Young people's sexual health literacy: seeking, understanding, and evaluating online sexual health information

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Abstract

Background: Improving the sexual health of young people is a key policy focus in Scotland. As the influence of the internet has grown within a rapidly changing health information landscape, so have opportunities for both sexual health promotion, and concerns about the challenges faced by young people in navigating this online environment. This study explores young people's sexual health literacy (SHL), primarily within this online context.

Methods: Paired interviews with friendship groups and observational online activities were used to explore young people's experiences of finding, understanding and evaluating online sexual health information. A purposive sample of 49 participants (aged 16-19), diverse in terms of gender, sexuality and religion, were recruited from across Scotland from areas that varied in terms of deprivation and urban/rural classification.

Findings: Participants varied in their confidence and ability to find and identify reliable information, and typically regarded identifying and filtering reliable sources as challenging. Barriers to accessing information on websites included: inaccessible language; inappropriate or non-relatable information; and websites that were difficult to navigate or did not function correctly. Concerns about stigma and 'being seen' seeking sexual health information was a key barrier. Stark differences, often mediated by gender, sexuality and educational circumstances, emerged in perspectives towards accessing sexual health information and support online. Findings suggest that different social media platforms present different opportunities and challenges; for example, social content sharing services such as YouTube may be useful venues for developing critical SHL, while social networking sites such as Facebook, may be less suitable to user's active engagement in identity construction. Dissatisfaction with school-based sexual health education appears to be a catalyst for online information-seeking, but school-based sexual health education did little to equip young people to use the online environment effectively.

Conclusions: Gender, sexual identity, stigma, structural factors and social support converge and intersect around young people's SHL. A broad range of targeted interventions are needed to improve SHL, focusing on overcoming stigma, presenting positive messages and developing interactive and critical skills. Schools could do more to develop SHL skills, including teaching the digital and critical skills to seek and appraise online information. Expanding online sexual health services may effectively complement traditional services and encourage uptake, but it is essential that research establishes a robust, comprehensive conceptualisation of SHL, and develops measurement tools specific to SHL such that interventions can be evaluated and refined.

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Author's Declaration

I declare that, except where explicit reference is made to the contribution of others, that this dissertation is the result of my own work and has not been submitted for any other degree at the University of Glasgow or any other institution.

Susan Martin

1   Introduction

Improving sexual health and blood borne virus (BBV) outcomes continues to be a high priority for the UK and Scottish Governments, with sexual ill-health remaining an important area for policy development (Department of Health, 2013; Scottish Government, 2011). While there have been positive downward trends in unplanned teenage pregnancy rates in Scotland and England, figures remain higher than many other western European countries (Association for Young People's Health, 2017; Office for National Statistics, 2016; Information Services Division, 2017). Similarly, although, there were small reductions in overall rates of new sexually transmitted infections (STIs) in 2016, transmission rates remain high, particularly amongst young people (Public Health England, 2017; Health Protection Scotland, 2016; Health Protection Scotland, 2015). In Scotland, research suggests that STIs amongst young people remain an issue, particularly for young women aged under 25. Young people in Scotland are unduly affected by chlamydia, with 68% of diagnoses in 2015 being amongst young people under 25, and for young women, this was 75% (Health Protection Scotland, 2016). Thus, sexual ill-health among young people is a particular public health issue, with young people in Scotland remaining at-risk for adverse sexual health, with research suggesting that this is due to relatively high numbers of sexual partners, relatively low age of first sex, and increasing sexual coercion (Kirby et al, 2010; Mercer et al, 2013). A school-based survey of 3465 young people aged 14-17 in five European countries found that the highest rates of sexual coercion were reported by young women in the UK, with 44% reporting some form of pressure to engage in sex or other sexual activity, both face-to-face and online (Barter et al, 2015).

While concerns about young people's sexual practices and relationships are not new, the rapidly changing health information landscape has altered the nature of these concerns, and worries have grown steadily about the influence of the online environment on young people's safety, sexual behaviours and practices (Livingstone et al, 2014; Parker et al, 2014). Public debates have arisen over the accessibility of sexually explicit content and the growth of practices such as 'sexting' and online bullying, and the influence these phenomena may have on young peoples' practices and wellbeing (Horvath et al, 2013; Tanton et al, 2015). A European Union survey of young people's internet use found that one fifth of young people (aged 9-16) had viewed a sexual image online (Mascheroni and Olafsson, 2014), and more recent research into young people's experiences with online pornography in the UK found that 47% of young people had encountered online pornography by the age of 16 (Martellozzo

et al, 2017).

In addition to public apprehension in relation to online content, there has been recognition of the potential of online technologies to support young people's negotiation of their sexual health. Whilst information about sexual health can be gathered from a broad range of sources, new digital media and information technology have altered the sexual health information and care delivery landscape, and have an important role to play in how young people understand and interact with sexual health information. The internet is a major source of sexual health information, and research has found that young people use the internet to access such information (Borzekowsi and Rickert, 2001; Hansen et al, 2003; Kanuga et al, 2004; Levine et al, 2008). The internet is considered to have potential for alleviating worries about confidentiality and embarrassment associated with accessing health information and care from more traditional sources (Barman-Adhikari et al, 2011; Klein et al, 1999). Thus, digital technologies present new opportunities to improve access to, provision of, and engagement with sexual health information. For this reason, the online context may be a key area of opportunity for sexual health interventions, including reaching young people with sexual health promotion and providing access to services such as online testing and treatment (Bailey et al, 2015).

The opportunities and challenges related to the role of digital technologies within young people's sexual health should be considered in the context of the Scottish and UK government's move towards services becoming 'digital by default', and ever-growing self-care and management expectations (Cabinet Office, 2014; Scottish Government, 2011a). The 'digital health' landscape has embraced the use of wireless devices, the internet, social networking and mobile networks to address health challenges.

Whilst digital technologies do represent new opportunities to improve provision of, and engagement with, information and services, and ultimately reduce health inequalities, there are growing concerns that transferring services and information sources to online spaces could instead fuel health inequalities. Aicken et al (2016) warn that "health inequalities might increase, especially if expansion of online sexual health care was coupled with reduced provision of conventional sexual health care" (p.13). Digital health inequalities comprise concerns over access, affordability, usability and appropriateness of technology, as well as individuals' varying capacities to make effective use of digital technologies. Such inequalities are multifaceted and complex, with individual, institutional and political

dimensions (eHealth Stakeholders Group, 2014). While concerns around a 'digital divide' in terms of fundamental access to the internet is considered to have become 'redundant' due to physical access within high-income countries been shown to be approaching universality (Office for National Statistics (ONS), 2016), worries persist about inequalities in how people *use* the internet (Boonaert and Vettenburg, 2011; Elwick et al, 2013).

Concerns about the 'digital divide' have tended to focus on older people, with young people typically perceived as 'digital natives', fully embedded and competent within the online context (Prensky, 2001). However, researchers have increasingly been recognising the difficulties that young people might face in negotiating their sexual health within the demanding and constantly changing online context. With the introduction of digital technologies, the sexual health information and support landscape is dynamic, presenting young people with challenges in effectively finding information and applying that information in decision-making. There is a huge quantity of sexual health content online, and due to the decentralised nature of the internet, regulating and negotiating the quality and accuracy of that information is challenging. With sexual health information increasingly being presented in digital format, and a growth in individuals seeking information online, it is important to explore the opportunities and challenges for the groups at which such resources are targeted, and those that inhabit these spaces. For research to shed light on the complex role of the online environment within young people's wider sexual health information and support, it is necessary to conceptualise sophisticated working definitions and models that relate to young people's abilities and experiences in engaging with online sexual health information.

The concept of health literacy has been influential in research and policy, and concerns how individuals access, evaluate, understand and use health information and services, dependent on individual, system and broader factors. Earlier definitions of health literacy tended to be narrow in scope, deriving from a functionalist perspective, referring to the function of basic skills in reading and writing that enable individuals to understand factual information on health risks and access health systems (AMA, 1999). However, understandings have evolved beyond narrow functionalist perspectives over time, towards broader definitions, recognising the range of personal, social and cognitive skills necessary to access, understand and use information to support and maintain health within healthcare, community and broader social realms (Nutbeam, 2000; Nutbeam, 2008; Peerson and Saunders, 2009; Ratzan and Parker, 2000). Nutbeam's (2000) three-part model of health literacy has been

particularly influential, differentiating between three different key components of health literacy: *functional* literacy, which refers to basic reading and writing skills to help use and understand health information; *interactive* literacy, encompassing cognitive and literacy skills to interpret and use information in changing circumstances and to interact and communicate with others; and *critical* literacy, which is the possession of advanced cognitive skills to analyse and question information critically and the ability to exercise more control over health decisions and behaviours.

Despite developments in the concept of general health literacy, conceptualisations of health literacy specific to sexual health remain underdeveloped. As such, relatively little progress has been made on establishing a concept of sexual health literacy, which must necessarily take into account the specific concerns associated with sexual health and the complexities of sexual health practices within a range of different contexts. Therefore, in carrying out this research it was necessary to synthesise a working definition of sexual health literacy with which to better understand young people's experiences, perspectives and practices. Further, it was crucial that the working definition of sexual health literacy acknowledge that sexual health is increasingly enacted online, such that it could facilitate examination of how the digital health landscape relates to young people's sexual health literacy.

1.1 Study aims and research questions

The broad aim of this study was to examine key information contexts within which sexual health literacy is developed and shaped, with a particular focus on the online context. Thus a key purpose was to explore how participants described and experienced locating, accessing, understanding, evaluating and applying sexual health information within sexual, social and formal healthcare contexts. The research questions were as follows:

1. What is the role of the internet within the broader landscape of participants' sexual health information and support?
2. How do participants describe and experience seeking, understanding, evaluating and using online sexual health information?
3. What are the individual, social and environmental factors relevant to young people's experience and use of online sexual health information and support?

While the focus of the research was on the online context, it was also important to consider 'offline' information and support, and, more importantly the interrelations between online and offline contexts, recognising how these environments interact.

1.2   Overview of thesis structure

The thesis begins with a review of literature relevant to young people's sexual health literacy within online and offline contexts (Chapter Two). This review is presented in two sections: firstly, an overview of theoretical literature on existing conceptualisations and understandings of 'health literacy', 'sexual health literacy' and 'digital literacy', followed by a review of the theoretical and empirical literature concerning young people's experiences of seeking sexual health information online, and the development of digital sexual health promotion and care interventions. Chapter Three describes and discusses the research methods, specifically: the broad approach and philosophic underpinnings; the specific research design; description and reflections on implementation and data management and analyses processes. The findings are reported in Chapters Four, Five and Six. Chapter Four situates the role of the internet within the broader arena of participants' sexual health support and information sources, describing the ways participants described learning about sexual health, and their perceptions of different information sources. Chapter Five focuses specifically on the online context, reporting how participants described and experienced seeking, understanding and evaluating sexual health information online. Chapter Six examines how participants described applying sexual health information within a range of contexts, including social and healthcare settings, and their perceptions of ways to circumvent formal sexual healthcare barriers, within both the peer and online context. Findings are integrated, synthesised and related to the existing literature in Chapter Seven, and conclusions and recommendations are presented in Chapter Eight.

2 Literature review

2.1 Overview of the literature review

The literature review is presented in two main sections. In Section One (2.3), I set out existing conceptualisations and understandings of 'health literacy', 'sexual health literacy' and 'digital health literacy', and propose a working definition of 'sexual health literacy'. This is followed by an examination of the tripartite information access model, which, along with the different definitions of health, sexual health and digital health literacy, is instrumental in establishing the conceptual foundations of this research. This is followed by Section Two (2.4), which focuses on literature about young people's use of the internet for sexual health and the challenges and potential for sexual health promotion and care within the online context. This chapter concludes by discussing how this study can contribute to existing literature (2.5).

2.2 Description of literature review search strategy

Given the breadth and depth of literature relating to online information seeking within different disciplines, this review should be considered as selective. While a systematic review would have been a more rigorous and comprehensive approach, it was unsuitable for this project, which was exploratory in nature, and subject to time and resource constraints. The aim of the literature review was to attain a broad understanding of the topic and provide an overview of the theoretical and empirical literature in order to identify important gaps in the literature and thus inform development of research aims. A traditional narrative review was suited to these aims of qualitatively summarising evidence to achieve a broad perspective, rather than addressing a clearly defined, focused and answerable question. A range of search strategies were employed to identify literature, allowing a sufficiently wide-ranging selection of relevant literature to be reviewed.

To identify relevant literature, including research articles, reviews, commentaries, and published abstracts, searches were conducted in the following electronic databases: ASSIA; CINAHL; Embase; IBSS; MEDLINE; PsychINFO; PubMed; and Web of Science. Keywords searches were used to identify relevant literature exploring 'health literacy', 'digital/ehealth literacy' and 'sexual health literacy'. Searches were limited to papers published in English post-1974, the date of the first mention of 'health literacy' at a health education conference (Simonds, 1974). As well as explicit searches for literature focused

around 'health literacy', searches were conducted for literature on young people's sources of sexual health information, digital health and digital sexual health interventions. The keyword searches were restricted to articles that explicitly mentioned the search terms within the title or abstract.

Ovid Medline and Embase automatically match search terms with controlled vocabulary, or Medical Subject Headings (MeSH). Thus, in addition to using the search terms, a separate search was conducted for the MeSH term 'health literacy'. This function was also used to choose subheadings associated with 'health literacy': health knowledge, attitudes and practice; and interpersonal communication.

Further literature was identified within reference sections of relevant papers and by searching for articles citing particularly relevant papers. Reference manager software (Endnote) was used to collate, summarise, categorise, store and retrieve the search results. The initial search was carried out in 2013-14, and updated in 2016-17.

2.3   Section One: conceptualising 'health literacy', 'sexual health literacy' and 'digital health literacy'

As this research aims to understand how young people seek, understand, evaluate and use online sexual health information, it was deemed essential to establish conceptual understandings of 'health literacy', 'sexual health literacy', and 'digital health literacy' as starting points. The development of these concepts are explored within this section.

2.3.1 Health literacy: theory and conceptualisations

Interest in the concept of 'health literacy' has grown since its first mention at an education conference in the 1970s and has since been increasingly acknowledged as a priority for health policy (Simonds, 1974). Entering the term 'health literacy' into PubMed using the topic-specific query tool highlights the growth in interest, from 11 search results between 1974 and 1990 to 2511 between 2000 and 2017. As the field of health literacy has gained importance, the term itself has been subject to debate (Baker, 2006). Sorenson and colleagues' (2012) systematic review highlighted the absence of consensus about the definition of health literacy or its conceptual dimensions, such that it has different meanings within different disciplines.

In scoping the literature on health literacy from 1974 to 2013, nineteen different definitions were identified. These are presented in Table 2-1, which expands on the table of definitions presented by Sorenson and colleagues (2012). Earlier definitions of health literacy tended to be narrow in scope, deriving from a functionalist perspective, referring to the function of basic skills in reading, writing and oral communication that enable individuals to understand factual information on health risks and access health systems. This view is exemplified by the American Medical Association's (AMA, 1999) definition of health literacy as "the ability to read and comprehend prescription bottles, appointment slips, and the other essential health-related materials" (p.522). This perspective emphasises health literacy as an individual construct, beginning and ending with the patient, primarily taking place within healthcare settings and with a focus on specific information provision products.

Over time understandings have evolved beyond narrow functionalist perspectives towards broader definitions, recognising the range of personal, social and cognitive skills necessary to access, understand and use information to support and maintain health within healthcare, community and broader social realms (Nutbeam, 2000; Nutbeam, 2008; Peerson and Saunders, 2009; Ratzan and Parker, 2000). Nutbeam's (2000) three-part model of health literacy has been particularly influential, differentiating between three key components of health literacy: *functional* literacy, which comprises basic reading and writing skills to use and understand health information; *interactive* literacy, encompassing cognitive and literacy skills to interpret and use information in changing circumstances and to interact and communicate with others; and *critical* literacy, which is the possession of advanced cognitive skills to analyse and question information critically, and the ability to exercise more control over health decisions and behaviours. Thus, whilst Nutbeam (2000) recognised the importance of functional literacy skills in enabling individuals to participate in society, he argued that definitions focusing on functional literacy miss "much of the deeper meaning and purpose of literacy for people" (p.263). From Nutbeam's (2000) perspective, it is crucial to focus on what literacy enables individuals to do.

Table 2-1. Chronological definitions of health literacy

Author/organisation	Definitions of health literacy
WHO/Nutbeam (1998)	"The cognitive and social skills which determine the motivation and ability of individuals to gain access to understand and use information in ways which promote and maintain good health"
American Medical Association's (AMA) (1999)	"The constellation of skills, including the ability to perform basic reading and numeral tasks required to function in the healthcare environment"
Nutbeam (2000)	"The personal, cognitive and social skills which determine the ability of individuals to gain access to, understand, and use information to promote and maintain good health"
Ratzan and Parker (2000) and Institute of Medicine (2004)	"The degree to which individuals' have the capacity to obtain, process and understand basic health information and services needed to make appropriate health decisions"
Zarcadoolas, Pleasant & Greer (2003, 2005,2006)	"The wide range of skills, and competencies that people develop to seek out, comprehend, evaluate and use health information and concepts to make informed choices, reduce health risks ad increase quality of life"
Sihota, S. and Lennard, L (2004) National Consumer Council (NCC)	"The capacity of an individual to obtain, interpret and understand basic health information and services in ways that are health-enhancing"
Kickbusch, Wait & Maag (2006)	"The ability to make sound health decision(s) in the context of everyday life—at home, in the community, at the workplace, the healthcare system, the market place and the political arena. It is a critical empowerment strategy to increase people's control over their health, their ability to seek out information and their ability to take responsibility"
Paasche-Orlow & Wolf (2006)	"An individual's possession of requisite skills for making health-related decisions, which means that health literacy must always be examined in the context of the specific tasks that need to be accomplished. The importance of a contextual appreciation of health literacy must be underscored"
British Columbia Health Literacy Research Team/Kwan, Frankish and Rootman (2006)	The degree to which people are able to access, understand, appraise and communicate information to engage with the demands of different health contexts in order to promote and maintain good health across the life-course"
EU (2007)	"The ability to read, filter and understand health information in order to form sound judgments"

Rootman & Gordon-Elbihbety (2008)	"The ability to access, understand, evaluate and communicate information as a way to promote, maintain and improve health in a variety of settings across the life course"
Ishikawa & Yano (2008)	"The knowledge, skills and abilities that pertain to interactions with the healthcare system"
Mancuso (2008)	"A process that evolves over one's lifetime and encompasses the attributes of capacity, comprehension, and communication. The attributes of health literacy are integrated within and preceded by the skills, strategies, and abilities embedded within the competencies needed to attain health literacy"
Australian Bureau of Statistics (2008)	"The knowledge and skills required to understand and use information relating to health issues such as drugs and alcohol, disease prevention and treatment, safety and accident prevention, first aid, emergencies, and staying healthy"
von Wagner, Steptoe, Wolf, & Wardle (2008)	"Health literacy is a combination of cognitive skills, knowledge, and experience attained throughout the life span. The relationship between health literacy and health action is mediated by at least 2 processes: motivation based and skill based"
Yost et al. (2009)	"The degree to which individuals have the capacity to read and comprehend health-related print material, identify and interpret information presented in graphical format (charts, graphs and tables), and perform arithmetic operations in order to make appropriate health and care decisions"
Adams et al. (2009)	"The ability to understand and interpret the meaning of health information in written, spoken or digital form and how this motivates people to embrace or disregard actions relating to health"
Adkins et al. (2009)	"The ability to derive meaning from different forms of communication by using a variety of skills to accomplish health-related objectives"
Freedman et al. (2009)	"The degree to which individuals and groups can obtain process, understand, evaluate, and act upon information needed to make public health decisions that benefit the community"
Sorensen (2012)	"Health literacy is linked to literacy and entails people's knowledge, motivation and competences to access, understand, appraise, and apply health information in order to make judgments and take decisions in everyday life concerning healthcare, disease prevention and health promotion to maintain or improve quality of life during the life course"

The concept of critical health literacy has been particularly influential. Critical health literacy focuses on the capacity to critically question and analyse information, and the ability to use (or reject) such information to "exert greater control over life events and situations", aligning health literacy with notions of empowerment (Nutbeam 2000, p.264). Within the health context, Nutbeam (2000) indicated that such skills could be used to support political action to encourage community development and address social, environmental and economic determinants of health. Chinn (2011) suggested dividing Nutbeam's (2000) concept of critical health literacy into three further components: critical analysis of information; understanding social determinants of health; and engaging in collective action (Chinn, 2011). There is a body of literature focused on the social determinants of health, with many expanded definitions placing structural factors as a significant component, particularly within critical health literacy (Kawachi and Berkman, 2003; Krieger, 1994; Nutbeam, 2000). This perspective aligns with those interested in the emancipatory and empowering aspects of health literacy, with critical societal awareness considered necessary in community empowerment (Caplan, 1993).

Thus, within Nutbeam's model (2000), improving health literacy has both personal and social benefits. On an individual level, these may include: improved knowledge of health risks; adherence to prescribed actions; acting independently on knowledge; increased motivation and self-confidence; and improved individual resilience in relation to economic and social diversity. On a social and community level, benefits may include: participation in population health programmes; improved capacity to influence social norms and interact with social groups; and improved ability to act on determinants of health to improve community empowerment and development of social capital (Nutbeam, 2000). Thus, increasing health literacy skills may result in greater autonomy and personal empowerment, and, on a broader level, greater equity in public health. From this perspective, routes to address health literacy include both increasing personal health literacy through education and making systems less demanding and easier to navigate.

There are many barriers to health literacy, and broader definitions of health literacy recognise this, acknowledging that the multidimensional and dynamic nature of health literacy extends beyond the individual to the healthcare system and broader society, and is shaped by changing individual-level, societal and contextual influences (Nutbeam, 2000; Nutbeam, 2008; Paasche-Orlow & Wolf, 2007; Pleasant et al, 2016; Rootman and Ronson, 2003; Sorenson et al, 2012; Zarcadoolas et al, 2005). From a public health perspective, this

moves the focus beyond individual actors to consider wider structural issues (e.g. education, social norms and possibilities of 'behaviour' change (in response to existing or new risks)) (Pleasant et al, 2016). It is also important to note that, in these broader conceptualisations, 'individual actors' include health care providers as well as patients, family members and friends.

Approaches to health literacy must recognise the myriad of social factors present in populations with widespread low health literacy, and the impact of socioeconomic disparities and unequal access to good quality education (Goldberg, 2007). Literature has highlighted demographic and social factors that impact health literacy, including: socioeconomic status; employment; culture and language; education; age; race/ethnicity; environmental and political forces; and media use (Manganello 2008; Paashe-Orlow and Wolf 2007; Sorenson et al, 2012). Much of individuals' health literacy depends on factors beyond their control, such as: the quality and completeness of information communicated to them (in school, in healthcare contexts, online); opportunities to develop skills within supportive environments; provision of information on social and economic determinants of health; and opportunities to achieve policy change (Nutbeam, 2000). Considering health literacy as a broader and social construct is crucial, as too much focus on individuals results in responsibility, and consequently solutions, being placed out with the healthcare system and broader society (as highlighted by Freedman, 2009).

It is crucial to acknowledge that health is increasingly negotiated online. Berkman and colleagues (2010) highlight the importance of changing contexts, particularly health information technology, to health literacy, as technology is an increasingly important medium for communicating health information. Such changing circumstances can influence the extent and development of literacy skills, as well as their application in particular settings (Pleasant and Kuruvilla, 2008). Online sexual health information is the key focus of this thesis, and the online context is explored in greater detail in Section 2.4.

Pleasant and colleagues (2016) highlight the importance of definitions of health literacy, as they influence the focus of concern, variables for analysis, parameters for inquiry and measurement tools developed in practice and policy. With the growth of health literacy theory, there has been rising demand for tools to measure health literacy to inform improved education (Abel, 2008; Pleasant et al, 2011). However, while conceptualisations of health literacy have become more sophisticated, reflecting its multidimensional nature,

measurement has not, continuing to focus primarily on individual-level functional literacy (Jordan et al, 2011; Sorenson et al, 2012). Table 2-2 details examples of measurement approaches. Jordan and colleagues (2011) found that none of the indices they evaluated comprehensively measured health literacy and the ability to seek, understand and use health information. Pleasant and colleagues (2011) criticised existing measurement tools for not being informed by health literacy theory, and for being limited because of: a reliance on direct reading tests, a focus on word recognition over comprehension; a lack of cultural sensitivity; bias towards particular population groups; a failure to evaluate oral communication skills; and insufficient consideration of health literacy as a public health issue.

Some emerging tools aim for more in-depth assessment of dimensions of health literacy beyond the individual, as well as investigating relationships between social determinants, health status and service use (Sorensen et al, 2013) (see Table 2-3 for full descriptions). A number of studies have attempted to comprehensively measure health literacy with a combination of methods. For example, Yee and Simon (2013), in their study of health literacy and contraceptive decision-making, used REALM-7, the Schwartz numeracy test as well as in-depth qualitative interviews. Similarly, Needham and colleagues (2010) used a 22-item demographic and reproductive health questionnaire (race/ethnic background; education; sexual behaviours), REALM and a review of a Chlamydia patient education brochure and comprehension test to examine health literacy and STI risk in young women. Such methods, particularly the inclusion of qualitative methods, demonstrate potential for understanding into the dynamic and multidimensional components that make up health literacy.

In addition to definitions being important in developing measurements, governmental definitions of health literacy have policy implications. Government organisations, particularly in the USA, have most commonly cited narrow, individual-focused definitions such as Ratzan and Parker's (2000) (see Table 2-1). This definition has been widely cited, and used in both an Institute of Medicine report entitled 'Health Literacy: A Prescription to End Confusion' (2004) and the Department of Health and Human Services' (HHS) 'Healthy People' report (2010). This approach, developed mainly in the USA, to help health professionals communicate and help patients understand, characterises health literacy as "a problem that patients have and physicians need to overcome" (Pleasant and Kuruvilla, 2008, p.152). However, in a commentary piece on defining health literacy, Pleasant and colleagues

(2016) highlight that some, particularly out with the USA, are beginning to recognise the "two-sided nature of health literacy" (p.2). In the Scottish Government's (2014) policy document, 'Making it Easy: A health literacy action plan for Scotland', the then MSP Cabinet Secretary for Health and Wellbeing, Alex Neil, stated "health literacy is about people having enough knowledge, understanding, skills and confidence to use health information, to be active partners in their care, and to navigate health and social care systems" (p.3). While this statement reflects an individual-level focus, the policy document refers to system barriers and the role of healthcare workers in addressing their own, as well as patients', health literacy. Actions recommended include raising awareness and capabilities of professionals and promoting development, access and use of health literacy tools. However, that report tends to focus on healthcare contexts, not considering broader contexts within which health literacy is shaped and applied.

Peerson and Saunders (2009) observe that medical literacy definitions of health literacy exclude those who are neither patients nor part of health-care settings, and fail to acknowledge health-related decision-making in everyday contexts. Numerous health theorists have advocated moving away from solely medical contexts to include community or broader social realms (Nutbeam, 2008; Peerson and Saunders, 2009). As Peerson and Saunders (2009) state:

> "Our concept of health literacy includes information and decision-making skills occurring in the workplace, in the supermarket, in social and recreational settings, within families and neighbourhoods, and in relation to the various information opportunities and decisions that impact upon health every day" (p.289).

In this respect, Public Health England (2015) seem to acknowledge health literacy out with healthcare settings in their policy document entitled "Improving health literacy to reduce health inequalities". This document included Nutbeam's (2000) broad conceptualisation of health literacy, incorporating functional, interactive and critical literacy skills, as well as recommending targeted action to improve health literacy of low-literacy populations, broad actions to make health and social care systems more health literate, and improving conditions within which individuals are born, live, work and age.

Table 2-2. Characteristics of health literacy measurements

Measure name	Measures	No of items	Scoring	Process/time to complete
Direct measures				
REALM (Davis et al, 1991)	word recognition and pronunciation test	66 words	Grade assigned based on total score ranging from 0-66: 0-18 = ≤ 3rd grade; 19-44 = 4th-6th grade; 45-60 = 7th-8th grade; 61-66 = ≥ 9th grade	Administered by clinician/researcher; <2 min
REALM-R (Bass et al, 2003)	word recognition and pronunciation test	8 words	Grade assigned based on total score ranging from 0-8: ≤6 = 6th grade and indicates poor health literacy	Administered by clinician/researcher; <3 min
TOFHLA (Parker et al, 1995)	reading comprehension and numeracy test	50 item (reading comprehension); 17 item (numeracy test)	Scores range from 0-100: <60 = inadequate health literacy; 60-75 = marginal health literacy; >75 = adequate health literacy	Self-administered; 22 min
s-TOFHLA (Baker et al, 1999)	reading comprehension	36 item reading assessment	Scores range from 0-36: 0-16 = inadequate health literacy; 17-22 = marginal health literacy; 23-36 = adequate health literacy	Self-administered; 7 min
NVS (Weiss et al, 2005)	reading comprehension and numeracy	6 questions on nutrition label	Each item correctly answered is given score of 1. Scores range from 1-6 and <4 = limited health literacy	Self-administered; 3 min
WRAT (Stone et al, 1995)	reading recognition, spelling and arithmetic computation	15 letters and 42 words (reading test); 13 letters and 40 words (spelling test); counting, reading number symbols and solving simple arithmetic problems; 40 arithmetic problems (arithmetic test)	3 scores (spelling, arithmetic, reading). Scoring: 1 = correct answer; 0 = incorrect answer, scores standardised, and average score =- 100	Self-administered; 20-30 min

HIV-HL (Ownby et al, 2013a)	Evaluates HIV-specific skills Quantitative tasks closely related to real-life problems (calculating time between medication doses) Ability to understand orally-presented information	20 items assessing general medication taking skills, including several items with content specifically related to HIV infection and treatment (interpreting medication labels and warnings). Questions based on a video simulation of an HIV-related clinical encounter	Computer scored, measure yields summary score. Scores ranged from 8-20. Cut off score for predicting if a patient has low health literacy not reported.	Administered on touch screen computer using multiple-choice format; Typically required 10-15mins, although some participants required 20-25

Indirect measures

3-brief SQ (Chew et al, 2008)	self-reporting of confidence in health literacy skills	3 questions	Each response option assigned values of 0, 1, 2, 3; scores range from 0-12; High scores = high health literacy skills; low scores = low health literacy skills	Administered by clinician/researcher or self-administered; 1-2 min
3-level HL scale (Ishikawa et al, 2008)	self-reporting of health literacy skills	14 item, 3 domains; functional (5), communicative (5), critical (4).	Each item scored on 4-point scale ranging from 1 (never) to 4 (often); scores then summed and divided by number of items on scale; higher scores indicate higher health literacy	Administered by clinician/researcher or self-administered; 5-6 min
SILS (Morris et al, 2006)	self-reporting of health literacy skills (functional, communicative and critical)	1 question	Possible scores: 0 (never), 1 (rarely), 2 (sometimes), 3 (often), 4 (always); Score >2 = difficulty reading printed health material	Administered by clinician/researcher or self-administered; <1 min

Table 2-3. Characteristics of broader health literacy measurements

Measure name	Measures	No of items	Scoring	Process/time to complete
CHC Test (Steckelberg et al, 2007)	critical health competences	72 items - 4 by 4 facets design– 1st facet: echinacea and common cold; magnetic resonance imaging in knee injuries; treatment of acne; breast cancer screening. 2nd facet was four subareas of competence – understanding medical concepts, skills of searching literature, basic statistics and design of experiments and sampling.	No details given.	Students were asked to respond to the four test sheets within 90 min.
AAHLS (Chinn et al, 2012)	self-reporting of health literacy skills (functional, communicative and critical)	14 questions, 3 domains; functional, communicative, critical	3-point scale: rarely, sometimes, often. Did not establish a cut off for "adequate" health literacy	Administered by clinician/researcher or self-administered; 7 min
HeLMS (Jordan et al, 2013)	Individual abilities and modifiable factors: seeking health information; verbal skills; assertiveness; literacy; process and retain information; application skills; social support; socioeconomic considerations	29 items, 8 domains; Patient attitudes towards health, understanding health information, social support, socioeconomic considerations, accessing healthcare services, communication with health professionals, being proactive, using health information	A five-point Likert-style response format was developed in response to the content of the items: 1 = unable to do, 2 = very difficult, 3 = with some difficulty, 4 = little difficulty, 5 = without difficulty.	Self-administered/no details given
HLQ (Osborne et al, 2013)	functional, interactive and critical health literacy attributes and competencies	9 scales, 44 items. Scales: Feeling understood and supported by healthcare providers; Having sufficient information to manage health; Actively managing health; Social support; Appraisal of health info; Ability to actively engage with healthcare providers; Navigating healthcare system; Ability to find good health information; Understand health information well enough to know what to do.	Items that represented personal attributes, resources or approaches used a disagree/agree Likert scale; items assessing specific or general competencies used a cannot do to very easy scale.	Self-administered/no details given

Reviewing published definitions and dimensions of 'health literacy' enhanced my appreciation of the complexity of the concept. Research in this field has progressed greatly, and conceptual models of health literacy contain a broad range of factors, components and dimensions, having progressively broadened in focus from purely functional, individual-level aspects of health literacy (Chinn, 2011) to embracing an ecologically-framed conceptual model, identifying health literacy as diffused in the realms of culture, context and language (Baker, 2006; Nutbeam, 2008; Zarcadoolas et al, 2006). Sorenson and colleagues (2012) propose an "all inclusive", flexible definition of health literacy, accommodating the roles of social, environmental and cultural factors and integrating diverging definitions, conceptual frameworks and models of health literacy (p.3).

Having reviewed existing definitions of health literacy, Nutbeam's (2000) three-part model and Sorenson and colleagues' (2012) conceptual understanding have been particularly influential in guiding my research. Sorenson and colleagues' (2012) conceptual framework recognises: the dynamic nature of health literacy; the dependency of health literacy on relationships between individual capacities, the healthcare system and broader society; and numerous health-related decisions made in the context of everyday life. As they explain, "Health literacy is linked to literacy and entails people's knowledge, motivation and competences to access, understand, appraise, and apply health information in order to make judgments and take decisions in everyday life concerning healthcare, disease prevention and health promotion to maintain or improve quality of life during the life course" (Sorenson et al, 2012; p.3). It is evident that a broad focus, incorporating individual, contextual and societal transformations as well as economic, socio-cultural and political changes, is essential.

2.3.2 Conceptualising and measuring sexual health literacy

The complexity of conceptualisations of health literacy is illustrated by the development of sub-concepts such as 'oral health literacy' and 'environmental health literacy' (Pleasant and colleagues, 2016). Helitzer and colleagues (2012) state that "being health literate assumes not just that generic literacy skills are applied in a health setting, but that individuals must often have multiple health condition-specific literacy competency" (p.2). Despite the rise in such specialities, conceptualisations of 'sexual literacy' or 'sexual health literacy' appear largely undeveloped, although, a number of studies have explicitly focused on exploring or measuring sexual health literacy within different populations (Graf and Patrick, 2015; Guzzo et al, 2012; Jones and Norton, 2007; McMichael and Gifford, 2009; McMichael and Gifford,

2010; Reinisch and Beasley, 1990). Reviews of these studies revealed a variety of definitions and approaches to 'sexual health literacy'.

'Sexual literacy' was first mentioned in a Kinsey Institute Report based on a survey revealing the alarming "sexual illiteracy" within the USA (Reinisch and Beasley 1990). Within this study, 'sexual literacy' was measured using the Kinsey Institute/Roper Organisation National Sex Knowledge Test, which tested the basic sexual knowledge of a statistically representative group of adults in America, and concluded that "unfortunately, Americans failed the test" (Reinisch and Beasley 1990, p.1). While providing no explicit definition of 'sexual literacy', Reinisch and Beasley (1990) measured sexual literacy in terms of knowledge. In some respects, this knowledge-focused understanding remains, with Guzzo and colleagues (2012), more than two decades later, referring to Reinisch and Beasley's (1990) study as influencing their research into race-ethnic differences in sexual health knowledge. Within this survey-based study, Guzzo and colleages (2012) examined what they defined as three components of sexual literacy: accurate knowledge about pregnancy risk, pregnancy fatalism, and perceptions of contraceptive side effects. More recently, Graf and Patrick (2015) published a paper titled 'Foundations of life-long sexual health literacy', examining the influence of different sexual health information sources on current safe sex knowledge and risky sexual behaviours amongst middle-aged and older adults in the USA. Again, sexual health literacy was measured with a focus on knowledge, but Graf and Patrick (2015) also explored participants' sources of sexual health information, using a quantitative survey method to investigate how timing and sources of sexual information relate to sexual risk knowledge and behaviours. However, they did not examine the content and quality of participants' experiences in relation to their sexual health information sources.

Accurate knowledge is essential, but not enough on its own. Measuring 'sexual health literacy' by surveying sexual health knowledge fails to acknowledge the importance of having skills and opportunities to apply knowledge. Simply measuring knowledge cannot give a comprehensive picture of an individual's sexual health literacy, and attempts to measure sexual health literacy have been characterised by inadequate consideration of individual skills and the contexts within which sexual decision-making occurs.

While there has been little focus on broad conceptualisations of sexual health literacy in the literature, three studies have explored the importance of knowledge and access to information, the development of skills to enhance abilities to take control of sexual health

and wellbeing, and the need to focus on structural and contextual influences (Gilbert et al, 2014; Jones and Norton, 2007; McMichael and Gifford, 2010). Two of these studies used qualitative methods to explore access, interpretation and implementation of sexual health information with young people from refugee backgrounds in Australia (McMichael and Gifford, 2010) and young women in rural Uganda (Jones and Norton, 2007). Each study identified various structural and contextual barriers for their participants, including social risks and lack of access to sexual health information (Jones and Norton, 2007; McMichael and Gifford, 2010). McMichael and Gifford (2010) stress the importance of providing access to clear, factual information on pregnancy, contraception and STIs, as well as developing skills in "managing sexual relationships, negotiating sexual pressures, and the potentially positive and emotional aspects of sex" (p.230).

Jones and Norton (2007) highlight the need to focus on the contexts within which sexual health decision-making occurs and to consider the information accessed, the conceptualisations and processing of such information, general sexual health awareness and "the nature of the 'ecologies' in which their sexual health knowledge intersects with human agency and proactive decision making" (p.289). Notably, Jones and Norton (2007) apply Nutbeam's (1998) empowering definition of health literacy to sexual health: "sexual health literacy references the ability not only to understand sexual health information, but also to act on the information available" (p.286). They argue that, while definitions focusing on possessing sexual health knowledge may be more applicable in a wide range of contexts, they have little applicability in developing countries, and do not account for the complex challenges faced in the developing world: chronic poverty, gender imbalances, unfavourable health conditions and poor infrastructure.

More recently, Gilbert and colleagues (2014) published a report from a meeting of researchers, policy-makers, service providers and community members funded by the Canadian Institutes of Health Research, focusing on health literacy and its relevance to gay men's sexual health and HIV prevention. The report embraces a broad conceptualisation of sexual health literacy, describing an emerging framework for sexual health literacy for gay men that recognises the importance of focusing on information providers as well as individuals as users of information, and the structural and systemic factors that impact these relationships (Gilbert et al, 2014). These three studies, in different countries and amongst different populations, go beyond knowledge-based sexual health literacy, highlighting the need for skills and the range of structural and contextual barriers to sexual health literacy,

including socioeconomic circumstances, gender oppression, cultural norms, community and family pressures, all of which can influence sexual practices (Gilbert et al, 2014; Jones and Norton, 2007; McMichael and Gifford, 2009; McMichael and Gifford ,2010;).

2.3.3 Towards a working conceptualisation of sexual health literacy

Sexual health is an integral part of overall health, but, as established in Section 2.3.2, conceptualisations of health literacy have typically neglected to incorporate the specific needs and concerns of sexual health. Beyond basic knowledge of facts, being sexually healthy involves managing sexual relationships and healthcare, negotiating sexual pressures, executing protective strategies and managing the moral stigma of STIs, sexual identities and social norms of acceptable sexual behaviour. Sexual learning operates within complex, dynamic contexts, and faces a range of barriers related to the changing landscape of information sources and provision, knowledge and understanding, and concerns over confidentiality, embarrassment and shame (McMichael and Gifford, 2010). Sexual encounters comprise multiple interacting contextual and interpersonal elements, such that applying learned information to healthy decision-making in sexual scenarios entails employing interpersonal skills to negotiate and communicate with sexual partners about complex risk information in dynamic and changing circumstances ('in the heat of the sexual moment') (Gilbert et al, 2014). Thus, the broader issues that influence individuals' ability to manage sexual wellbeing may be different or more pronounced than for other general health issues due to the particularly social and interactive nature of sexual health, and the heightened significance of issues of taboos, stigma, sexual violence and sexual rights. As such, conceptualisations of sexual health literacy must incorporate critical and interactive aspects, even more so than conceptualisations of general health literacy.

The cultural and social contexts in which individuals are located, and the demands placed on individuals, each of which shape accessibility and experience, are crucial. Sexual health literacy must include critical awareness and analysis of socio-cultural beliefs, attitudes and practices that may undermine individual autonomy and decision-making, and stem opportunities to exercise agency in expressing sexuality and making safe, healthy decisions (Jones and Norton, 2007). Going beyond the absence of disease, a broad definition of sexual health literacy should incorporate physical, emotional, mental and social wellbeing, and facilitate pleasure, intimacy and safe sexual experience (WHO, 2010).

A definition of sexual health literacy should incorporate the *level* of sexual health knowledge, the *capacity and motivations* to employ it, and the *contextual influences* to finding, interpreting and using information and support. Thus, a foundation of sexual health knowledge should be supported by the functional, interactive and critical skills necessary to understand, evaluate and use it in everyday sexual and social contexts. Sexual health literacy should empower individuals in decision making and in exercising their sexual health rights (free from coercion, discrimination and violence), and must acknowledge the role that contextual, social, cultural and economic factors have on these freedoms. Critical understandings of socio-cultural beliefs, attitudes and practices that may undermine autonomy and decision-making are essential to this empowerment. The importance of context should be central to a comprehensive conceptualisation of sexual health literacy, as contextual factors can complicate processes of making healthy sex choices, potentially exerting greater influence than a lack of knowledge or motivation.

It was necessary to form a working definition of 'sexual health literacy' with which to guide the design of this research. To this end, I propose an inclusive, holistic definition of sexual health literacy influenced by broad understandings of 'health literacy', particularly Nutbeam's (2000) three-part model and Sorenson and colleagues' (2012) 'inclusive' conceptualisation, as well as Jones and Norton (2007) and McMichael and Gifford (2009) broad understandings of 'sexual health literacy'. Synthesising these perspectives, I define sexual health literacy as referring to an individual's knowledge, beliefs, attitudes, motivations and skills in accessing, understanding, evaluating and applying sexual health information in social, sexual, online and healthcare contexts, to negotiate and make judgements and decisions concerning sexual healthcare, health promotion, relationships and wellbeing. Sexual health literacy is dynamic in nature, developed and applied in complex ecologies and influenced by individual, healthcare system, contextual and societal factors. In addition to synthesising this working definition, I produced a model (Figure 2-1) visualising the relationships between the individual, information sources and the broader context within sexual health literacy. The model illustrates how sexual health literacy enables individuals to understand, interpret and evaluate information and apply that information within a variety of contexts.

Figure 2-1. Dynamic sexual health literacy model
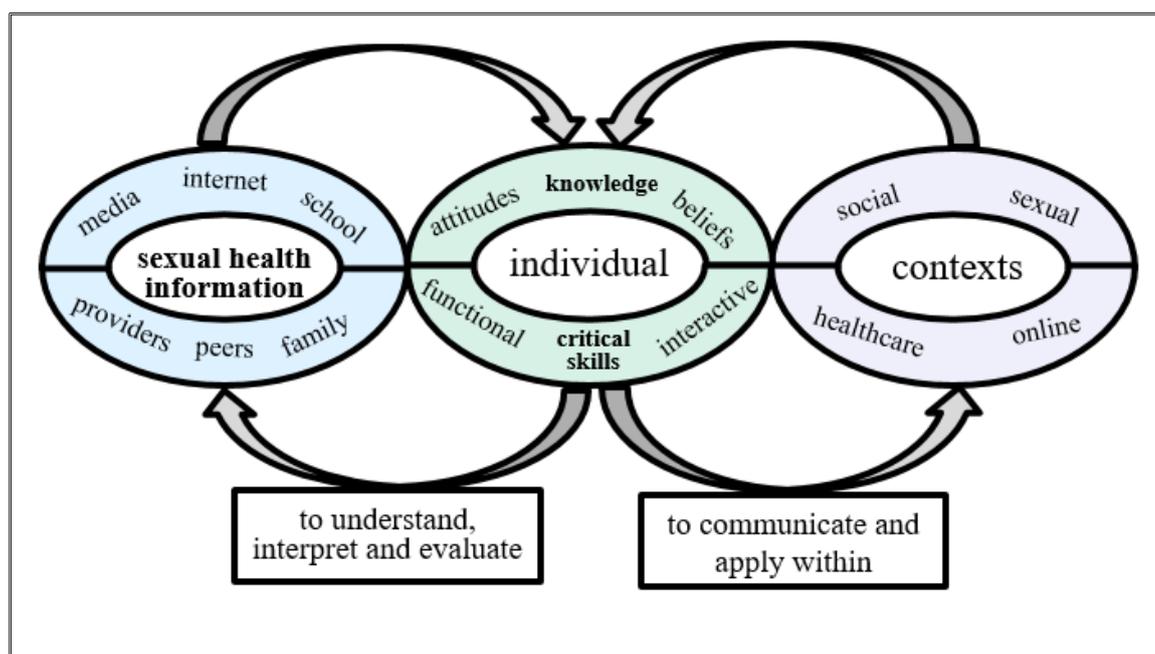
2.3.4 Digital literacy and digital health literacy

Digital literacy is an expansive field of study, spread across many disciplines, including computing, public policy, library science, education and political science (Thomson et al, 2014). As such, it cannot be explored at length here. However, given the increasing importance of sexual health literacy within the online context, it is important to establish what digital literacy is, and to understand why interactions between digital literacy and sexual health literacy are increasingly important. As such, this section provides a brief overview of digital literacy and digital health literacy literature.

Like health literacy, digital literacy has traditionally been defined narrowly, focusing on technical skill and functional competence in basic information retrieval in relation to information and communications technology (ICT) (Goodson and Mangan, 1996). However, broader understandings have emerged, and the consensus appears to be that digital literacy concerns more than a capacity to use computers and access information (Buckingham, 2006; Jones-Kavalier et al, 2006), and is instead a dynamic, process-oriented skill that develops and adapts over time as personal, technological, environmental and social contexts change. Martin (2005) broadly defines digital literacy as:

"the awareness, attitude and ability of individuals to appropriately use digital tools and facilities to identify, access, manage, integrate, evaluate, analyse and synthesise digital resources, construct new knowledge, create media expressions, and

communicate with others, in the context of specific life situations, in order to enable constructive social action, and to reflect upon this process" (p.135)

This definition stresses the importance of communication and creating meanings as well as searching, assessing and synthesising abilities.

More recently, Ng (2012) developed a digital literacy framework model drawing broader definitions, incorporating three intersecting dimensions of digital literacy: technical, cognitive and social-emotional. The technical dimension comprises the functional, operational and technical skills to use ICT in learning and day-to-day activities; the cognitive dimension comprises the ability to critically search, evaluate and create within the digital context; and lastly, the social-emotional dimension comprises the capacity to responsibly use the internet to communicate, socialise and learn. This framework has similarities with Nutbeam's (2000) health literacy model of functional, interactive and critical literacy skills. Critical literacy is particularly central to digital literacy, and within all three dimensions of Ng's (2012) model: "understanding that people behind the scene writing the information have their own motivations and being able to critically evaluate whose voice is being heard and whose is not is important for learning as neutrally as possible" (p.1068). These demands for critical literacy have grown commensurately with the importance of the online context.

As health information and communication is increasingly digitised, the need to focus on the digital context grows (Madden et al, 2006; Norman and Skinner, 2006). Whilst traditional conceptualisations of health literacy largely neglect the growing role of digital technology and media, there has been a recent growth in literature on 'digital health literacy' and 'eHealth literacy' (Mein et al, 2012; Norman and Skinner, 2006). Digital health literacy has been defined by Chan and Kaufman (2011) as "a set of skills and knowledge that are essential for productive interactions with technology-based health tools" (p.1), and by Norman and Skinner (2006) as "the ability to seek, find, understand, and appraise health information from electronic sources and apply the knowledge gained to addressing or solving a health problem" (p.3). Accessing, retrieving and appraising digital information occurs within unregulated and dynamic environments, presenting different challenges to health promotion in other forms of media. As Norman and Skinner (2006) state, "being health literate in an electronic world requires a different or at least expanded set of skills to engage in health care and promotion, or eHealth literacy" (p.4). Their conceptual model situates digital health literacy within the wider literacy environment encompassing traditional, information, media, health and scientific literacies (see Table 2-4), each of which is essential to "empower

individuals and enable them to fully participate in health decisions informed by eHealth resources".

Table 2-4:   (Norman and Skinner, 2006)

Term	Definition/description
Traditional literacy	Traditional literacy is the one most familiar, referring to functional literacy such as reading text, understanding written passages, and speaking and writing language coherently (Tyner, 1998).
Information literacy	An information literate person knows "how knowledge is organized, how to find information, and how to use information in such a way that others can learn from them" (American Library Association Presidential Committee on Information Literacy, 1989).
Media literacy	Media literacy has been defined as "the ability to access, analyze, evaluate, and produce communication in a variety of forms" (Aufderheide, 1993). While there are variations in the wording of definitions, most focus on these key areas and the importance of critical thinking and analysis.
Health literacy	"Health literacy is linked to literacy and entails people's knowledge, motivation and competences to access, understand, appraise, and apply health information in order to make judgments and take decisions in everyday life concerning healthcare, disease prevention and health promotion to maintain or improve quality of life during the life course" (Sorenson et al, 2012; p.3)
Computer Literacy	Computer literacy is the ability to use computers to solve problems and adapt to new technologies and software (Logan, 1995). An individual's level of computer literacy depends on access, quality of access and the ability to utilise this access (e.g. for health) (Norman et al, 2006; Skinner et al, 2003).
Scientific literacy	Scientific literacy refers to an understanding of the aims, nature, methods, application, politics and limitations of creating knowledge in a systematic manner (Laugksch, 2000). This is necessary for understanding science-based-online health information, allowing users to place health research findings in appropriate context, understand how science is done and the limitations and opportunities it can present (Norman and Skinner, 2006).

Effective use of digital health information requires both digital literacy and health literacy, each of which intersect with other forms of literacy, including basic literacy, information literacy, media literacy, scientific literacy, cultural literacy and computer literacy (Norman and Skinner, 2006). As such, using digital technologies for health requires individuals to read, use computers, and search for, understand and contextualise health information. This involves working with technology, thinking critically about issues of science and media, and navigating a wide range of information tools and sources to locate the information needed to make health decisions (Neter and Brainin, 2012; Norman and Skinner, 2006).

As when conceptualising health and sexual health literacy, a broad perspective is necessary in defining eHealth or digital literacy, recognising the influence of many individual, societal and environmental factors, including: the presenting health issue; health status; educational background; socioeconomic status; motivation for information seeking; and the technologies used (eHealth Stakeholder Group, 2014). Inherent in recognising the role of these contextual factors in digital literacy is recognising the roles of policy and interventions in mitigating potential barriers, empowering individuals across society to make better-informed sexual health choices through improved digital health literacy. These issues are touched upon again in Section 2.4, in reference to digital literacy inequalities.

2.3.5   Tripartite information access model

In addition to understanding different conceptualisations of health, sexual health and digital literacy, Burnett and colleagues (2008) tripartite information access model also provided a useful foundation for this research. This model recognises that issues of access and inclusion are not simply about ownership and availability (Barzilai-Nahon, 2006), and distinguishes between different types of access, which Burnett and colleagues (2008) argue are each essential: *physical*, *intellectual*, and *social* access.

Physical access is the interpretation of 'access' most commonly focused on, and typically refers to access to documents containing information, whether electronic, verbal or other (Svenoius, 2000). Physical access to information is mainly an institutional issue, but, as Thomson and colleagues (2014) observe, at the individual level users must know that information exists, know where to find it and be able to find it, and these capacities can be influenced by a range of factors including economics, geography, disability and technology. Physical access is crucial, but not sufficient alone. In this respect, physical access in the

tripartite information access model occupies a similar status to functional health literacy in Nutbeam's (2000) three-part model of health literacy.

To go beyond physical access and understand and employ information, individuals require intellectual access. Intellectual access is influenced by the way in which information is presented, and the way that presentation affects the individual accessing the information (Pitts and Stripling, 1990). Thomson and colleagues (2014) list potential factors affecting intellectual access as: "information-seeking behaviour, language, dialect, education, literacy, technological skill, cognitive ability, disability, vocabulary, and social elements, like norms and values" (p.5-6). For content to be equally accessible by all users, and therefore considered intellectually accessible (Jaeger and Bowman, 2005), the outcomes that that content produces must be similar in between users regardless of individual differences in capacity (Thomson et al, 2014).

In addition to the physical and intellectual layers of access, the tripartite information access model includes a third, often overlooked, layer: social information access. This layer concerns the context of information, and information seeking, within the norms and attitudes of social groups (Burnett et al, 2008). Jaeger and Burnett (2010) describe how 'small worlds' are created in which individuals share norms, values and behaviours, and these constructions influence the value and acceptability of different types of information, and the appropriateness of different information-seeking behaviours. The social information access concept has been acknowledged in various types of research, including research into the influences of social trust, social motivation, and social inclusion on information behaviour (Chatman, 1987; Thomson et al, 2014).

The three layers of the tripartite information access model must be seen as inter-reliant to the extent that information provision must allow all three to exist to be meaningfully considered accessible; physical access to information is of little use if the individual cannot understand or share it (Thomson et al., 2014). From this perspective, information sources, such as sexual health websites, must ensure physical access to content through technical aspects of their design, and that content must be intellectually and socially accessible by being presented and written in ways that audiences can understand, and being relevant and acceptable within the norms and values of audience members' social contexts. The tripartite information access model is relevant and valuable to this research both as a way to understand the sophistication required for information sources to be truly 'accessible', and

as a perspective from which to critically address conceptualisations of 'access' to both the online environment as a whole and individual information sources within that environment.

2.4 Section Two: Young people, online sexual health information and the 'digital divide'

Digital technologies have changed, and continue to change, the sexual health information landscape, presenting dynamic opportunities and challenges to young people as they seek sexual health information. As Tanton (2015) explained, young people's sex information landscapes have changed, and continue to change, in terms of the variety of different sources available and the relative importance of those different sources.

The digital context may represent fertile ground for interventions, including sexual health literacy interventions, but the fast-changing, relatively unregulated nature of the internet makes it a challenging context to work within. Rather than a medium of one-way, one-to-many knowledge transfer, the internet is intrinsically interactive and collaborative, and, with the explosion of social media and user-generated content, the internet represents an increasingly core part of people's lived experiences. As well as knowledge exchange, the internet is increasingly a site of service provision, as health services move to a digital-first paradigm.

Given the growing importance of the internet in young people's lives, and the dynamic opportunities and challenges presented, studying the role of the digital context in young people's sexual health literacy is crucial. This section: introduces young people's use of the internet for sexual health information; outlines potential advantages of connectedness and empowerment; discusses potential risks to sexual health in the online context; presents literature on various types of online interventions targeting young people's sexual health; questions the effects of online sexual health information on inequalities; and examines literature on young people's online health information seeking skills.

2.4.1 Young people, the internet and sexual health

The internet is a key sexual health information source for young people (Richardson et al, 2002; Smith et al, 2000), and research indicates that they use it to seek sexual health information, discuss personal issues and access peer advice (Borzekowski and Rickert, 2001; Buhi et al, 2009; Hansen et al, 2003; Kanuga et al, 2004; Ralph et al, 2011). One of the key

types of sexual health content that young people seek online is information and reassurance about norms of sexual behaviour (Harvey et al, 2007), and user-generated content in the relatively anonymous online environment provides opportunity to find such content (Suzuki and Calzo, 2004).

There is some evidence that the internet reduces barriers to accessing information and support for some young people (Barman-Adhikari et al, 2011; Klein et al, 1999), and searching for anonymous reassurance online may be particularly relevant to LGBTQ young people, whose needs may not be met by traditional mainstream sexual health information provision, and who may value anonymity particularly highly (Bond et al, 2009; Mustanski et al, 2011; Ross and Kauth, 2002). Research has shown that young people use the internet to learn about sexual positions, behaviours and pleasure-based aspects of sex (Buhi et al, 2009; Gilbert et al, 2005; Hooper et al, 2008).

Recent findings from the third National Survey of Sexual Attitudes and Lifestyles (Natsal-3) in Britain found that use of the internet for 'key sexual health reasons' was relatively rare among people aged 16-44, particularly in relation to accessing online STI services or protective and contraceptive supplies (Aicken et al, 2016). However, using the internet for general help and advice about sex lives was more common, particularly amongst young people and those who reported higher sexual risk behaviours, including men who have sex with men (MSM) (Aicken et al, 2016). These findings highlight the importance of nuanced understandings of the role of the internet within young people's information and support landscape, acknowledging the different types of content that young people may, or may not, seek online, and acknowledging how different groups of young people may use the internet. Aicken and colleagues (2016) described the finding that young people seek sex advice online as "unsurprising" due to the confluence of young people's higher internet and smartphone use and greater need for sexual health information and care (p.12).

The internet and social media hold great promise for geographically unbounded dissemination of sexual health promotion harnessing the social connectedness created by social media. As Guse and colleagues (2012) state: "the Internet and other forms of digital media have afforded opportunities for the breakdown of geographic boundaries in sexuality education" (p.535). The next section explores how the increasingly social nature of the internet may empower young people to improve their sexual health literacy.

2.4.2 The internet, social media, connectedness and empowerment

Technologies referred to variously as social media, web 2.0 and new media have increased in prominence, embedding interactivity within online experiences and expanding users' production and consumption of content. In 2007, Beer and Burrows (2007) stated that, as new social media technologies become ingrained within society, they are "reworking hierarchies, changing social divisions, creating possibilities and opportunities, informing us and reconfiguring our relations with objects, space and each other" (para 1.2). Now, ten years later, social media is an even more prominent aspect of people's lives, and continues to reshape social life.

Social media has continued to infiltrate contemporary culture, integrating itself within young people's lives, particularly, to the extent that digital social networks are key aspects of young people's broader communities (Boyd, 2014; Evers et al, 2013; Marwick and Boyd, 2014). Delineations between online and offline life have become blurred as mobile internet technologies have progressed (Boyd, 2014; Pascoe, 2011), such that 'using the internet' is no longer a distinct activity from being engaged in social situations, and technologies such as dating apps bridge the physical and online social worlds.

As well as arguably enhancing social connectedness, digital technologies promise greater access to information (Niland et al, 2015), including experiential knowledge (Pascoe, 2011) and information about niche topics (Suzuki and Calzo, 2004). Suzuki and Calzo (2004) and Bay-Cheng (2005) attributed young people's use of online bulletin boards – the precursors to today's social media – to their facilitation of open sharing of information and experiences. More recently, Simon and colleagues' (2013) qualitative study of young people's motivations for, and experiences of, using online sexual health education, found that participants were motivated to seek sex information from anonymous and social websites, learning about sex from a wide variety of online sources including Twitter, YouTube, pornography, Tumblr and podcasts. They concluded that young people find new digital media extremely valuable for sex education (Simon et al, 2013).

From the perspective that the online context can increase both social connectedness and access to relatable, experiential information, the internet can be seen as facilitating the 'empowering' aspect of health literacy described by Nutbeam (2008); the internet can empower young people to socialise with others, find peers, and access a wide array of information about their health, independently from parents, adults or healthcare providers.

Parker and colleagues (2014) state this is particularly relevant to learning about sex and relationships, where awkwardness may prevent young people from accessing that information through 'traditional' means.

While exploring the opportunities presented by social media, it is crucial to consider the challenges that must be overcome. The social and democratic characteristics of social media that make it a powerful tool are the same characteristics that create challenges for safe, reliable and effective sexual health promotion. Research suggests social media can be a problematic environment for engagement with health content, due to its role as a site of presentation and management of identity (Fergie et al, 2016; Marwick and Boyd, 2011; Papacharissi, 2010). Fergie and colleagues' (2016) qualitative study with young adults with experiences of diabetes or a common mental health disorder found that participants, regardless of their level of engagement with social media, described "how considerations of their identity and presumed audience of social media impact their online practices" (p.51). This evidence highlights the importance of understanding, and being aware of, the social processes being carried out in these potential venues for sexual health promotion, and how they might interact with effective promotion. The key concerns related to sexual health in the online context are examined in the following section.

2.4.3 Concerns about online sexual health: risks of online information and interactions

Contrary to perceptions of online sexual health information as a key aspect of 'empowering' sexual health literacy, contrasting perspectives highlight potential risks and disadvantages of providing sexual health information online. These perspectives do not necessarily negate the benefits, but highlight potential challenges to young people's sexual health and wellbeing that should be addressed (Tanton et al, 2015). This section outlines concerns related to: privacy and safety; the decentralised, unregulated nature of the internet; the accessibility of pornography; pressures to conform to unhealthy digital norms; and dangers of forming unhealthy social connections online.

Public concerns about young people's online safety are well established, particularly in relation to 'grooming' and exposure to, and creation of, sexually explicit content (Livingstone et al, 2014). These concerns are symptomatic of the decentralised and largely unregulated nature of the internet, raising issues about both safety and finding reliable information online. One often-cited risk of the open and unregulated internet is the

availability and accessibility of pornography (Horvath et al, 2013; Parker et al, 2014). Parker and colleagues (2014) state that, in comparison to offline contexts, "access to adult or extreme material is fundamentally different and much easier" (p.3). Research indicates that young people do access pornography using digital media, sometimes intentionally and sometimes not (Livingstone and Helsper, 2007; Scarcelli, 2015). Some, particularly males, view pornography as a source of sex education (Allen, 2006; Scarcelli, 2015). Gender differences in young people's attitudes to pornography are likely symptomatic of wider, ingrained gendered perceptions of pornography, with cultural norms presenting pornography as more acceptable for men than women (McKee et al, 2008, Scarcelli, 2015).

The accessibility of sexually explicit material online has raised concerns about young people developing unrealistic, and potentially harmful, expectations of sex and relationships (Horvath et al, 2013; Parker et al, 2014; Tanton et al, 2015) since the early 1990s, with pornography viewed as a risk to young people's sexual health practices and wellbeing (Albury, 2014; Crabbe and Corlett, 2011; Flood, 2009; McKee, 2010). Sexual learning through pornography may influence sexual attitudes and behaviours, including safer sex practices, as well as perceived emotional and physical boundaries, raising concerns about consent, pressure, coercion and gender roles (McKee et al, 2008). From a more optimistic perspective, some argue that young people can develop skills to think critically about explicit material (Albury, 2014; Allen, 2006). For example, teaching young people 'porn literacy' may empower them to be critical about gender roles, and portrayals of normative practices (Albury, 2014).

Another aspect of explicit content in digital communication that has caused concern is 'sexting', the process of exchanging self-taken, sexually-explicit images via mobile or online technologies. Research amongst young people has highlighted peer and partner pressure, particularly for young women, to send self-taken sexual images, which may result in negative experiences (Drouin and Tovin, 2014; Henderson, 2011; Renfrow and Rolla, 2014). Some literature presents sexting as an indicator of further risk, creating vulnerabilities to online bullying, victimisation and engagement in early or risky sexual practices (Houck et al, 2013; Temple et al, 2012).

There has been some criticism of the focus on negative outcomes of sexting, with research suggesting that sexting behaviours are less problematic than societal fears may suggest (Cooper et al, 2016; Hasinoff, 2013), and that young people are careful and selective in their

their sexting behaviours (Albury et al, 2015). In reviewing the literature on sexting, Cooper and colleagues (2016) characterised the behaviour as predominantly occurring in positive forms, "within either a romantic relationship or as a means of adolescent explorations of sexuality and identity creation" (p.12). Albury and colleagues (2015) carried out interviews with three mixed-sex groups of 16-17 year olds in Australia, who they found to be "highly conscious of privacy and that not all selfies were made to be shared" (p.1735), suggesting that some young people can negotiate privacy in the online environment in relation to sexual relationships, in a manner that epitomises context-specific definitions of sexual health literacy.

An increased focus on sexting is part of a larger focus in literature on the changing nature of social and visual media cultures, and online safety in general, and the extent that young people's social lives are played out in semi-private online spaces has raised concerns (Ringrose et al, 2012). Some concerns relate to young people's online relationships unfolding outside of the protective oversight of adults; as Parker and colleagues (2014) explain, "relationships can be more intensive, with more opportunities for contact and less visibility or moderation by adults, and relationships and friendships often create permanent digital content" (p.3). Here, a paradox is identified, in which online relationship formation is both more private, in its lack of parental moderation, and less private, due to the permanent records of social interactions that young people may leave online. Moreover, through being recorded online, negative social and relationship events such as break-ups and bullying can be "magnified" (Parker et al, 2014, p. 3).

In addition to concerns related to activities performed within online environments, it is important to acknowledge concerns related to media in which online and offline environments overlap, such as dating and matchmaking websites and apps, which, particularly for MSM, may be associated with risky sexual activities (Elford et al, 2004). There are a range of concerns, both in academic literature and public debates, about risks young people can face in the online context and where online and offline contexts intersect. While these risks garner considerable public attention, other potential barriers to young people's use of the internet as a source of sexual health literacy, such as challenges in identifying reliable content, receive relatively little attention in public discourse and academia. Despite widespread recognition of risks posed to young people within the digital context, many sexual health stakeholders have identified the internet as an appropriate

environment for sexual health literacy interventions. Some of these interventions are discussed in the following section.

2.4.4 Promoting young people's sexual health with digital services and interventions

Literature has explored the potential for sexual health promotion to engage young people through the internet, leveraging an environment that they already use to provide access to advice and testing, working to alleviate common barriers, such as embarrassment and stigma, to potentially improve sexual health outcomes. This section outlines the literature on online interventions designed to improve sexual health promotion, information and access to services.

The deep integration of online technologies within young people's lives, combined with the interactive nature of social media, may represent a valuable opportunity for engaging young people in sexual health promotion (Bailey et al, 2010; French et al, 2014; Gabarron et al, 2016; Guse et al, 2012). The World Health Organisation stresses the importance of choosing the best medium for reaching the target population (WHO, 2015). A number of systematic reviews have been published concerning the use of digital technologies and social media for sexual health promotion, with differing foci (Bailey et al, 2010; Bailey et al, 2012; Gabarron et al, 2016; Gold et al, 2011; Guse et al, 2012; Jones et al, 2014; Schnall et al, 2014; Yonker et al, 2015).

From the early days of computer-mediated communication to the present day, digital interventions have progressed from using computers to present one-way information in schools and clinical settings (Kann et al, 1987), to taking advantage of the multimedia and interactive nature of today's online technologies (Bull et al, 2009; Tortolero et al, 2010). In the emerging field of mobile health (mHealth), portable mobile technologies are used as health research and care delivery platforms (mHealth for Development, United Nations Foundation, 2009). Mobile health is increasingly seen as a valuable alternative to clinician-delivered interventions, which may present barriers of time and cost (Ownby et al, 2013; WHO, 2011). A WHO (2011) report stated that "the use of mobile and wireless technologies to support the achievement of health objectives (mHealth) has the potential to transform the face of health service delivery across the globe" (Kay et al, 2011, p.1).

Digital interventions have been used for sexual health promotion, for example in encouraging safer sex practices (Gold et al, 2012; Lim et al, 2012; Suffoletto et al, 2013) and promoting STI testing (Downing et al, 2013). Some of these interventions were tailored and targeted to specific populations (Jones et al, 2012). Gold et al (2011) conducted a systematic review of 178 interventions using SNS for sexual health promotion, typically in the USA, on Facebook, and run by not-for-profit groups or clinical service organisations. The review found that most SNS platforms were not used to their broadest potential, and most interventions simply comprised programme or organisation presences on SNS, many of which had fallen inactive. Thus, Gold and colleagues (2011) concluded that, whilst SNS are increasingly used for sexual health promotion, engagement with, and utilisation of, these activities varies greatly.

Reviews by Guse and colleagues (2012), Jones and colleagues (2014) and Gabarron and colleagues (2016) suggest that online interventions can, but do not always, positively impact on knowledge and behaviours. In contrast to the lack of sophistication exhibited by the interventions reviewed by Gold and colleagues (2011), Guse and colleagues (2012) identified more variety in their systematic review of interventions published between 2000 and 2011 using digital media to improve adolescents' (aged 13-24) sexual health knowledge, attitudes and behaviours. Approaches used included: online quizzes about sexual health knowledge and perceptions (Bull et al, 2009; Roberto et al, 2007); peer/expert videos (Tortolero et al, 2010); role-model accounts (Bull et al, 2009; Marsch et al, 2011); moderated online discussion forums (Tortolero et al, 2010); and self-assessment of skills and attitudes (Roberto et al, 2007). The interventions reviewed various psychosocial outcomes (including abstinence attitudes and condom self-efficacy), knowledge of HIV, STIs or pregnancy, and delayed initiation of sex. Similarly, Gabarron and colleagues' (2016) more recent review of 51 primarily USA-based studies of sexual health promotion interventions on online social media found that approximately a quarter of these showed "promising" results in relation to behaviour. However, Jones and colleagues' (2014) review of 11 social media interventions for young adults demonstrated increased knowledge, but produced less convincing evidence of those interventions' ability to generate behaviour change.

In addition to interventions designed to improve knowledge and behaviours, digital interventions are also being used to deliver information about, and facilitate access to, sexual health services. Bailey and colleagues (2015) stated that many such tools are already in use within the UK, including search tools to assist with locating services, online symptom

checkers, online appointment booking, appointment text reminders, provision of condoms and emergency contraception, and online testing services (Woodhall et al, 2012). There has also been an increase in research exploring the feasibility of online STI testing services (Lorimer and McDaid 2013; Owens et al, 2010; Peeling, 2006; Woodhall et al, 2012), as well as research into integrated e-services for diagnosis, management and treatment (Estcourt et al, 2017).

The evidence base for the acceptability and effectiveness of online sexual health services seems to be growing (Bailey et al, 2012; Gold et al, 2011; Kang et al, 2010), and young people seem largely well disposed towards such services due to their convenience and privacy (Lorimer and McDaid, 2013; Novak and Karlsson, 2006; Shoveller et al, 2012). Conversely, Aicken and colleagues (2016) found from NATSAL-3 survey data that few participants reported a preference for using the internet to access STI testing, STI treatment or contraception, although the authors suggested their finding might "underestimate the proportions that might choose Internet-based services if they were well-regulated and based in the NHS." (p.7). From this perspective, the true public acceptability of internet-based sexual health services might only be determined once widely available through respected providers. Aicken and colleagues (2016) went on to call for qualitative research into "awareness of, expectations and barriers to use of currently available online sexual health services", in the hopes of increasing access to services amongst populations at higher risk of STI and who underutilise traditional services, such as young people, MSM, individuals who report multiple sexual partners and those living in deprived areas (p.8).

Digital interventions have increasingly leveraged mobile smartphones for facilitating tailored health messaging and outreach (Kay et al, 2011). Unlike websites, mobile applications (apps) can be downloaded and used offline, allowing users to access the information without an internet connection (Broderick et al, 2014). Thus researchers are increasingly designing and developing smartphone-based apps to deliver tailored and interactive services (Muessig et al, 2013). Whilst there has been a rapid increase in mHealth interventions, particularly in relation to healthy eating, exercise and measuring blood pressure, development has been slower in sexual health promotion (Muessig et al, 2013), which could be attributed to perceptions of sexual health as private and potentially embarrassing (Bailey et al, 2015).

Muessig and colleagues (2013) conducted a review of 55 HIV/STD-related apps, exploring uptake, acceptability and content and concluded that most of the apps had failed to engage their target audiences, generally receiving low user reviews and being downloaded infrequently. The authors called for health practitioners and app developers to include evidence-based risk-reduction interventions within app design and to improve inclusiveness and interactivity. Carvajal and colleagues (2013) reviewed 16 contraceptive reminder apps designed to reduce teen pregnancy rates, which used a variety of methods of providing assistance and information Carvajal and colleagues (2013) were more positive about these apps than Muessig and colleagues (2013) were about HIV/STD apps, and argued that such apps have great potential in improving contraceptive consistency and should be promoted by care providers in counselling sessions. However, these findings were presented in a brief commentary piece rather than a full-length research paper, so neither the research methods nor findings were presented in detail.

Research exploring public acceptability of sexual-health-related mobile apps has demonstrated willingness to use HIV prevention apps (Holloway and colleagues, 2014; Muessig and colleagues, 2013). Muessig and colleagues (2013) explored user's design preferences for an HIV-related app, and found that participants requested an app with user-friendly content about STDs, symptom evaluation, test site locations, alcohol and drug risk, relationships, safe sex, and gay-friendly health providers, as well as facilitating communication with gay, HIV-positive men. Similarly, Ramanathan and colleagues (2013) studied user preferences concerning mobile health applications for self-monitoring and self-management amongst HIV-positive individuals and young mothers, and found individualisation and context-awareness to be the most important features influencing attractiveness and acceptability.

Literature suggests that using apps on smart phones to provide HIV and STI prevention and care has numerous benefits, including: convenience, flexibility, tailoring, accessibility, anonymity, real-time feedback and interactivity. Well-designed mobile apps can facilitate delivery of interventions in ways that are desirable for at-risk populations, including MSM and racial and ethnic minorities (Muessig et al, 2013). However, Muessig et al (2013) and Bailey et al (2015) both state that current sexual health prevention and care apps lack many promising features, and call for developers to create appropriately tailored, interactive apps. Specifically, Bailey and colleagues (2015a) suggest the NHS have been slow to embrace digital interventions, and that, while numerous health apps are available, they are not

evidence-based, and the NHS has no system of formally approving apps as safe. Development may be hindered by the resources necessary to develop, assess and promote sophisticated and reliable mobile sexual health apps, particularly as they must compete with popular commercial apps. As Gold and colleagues (2012) observed, keeping the content, look and feel of apps up-to-date is a costly, ongoing process, and funding models that view intervention development as a one-off cost may not foster effective online interventions, which is in line with their finding that many interventions on social media have fallen inactive (Gold et al, 2011). As a solution, Bailey and colleagues (2015) suggest cross-sectoral collaboration and offering digital interventions "in conjunction with currently existing digital health systems" to overcome barriers of sustainable funding and user uptake (p.10).

Digital sexual health interventions have the potential to enhance access for vulnerable and hard-to-reach groups, as well as making sexual health care easier for those who may be reluctant to visit sexual health care settings. However, there is a need to consider the possibility that increasing digitalisation might fuel, not reduce, inequalities. The following section explores literature on the 'digital divide', considering how inequalities in internet use might drive inequalities in young people's sexual health.

2.4.5   Digital divide?

It is important to consider how the growing importance of the internet as a source of sexual health information and support may unequally benefit different individuals and societal groups. As services increasingly become 'digital by default', Thomson and colleagues (2014) warn that "the lack of digital literacy and digital inclusion threatens democratic processes" (p.1), while Neter and Brainin (2012) identify the risk of eHealth literacy creating new divisions between health consumers.

Since the emergence of the computer economy over the last 25 years, researchers have developed the concept of a 'digital divide', characterised by "unequal access to the internet and its use" (Boonaert and Vettenburg, 2011, p55). The term describes divisions across and within society in relation to age, gender and socio-economic status, and refers to differences between those with the essential resources to participate in current society and those without (Chen and Wellman, 2004). However, emerging research suggests that traditional conceptualisations of the 'digital divide' focused on access, are now 'redundant', particularly within middle-high income countries (Elwick et al, 2013; ONS, 2016). Elwick and

colleagues (2013) found internet access to be approaching universality, and recent ONS (2016a) statistics indicate that, in the UK, 89% of all households, and 99% of households with children, have access.

The tripartite information access model (Burnett et al. 2008) introduced in Section 2.3.5 is a useful point of reference for considering 'access' to the internet and online content. While *physical* access to the internet is approaching universality, *intellectual* and *social* access are not necessarily as equally distributed; a digital divide may continue to exist in *how* individuals use the internet (Boonaert and Vettenburg, 2011; Elwick et al, 2013; Eynon, 2009; Lichy, 2011). This is commonly referred to as the 'second-level digital divide' (Lichy, 2011; Zhao, 2009). Eynon (2009) defines this new digital divide, concerning digital literacy skills rather than physical access, as a:

> "multifaceted phenomenon, defined as a continuum of access and use where multiple interrelating reasons such as attitudes, skills, quality of access and social support are at work in explaining if, and how, people use new technologies" (p.278)

This conceptualisation of division recognises that connectivity and usage can be influenced by a number of factors, including demographic, socio-economic and cultural variables, and socio-technical factors that support or constrain access (Eynon, 2009; Lichy, 2011; Livingstone and Helsper, 2007). Thus, research has begun to focus on comparisons across socio-spatial perspectives and between 'advantaged' and 'disadvantaged' socio-economic groups (Eynon, 2009; Lichy, 2011; Livingstone and Helsper, 2007). The concept of the second-level digital divide will be deeply relevant to my research, helping to focus data collection and analysis less on issues of physical access, and more on the socio-cultural factors that may affect young people's intellectual and social access to online sexual health information and services.

2.4.6 Perceptions of young people as 'digital natives'

Related to changing conceptualisations of the 'digital divide' are perceptions of young people as 'digital natives'. Young people of school, college or university age, who have grown up with the internet, are assigned labels emphasizing the significance of digital technologies within their lives, such as 'digital natives', 'the net generation' and 'millennials' (Helsper and Eynon, 2010; Prensky, 2001). As Parker and colleagues (2014) explain: "Teenagers are the most technology-savvy group in the UK, with much of their social lives conducted online, and it is clear that young people have access to a much less

moderated world than previously existed. It no longer makes sense to separate online and offline activities – digital activity is an integral part of young people's relationships" (p.3).

Labelling young people as digitally adept implicitly marks older people as being otherwise (Prensky, 2001; Underwood, 2007). In an extreme example of this distinction, Prensky (2001) defined digital natives as "native speakers of the digital language of computers, video games and the internet" (p.1), stating that their brains have adapted in structure to suit the way they process information to the use of digital technologies. According to Prensky (2001), digital natives process information quickly, often multi-task, prefer graphics to text, function well when networked and prosper on quick gratification and rewards. In contrast, 'digital immigrants', born before 1980, are ill-adapted to digital technologies, and would not turn to the internet as a first port of call for information Prensky (2001).

Perceptions of young people as 'digital natives' may partially explain why more literature focuses on older people's digital literacy. This focus may be warranted, as research suggests that those who use health services the most and experience the greatest burden of ill health are least likely to use online services or have basic digital literacy skills (eHealth Stakeholders Group, 2014; The Royal Society of Edinburgh, 2013). However, a growing body of literature is critical of perspectives that generalise the internet use of whole generations. Boyd (2014) argue that the term 'digital natives' obstructs nuanced understandings of the challenges that young people face online. Researchers have shown that, while age may be related to internet use (Cheong, 2008; Dutton and Helsper, 2007; Helsper and Eynon, 2010), young people do not use new technologies in the same ways, for the same reasons, and with the same levels of effectiveness (DiMaggio and Hargittai, 2001; Facer and Furlong 2001; Hargittai and Hinnart, 2008; Livingstone and Helsper, 2007).

Access to online health information, and the capacity to interpret and implement such information, can be influenced by socioeconomic and cultural factors (Warschauer and Matuchniak, 2010). For example, research suggests that students who experience greater socio-economic deprivation access the internet as frequently as other socio-economic groups, but are considerably less likely to use the internet in carrying out school work (Elwick et al, 2013). Similarly, Lichy (2011) found that engagement in scholastic and educational activities online is socioeconomically patterned in both France and the UK. Research further suggests that young people's digital literacy can be influenced by social support from peers (Margolis et al, 2008) and family members (Barron et al, 2009).

2.4.7 Researching young people's skills in seeking online health information

While having access to the internet and capacity to use the internet are prerequisites for effectively finding health information online, doing so requires skills that may not be shared equally amongst young people. Twelve years ago, Gray and colleagues (2005) described young people's use of the internet to source general health information as a useful example of the pressures placed upon individuals' health literacy, with young people facing processes of identifying useful websites and relevant content, evaluating information and determining how to apply that information. They found that students were typically confident internet users, but varied in their competence in locating, evaluating and using online health information.

Since Gray and colleagues' (2005) research was published, the role of the internet in young people's lives has changed and grown, with the online context taking a more central role in health information and service provision, such that the pressures placed on individuals' health literacy in the online context are likely even greater today. Developments in internet technology have led to a greater role for social and multi-media content, such that the demands of negotiating the online context are not just more intense, but also different from what they were in the past.

Despite the increasing complexity of using online health information, some research into young people's capacity to evaluate online content has identified improvements. While studies by Borzekowski and Rickert (2001a), and Hansen and colleagues (2003) found that young people experience difficulties evaluating the reliability of general health information online, later studies have suggested that young people are typically skilled in evaluating sources (Buhi et al, 2009; Jones and Biddlecom, 2011). Research has progressed beyond measuring effectiveness to exploring the strategies young people use to evaluate sources, including: relying on reputable or well-known sources; avoiding certain types of sources; and triangulating information (Buhi et al, 2009; Gray et al, 2005; Jones and Biddlecom, 2011).

While these few studies are instructive and of good quality, they primarily focus on college students, and are based in the USA, and therefore may not be reflective of the experiences of people of different age groups and in different locations. As such, from a UK perspective it is important that research increases our understanding of young, Scottish people's behaviours and experiences in searching for sexual health information online. At the same

time it is important that, in addition to studying young people's online information-seeking skills, research examines young people's interactive sexual health literacy. Barriers such as embarrassment and shame are considerable, and research has shown that young people experience these in relation to talking about sex or sexual health with others (e.g. teachers; friends; family) (McMichael and Gifford, 2010). Therefore, communication must be studied as a core component of sexual health literacy alongside individual information-seeking, and a broad conceptualisation of communication should be used that includes verbal, non-verbal and online communication in various situations, including communicating with service providers and within sexual interactions.

While understanding young people's information-seeking skills is valuable, it must be acknowledged that the presence of relevant, accessible and accurate information is a pre-requisite for successful information-seeking. From the 1990's to the present day, research has consistently found sexual health information to be presented at too high a level for young people (Charbonneau, 2013; Parker et al, 1996), variable in quality and narrow in scope (Bay-Cheng, 2001), with topics including sexual identity/orientation, masturbation and abortion under-represented (Isaacson, 2006; Keller et al, 2004; Simon and Daneback, 2013). Moreover, the growth of user-generated content and social media may further exacerbate concerns about the quality of information available online (Adams, 2010), and therefore concerns about the demands placed on young people's information appraisal skills. Within social media, peers collaboratively generate their own understandings without input from health professionals, but, as Fergie and colleagues (2015) note, this is not necessarily without benefits, as social media can also present participants with "opportunities to contribute to medical knowledge which circumvent established boundaries" (p26).

2.5   How can this study contribute to existing literature

Research around conceptualisations of health literacy, sexual health literacy and digital health literacy has highlighted these concepts' multidimensional and contested nature. However, there has been a limited focus on health literacy specific to sexual health (or, 'sexual health literacy'), and studies that have measured sexual health literacy have tended to do so quantitatively, measuring knowledge and access to sources with little consideration of broader aspects of health literacy. As such, there is potential for new research to usefully focus on sexual health literacy in a way that recognises its functional, interactive and critical aspects. Thus, it is crucial that this thesis approaches sexual health literacy in terms of skills, not simply knowledge.

Young people rely on more 'traditional' sources of sexual health information (Alldred and David, 2007; Parker et al, 2014; Tanton et al, 2015). It is important to recognise this, and consider the relationships between these traditionally 'offline' sources and the 'online' environment. Viewing the offline and online environments in isolation, as separate domains, is likely counterproductive, and recognising the interactions between, for example, online diagnostic information and interactions within 'offline' health care settings is part of understanding interactive sexual health literacy. It is important to explore the broader context of young people's sexual health decision-making, including their sources of information, such as school, peers, friends, and social media. Simon and Daneback (2013) identified gaps in the literature around young people's motivations for seeking sexual health information online and understandings of how forces in the 'offline' domain may drive young people to seek sexual health information online. When considering the broader sexual health information landscape, the influence of school could be substantial, and another area of investigation could be heterogeneity in experiences of school-based sexual health education. For example, studying differences between denominational and secular schools, for which the Scottish context would be well suited.

There is a need for up-to-date, qualitative research within the Scottish context that explores the variety and importance of different information sources for young people, as well as the extent to which those sources meet their information needs (Tanton et al, 2015). Given that most research into sexual health literacy and online health information seeking has been in the USA, more detailed understandings of young people in Scotland may be illuminating. Similarly, literature has been dominated by studies of university-aged people, and studying the experiences and behaviours of a greater range of ages and circumstances may be constructive, particularly given the speed at which young people's sexual activity can change as they reach their late teenage years. Understandings of the experiences and behaviours of a range of different age groups could be instructive for efforts to create online sexual health information tailored to specific groups.

In addition to studying the role of school-based sexual health information, this thesis may benefit from studying the role of friends and peers, another key source of predominantly 'offline' sexual health information and support. As established, it is crucial to acknowledge the interactive aspects of sexual health literacy, and peer support represents a way in which young people may both give and receive support. It also has clear overlap with the online

environment, given the increased role of social media and user-generated online content in young people's lives.

As interest in digital technology in sexual health care and prevention grows, there is a need for further quality research to understand the effect of new media use on adolescents' sexual health, and to identify the best ways to use new technologies to promote sexual health in the short and long terms (Allison et al, 2012). Researchers have called for qualitative research into the different kinds of services and information young people want, as well as into awareness, expectations and barriers to online sexual health services (Aicken et al, 2016; Livingstone and Mason, 2015).

In the rapidly-changing health information landscape of this digital age, it is increasingly important to better understand people's experiences of, and perspectives on, finding, interpreting and applying online sexual health information. Although literature has studied aspects of young people's interactions with online sexual health information, few studies have done so comprehensively, taking into account an expansive conceptualisation of sexual health literacy.

3   Methods

3.1   Overview of chapter

This chapter describes and discusses the research methods, beginning by describing the aims and scope of the study (3.2), before discussing the epistemological and methodological considerations informing research design decisions (3.3). This will be followed by a description of the specific research design and data collection methods (3.4) and data management and analysis processes (3.5). Finally, I discuss issues of reflexivity and the influence of the researcher (3.6).

3.2   Aims and scope of the study

3.2.1   Aims of the study

The aims of this study were to examine young people's sexual health literacy, particularly within the online context, exploring how they describe and experience locating, accessing, understanding, evaluating and applying sexual health information within sexual, social and formal healthcare contexts. The research questions were as follows:

1. What is the role of the internet within the broader landscape of young people's sexual health information and support?
2. How do young people describe and experience seeking, understanding, evaluating and using online sexual health information?
3. What are the individual, social and environmental contexts relevant to young people's experience and use of online sexual health information and support?

3.2.2   Identifying the population of interest

This project began with an interest in young people's sexual health. The age range of 16-19 years was chosen to enable exploration of abilities in seeking, understanding and evaluating online sexual health information at ages when many young people in the UK become, or consider becoming, sexually active. As Robinson and Rogstad (2002) state: "adolescence is a time of risk taking as part of the process of growing up" (p. 314). Recent findings from the National Surveys of Sexual Attitudes and Lifestyles (Natsal-3) found that the median age of first heterosexual intercourse for both sexes was 17 years (Mercer et al, 2013). Young

adolescents are also more likely to have short monogamous relationships, concurrent relationships and more new partners, and be particularly vulnerable to poor sexual health outcomes (Robinson and Rogstad, 2002; Slater and Robinson, 2014).

As detailed within the literature review (Section 2.4.5), research has highlighted potential inequalities in how individuals *use* online technologies, in relation to a range of factors, including demographic, socio-economic and cultural (Elwick et al, 2013; ONS, 2016). Despite this, young people have traditionally been considered as 'digital natives', which arguably hinders understandings and research into variety in young people's negotiations of the online environment (Boyd, 2014). My study aims to confront the potential variety of young people's experiences by representing a diverse range of young people. The sampling approach is described in Section 3.3.2, and the final sample is detailed in Section 3.4.4.

3.3 Epistemological and methodological rationales

3.3.1 Why a qualitative perspective?

Depending on their chosen research questions, researchers should determine the most appropriate approach, which then influences the study design, including data collection, tools and analytical approaches. Many methodological approaches and tools are available to researchers, with different strengths and weaknesses. Within the social sciences, there has traditionally been a clear divide between quantitative and qualitative approaches. Quantitative research tends to involve deductive and structured research techniques, and is suited to collecting data that can be generalised to some larger populations (Cresswell, 2013). Qualitative methodologies tend to offer greater flexibility, involving inductive research techniques, which are valuable to researchers who aim to describe, explore or understand phenomena, establishing the 'what', 'why' and 'how', rather than 'how frequently' or 'how many' (Gantley et al, 1999). While qualitative methods are often criticised for lacking scientific rigour, they allow researchers to acknowledge the social context of people's experiences and explore behaviour within specific settings rather than across broad populations.

The research reported in this thesis comprised an exploratory research project grounded in participants' perceptions and experiences. Consequently, qualitative methods were chosen for their focus on gaining insights into the wider contexts of experiences. In particular, a qualitative descriptive approach was employed, allowing participants' experiences to be

comprehensively summarised whilst remaining close to the data and "to the surface of words and events" (Sandelowski, 2000, p.334; Neergaard et al, 2009). Descriptive approaches differ from more interpretive approaches, such as grounded theory or phenomenological approaches, as researchers using descriptive approaches tend to stay closer to the data and words or actions of the participants, rather than describing events through a conceptual or abstract framework (Sandelowski, 2000; Neergaard et al, 2009). Such an approach is particularly useful when seeking to shed light on a gap in knowledge, and particularly to provide answers to questions of practitioner and policy relevance (Sandelowski, 2000; p.336; Neergaard et al, 2009).

While descriptive approaches are considered to be less interpretive, it is important to recognise that some degree of interpretation is intrinsic to the research process. Taking a hue from an interpretivist perspective, researchers must be aware of their role in subjectively interpreting participants' accounts, which are themselves subjective representations of their lived experiences (Cresswell, 2013). An interpretivist approach to research recognises that human social action must be understood through interpretation of what actions mean to those taking part, but also that interpretations are influenced by researchers' backgrounds and experiences (Crotty, 1998).

With this understood, qualitative methods can aid identification of meanings, patterns and themes through considering and prioritising understandings and subjective experiences (Broom and Willis, 2007). As detailed in Section 3.2.1, my study aimed to understand young people's online sexual health information practices. It is self-evident that seeking, understanding and using health information are active processes, and each individual may have unique approaches to finding and using sexual health information. Understanding such nuances is a strength of qualitative research (links to research question 2: How do young people describe and experience seeking, understanding, evaluating and using online sexual health information?). People's experiences are complex and context-sensitive, and my aim was to choose a method that would best illuminate these complexities. Exploring how such practices are shaped, and the impact of wider social and environmental contexts, were key focuses (maps on to research question 1: What is the role of the internet within the broader landscape of young people's sexual health information and support?; and research question 3: What are the individual, social and environmental contexts relevant to young people's experience and use of online sexual health information and support?).

3.3.2 Data collection methodology

The chosen study design integrated different qualitative research methods. After careful consideration of the research aims and the strengths and limitations of various qualitative methods, a paired interview method incorporating an observational analysis was deemed best suited to exploring the role of the online context within young people's wider sexual health information landscapes (research question 1), their use of online sexual health information (research question 2), and interactions between those online and offline contexts (research question 3). Within this section, I will discuss the use of paired interview and observational methodologies *broadly*, and the *specific* rationale for choosing these methods for this study. I will then discuss formulating sampling and recruitment strategies, and considerations about the interview setting.

3.3.2.1 Rationale for use of paired interview method

Paired interviewing first emerged as a qualitative methodology in the 1970s, and is typically defined as one researcher interviewing two participants at the same time in the same place (Arksey, 1996; Pahl and Pahl, 1971). Since its creation, paired interviewing has been used in various qualitative studies to explore various topics amongst different groups, including young people and within friendship groups (Highet, 2003; Houssart and Evens, 2011). Despite this, Wilson and colleagues' (2016) review of qualitative methodological literature found paired interviews to be largely absent, deeming this to be surprising given the method's methodological potential, which offers "the unique advantage of allowing the interviewer to observe interactions between pairs of interest" (p.1551).

Within qualitative methodology, paired interviews are typically seen as a middle ground between individual interviews and focus groups, offering some valuable alternative strengths (Morris, 2001). They share some of the benefits and strengths of focus groups, creating a space within which participants can engage in discussions with each other, potentially resulting in richer data on individual and group interactions, perceptions and experiences (Kitzinger, 2004; Marshall and Rossman, 2014). While my research aims could have been addressed using a focus group method, upon reflecting on the literature and considering the potentially sensitive nature of the topic, I decided that paired interviews could encourage engagement by providing each participant ample opportunity to contribute. By giving individuals more scope to contribute, richer data about individuals may emerge, reducing

the risk of 'skimming of the surface' of participants' experiences and perspectives (Munday, 2006).

Paired interviews offer more space than focus groups "for frequent and sustained dialogue between participants, a process possible in larger groups but likely to be much more dispersed and fragmented" (Highet, 2003, p.114). Thus, conversations are less likely to diverge in multiple directions, as they can in focus groups. Given that addressing my research questions demanded examining various aspects of the sexual health literacy landscape, not confined simply to the online context, I concluded that paired interviews would allow effective moderation of interviews to remain on-topic throughout a dense interview schedule, while still producing valuable group dynamics that are the key strength of group research (Highet, 2003).

An aim of the paired interview method is to create research environments within which researchers can observe interactions between pairs to gain insights into their perceptions, understandings and experiences, and explore power dynamics, highlighting issues of tension and conflict which may not emerge in individual interviews (Arksey, 1996; Houssart and Evens, 2011). Wilson et al (2016) highlight the benefits of paired interviews in shedding light on both similarities and differences in participants' perceptions. They allow researchers to observe how pairs make decisions and reach compromises together (Seale et al, 2008), and how they engage in shared storytelling and the negotiation and co-construction of knowledge (Highet, 2003). These observations can help researchers to understand the implicit resources important in decision-making. Participants can encourage and prompt one another, resulting in richer stories and more detailed accounts.

Paired interviews' potential for capturing frequent and sustained dialogue between participants may be enhanced when conducted with participants in established relationships (such as family, friends or partners). Highet (2003) states that paired interviews with self-selected friends offer spaces where young people's understandings may be contextualised within their social worlds, providing insights into their social relationships with each other. As Highet (2003) details:

> "Paired interviews offer a novel context within which young people can discuss, debate and theorize about aspects of their social worlds, offering occasional glimpses into more private territory"
> (Highet, 2003, p.108)

By creating this novel context, paired interviews allow nuanced insight into differing relationships and social dynamics, and the influence of these on communication of perceptions and experiences. They are more conducive to exploration of personal feelings than larger groups, while retaining some valuable elements of group discussion, such as spontaneity (Highet, 2003). Another advantage of conducting paired interviews with participants with pre-existing relationships may be that participants can help fill gaps in each other's recollections, providing insights that may not be revealed in solo interviews (Seymour et al, 1995).

Commensurate with indications from literature that paired interviews are well suited to research with young people and participants from friendship groups, I chose to recruit young people with existing friendships to take part. Encouraging participants to choose friends to take part with may help "offset the inhibiting potential of the setting" and "create a supportive social context" to facilitate engagement in conversation that may produce insights into close friendship bonds by drawing on natural social networks (Highet, 2003, p 108). Highet (2003) argues that interviewing friendship pairs may produce less inhibited contributions due to pairs' pre-existing trust, changing power dynamics to allow more natural conversation and more genuine insights into social meanings. It was hoped that interviewing self-selected friendship pairs would diminish both the discomfort inherent to any interview situation, and discomfort associated with discussing sexual health issues, particularly with an older researcher (the role of the researcher is discussed in Section 3.6.2). By reducing these sources of discomfort and self-consciousness, the research design was hoped to facilitate open reflection, expression and exploration of emotions and feelings.

As with any methodology, there are limitations to paired interviews. One participant may dominate conversation and not allow the other equal opportunities of self-expression (Arksey, 1996; Houssart and Evens, 2011). Similarly, power dynamics within pairs may influence the reliability of individuals' accounts (Sandelowski, 2008); participants may influence one another, and feel unwilling or unable to answer questions freely, feeling pressured to conform to a unified account (Wilson et al, 2016). However, concerns about reliability of accounts are intrinsic to all qualitative research methodologies. Wilson and colleagues (2016) state that the literature on this topic is conflicted, with no consensus about the influence that one participant's accounts may have their partner's. However, they conclude that:

Paired depth interviews have logical appeal because they have the potential to lead to the collection of data in a more cohesive way whenever the participants form natural pairs in the context of the research question(s). Indeed, it can be argued that in such situations, compared solely to conducting individual interviews of each member of the pair, the use of paired depth interviews would lead to an interview process that is more continuous, iterative, interactive, dynamic, holistic, and, above all, synergistic (Wilson et al, 2016, p.1565)

Thus, after considering the strengths and limitations of this methodology, I concluded that paired interviews would be an appropriate and valuable method for my research, allowing participants to discuss their experiences of seeking, evaluating and using online sexual health information, as well as questioning and critiquing their interview partners' approaches and understandings. The research aims demanded an in-depth data collection method that supported dialogue and rich interactions. The literature illustrates how paired interviews can give insights into the social context of participants' experiences, and I therefore determined that the method was appropriate to addressing my research questions, particularly research question three, with its focus on contextual aspects of young people's experience and use of online sexual health information.

Paired interviews offer the potential to incorporate different data collection techniques to generate richer data, such as activities to promote discussion and interaction (Wilson et al, 2016). The following section discusses the use of observational methodologies, and justifies the inclusion of an observation aspect within the paired interviews.

3.3.2.2 Rationale for the use of observational methods

Clinicians and epidemiologists have consistently used observational methods within healthcare settings to monitor patients or diseases (Mays and Pope, 1995). Qualitative observational studies within the social sciences involve detailed and systematic observation of behaviour and interactions, watching and recording what individuals do or say in specific settings (Mays and Pope, 1995). Mays and Pope (1995) state "an important advantage of observation is that it can help to overcome the discrepancy between what people say and what they actually do" (p.183). In other words, observational analysis can help circumvent biases within individuals' accounts of their own actions and behaviour, such as selectivity and differences in recall, as well as potentially revealing behaviours that participants may not be conscious of. Real-time data collection of this type has been suggested to reflect

individuals' thinking processes in the moment more accurately than retrospective reflections (Eysenbach and Kohler, 2002; Hansen et al. 2003).

Observational methods can be illuminating and insightful, but have certain limitations. While proponents of observational methods believe them to be less reactive than other common data collection techniques (Johnson, 1975), they nonetheless take place within somewhat artificial environments, often under experimental conditions. Both participants' awareness of being observed and artificial time pressures often necessitated by research practicalities may produce observed behaviours that differ from how participants would behave when not under observation.

Despite these limitations, the method's transferability and value is increasingly recognised within health behaviour and information research. Research into online health searching behaviours has traditionally relied on surveys (Baker et al, 2003; Fox et al, 2006), which are vulnerable to recall bias and, potentially, inability to capture particular search tactics, with few studies actually observing, recording and analysing individuals engaged in search processes (Buhi et al, 2009; Eysenbach and Kohler, 2002; Gray et al, 2005; Hanson et al, 2003; Smith et al, 2000). Hansen et al (2003) highlight the importance of such methods within health information research: "analysing search behaviour through actual observation should be a cornerstone in any effort to improve adolescents' access to health information" (p.18).

After reflecting on the methodological literature, I concluded that augmenting paired interviews with observational research could produce insights beyond those attainable through self-reported data, which could be particularly relevant for addressing research question two. A key challenge of gathering data about internet use is that the resources drawn upon and decisions made during search processes are often implicit; this challenge may be circumvented by observing pairs' use of resources in the co-creation of knowledge during an activity. Observing participants engaged in an online activity enables examination how they 'actually' experience searching for, and evaluating, sexual health information in real time, albeit in artificial circumstances. Furthermore, incorporating an observational activity further justified the use of the relatively manageable paired interview method, as opposed to focus groups.

The designs of the paired interviews and online activity are detailed in Section 3.4.2, and the analytical considerations of synthesising data from the different stages of data collection are described in Section 3.3.3.

3.3.2.3   *Sampling and recruitment approach*

Unlike quantitative research, sampling for qualitative studies is seldom statistically based. Rather, participants tend to be sampled purposively to provide a range of contrasting accounts and experiences from a population (Merriam, 2002; Polkinghorne, 2005). Mays and Pope (1995) summarise this approach: "The idea of this type of sampling is not to generalise to the whole population but to indicate common links or categories shared between the setting observed and others like it" (p.4). Guided by these principles, my research aimed to represent a diverse range of young people's perspectives, exploring both commonalities across the sample and variation within the sample. Thus, to explore the diversity of how young people experience and describe seeking and using online sexual health information, this study sought a heterogeneous and purposive sample driven by the literature (detailed in Section 2.4.6).

The target population for this study was young men and women (aged 16-19), purposively sampled to include individuals from diverse socioeconomic backgrounds and geographical areas (the main study sample is detailed in Section 3.4.4). However, while sampling was purposive, with the aim of recruiting a diverse sample, sampling was driven by participants to an extent, as individuals were invited to recruit their friends to be interviewed with, so ultimately I ceded some control over the makeup of the sample to create paired interview situations that engendered comfort and openness.

To represent a diverse range of perspectives from the target population I used a broad range of recruitment strategies, which will be detailed in Section 3.4.4.

3.3.3 Analytical approach

A range of approaches to qualitative analysis have emerged from specific epistemological and methodological traditions (Frost et al, 2010). However, there has been little literature related to analysis of paired interview data (Wilson et al, 2016). To address this, Wilson and colleagues (2016) identified fifteen possible approaches, encouraging future researchers to document their analysis to provide further shared insights. Their suggested approaches range from more quantitative approaches such as word counting (Carley, 1986), to in-depth

qualitative approaches such as discourse analysis (Gee, 2014) and narrative analysis (Riessman, 1993).

3.3.3.1   The Framework method

The Framework Analysis approach was adopted to ensure systematic thematic analysis and facilitate synthesis of key themes and interpretations across the dataset (Ritchie and Spencer, 2002). This approach to analysis involves five key stages: familiarisation; identification of a thematic framework; indexing; charting; and mapping and interpretation. Systematic analysis is enabled by the key feature of Framework analysis, which is the methodical organisation of data within framework matrices, allowing comprehensive analysis both across themes, and within cases. While cases are typically individual participants, a case can also be other units of analysis; in my research it became necessary to treat both individuals and pairs as units of analysis (described in Section 3.3.3.2). Thus, the Framework analysis method was particularly valuable for my research, allowing perspectives on themes to be compared across all participants, while also allowing individuals' and pairs' perspectives on specific themes to be contextualised alongside other aspects of their accounts (Gale et al, 2013). Furthermore, Framework allows inclusion of non-interview data, such as field notes and reflections, increasing the context-driven nature of the analysis (Gale et al, 2013).

Taking these strengths into account, the Framework method was deemed to be well-suited to grounding analysis in participants' accounts and being sensitive to context, which was particularly relevant to my research questions, which concerned young people's sexual health literacy within the wider contexts of their experiences. In Section 3.5.2, I provide an explanation of how I approached the five key steps of Framework Analysis.

3.3.3.2   Paired interview analytical considerations

An important consideration in analysing paired interviews is to maintain balance between examining the pair 'as a unit' and identifying individual voices within. In relation to focus groups, Kitzinger and Barbour (1999) state that analysis requires balance between considering the overall picture of the group 'as a unit' and acknowledging the individuals within it. I decided that my analysis would recognise both pairs and individuals as units of analysis as appropriate, recognising that individuals might share experiences, but might relate to those experiences differently. It is important to explore individual responses, as well as looking at contrasts and comparisons between participants' accounts. This is also true

when analysing across the sample, as well as within pairs, as it is important to highlight and code parts of discussions that exemplify both typical responses and minority viewpoints.

While it was necessary to explore individuals' perspectives, it was equally necessary to recognise the importance of dynamics within pairs. As detailed in Section 3.3.2, a key strength of paired interviews is in generating rich insights into participants' interactions and dynamics. Therefore, to justify the data collection method, analysis must consider the effects of participants on their co-interviewees, and how accounts may be changed, opposed or censured within group interactions.

3.3.3.3   Synthesis of findings

Due to the relative complexity of the data collected, it was necessary to systematically integrate conversational and observational data. The data integration approach used facilitated synergistic interpretations, which considered the findings from all the data collected across the different stages of the research. This approach was adapted from that used by Flowers and colleagues (2016), who used this method to integrate findings from quantitative and qualitative data within a single matrix. The researchers reflected that this synergistic approach generated valuable knowledge by identifying complementary and unique findings from different data sources.

3.4   Data collection methods

Within this section I begin by discussing ethical considerations (3.4.1), before presenting an overview of the paired interview design and facilitation (3.4.2). I then discuss implementing those methods within the pilot phase (3.4.3) and main study (3.4.4).

3.4.1 Ethics

Too often, ethical issues are treated as an afterthought, and not granted sufficient consideration in research design. However, qualitative research must be considered in terms of a relationship or collaboration with participants, and therefore ethical engagement should feature throughout qualitative research, from beginning to end of data collection and within the process of writing up the research. This engagement involves informal processes that help build trust and rapport with participants, and formal ones, providing ethical guidance, and protection for both researchers and participants.

Consideration of both informal and formal ethical issues informed the design of the pilot and main study. Key ethical issues related to the importance of informed consent, confidentiality and the sensitivity of the issues covered within the research. It was vital to make clear to participants what the research involve and make them aware of their rights within the research process. Each participant was given a simple, comprehensive information sheet by either a gate-keeper or myself approximately a week in advance of their interview, and were made aware that they could refuse to answer any questions and withdraw their consent at any time, for any reason (see Appendix 1). Informed consent to record audio throughout the interview, and screenshots during the observational activity, was obtained, and participants were made aware that they would remain anonymous, and the data would be stored and destroyed in accordance with MRC guidelines on good practice (see Appendix 2).

Ethical approval for this research was obtained from the University of Glasgow College of Social Sciences Research Ethics Committee. Ethical issues that arose will be discussed in more detail in Section 3.4.3.

3.4.2 Overview of paired interview design and facilitation

Each paired interview comprised of three stages (illustrated in Figure 3-1): a 'traditional' interview stage, in which the participants were prompted to discuss sources of sexual health information in general, and online sexual health information specifically; an interactive online activity; and a post-activity discussion in which I asked questions to provoke discussion of the information-seeking processes that played out in the online activity. The three stages are described in more detail below.

Figure 3-1: Paired interview stages and data produced
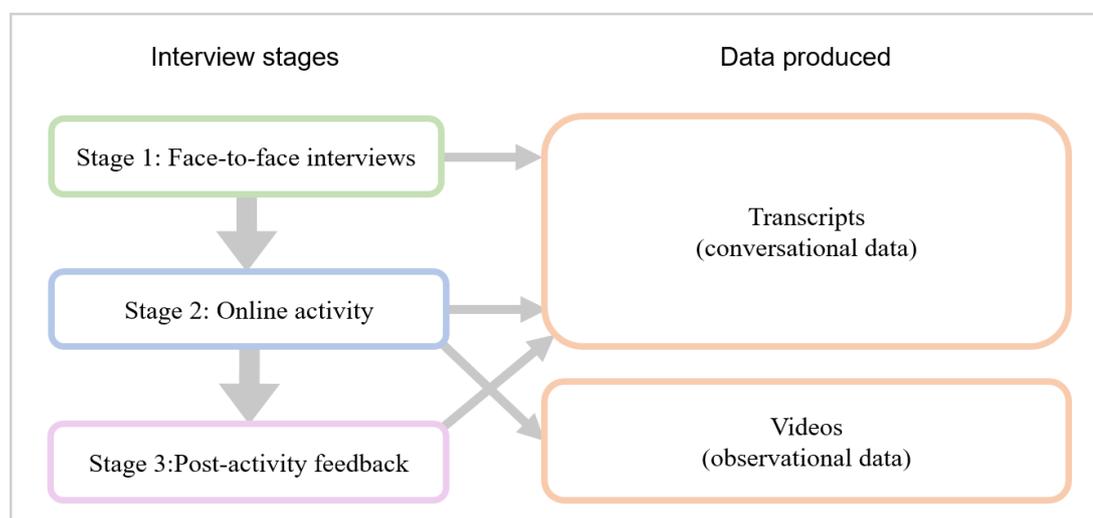
At the outset of the paired interview, I discussed the information on the information sheet and the consent procedures with participants. Written consent was sought before commencing, and participants were made aware that they could withdraw consent at any stage without providing a reason. After consent forms were signed, participants were asked to complete two short questionnaires to collect basic demographic information and information on their internet access and use (see Appendix 3). The results of these were used to contextualise participants' contributions within interviews.

3.4.2.1 Stage one: 'traditional' exploratory interview

The first stage of the paired interview followed a traditional interview format, following a semi-structured topic guide covering broad issues intended to explore how participants experienced, used and described online technologies and sexual health information, as well as exploring participants' understandings of 'sexual health' and their experiences and perceptions of other information sources.

A topic guide was created so that discussions could be steered to cover issues including: understandings of sexual health issues; communication skills; awareness of, and engagement with, different sources of sexual health information; access to, or engagement with, different forms of media and technology; experiences of applying sexual health information within social and healthcare contexts; and perceptions of barriers to doing so (see Appendix 4). Throughout the interview I strove to ask questions to explore more contextual factors, reflecting the importance of examining psycho-social, and environmental factors in online sexual health literacy and decision-making. While the topic guide was consistent between interviews, it was followed in a flexible, semi-structured manner such that participants had freedom to introduce and discuss topics they saw as relevant. To ensure the topics to be covered mapped back onto the overarching research aims, I carried out a mapping exercise of the research questions and the questions within the topic guide, categorising each question in the topic guide to ensure it contributed to the research aims.

3.4.2.2 Stage two: online observational activity

The second stage of the paired interview was an observational analysis comprising an unsupervised online information-seeking activity designed to allow examination of participants' search strategies and abilities to locate, navigate, interpret and evaluate online

sexual health information. Thus, after initial discussion about general experiences and perceptions of digital technologies and sexual health information seeking in the exploratory interview stage, participants were provided with a laptop with a blank web browser on-screen, and asked to think about the techniques they would usually use to search for information relevant to two predetermined sexual health scenarios (see Box 3-1 below). The scenarios were presented in a relatively general manner, designed not to require specific answers, but rather to prompt participants to consider how they would search for and evaluate information they deemed relevant to addressing each scenario (see Appendix 5). The first scenario was hypothetical situation a person might encounter following sexual risk-taking: "You had unprotected sex and are worried that you might have an STI. Use the laptop provided to find information that will be useful to you". In contrast, the second scenario was a hypothetical situation involving gathering information in anticipation of a sexual encounter: "your friend is thinking about having sex for the first time and would like some advice. Use the laptop provided to find information that will be useful to them." The two differing scenarios were purposefully chosen to allow assessment of a range of health information needs: generic, specific, service related and location specific, and were developed with reference to relevant literature on typifying realistic, common situations (Forrest et al, 2011; Hansen et al, 2003).

Box 3-1. Online scenarios

Scenario One: You had unprotected sex and are worried that you might have an STI. Use the laptop provided to find information that will be useful to you.

Scenario Two: Your friend is thinking about having sex for the first time and would like some advice. Use the laptop provided to find information that will be useful to them.

After being provided with the scenarios and laptop, I left the participants for approximately 20 minutes for them to address the scenarios without being directly observed. Participants' use of the internet and discussions with each other as they carried out the activity were recoded using TechSmith Camtasia Studio screen capture software to document images and audio of the activity, saving two screen captures per second and recording participants' conversations to produce synchronised videos of the process. In addition, participants were given pens and paper and asked to take notes for later discussion. Both before beginning the overall interview process, and before beginning the online activity, participants were made aware that they would be audio recorded during the online activity, and that I would listen

back to the recordings and watch the search terms and websites they visited. I explained that participants could call me back to the room for any reason.

Typically observational activities such as this involve asking individual participants to use a 'think out loud' approach (Hansen et al, 2003). In this study, the pairs were encouraged to share their thought processes aloud with each other as they searched for answers. It was hoped that working in pairs to find information would place less pressure individual participants than in solo observational activities, and that natural interaction between friends would provide greater insights into information search and evaluation processes. Ideally, participants would discuss their search processes openly, free from direct supervision and without feeling that their performance was being tested.

3.4.2.3 *Stage three: post-activity discussion and finishing up*

Following the online activity, I re-entered the room and began the third stage of data collection, which was a discussion of more specific aspects of seeking and evaluating online sexual health information. The notes taken by participants during the online activity were used to reassemble their behaviours from the activity and inform discussion. The discussions explored: decision-making processes, including criteria for selecting specific online sources; facilitators and barriers encountered; and each participant's perceptions of their friend's approaches to information-seeking.

As the paired interview ended, participants were invited to contribute further comments by post, email or on a one-to-one basis if they wished to clarify certain points or had been reluctant to say something in the presence of their friends.

3.4.3 Piloting the methods: reflections and learning

A pilot study was conducted in winter 2014 to test and help refine data collection methods ahead of the main study (see PhD study timetable – Appendix 6). Two paired interviews were conducted, one with male participants and another with female participants. Conducting these pilot interviews allowed the methodological combination of paired interviews and online activity, including the screen capture software, to be tested in practice, providing opportunities to gather feedback on the topic schedule, the scenarios used in the online activity, and the practicalities of using the hardware and software. The main insights gained are described below.

3.4.3.1 Recruitment and sampling

Participants for the pilot phase were recruited using convenience sampling through personal and professional networks, facilitating relatively fast recruitment. However, as convenience sampling would likely constrain the diversity of the sample, a more expansive sampling strategy was developed for the main study (detailed in Section 3.4.4).

To gain insights into possible differences in accounts by gender, I purposively sought to include both male and female participants. I recruited one pair of female participants (Jess and Amelia, both aged 16), and one pair of male participants (Aaron and Michael, both aged 19). Participants were given pseudonyms to protect their anonymity.

3.4.3.2 Suitability of methods

In practice, the research design detailed in the preceding section appeared to have many benefits in terms of producing valuable data that may not have been produced by straightforward interviews. As detailed in Section 3.3.2, a key rationale for observational methods is to create an environment much closer to 'real-life' than face-to-face interviews, allowing observation of similar behaviours to those that might be exhibited in participants' everyday lives. Certain behaviours, such as online information seeking, can be difficult to access fully through research, and participants' recall of their experiences may differ substantially from their actual experiences and behaviours. During the initial stage of the first paired interview, Jess and Amelia (aged 16) described having no problems searching for sexual health information on the internet, perceiving the internet as a place to go for all kinds of information. For example, Amelia said: "You can find anything on the internet, so if you're looking for something, you can just go there, you can fling anything in, you'll get something", and Jess agreed: "I think you can just really search for anything". However, during the online activity, they became frustrated trying to source information, particularly for Scenario Two, and were surprised by this, with Amelia stating "Like you expect loads to turn up about that". This example demonstrates how participants' perceptions and expectations of internet use may not match their practical experiences, and how my method allowed this dissonance to be surfaced. In another incident, Jess initially stated that she knew of no sexual health websites during the first stage of the interview, but, during the online activity, she narrated the process of accessing a familiar website: "Just checking 'Being Girl'…that what I was talking about…it's an online girl's magazine…I remember going on

it and thinking oh this is so cool...". Again, this illustrates how participants' practices in the online activity provided insights that the face-to-face interviews may not have.

Whilst the online activity shed light on participants' searching practices and relationship dynamics, one limitation was that I was not present to prompt for explanations about certain decisions. Consequentially, at times listening back to the data from the online activities I would have liked to have been able to ask participants to explain their practices in more depth. The opportunity to probe for greater depth is, ordinarily, a key advantage of qualitative research, but it was not afforded to me during the online activity. However, incorporating a post-activity interview, in which I asked for feedback on the activity, mitigated this limitation somewhat. These reflections reinforced the need to explore and probe their online activity practices in the third stage of the interview.

Similarly, another issue that was presumably related to the participants being left unsupervised was that, at times, they became distracted and did not always focus on addressing the scenarios, particularly towards the end of the online activity. This was particularly the case for Aaron and Michael (aged 19), who, and as time progressed, used less serious search terms. In an extreme case, Aaron entered the search term 'ku klux klan' seemingly to irritate and embarrass Michael. At another point, Aaron and Michael took pictures of them carrying out the online activity and sent them to their friends using SnapChat, suggesting that they were happy to share what they were doing on social media. These examples illustrate that an unsupervised observational method demands relinquishing some control as a necessary by-product of producing data that would be unlikely to arise from supervised interviews alone.

Testing the software and hardware used to carry out and document the online task in a practical research situation was a vital aspect of the pilot phase. Within the first pilot interview, in a meeting room in the participant's local library, I found that the library's wireless internet access was slow, impacting participants' searches. Beyond this, the software functioned correctly and the task was recorded properly. In reaction to encountering poor wireless internet, and in recognition that some interview sites may have no internet access, I sourced a mobile internet dongle to use in case of limited internet access at future interview sites. As a further precaution, I created print-outs of example search results pages and websites as a back-up discussion prompt to use in the case of technical problems.

3.4.3.3   Ethical issues

On reflection, watching and listening back to the recording of the online activity from the pilot interviews raised feelings of unease and ethical concern. While I had followed correct ethical procedures by ensuring participants were made aware that their behaviours would be recorded and watched back, it seemed at times that they had forgotten they were being recorded; at one point, Michael reminded Aaron: "remember this is being recorded". While I had set out to capture natural conversations and behaviours that young people might engage in outside of the research context, this phenomenon made me somewhat uneasy, as if I were covertly observing private conversations. After reflecting on this phenomenon, I concluded that such unease is inherent to producing useful, in-depth insights into 'natural' discussions and behaviours. While participants' apparent comfort within the research environment may be indicative of a successful observational research design, it also highlights the importance of being rigorously ethical when storing, analysing and writing-up the data emerging from these naturalistic processes, and highlighted the importance of reaffirming and ensuring informed consent at the outset and throughout.

An area of ethical consideration was highlighted in the pilot study, when Aaron expressed a misconception about STI risk that I felt a natural desire to correct him. However, in advance of the interviews, I had taken the decision that I would not intervene in participants' understandings or practices, except for in cases where I believed their wellbeing to be at serious risk. While it is open for debate whether interventions into minor misconceptions are within the remit of the researcher, in the case of interviews with friendship pairings, and particularly when discussing a topic as potentially sensitive as sexual health, it may be appropriate to seek to avoid causing embarrassment, except when the understandings are likely to be directly harmful.

Upon completing and reflecting on the pilot paired interviews, I concluded that the method was useful and suitable to addressing my research aims, producing data that highlighted personal reflections on online behaviours and provided insights into online behaviours. As no substantial changes to the data collection methods were necessary, the data from the pilot study were included within the main study.

3.4.4   The main study

Fieldwork for the main study began in January 2015 (see PhD study timetable – Appendix 6). This section details sampling and recruitment strategies, characteristics of the sample, issues of power and the influence of the researcher, and general reflections on the methods in practice.

3.4.4.1   Recruitment

Recruiting young people for this kind of study can be complex and time-consuming, and arranging interviews with participants can involve negotiating with gatekeepers to co-ordinate time schedules and interview locations. To recruit a diverse range of young people of varying socioeconomic status and geographical origin I used a range of recruitment strategies, including both working with gatekeepers and directly contacting young people within a range of settings across Scotland.

One strategy chosen was recruiting via gatekeepers working within organisations that young people frequent, including youth clubs, community centres and charity organisations. Such settings provide access to young people within more informal environments than the school setting, the formality of which may have negatively influenced comfort in agreeing to take part in research about sexual health. I carried out a scoping review to systematically identify appropriate organisations within Scotland.

Given the need to recruit a sample diverse in socio-economic status (SES) and geographical location, I approached organisations within areas of high deprivation (measured by area deprivation: SIMD). While area deprivation does not necessarily match the material well-being or disadvantage of individuals within those areas, categorising participants by other measures of SES (e.g. defined by level of education, occupation/income and type of housing tenure) was regarded as unsuitable due to participants' ages. Upon reflection, I decided that focusing on geographical localities with the highest and lowest area deprivation scores would increase the likelihood of recruiting young people from diverse socioeconomic backgrounds. However, the heterogeneity of deprivation within areas must be acknowledged, with participants' area-based SES being a potential indicator, not a firm determinant, of their individual circumstances. The need to recruit participants from varied geographical locations was addressed by approaching organisations and young people within

a variety of urban, semi-urban and rural areas across Scotland, as defined by the Scottish Government (SG) urban/rural classification (Scottish Government, 2014a).

Having identified organisations that might provide access to suitable participants, I contacted the identified organisations initially by email to introduce myself and describe my research, before contacting them by telephone to ask if they would be interested in helping to recruit for the study (see Appendix 7). They were sent recruitment information concerning: the focus of the project; participants' roles in the research; the number of participants required; the expected format and content of the paired interview; details of how participants would be compensated for their time (with shopping vouchers worth £20 each); contact information for myself and supervisors; and clear information about anonymity, confidentiality and use of data. Where possible, I met gatekeepers in person to give them information sheets, answer their questions and organise times and locations for paired interviews. Once individuals agreed to take part, contact was maintained by telephone, email and text to encourage attendance and respond to queries. During the recruitment process, I maintained a detailed database of each organisation, with notes of contacts made and responses received, to keep track of communications and maintained effective, respectful, and professional relationships.

A potential risk of relying on gatekeepers to recruit participants is that they may screen potential participants, consciously or otherwise (Kitzinger and Barbour, 1999). To reduce selection bias, I asked gatekeepers to pass information sheets on to all the young people that used their facility, or, better still, I offered to attend to talk to the young people directly, allowing them to have time to think about whether they would like to take part and ask questions about the research. One youth group gatekeeper provided guidance, introducing me to a group of young people with minor support needs (typically troubles with concentration), identifying them as a key group whose perspectives should be represented in my research. In addition to highlighting, and providing access to, specific groups, some gatekeepers assisted in recruitment by providing me with contact details of gatekeepers within other organisations.

Despite the potential limitations of using gatekeepers, I found it to be a successful way to recruit participants, with eighteen interviews being arranged in this way. In addition to assisting with recruitment, some gatekeepers provided added insight and more contextual data. For example, after an interview within which the participants, Josh and Christina (aged

16), were quiet and difficult to engage in conversation, the gatekeeper asked if I had managed to 'get a word in edgeways', implied that this was out of character. Such added insights were noted in my field notes and considered during analysis (detailed in Section 3.5.2).

In addition to working with gatekeepers, I directly contacted young people, primarily through posters, word of mouth and online posts (see recruitment online/offline poster in Appendix 8). More passive methods, like putting posters with study details in community centres and college and university student unions, were less successful than more direct contact with gatekeepers and young people, with only one paired interview being recruited in this way. This could be attributed to visibility of the posters, but also to reluctance to initiate contact with a stranger about a potentially sensitive topic. The study was also advertised online, through personal and professional contacts on Facebook and Twitter. Participants recruited in this way tended to have been referred by contacts who had told them about the posts, rather than seeing the posts themselves. By not relying on online recruitment methods I avoided excluding participants who either do not have internet access or are not regular internet or social media users.

Once fieldwork had commenced, I recruited new participants through snowball sampling. This strategy is particularly useful in accessing participants for research in sensitive topic areas, for which advertisements such as posters may not be as persuasive or reassuring as a personal recommendation (Ritchie et al, 2003). After each interview I thanked the participants for their participation and asked them if they could pass on an information leaflet with contact details to any friends that might want to take part (aiding snowball sampling). Participants for two paired interviews were recruited in this way. In one interview, this process helped shed light on barriers to recruitment and issues in relation to gender norms; at the end of the interview with Amelia and Jess (aged 16), I asked them if they thought any of their friends might like to take part, and they thought their female friends might, but not their male friends. Amelia explained "oh no they are too masculine for this kind of thing". This was an interesting insight, alluding to norms around participation in research, possibly in relation to sexual health specifically. Some of these gender issues are explored within the findings chapters.

When young people contacted me for more information or to take part (either by telephone, email or text), I provided them with more information and invited them to participate at locations and times that suited them. While participants were invited to bring friends, they

were given the option of being interviewed individually if they prefer, or could not arrange for a friend to join them. This allowance was afforded to participants due to the sensitivity of the subject matter, but also due to a practical desire to reduce barriers to recruitment.

Despite some initial concerns about recruiting young people, recruitment was relatively straightforward. This may have been aided by young people feeling more confident to come forward and take part with a friend. Similarly, the interviews were relatively easy to schedule, which may also be attributed to the pairs' established relationships, rather than trying coordinate groups of strangers. Similarly, Highet (2003) found paired interviews relatively simple to recruit and facilitate, attributing this to the established relationships between the participants.

3.4.4.2   Characteristics of the sample

Between January and August 2015, 49 participants (aged 16-19) from across Scotland participated in 25 interviews (23 paired interviews; two individual interviews and one triad interview). The triad interview and individual interviews were necessitated by circumstances rather than participants' preferences. In terms of their relationships with one another, participants tended to bring along a 'best friend', or childhood or school friend. Two pairs were related and two pairs were acquaintances, with implications for interview comfort and openness, as will be discussed in more detail in Section 3.4.4.4. This section details the makeup of the sample by: geographical location; gender and sexuality; education and occupational status; age; socio-economic status; nationality and ethnicity; religious affiliation; and support needs. Finally, this section highlights some limitations of the sample.

Participants were recruited from, and interviews took place within, locations across Scotland, including: South Lanarkshire; Glasgow; Edinburgh; Dundee; Aberdeenshire; North Lanarkshire; East Ayrshire; Fife; Perth and Kinross; Angus; and Inverclyde. Participants were predominantly recruited within large and small urban areas (18 interviews); followed by accessible small towns (4 interviews) and accessible rural areas (3 interviews). I was unable to recruit any participants from organisations within remote rural areas (those with populations less than 3,000 and a drive time of over 30 minutes from the nearest settlement (Scottish Government, 2014a)). Despite this, the sample represented a satisfactory mixture of urban and rural localities across Scotland.

I aimed to recruit equal numbers of young men and women to facilitate exploration of relationships between gender and perspectives. The final sample comprised 30 female participants (61%) and 19 male participants (39%). This imbalance may be related to females being more comfortable talking about sexual health with friends. Most participants identified as heterosexual (n=36), five identified as gay or lesbian, three as bisexual, and five either left this question blank or indicted that they preferred not to answer.

Participants varied in their circumstances regarding education and work: most were still at, or had recently left, school (n=22), followed by attending college or university (n=14), being employed (n=5) and looking for work (n=3), while six did not provide this information. Participants were predominantly younger; 31 (63%) were aged between 16-17 and 18 were aged 18-19 (37%). Eleven interviews comprised participants recruited from within the 15% most deprived areas (SIMD) and one pair was recruited from a charity that works with young people vulnerable to homelessness.

All participants classed themselves as white Scottish, except one who identified as white Polish. Most participants reported having no religious background (n=36), but 13 described themselves as having a religious background: 10 Roman Catholic, two Church of Scotland the one other Christian. Two of the interviews (n=3) were with individuals with minor support needs.

Overall, the sample was heterogeneous in terms of the characteristics targeted, representing young people from a broad range of backgrounds. The diversity of ages and educational backgrounds represented in the sample was particularly valuable, as previous studies exploring online information-seeking amongst young people tend to focus on university students. Each participant and pair's characteristics are detailed in Appendix 9. It is important to consider the limitations of the research sample. While the sample was diverse, some groups that were not represented, including participants with no access to the internet, participants from ethnic minorities and participants from remote rural locations. These limitations could mean that the full range of perspectives was not represented in the data. More specifically, as all participants had daily access to online technologies at home, and primarily on mobile phones, this sample cannot address questions about the 'digital divide' in traditional access terms, but, as highlighted in the literature review, *use*, not access, is now the more relevant digital divide, and the recruited sample did allow use to be explored.

Another key concern is that, as many participants were recruited from youth organisations, they were already somewhat engaged in their communities, within these organisations and with other young people. Therefore, those who do not have such social support, who may be more likely to instead seek support online, may have been underrepresented. Additionally, given that participants were necessarily aware that they were agreeing to participate, with a friend, in an interview about sexual health, individuals who struggle the most to communicate about sexual health were likely underrepresented. However, despite this concern, not all participants appeared comfortable in talking about sexual health, indeed some acted as if they had not been enthusiastic to participate, perhaps having been persuaded by their friends.

3.4.4.3   Interview setting

Paired interviews primarily took place within places that participants frequented, or could easily access, including: local youth clubs/organisations (n=12); local library or community centres (n=8); private meeting rooms within my workplace (MRC/CSO Social and Public Health Sciences Unit, University of Glasgow) (n=2); and within participants' homes (n=3).

I was enthusiastic for interviews to take place where participants felt comfortable, and felt that an academic office environment may exacerbate participants' perceptions of me as a professional, increasing barriers between us (power dynamics are discussed in more detail in Section 3.6.2). Participants who were interviewed within their own homes appeared to be particularly at ease; Kara, who was paired with her friend Amy, tried to make me feel at ease, encouraging me to make myself at home and help myself to food.

While I strove to conduct interviews within enclosed, private spaces to encourage comfort and openness, this was not always possible. Participants' chosen interview settings raised issues of noise and privacy, with participants at times distracted by activities elsewhere within the environment, particularly within youth club settings. On two occasions other members of a youth club entered the room during the interview, interrupting the flow of the conversation and potentially increasing participants' anxieties about the subject matter and privacy. In one such incident, Cleo lowered her voice when a fellow member of the youth club's staff walked past, explaining to Alice that she did not "want to talk too loud in case people are pure listening". This contextual insight highlights concerns about being overheard discussing sexual health. Beyond this, noisy environments caused technical challenges, as participants' words were not always clear on interview recordings.

3.4.4.4   *Further reflections on data collection*

This section further details my reflections on both the opportunities and challenges presented by applying these methods in practice, drawing on interview transcripts for illustrative examples.

As reflected on in Section 3.4.3, incorporating the online observational activity within the pilot study demonstrated online practices that could not have been accessed directly through interviewing alone. For example, in the first stage of the interview, participants at times had difficulty answering questions about searching practices, explaining that they did without conscious consideration. These barriers were partially overcome through the observational online activity, which allowed me to observe search practices that participants may have been unlikely to recall or report in an interview, for example: strategies for locating relevant information; rationales for choosing specific links; difficulties with certain information and language; and their general skills in navigating the online environment (these will be described in Chapter 5). This produced rich data, which questions alone may not have captured, about participants' experiences if searching for, and evaluating, online sexual health information in real time, albeit within an artificial environment. Furthermore, the online task appeared to improve participants' recall and sharing of opinions in the post-activity stage of the interview.

Because the activity was done in pairs, and participants talked to each other while negotiating their search strategies, the activity produced insights into both shared norms and experiences. For example, whilst deciding which search result to follow after entering search terms, Sophie said "Usually I'd just click on the top ones", to which Keira agreed: "Yeah I always click them because I feel the top ones are most reliable and I feel like the more you go down its more weird things you get". This illustrates how the paired activity provided insights into shared practices that a solo activity may not. As well as consensuses between participants, the activity also highlighted differences in opinion, both within and between pairs. For example, Lucy and Reece disagreed over the reliability of a WikiHow article, which Reece wanted to use:

> Reece: Okay. Actually, WikiHow is really good. I like WikiHow.
> Lucy: No.
> Reece: Go on WikiHow.
> Lucy: No, we'll go on Better Health.

Reece: No, go on WikiHow.

Lucy: Let's not go on WikiHow!

Reece: But WikiHow's good.

Lucy: Yeah, and it could also be written by anyone.

Reece: So can pretty much anything on the internet

(Lucy and Reece, aged 17)

Thus, this method revealed disagreements between participants in terms of their search strategies and perceptions of different sources, insights which would have been difficult to gain from a solo activity.

The ways that differences played out within the interview also provided insights into the dynamics of pairs' social relationships, which apparent within the face-to-face interview, and, particularly, during the online activity. While most selected close friends to accompany them, dynamics and power relationships within pairs varied. Generally, participants worked well together, with decision-making, formulating of search terms, suggestions and feedback being mutual, collaborative processes, but in some pairs one participant dominated, particularly in initial stages of searching. This initial inequity generally reduced as the searching process unfolded, but for three pairs imbalances were evident for the duration. Samantha (aged 17) and Martha's (aged 16) relationship was one of short-term acquaintanceship rather than long-term friendship. When their online activity began, Martha entered search terms without consulting Samantha, and was reluctant to listen to Samantha's suggestions, who wanted to think carefully about search terms. This power imbalance was matched by an imbalance in confidence evident during the interview stages, in which Samantha appeared more nervous, exhibiting greater difficulty in expressing her ideas. In another pair, their familiarity with one another resulted in Josie (aged 19) taking charge of the decision-making, while Kyle (aged 19) contributed little, seeming content to note the information that Josie found. During the the online activity, Josie's influence on Kyle was highlighted while discussing their findings about HIV:

Kyle: 'It can lead to AIDS if left untreated'.

Josie: It cannae be treated. That's the point.

Kyle: Aye, but if you leave it and you don't know you've got it it can go intae AIDS.

Josie: It goes tae AIDS no matter what…

Kyle: But HIV is manageable but, isn't it?

Josie: No. There's nae tablets, there's nae cure, there's nothing for it.

Kyle: Really?

Josie: Mmm hmm. Did you no' know this?

Kyle: Naw, man. I can't believe that

(Kyle and Josie, aged 19)

In this example, participants took different roles in an apparently functional partnership. In a minority of cases, pair dynamics prevented insights into searching practices. For example, Christina and Josh, whose relationship seemed to have a competitive dynamic, stopped the activity after five minutes in reaction to differences of opinion, instead of working to reach a compromise, illustrating how the unsupervised nature of the online task could hinder data collection with some pairs of participants.

Throughout the research process I was conscious of the need for flexibility in implementing the research method. The pilot phase (as described in Section 3.4.3) was beneficial in determining the methods to be sufficient and motivating me to source additional IT equipment and develop alternative materials in anticipation of technical problems. Despite this, I embarked on the main study with some concerns about the online activity, including the risk of technical problems, but, thankfully no substantial problems arose. Aside from technical challenges, another reason for flexibility when carrying out paired interviews is that individuals may not attend at the arranged time, and an unplanned solo interview may have to be carried out. Two participants stated that they would prefer to take part alone, and one of them, Tina, later confided that she did not feel that she had many friends to turn to. In this instance, I was glad to be able to include Tina, and not let her circumstances prevent her participation, as her perspectives were particularly important to document given her lack of a friend support network. However, these experiences highlighted how limited friendship networks could prevent some young people from participating in this type of research. Conversely, on one occasion a participant, Caleb, brought two friends with him, and, not wishing to turn one away, I chose to be flexible and incorporate all three. The resulting interview was less effective than the paired interviews, as it was more difficult to explore three participants' perspectives.

For some participants with minor additional support needs, it was appropriate to improvise to adapt the research design. As the unsupervised online activity was not necessarily suitable for these participants, I asked whether they preferred for me to stay in the room, which they did. When participants in these improvised, supervised online activities were unsure about web searches, I instead guided them through some websites and prompted them to discuss

their reactions to them. In these instances, the data produced was not as rich as in the paired interviews with unsupervised online activities, but it was important to be flexible and inclusive to represent as much diversity as possible.

3.5   Data management and analysis

Working with the copious and complex data produced necessitated special consideration. Data produced included: individual and group-level self-reported experiences and perceptions; interactions between participants; participants' descriptions of their actions during the online task; and search behaviours exhibited during the online task. These data needed to be synthesised to be analysed as one coherent body, which presented substantial challenges. For example, within any given pair, there was the potential to compare their stated perceptions in the initial interview with: their descriptions of their search behaviours during the online task; their exhibited behaviours during the online task; and their reflections on their behaviours following the online task. On top of this, it was necessary to consider similarities and differences between participants both within and across pairs. This chapter details how the copious, complex data were transcribed, managed, analysed and reported.

3.5.1   Transcription and data management

The three stages of the paired interview (before, during and after the online activity) were audio-recorded, with informed consent, and transcribed verbatim. I transcribed the first four paired interview and online activity transcripts, and the remainder were transcribed by a professional transcription service adhering to MRC and University of Glasgow confidentiality guidelines. I read each transcript while listening to the corresponding audio recording to both correct errors and familiarise myself with the interviews, adding notes and reflections and drawing on field notes. Kvale (2007) considers this an important means of reawakening "social and emotional aspects of the interview situation" (p.95). Following transcription each participant, along with any other individuals described in their accounts, were assigned pseudonyms to maintain anonymity. Further, any identifying information such as details of workplaces or youth organisations were removed or altered.

Transcripts were imported into NVivo 10 qualitative software, to facilitate capturing and organise the extensive qualitative data. NVivo 10 was a useful way to manage the data, allowing me to focus on brief excerpts of transcripts while retaining the ability to see excerpts in their original context. As well as the written transcripts, the video files generated

by TechSmith Camtasia Studio synchronising participants' discussions during the online task with the corresponding screen captures were imported into Nvivo10. However, NVivo 10 consistently crashed, seemingly prompted by the large quantity of data imported. As an alternative coding strategy, I created a Microsoft Excel workbook containing a separate worksheet for each pair in which I systematically recorded detailed information about their search strategies, websites chosen and the discussions that accompanied these behaviours (detailed in Section 3.5.2.2).

3.5.2 Three stages of analysis

This section will describe the process of analysing the data and synthesising the findings, which comprised three stages: Framework analysis of conversational data; descriptive quantitative analysis of observational data; and data integration (see Figure 3-2).

Figure 3-2. Analysis and synthesis processes
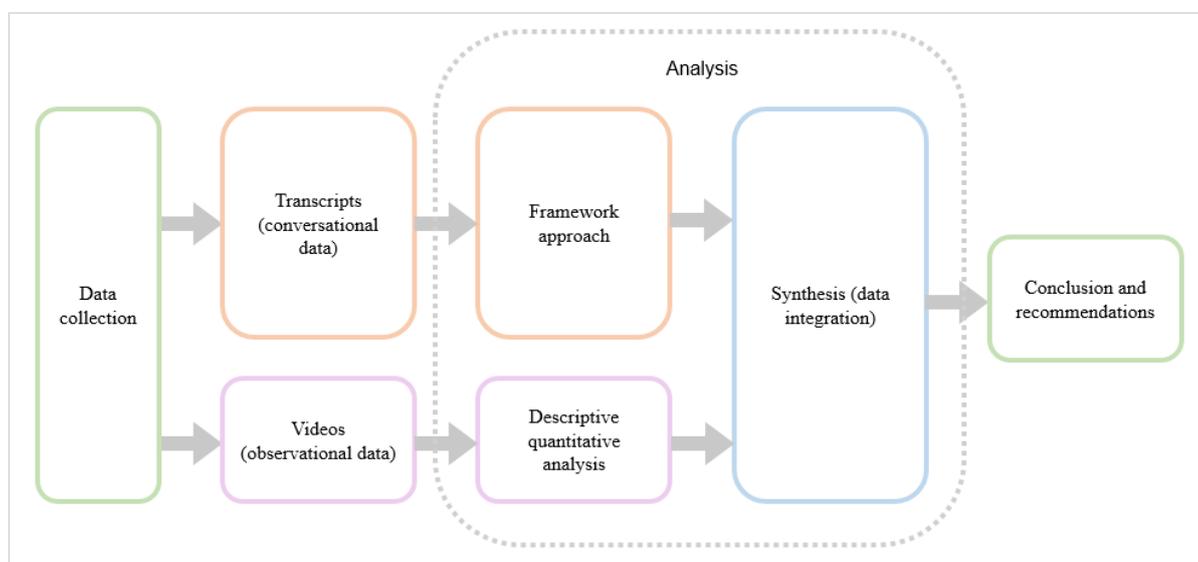
3.5.2.1 *Framework analysis of conversational data*

The Framework analysis approach was adopted to ensure a systematic approach to thematic analysis and facilitate synthesis of key themes and interpretations across the dataset (Ritchie and Spencer, 2002). This approach to data analysis involved five key stages: familiarisation; identification of a thematic framework; indexing; charting; and mapping and interpretation.

The Framework analysis process began with familiarisation stage, involving reading and re-reading transcripts, listening to recordings, reviewing field notes and taking notes to identify themes and issues from the data. This early analysis stage was primarily carried out using

paper and pen, recording analytical notes and emerging themes in the margin, ranging from attitudes and values, practices and emotions to methodological considerations (for example, relating to pair dynamics and the interview context).

This familiarisation informed the second stage of analysis, which was identification of a thematic framework. Using the notes taken during the familiarisation stage and the key themes, issues and concepts identified, I developed a broad thematic framework to shape coding to enable further analysis and allow the research questions to be answered. These codes were kept relatively broad so as not to miss any relevant data, with the intent of becoming narrower as analysis progressed (Bloor et al, 2001). The thematic framework encompassed six main areas:

- Understandings of, and attitudes towards, sexual health
- Sources of sexual health information and learning: school; internet; friends and family; media; other
- Locating, evaluating and understanding online sexual health information: strategies, facilitators and barriers
- Using and applying sexual health information: communicating and negotiating in sexual, social and healthcare contexts
- Perspectives on the use of online sexual health services and social media for sexual health promotion
- Pair dynamics and interactions

The final broad code was included to ensure that I remained conscious of the importance of pair dynamics and the influence of relationships between friends on the data elicited. I studied my observations of in-pair dynamics from my field notes, and coded interactions between pairs, including agreements, disagreements, joking, and annoyance, and I recorded how differences were managed. I also noted when one individual appeared to dominate an interview, and considered how this might have influenced their friend's contributions. The content of individual participants' contributions and the context in which they occurred were not treated as separate units of analysis; my field notes and reflections on participants' characteristics, interactions and paired dynamics were considered throughout analysis.

Once these broad theme codes were identified, I imported the transcripts to NVivo 10 and provided each pair with a case node to allow exploration of patterns across the sample, whilst including the context of data within each interview. As this point, I began stage three:

indexing. The broad codes identified above were used as starting points for coding. For each broad theme identified, I created a theme node within NVivo 10, and coded each interview transcript systematically, assigning excerpts of transcripts to relevant theme nodes. As described, to ensure that contextual dynamics within pairs were retained during coding and analysis, I strove to code excerpts of conversations between participants, rather than coding individual statements in isolation (Kidd and Parshall, 2000).

At this stage, coding within each of these themes became unwieldy in terms of the quantity of data extracts being assigned to each broad theme node, and thus I created secondary and tertiary nodes within the theme nodes to allow more in-depth coding of data (see Appendix 10 for a detailed thematic framework). For example, within the 'Sources of sexual health information and learning (SCHOOL)' code, I created sub-codes for: 'scope and content'; 'frequency and timing'; 'delivery mode and quality of teaching' and 'facilitators of and barriers to learning'. The codes, sub-themes and broader themes were revised as the process progressed. To ensure that I had not overlooked relevant data, I reviewed prior coding in an iterative process.

After I had finished coding, I progressed to the fourth stage of the Framework approach, charting, creating matrices around each key theme. Matrices for each of the five thematic areas were created in Microsoft Excel with columns for each sub-themes rows for each paired interview. Within each matrix, I summarised key points, made notes and included illustrative quotes from participants relevant to each particular theme (see example extract from a framework matrix, Figure 3-3). I also noted differences and similarities between participants within pairs. Systematic coding and charting allowed comparison across the sample, highlighting commonalities and differences within and across the paired interviews.

Figure 3-3. Extract from Framework matrix

	2. Sources of sexual health information and learning (SCHOOL)			
THEME				
Name	Satisfaction	Content/Topics focused on	Delivery mode and quality of teaching	Lea
Alice and Cleo	Neither felt like they had learned very much in school. They both agreed that they had been taught very little and that the responsibility was placed on them to learn Alice: left up to us to…(Cleo:…learn)…yeah". They agreed that they would have liked	Alice and Cleo described primarily learning about STDs in their SBSHE, but not enough practical information, like how to use condoms: Cleo: We learned about STDs which was good to be aware of…but other than that you didn't know like how to say use a condom and stuff like that; Alice: Mmhmm they didn't do that.	They were both in the same class at school and described being primarily taught by their teacher in the PSHE classes. They thought being taught by their teacher was awkward. On a few occassions they had outside people (not sure who) that came in to teach them and they both said they preferred this to	Alice prev it mig abou "wou actua abou boys
Craig and Darren	They were both generally positive about the teaching they received. School was the main source of sexual health learning for Craig and Darren growing up. In fact for Craig, his classes in PSE were the first thing that came to his head when he thought about sexual health. Overall, Darren thought that the classes "gave us the	Craig said that the lessons varied from week to week – from a "slow lesson" to something "pretty full on and you'd have to put on a condom on a dildo or something [laughing]". They thought that the classes provided enough information, although Darren thought they "probably got it too much". There was a sense that there was quite a lot of repetition: "it was all the same in the end" (Craig). Although, this was seen as a necessary evil: "it does get boring but at least you've known it that whole	They got taught within their PSHE classes by their guidance teacher who they described as their closest teacher in school: "so everyone knew him well" (Darren); "you build up a relationship with them" (Craig). Darren said the teachers pitched it at quite a good level which helped everyone learn: "I think they did take it seriously, but they, kinda, conveyed the, sort of, laughy sort of thing	Darr "help beca class awkw abou were whol "wor awkw and t
Liam and Rowan	Liam and Rowan both stated that their information needs weren't met in school and both recalled negative experiences. Liam talked about being "the only gay in the class", which meant his information needs weren't provided, forcing him in an effort to learn to ask "leading questions" and being picked on by his fellow classmates.	Rowan and Liam talked about only really recalling learning about STIs in a very basic way with not enough detail. Rowan attended a denominational school and was critical about the kind of messages his school promoted about homosexual relationships - he said they only talked about heterosexual relationships "for their own agenda to completely tarnish all homosexual reltionships". All he recalled being taught was that homosexual relationships are "morally wrong". Liam described getting no practical information about anal sex, just the message that it is	Liam who identified as gay remembered quite negative experiences in school and the quality of teaching to be poor. He recalled his teecher asking him whether it was OK to talk about homosexual sex and then asked him what she should cover. He said "I was like 'I'm the one who's supposed to be learning stuff here, not you. Where's your teacher training?' Liam remembered the one week they were meant to be taught how to put a	

The final stage of framework analysis consists of mapping and interpretation. In this crucial stage, the charted data is examined to establish key themes, typologies, associations and theories around the research questions. This stage of moving between themes and participant accounts helped in identifying patterns, similarities and differences across the data, allowing interpretations and explanations to emerge. I created descriptive and interpretive summaries of each of the broad themes using the matrices, and created 'biographies' of each pair in relation to each theme to consider the whole context, allowing links to be drawn between the paired interview and online activity stages of data collection. These summaries included information about the pair dynamics and interactions during the interview, to aid in contextualising participants' contributions. An abridged example of such a 'biography' is included in Appendix 11. These summaries were drawn on in comparing experiences between pairs. Following this process, I systematically collated and made sense of all the data. The codes and subthemes were collated with field notes to produce overall summaries of each over-arching theme, which ultimately formed each of the three findings chapters.

3.5.2.2 Online activity analysis

The observational activity generated both video (consisting of regular screen captures) and audio data. Verbal interactions between participants were transcribed and analysed qualitatively, as explained in the preceding section, while the videos necessitated a different approach. A coding scheme was developed to record the content of the videos to documenting the pairs' online search processes. Specific codes included: the scenario being addressed; the length of time spent on each scenario; the broad search strategy used (search engine or direct URL); the search strings used; the number of search results pages viewed; the search rankings of chosen links; the types of websites chosen; the number of pages viewed within individual websites; time spent on each website; the use of menus; engagement with advertisements; and engagement with visual content. A Microsoft Excel workbook was created, containing separate worksheets for each pair, in which I systematically recorded detailed information about search strategies, websites chosen and the discussions that accompanied these behaviours (see example Excel extract, Figure 3-4).

By systematically analysing the videos using this coding scheme, information-searching processes were documented methodically. The websites participants accessed during the online activity were categorised by the operator/developer of the website (e.g. a Government health organisation), and subcategories by the type of website (e.g. user generated/social media websites). The categories and sub-categories of websites used displayed in Table 3-1. Categorising websites allowed greater insight into the types of websites participants selected, as well as the location and context of the information, and facilitated comparison between the types of online sources used during the online activity and the types that participants reported preferring during the interview stage. Having established this basic information about the websites that participants accessed, I employed thematic analysis of the videos to produce more detailed descriptive and interpretative summaries of pair's search processes and the discussions they had during the online activity.

Figure 3-4. Extract from website coding

	A	B	C	D	E
1			Scenario 1		
2		Search terms	Action/Webpage chosen	Link numbe	Comments on conversations
3	00:00:36	when do symptoms start to show of an sti'			Skye whispers to Lily that she doesn't know the answers
4	00:00:50	Website category key — Health organisation (governmental) / Health organisation (non profit) / Commercial/for profit / User generated/social media / Other / Educational organisation	How soon do STI symptoms appear? - Health questions…(NHS)	1st link	Scroll through site reading bits out to one another. Lily is shocked by some of the information as she didn't know about it. Skye reads out that some STIs don't have symptoms. They both seem to share some of their own knowledge about STI symptoms
5	00:02:34		Video: genital warts from above site		Lily seems to like the interactive features of websites - they try to watch a video about genital warts but it doesn't work. Skye seems hesitant and tries to discourage her from watching it, seems maybe disgusted at the thought of watching it
6	00:03:24		Return to Google		They both talk about what else they should look up - unsure
7	00:03:40	what stds can you get from one night stand'			Skye suggests this
8	00:04:07		Sexually transmitted diseases (STDs) - NetDoctor.co.uk	1st link	Skye says 'netdoctor' and they agree to go on it. Scroll through - some symptoms info catches attention and reads out, they seem a bit worried about some of the symptoms. Only read out certain bits, scrool quickly through some. Lily reads about treatment of Gonorrhoea and recalls a trip to the doctor. Lily seems confused by some of the language. Skye struggles to pronounce some of the STI names. They like this website and write it down in the notes. Skye shares some of her knowledge about condoms
9	00:08:18				
10			Scenario 2		
11		Search terms	Action/Webpage chosen	Link numbe	Comments on conversations
12	00:08:49	contraception'			Lily asks Skye what they should look up and she suggests 'how to avoid getting STDs' but Lily seems unsure and suggests 'contraception' and Skye agrees. Lily offers her own advice before the website has loaded - about making sure they wear protection
13	00:08:56		Contraception - Contraception guide - NHS Choices	3rd link (1st	Lily recalls there being a quiz on this website that she has used be for and she scrolls through looking it (she likes this kind of interactive content). Struggles to find it
14	00:09:09		Back to search results		Goes back to search results, before going back to NHS ws
15	00:09:11		Clicks on 'which method suits me?' which is an option on the Contraception-Contraception guide - NHS Choices	3rd link optic	Scrolls through again looking for quiz
16	00:09:23		Clicks on Brook - My Contraception tool link (Contraception NHS Choices)	3rd link tool	She finds it and gets excited about a contraception tool questionnaire. She says "That's very good innit?" Skye seems less enthused
17	00:09:42		Start My Contraception Tool (www.brook.org.uk/our-services/category/my-contraception-tool)		She says "That's very good innit?' Skye seems less enthused and they go back to search results
18	00:10:04		Back to search results		
19	00:10:06		Contraception - Contraception guide - NHS Choices	3rd link	They go back to the NHS Choices website and scroll quickly through - info about different contraceptions catch attention (tends to be headings and highlighted words). Skye sayes says "What if somebody wants to go deep?" and Lily laughs and reminds her it is recording. She doesn't seem bothered
20	00:10:24		Clicks on link for more information about the Contraceptive cap (NHS Choices)	3rd link	The select more information on the Contraceptive cap as they are unsure about it. Lily reads out the information to Skye, but becomes confused by the description and use of the word 'spermicide'. They are both confused
21	00:12:33		Back to previous page - Contraception - Contraception guide - NHS Choices	3rd link	Scroll through quickly
22	00:13:18		Click on link for more information about 'natural family planning'	3rd link	Scroll through quickly - read out headings that catch attention
23	00:13:46		Back to previous page - Contraception - Contraception guide - NHS Choices	3rd link	
24	00:13:55		Return to Google		Lily suggests they look up information about being ready for sex as it is important that they know whether they are ready or not. As she is typing it in she comments that the predictive Google text automatically predicts this and Skye comments on it coming up in the top searches - lots of people searching for it
25	00:14:08	how do you know you are ready to have sex'			
			How to Know if You Are Ready to have Sex: 9 Steps (with…) (wikihow)	1st link	Lily notieces in the heading that it has 9 steps and she wants to select it. They do and scroll through reading out the steps (often just the titles of steps). They agree with the information about embarrassment and maturity, and agree that you shouldnt have sex if you think you are going to be embarrassed - Skye says you really shouldn't be in the relationship if that is the case. Lily talks about it being important to be emotionally ready. They talk about consent.

Interview 1 / Interview 2 / Interview 3 / Interview 4 / Interview 5 / **Interview 6** / Interview 7 / Interview 8 / Interview 9 / Interview 10 / Interview 11 / Interview 12

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Table 3-1: Website categories and sub-categories

Government health organisation	Non-profit health organisation	Educational organisation
• NHS • Scottish Government • UK Government • Non-UK Government • WHO	• Youth health • Youth services • Sexual health • Women's health • Men's health	• University • Research Centre

Commercial/for profit	User generated/social media	Other
• Magazine (offline and online) • Information/lifestyle website • Pharmaceutical/retail • Private healthcare company	• Blog/micro-blog • Online community – 'how to' database • Community question and answer website • Crowd sourced FAQs • Online video network	• Search engine (e.g. Google images) • News provider (e.g. BBC) • Web tool

3.5.2.3   Data integration

When analysing qualitative data, it is important to draw from experience and interpretation of complete interviews to retain awareness of the original context of extracts. To facilitate this, I wrote and compared interpretive and descriptive summaries of the data and entered them into a data synthesis table. While the primary focus of analysis was participants' individual feelings, perceptions and experiences of searching, evaluating and using online sexual health information, and the context within which this occurs, it was important to also incorporate insights from the search processes and negotiations exhibited during the online activity. Considering one aspect of the research in isolation would be to undermine the value of combining the two methods, so effective synthesis of paired interview and online activity data was essential.

To facilitate high-level synthesis of findings from the different stages of data collection for the Discussion Chapter (7), the key findings from the paired interviews were combined with those from the online activity within an analytical findings integration table. The table was

organised to allow consideration of the findings related to specific contexts (rows) across each of the findings chapters (columns), thereby synthesising findings drawn both from conversational and observational data. The first three columns represented the three findings chapters, and each contained the key findings of that chapter. Those chapters concerned: young people's understandings of sexual health and experiences of different sexual health information sources; perceptions and performances of locating, understanding and evaluating online sexual health information; and using and applying sexual health information within different contexts. The fourth column contained interpretation and synthesis of key findings from each chapter relevant to different contextual aspects of participants' experiences. The key environments within which sexual health literacy is developed and applied were represented in the rows of the table: the online context; school; peers and the formal health context. The data integration table produced from my findings is in Appendix 12.

3.5.3 Reporting the data

It is important to consider how the data are reported. To capture the context of data, I felt it important to report interactions by quoting excerpts capturing exchanges between participants, instead of quoting participants in isolation. However, in practice it was not always appropriate to do this, with conversations between pairs often chaotic, such that the discussions surrounding statements were not always relevant to those statements, and reporting excerpts of conversations would obstruct rather than enhance clarity. Therefore, I made the decision to quote discussions between pairs when the context genuinely contributed to meaning, but not necessarily when the context did not add value to the quotation. Alongside quotations encapsulating perspectives, I have reported participant characteristics, such as age, where relevant. Quotes from data elicited during the online activity is presented in coloured text to highlight differences and context.

I have not consistently used numerical data to report the numbers of participants presenting specific opinions. I decided that, in many cases, using numbers to represent this complex data would be only superficially meaningful, undermining the nuances of individuals' perspectives. As such, while I report numerical data in some circumstances, I primarily use terms such as 'most', 'majority', 'many', 'some' and 'rarely' to indicate how common perspectives were within the sample. In doing this, I acknowledge that the strengths of qualitative research lie in describing subjective experiences within specific contexts, rather than measuring frequencies of discrete variables.

Beyond reporting data within this thesis, an important additional consideration was how to present data when communicating my research findings in presentations. Given the rich data captured, it was desirable to present excerpts from videos, both to present the data and illustrate the methods. However, reproducing recordings of participants' voices in presentation contexts raised ethical concerns. I adopted two strategies to address this issue: in some presentations, I played videos with audio tracks redubbed by colleagues reading transcripts, while in others I read the transcript aloud as the muted video played. I will continue to use these approaches when presenting this data in future.

3.6   Reflexivity

This section contains discussion of the process of reflexivity in the research, and the influence and power of myself within the research context, with illustrative examples.

3.6.1   Reflexivity in research

It is important to acknowledge that there are no perfect methodological tools, and that each approach has strengths and weaknesses. Plummer (2001) advocates 'a self-consciousness about method', while Brewer (2000) stresses the importance of 'analytical reflexivity'. Within qualitative research, a reflexive approach recognises the necessity of these responsibilities from the beginning to the end of the research process, including data collection, analysis and writing up. Reflexive approaches allow researchers to think critically about the impact of their own values, characteristics, biases and preconceptions in shaping the research and creation of knowledge (Bryman, 2015; Willig, 2013). Willig (2013) described two types of reflexivity: personal, and epistemological. Personal reflexivity concerns the influence of researchers' values, interests, political leanings and social identities on their research, while epistemological reflexivity concerns the the influence of the construction of study design on the data and findings, and how these might have influenced understandings of the data.

The concept of the neutral, absent and objective researcher, common in positivistic methodological theory, has been critiqued by many (Harding, 1986; Mauthner and Doucet, 2003). While it is often assumed that the best approach to qualitative research is one of open-mindedness, allowing theory to emerge from the data, O'Reilly (2005) stresses the need to accept the impossibility of carrying out research without predetermined ideas or judgements. From this perspective, the best approach is for researchers to be as aware of preconceptions

as they are of the content of previous literature and the methodological strengths and weaknesses of their chosen methods (O'Reilly, 2005). Thus, O'Reilly (2005) explains that, before carrying out qualitative fieldwork, it is important to consider and record any preconceived ideas or expectations:

> "it is only when you face your preconceptions head on that you are able to put them on one side when you actually go out and observe and talk to people. You can only be open to surprise if you know what you expect to find"
>
> (p.31-2).

While I am sceptical of being able to entirely put expectations or preconceptions to "one side", I believe the process of overtly identifying my personal preconceptions was useful. My preconceived expectations included: participants would have broadly negative perceptions of school-based sexual health education; participants' understandings of sexual health would be primarily negative and risk-focused; and participants would generally be competent internet users. I recognised these as being partially derived from my own personal experiences, as well as my knowledge of the relevant research literature. I remained conscious of these preconceptions throughout data collection and analysis, to guard against them biasing either my questions or my interpretations as best as possible.

As well as not being objective, most kinds of qualitative research cannot be unobtrusive, and it is important to be aware of the effect of the researcher. When conducting research we cannot help but interfere with phenomena we hope to research (Holstein and Gubrium, 2004). In data collection, factors such as the researcher's gender, ethnicity, class and educational level may influence interactions with participants and the data produced, so the fieldwork context cannot disconnected from the researcher's influence (Block, 2000; Holstein and Gubrium, 2004). Therefore, it is important to consider the data generated from fieldwork as not simply reflecting participants' experience, but as a product of the interaction between the researcher and participant (Block, 2000; Holstein and Gubrium, 2004). While the data produced during stages one and three of the interviews were inevitably products of interactions between me and my participants, I contend in the following section that, though I was absent during the online activity (stage two), I nonetheless influenced the data construction in that stage.

3.6.2 Issues of power and the influence of the researcher

This section explores the role of power within the research context during my study. As discussed in the preceding section, it is crucial to continually acknowledge the role of power and perception within research settings (Matthews, 2001; Morrow and Richards, 1996). The relationships developed are influenced and shaped by factors including perceptions of authority, stereotypes, age, social class, and gender (Matthews 2001). Exploring such power relationships is crucial, particularly in this research project, where I, the researcher, was not physically present for part of the interview.

During the interactive online activity stage of the interview, I would leave the participants unsupervised whilst they undertook the online activity. So, in a literal sense, I was an "absent" researcher. While the participants were being recorded, which was made clear to them prior to the activity, I was not physically present to observe in real time. By removing themselves from data collection, researchers create a different environment from the traditional interview, with their own opportunities and concerns. Gibson (2005) explains that "the researcher, whether physically present or not, is inevitably part of the research world being studied. Reflexive analysis of this relationship might be especially important in situations in which the influence of the absent researcher is less transparent" (p.36).

As a researcher, it is important to consider how the participants may have perceived me and how this might have influenced them; was I perceived as an older authority figure or as a young woman with similar experiences? Just as I had expectations as I met participants to begin the interview process, so would they of me. One pair explicitly said so: on arrival, Emma said: "you're just wee" and her sister, Mia explained "yeah we thought you'd be much older". However, my role as a university researcher likely caused me to be viewed as an authoritative source, rather than a peer. I deliberately wore casual dress and engaged participants in conversation to build rapport prior to interviews, trying to portray myself with a certain naivety, as someone who was keen to learn from them, rather than an 'expert'. To try and put participants at ease, I explained that there were no right or wrong answers, and that there was no pressure on them, but doubtless some did feel uneasy and pressured by the research context.

The inherent unease engendered by the research context may have been exacerbated by the subject matter being discussed. Despite me initially asking general questions around internet use to 'warm up' participants, my presence as a researcher asking questions about sexual

health undoubtedly influenced their willingness to openly share their perspectives. Many seemed initially hesitant to share their thoughts and understandings of what 'sexual health' meant to them. At times, this appeared to be due to embarrassment at openly discussing sexual health, exhibited through both frequent nervous laughter and silences. For most participants, the initial embarrassment eventually subsided, with them becoming more open to discussing their understandings relatively fully. However, others remained reticent throughout, exhibiting their awkwardness through very brief answers and reluctance to elaborate despite gentle prompting. This outcome should be considered, along with the fact that participants were likely somewhat self-selecting for willingness to discuss sexual health, suggesting that more reticence might be expected in a truly random sample.

The online activity assisted in highlighting issues of power and expectations within the research, as well as the effect of my physical presence on participants' openness. Once I left the room and the activity began, participants generally seemed more at ease, showing greater willingness to voice their frustrations, confusions, and feelings. In one case, as soon as I left the room one participant whispered 'I just don't have a clue about sex', to which the other replied 'I know, it really confuses me all this', suggesting that they had been more guarded with me. Differences between participants' presentations of themselves and their knowledge between the interview and activity stages of the research suggest that the research design was somewhat successful in accessing both participants' public and private accounts, the latter of which, as Cornwell (1984) suggests, are usually only revealed upon repeat interviews and increasing familiarity between interviewers and interviewees.

However, despite my absence, both me and the research environment still appeared to influence participants' actions. For example, some participants voiced concern about sexually explicit content appearing on screen during the activity; Craig (aged 16) said 'Should we be clicking on images do you think? Is that, like, can you do that?', while some male participants wondered whether I would reprimand them for searching for pornography, even as a legitimate response to one of the scenarios presented to them. These insights suggest that participants may have been self-censoring in other ways as well.

Despite me telling participants that there were no right or wrong answers, some participants clearly felt pressured to perform well for my benefit. For example, Michael (aged 19) said "do you think she printed these out of her own pocket? We need to give her good answers', and Matthew (aged 17) and Charlie (aged 18), who both had minor support needs,

continually asked if they were giving me the 'right answers'. Ruth (aged 16) worried about what I would think "she must listen back to this and be like 'what are they even talking about?'. Through statements like this, it became evident that participants were concerned about my reactions to them, and some seemed to provide answers that they thought I wanted to hear. For example, when asked whether they might use sexual health apps, Darren (aged 17) stated he would, while his friend Craig (aged 16) said he wouldn't, to which Darren told Craig "you're a miserable so-and-so, you…". In this example, Darren appeared to feel that I wanted them to say positive things about sexual health apps, and that Craig was letting me down. In future it may be beneficial to consider ways of making clear to participants that there are no right or wrong answers.

These examples illustrate the importance of recognising that, even without the researcher being physically present, the fieldwork environment cannot be disconnected from the researcher's influence (Gibson et al, 2005). The online activity was effective, producing valuable data that would not have been produced by traditional interviews alone, and ideally going beyond participants' verbal constructions of their own behaviours to access actual behaviours (Silverman, 2001). However, it must be acknowledged that the activity did not necessarily recreate real-life searching behaviours, as it was an inherently artificial environment and the young people remained aware of their positions as research participants. It was important to take these factors into account during data analysis and write-up.

3.7   Summary

Within this chapter, I detailed the methodological process of designing and conducting this research. The multi-method approach to data collection (incorporating both 'online' and 'offline' aspects) and the interpretive approach to data analysis enabled exploration of young people's sexual health literacy, primarily in an online context, but taking other key influences and contexts into consideration. The findings of this research are reported in the following three chapters, drawing on what participants said in the paired interviews, and what they both said and did during the online activity. Within the findings chapters, I have included my own brief interpretive reflections on the potential meanings of findings where appropriate. In the discussion chapter, I summarise the key findings from each findings chapter, and expand upon my interpretations with reference to literature and theory.

4 Sexual health information sources: school, peers and the internet

4.1 Overview of chapter

This chapter will present participants' descriptions of their motivations for, and experiences of, using different sexual health information sources, addressing research question 1: What is the role of the internet within the broader landscape of young peoples' sexual health information and support sources?

Participants varied in their past learning experiences, their approaches to learning and their current preferences for seeking sexual health information. While this thesis focuses on the online environment, this chapter begins by examining participants' experiences of receiving sexual health information and support at school (Section 4.2) and from friends and peers (Section 4.3), before discussing their use of the internet (Section 4.4). While other sources were mentioned, including family and other media, school, friends and the internet emerged as the three key sources. As these findings will demonstrate, school and friends are fundamental, interrelated, elements of the information and support landscape, and understanding them is crucial to contextualise the role of the online environment. By describing how participants discussed learning and seeking sexual health information, Chapter 4 establishes the background to various aspects of participants' sexual health literacy, contextualising the analysis underpinning Chapter 5, with its focus on the online context.

The data derive from participants' direct conversations with me during the paired interviews and from their discussions during the online activity, during which I was absent. Particular attention has been paid to highlighting similarities and differences between participants, alongside identifying common themes across the sample.

4.2 Learning in school

School-based sexual health education (which, in Scotland, has been named Relationships, Sexual Health and Parenthood Education since 2014 (The Scottish Government, 2014a)), emerged as a key source of learning, typically mentioned when asked 'where do you think you have learned about sexual health?'. All participants described having received some

form of school-based sexual health education, with the exceptions of Ralph, who left school aged 13, and Laura and Courtney, who attributed this to attending a denominational school[1]:

> *And where do you think you've learned?*
> Laura: Not at school
> Courtney: Definitely not at school
> Laura: Yeah, we go to Catholic schools and it's no' really a thing they teach you
> Courtney: Like, never, you don't…it just doesn't come up
> (Laura, aged 16 and Courtney, aged 17)

While most described receiving sexual health education at school, accounts of the extent and nature of the education received varied in terms of the type of messages promoted, the topics covered, and the individual relevance of the content. Participants typically perceived their school-based sexual health education as infrequent and sporadic, typified by Claire and Ashleigh:

> *And what was it like in school?*
> Claire: Can't really remember…we did it, like, earlier on
> Ashleigh: Eh, it was, yeah it was early and it was quite short
> Claire: Yeah, we didn't do that much of it
> Ashleigh: Yeah we didn't do it for very long
> (Claire and Ashleigh, aged 17)

Like Claire and Ashleigh, many struggled to remember their school sexual health education, often attributing this to having received it early (in the first two years of high school) or having received too little for it to be memorable. Most participants stated they would have liked to receive more.

This section describes participants' reflections on school-based sexual health education, including their perceptions of the sufficiency, consistency and applicability of content, as well as the learning environment and delivery mode. Insights about aspects of school that may facilitate, or obstruct, young people's negotiations of their sexual health will be highlighted throughout.

---

[1] The Scottish educational system consists mainly of non-denominational schools, but also a small number of denominational schools. The majority of denominational schools in Scotland are Roman Catholic. Fourteen participants attended a denominational school, all of which were Roman Catholic.

4.2.1 Focus on risk and sexual ill health (It's risky!)

Participants' accounts of their school-based sexual health education suggested that class content tended to focus on specific topics and messages; most of participants recalled learning primarily about outcomes of risky behaviours, such as unwanted pregnancy and STIs. Connie and Jamie's recollections typified this:

> *Do you remember what kind of topics were…?*
> Jamie: Yeah, aye S…
> Connie: STIs and STDs
> Jamie: HIV and Chlamydia really
> Connie: Aye, that was the biggest things that they really focused on
> (Connie, aged 18 and Jamie, aged 16)

Jacob and Connor, who attended a denominational school, directly associated 'sexual health' with 'STDs' and 'dangers' due to their school sexual health education:

> *When you think of sexual health, what does it mean to you?*
> Jacob: I think about the NHS, like we used to get talks in school and I just think of that and it's pretty much to do with all the dangers and stuff like that…that's what it reminds me of
> Connor: Yeah, it just reminds me of like STDs
> Jacob: That's what it reminds me of too actually…yeah kinda being warned about them and all that in school
> (Jacob and Connor, aged 18)

Such responses were not unusual, with participants' recollections of a focus on risk within their school-based sexual health education often appearing to be reflected in the narrow, risk-and-disease-focused articulations of 'sexual health'. While participants typically described a focus on physical aspects of sexual heath within school-based sexual health education, in four interviews participants recalled learning about relational and emotional aspects. Two of these pairs had been involved in school-based peer education initiatives at school, in which third-year students delivered health education to younger students. Joe and Ruth discussed both receiving and delivering this type of education:

> Joe: It's used in the schools and you go to, like, primary schools and, kind of, educate them a bit more as well
> Ruth: It's mostly like alcohol an' that

Joe: And drugs and stuff, like, drug misuse and stuff yeah

Ruth: And friendship, yeah. And then health buddies was more about, like your relationships at home, relationships with partners. Like, puberty and stuff. And then what they done was you taught that to – was it third years?

Jo: No, second years

(Ruth and Joe, aged 16)

In this exchange, Joe and Ruth recalled that the content they covered included relationships. Indeed, Ruth, was one of the only participants to mention emotional and relational aspects within her reported understandings of 'sexual health':

So when you think about sexual health, what do you think about?

Joe: Just the risks an' a' that really, I think

Ruth: Yeah, definitely

Joe: Like, protection and just things like that

Ruth: It's more like the relationship that I think about…

Yeah…

Ruth: Like, 'cause obviously nowadays you either have, like, there's obviously lots of different kinds of relationships you can have with people, to do with sex an' that. So, I don't know, I'm only thinking about that. Just about the actual, not so much the health, but, like, the more involvement, I think, with each other.

(Joe and Ruth, aged 16)

Typically, however, participants rarely mentioned relationships, communication and broader wellbeing within either their recollections of school or their understandings of 'sexual health'. In fact, within the other two interviews where participants described learning about relationships, they drew distinctions between interpersonal content of sexual health education classes and 'sexual health'. Kara and Amy described the content of their school-based sexual health education:

Kara: Now it's mostly relationships they do. They try and avoid like, anything too deep so they just do relationships and like, abusive relationships

Amy: Yeah, I think they do touch on, like diseases and infections, like actual sexual health, but no' very much, not enough to learn from

(Amy and Kara, aged 17)

Here, Kara and Amy appear to consider relationships as not being a legitimate part of 'actual sexual health', which Amy defined as concerning disease and infection, highlighting the degree to which some associated sexual health with risk and physical ill health.

Few participants mentioned anything positive when defining 'sexual health' or describing school-based sexual health education content. A small number of participants, such as Nicola and Ralph, commented on the lack of teaching about broader and more pleasurable aspects of sex:

> Nicola: Well they've [schools] not been letting young people know, like, they should talk to them like face to face tae show that like it's okay if you have these questions, it's okay tae do this, it's perfectly normal. But they don't talk about like a lotta things like masturbation or whatever, like they don't talk about that because like… I don't know why because like a lotta kids do it and they feel like horrible for doing it…
> Ralph: It should be talked about…
> Nicola: You know 'its fine, it's okay. Don't worry'…
> (Nicola, aged 17 and Ralph, aged 19)

As well as highlighting the limited focus on pleasurable aspects of sexual health within school, Nicola and Ralph identified how tacitly reproducing taboos could cause shame and suppress communication. They had recently watched a television documentary called 'Sex in School', in which a Belgian sexologist introduced a new kind of sex education covering sexual pleasure within a Lancashire school. This documentary seemed to have influenced their understandings, making them critical of the negative framing of sexual health within their own schools, which highlights the potential role of the media in critical awareness.

Within this primarily risk-based teaching, participants described two main themes of content: abstinence and using protection. Participants' attitudes towards these teachings are explored in the following two sections.

4.2.2 Abstinence based messages (It's risky, so don't do it!)

Abstinence-based education was primarily experienced by participants who attended denominational schools. Jacob (aged 18) typified these experiences, stating: "it kinda made it out as though you'll have sex and you'll get an STD". Jacob and Connor indicated that their school used fears about STD transmission to promote abstinence. Jess and Amelia

highlighted similar teaching within their school and described their abstinence-based education as excluding information about safe sex and contraception:

> Amelia: I feel like with our school, cause the other schools are like obviously not religious and stuff so they don't care about like like…like our school doesn't like, they don't do the whole contraception thing, they all do like the natural thing cause it's…
>
> Jess: Yeah
>
> Amelia:…like Catholic and stuff em…and then all the other schools obviously get like… get taught how to have like safe sex and all that and we don't like
>
> Jess: Yeah you feel like…
>
> Amelia:…you feel at a bit of a disadvantage
>
> Jess: In RE like you kind of like touch on subjects but it doesn't go into like detail
>
> Amelia: Yeah it's just like, it's basically just like NO [laughing]
>
> Jess: Yeah
>
> Amelia: No, don't
>
> (Jess and Amelia, aged 16)

Amelia and Jess's recollections emphasised their feelings of being disadvantaged by their denominational education. They appeared concerned about their limited knowledge during the online activity, with Amelia stating: "I don't know, sex confuses me" and Jess replying: "I know, I don't really know anything". Amelia's understanding of 'sexual health' was somewhat consistent with her school experiences, perceiving sexual health as being about absence of disease, using the stigmatising, moralistic terminology of "if you're clean or not".

Lily and Skye did not attend a denominational school, but demonstrated awareness of the influence of socio-cultural factors (specifically religion) on access to information, feeling that those that do may be disadvantaged in terms of sexual health education:

> Lily: I just think if a lotta younger people were taught a lot more about sexual health 'cause like you get like, you get taught about sex an' that but you don't get taught about sexual health properly. Like you don't. An' in like religious schools an' all that they won't tell you about like contraception or anythin' cause they're against contraception so they won't know about that either. But you should be told about that. I think anyway.
>
> Skye: 'Cause a lotta the schools that people go to are religious
>
> Lily: Aye

Skye: In like Glasgow and like around certain areas, they are all the religious schools

(Lily and Skye, aged 19)

In identifying Glasgow as an area with many denominational schools, Skye highlighted one way that geographical location might drive inequalities in sexual health literacy.

4.2.3 Prevention messages and practical information (It's risky, so use protection!)

While some participants described receiving abstinence-based sexual health education at school, the majority described a focus on prevention messages, particularly on contraception use. Martha and Samantha described a focus on 'safe sex' and contraception at the expense of other topics:

Martha: It was always really contraception that was, like, what's the word for it...like, it was encouraged

Samantha: Yeah

Martha: But there was never really anything about anything else, or that, it was just contraception, contraception, contraception

(Martha, aged 16 and Samantha, aged 17)

Despite focusing on risk and preventative measures, participants typically described class content as lacking practical information about lowering risk within sexual and healthcare contexts. For example, Alice and Cleo recalled learning about STDs, but receiving insufficient information about the practicalities of using condoms:

Cleo: We learned about STDs which was good to be aware of…but other than that you didn't know like how to say use a condom and stuff like that

Alice: Mmhmm, they didn't do…

Cleo: It got touched on once and that's not gonna exactly be in your mind for when you have first time sex

Alice: It wasn't great

(Alice, aged 18 and Cleo, aged 19)

This experience was shared by many, and seemed to drive confusion, uncertainty and misconceptions, with only a small minority feeling they had been adequately taught how to use condoms. A lack of practical guidance was emphasised by participants who described primarily learning about sexual health within science classes, such as Melissa:

Well they do like, how the body changes and they do, like, I don't know – they do, like what age that's gonna happen and they just tell you to use, like, contraception. They don't actually tell you anything about the different things you can do an' that, what contraception you could use an', they just say what's gonna happen to your body

(Melissa, aged 16)

Melissa described biology classes' failure to explain contraception in practical terms, instead taking a biological, mechanical focus on procreation, sexual diseases and contraception. As a result, Melissa felt insufficiently informed about different contraceptive options.

Beyond prevention, Lucy and Reece highlighted a 'one-sided' lack of guidance on managing the results of risky behaviours:

Lucy: It was basically just 'wear protection'

Reece: Yeah, that was…

Lucy: kind of repeated again and again and again

Reece: There was nothing about, say, if you…

Lucy: And they kind of go on about, like, alcohol and, like…and all that sort of stuff as well, like that kind of area, but…

Reece: It was more to do with preventing it rather than, like say, not saying we do…but if we had, like, something like an STI or something, they didn't give us any information on how we could deal with that. So it was more just informing us on how to prevent it.

Lucy: Yeah.

Reece: So it was kind of like the one-sided kind of thing.

(Lucy and Reece, aged 17)

Similar issues were also raised by other participants who felt they were given general messages about prevention, but insufficient practical information on where to access contraception or testing services.

In addition to criticising school-based sexual health education for providing insufficient practical information, participants did not recall being taught skills for safe and effective information-seeking. Notably, no participants described receiving advice on seeking information, support and services online. As discussed in the literature review, the internet

is a potentially valuable information source laden with potential challenges and risks. Participants' perspectives on the internet are discussed in detail in Section 4.4.

4.2.4 Incomprehensive content (It's all about heterosexual sex!)

Participants who identified as gay, lesbian or bisexual described the sexual health content they received at school as irrelevant and insufficient, failing to account for the interface between sexual identity and sexual health information needs. For example, Abbie said of school that "they taught me nothing", and eloquently critiqued insensitivities to gender and sexuality:

> And they didn't talk about anything, like we didn't talk about homosexual, they didn't talk about trans issues, they didn't talk about any sexual health other than, "This is how you not get pregnant." This is how to not get pregnant, and that's it, that's all you need to know, and you're like, "Ok, cool""; It's like… how do people have sex? And it's like, "Oh, like this…" And you're like, "What about gay people?" "Oh, eh, eh…" "What about trans people?" "What about non-binary people?" It's like, "Oh…" Like they totally skipped over everything.
> (Abbie, aged 17, paired with Sinead)

Abbie found the information she received neither interesting nor relevant, and worried that classmates may have had similar unmet needs, but been too embarrassed to ask. She recounted an occasion when she requested that her teacher cover homosexual health issues, and found herself being invited to talk in front of class:

> And I was like, "What about page twenty-six? What about page twenty-six? The one that's actually really quite important." She was like, and everyone looked at me, and I wasn't even out at the time, I was just like… Well I was out, but not to everyone, and I'm just like… And they're like, "Are you gay?" I'm like… just didn't know what to do, I was like…"no, I'm just quite interested in this." Like—yeah I just went, "Yeah, page twenty-six." And she's like, "Well, I don't feel like I should be the person to talk to you's about it. Would you like to come up and talk, Abbie?
> (Abbie, aged 16, paired with Sinead)

Abbie described a particularly insensitive reaction from her teacher, in which her desire to learn about relevant sexual health issues resulted in her being 'outed', both as being gay and as wanting to increase her knowledge. While Abbie generally described herself as being comfortable talking about sexual health with others, she described being embarrassed in this

situation, with her embarrassment stemming specifically from her teacher's indiscrete response to her attempts to steer the focus of the teaching towards issues relevant to her. Liam, who identified as gay, recalled similarly unhelpful experiences with teachers, such as a teacher approaching him to ask for both permission and advice for covering homosexual sex:

> My teacher actually came up to me once and asked, said, 'we're going to do one on, like genders. Like, you know, like homosexual sex. Is it okay if I do that?' It's like you want my permission?! Like, in case I got offended. And then she…was like 'so what exactly do you want me to cover?' I was like 'I'm the one who's supposed to be learning stuff here, not you. Where's your teacher training?'
> (Liam, aged 16, paired with Rowan)

Like Abbie, Liam described learning to ask "leading questions" to try to meet his information needs without overtly singling himself out within class, but nonetheless described being picked on by classmates. Both Abbie and Liam's accounts demonstrated their confidence and both critical and interactive literacy skills in identifying shortcomings of information provided and trying to discretely request more relevant content. Unfortunately, in each of these experiences, seeking more relevant teaching had unintended adverse consequences.

Participants' concerns about abstinence-based teaching and risk-focused teaching, mentioned in Section 4.2.2, seemed particularly acute for gay, lesbian or bisexual participants. Denominational schools were identified as particularly heteronormative. Rowan (aged 16), who identified as gay, was critical of the influence of religion on sexual health education content, describing denominational schools as presenting heterosexual relationships as the only legitimate relationships, pursuing "their own agenda to completely tarnish all homosexual relationships". Further, he recounted that: "the only teaching we ever got on homosexual relationships was: 'Yeah, there are homosexual relationships but we as Christians believe that's morally wrong'". Rowan's friend Liam, who also identified as gay, but did not attend a denominational school, observed that his school provided no positive, practical information about anal sex:

> I think it's quite ironic when we were doing STIs obviously one o' the big ones was HIV/AIDS an' they were saying that that's more commonly transmitted, like, through the likes of anal sex but you never actually taught us about anal sex. Like you know, like the safety side, using lubricant, whatever. An' it's like if you're going to tell us "Here's the dangers" at least tell us how to prevent it.

(Liam, aged 16, paired with Rowan)

This again illustrates the finding, introduced in Section 4.2.3, that sexual health messages are often not supported with adequate practical information.

The accounts of Abbie, Liam and Rowan illustrate how education can undermine non-heterosexual relationships, both implicitly, by failing to provide relevant information, and, potentially, in more explicit ways. Emma, who identified as heterosexual, described how heteronormative teaching could impact attitudes:

> And when you're in school, they dinnae really talk you through the difference on that. Like some teachers are against it, some are like: "Go for it." And it's quite like, when you find oot somebody is, either gay or straight or whatever, you're kinda like, you don't know how to take it anymore. Like, especially in the schools you're like: "Oh that person's a lesbian, you dinnae want to get changed in front of her?" And it's all these snide remarks, and it's like, you really need to learn aboot what's going on.
> (Emma, aged 17, paired with Mia)

Emma highlighted how heteronormative teaching could have negative consequences, beyond adequately preparing individuals, by fuelling confusion and stigma about sexuality. These accounts demonstrated how teachers' competence and willingness to engage with non-heterosexual relationships might influence understandings, perceptions and outcomes. The role of teachers and the learning environment more broadly are examined in the following section.

4.2.5 The learning environment: teaching quality, delivery mode and awkwardness of learning environment

As well as the content of their schools' sexual health teaching, participants discussed the environments in which teaching took place. Participants typically described receiving school-based sexual health education through traditional didactic teaching methods within personal, social and health education (PSHE) classes or religious education (RE) classes and, for a small number of participants, science or biology classes. Accounts of learning environments were predominantly negative, and teachers were typically perceived as 'awkward' and 'unqualified'. Most teaching was led by 'regular teachers' (e.g. maths teachers), which some identified as a major barrier to learning, highlighting shortcomings in

non-specialist teachers' knowledge, confidence and enthusiasm. Aaron and Michael encapsulated such concerns:

> Aaron: The teachers didn't really care about it…nah…I mean we got classes but…
>
> Michael: Like they done classes for it but they weren't really…
>
> Aaron: They weren't like educated on it, it was just like teachers who like done it…like maths teachers
>
> Michael: And they just make it up
>
> (Aaron and Michael, aged 19)

Michael demonstrated little confidence in his teacher's competence in teaching sexual health, suggesting that they neither followed a curriculum nor provided accurate information. Within four interviews, participants described situations where teachers' lack of enthusiasm limited pupils' education, for example by cancelling and neglecting to reschedule classes out of a desire to avoid the awkward experience of delivering sexual health teaching.

Most participants felt that school-based sexual health education should be distinct from other school subjects, and be delivered by external 'experts' or nurses. For example, Kara and Amy, identified teachers' existing professional relationships with students as barriers to students' willingness to engage:

> Kara: if we were in SE I'm not gonnae be like "aww, Miss…" like and then say something really embarrassing and then next week I'm going tae be like "Hi, can you help me pick my course choices," you know what I mean? Like…
>
> Amy: Yeah it's really awkward
>
> Kara: Yeah
>
> Amy: I think it is a bit awkward though 'cause you them an like cause we have like a professional relationship wi' her rather than, like, one where you want tae talk about that stuff with her, it's a bit awkward
>
> (Kara and Amy, aged 17)

This account implicitly identifies sexual health as an "embarrassing" topic that should be distinct from other school subjects and regular teachers. Kara later described a one-off sexual health conference conducted within their school and run by external staff as "the most useful thing in school", highlighting possible benefits of delivery within an 'out of class' context.

As well as questioning the people delivering teaching, some participants identified barriers created by group-learning environments and didactic teaching method. Nicola and Ralph felt that shyness and embarrassment prevented some from asking questions in classes:

> Nicola: like they ask dae you have any questions but some o' them are too shy to say so they don't cover it, I think they should just tell them
>
> Ralph: They should do more one-on-one because those things, it's always one person goes out and speaks to a whole class. "Do you have any questions?" And it's about you, just you. And there's a whole class there of people you know and people you don't, you don't want to embarrass yourself.
>
> Nicola: Just like…'cause obviously, could be like this question that people laugh about. How can you not know this or why would you ask that? It's just like it makes them a lot more nervous
>
> (Nicola, aged 17, and Ralph, aged 19)

Here, Nicola and Ralph identified how embarrassment could prevent individual's needs from being met within the class context, and suggested that teachers could avoid this by providing comprehensive information without being prompted by students.

While most participants agreed that sex education should be delivered by external 'experts' or 'nurses', some described experiences of such alternative education being provided at school. Another alternative way of delivering teaching is peer education, in which students receive teaching from older students, which was described by participants in two interviews, including Ben, Caleb and Dylan:

> Caleb: we get, like, sex ed from the teacher but it's not the same, 'cause it's kind of boring, 'cause you switch off
>
> Dylan: 'Cause it's the teachers
>
> Caleb: But when someone's only a couple of years older than you, you're kind of like yeah…
>
> Ben: More your age group
>
> Dylan: So you're a wee bit more comfortable about it
>
> (Ben, Caleb and Dylan, aged 17)

Dylan, Caleb and Ben seemed relatively relaxed discussing sexual health within school, which they attributed to peer education, which they valued for it being relatable. Dylan reflected that "it wasn't as awkward as you thought [laughing]".

While participants were typically critical of their experiences at school, some, primarily heterosexual males, recalled school-based sexual health education favourably, as a comfortable, and sometimes fun, learning experience. Craig and Darren credited their teachers with pitching lessons at a good level, combining seriousness with humour, and highlighted how preferences about learning environments might vary between genders:

> Darren: I think they did take it seriously, but they kinda, conveyed the, sort of, laughy sort of thing so that they could get rid of the awkwardness but I think everyone did learn, yeah…the teachers, they made, kind of, like, jokes round about, like, things an' that and it really helped as well.
> Craig: Yeah
> Darren: Like, it helped get rid of the awkwardness especially because there were girls an' that in the class so I think that really helped
> Craig: Yeah I think the girls were more awkward 'cause the boys were all pretty boisterous about it [laughing]
> Darren: Yeah [laughing]
> Craig: Pretty happy to do everything [laughing]
> (Craig, aged 16 and Darren, aged 17)

For Darren and Craig, a balance of seriousness and humour mitigated "awkwardness", which they considered particularly valuable in a mixed-sex class. This account highlights the importance of skilled educators, as well as implicitly suggesting that mixed-gender classes may not benefit males and females equally. This perspective was supported by the accounts of some female participants, who tended to focus on embarrassment within classes and characterise the class context as unconducive to learning about sexual health, which they often attributed to the presence of boys. For example, Kara (aged 17) described "very immature boys" undermining classes by not taking them seriously, and Alice (aged 18) explained that the presence of boys hindered her ability to ask questions, as she: "would have had a bit more confidence to actually ask questions without being embarrassed about it". Lily and Skye echoed these sentiments, and advocated separating girls and boys to foster comfort and confidence:

> *What do you think sexual health education in school should be like?*
> Lily: They should put it intae PSE, but I think they should like, they'd have to separate boys from girls I think. I think they'd need tae
> Skye: 'Cause I think you feel more comfortable talking aboot it…with other girls
> (Lily and Skye, aged 19)

This account underlines the importance of the learning environment and highlights a potential driver of gender inequality in sexual health literacy.

As well as feeling less comfortable within sexual health class environments, female participants appeared to exhibit less confidence in their sexual health knowledge. When asked where she and Sophie (aged 18) had learned about sexual health, Keira (aged 18) paused before saying "to be honest with you…it's not something that I really know a lot about", and the two girls attributed this to poor learning experiences at school. Participants who reported particularly negative school learning experiences typically: expressed dissatisfaction with their levels of knowledge; voiced frustration, confusion and anxiety; and were less confident in their abilities to seek sources to improve their own knowledge. Typifying this, Amy, who described negative experiences of learning about sexual health at school, seemed particularly unsure and often unnerved, especially during the online activity:

> Kara: Right. Amy, put yourself in this scenario
>
> Amy: I wouldnae have clue, like, if you go an' get tested
>
> Kara: Right, no, Amy, you had unprotected sex last night and you're worried and that about STIs. What are you gonnae dae?
>
> Amy: Cry, probs I dunno
>
> Kara: Right
>
> Amy: I dinnae ken!
>
> (Amy and Kara, aged 17)

Such uncertainty appeared to be more common amongst female participants, while most male participants tended to exhibit more confidence in both their sexual health knowledge and their ability to increase their knowledge through other sources outwith school. However, it should be noted these are self-reported data, which might reflect desires to be seen as sexually knowledgeable, particularly in front of peers (explored in Section 4.3).

As illustrated in the preceding sections, participants typically had negative experiences of school-based sexual health education, although experiences tended to vary by gender, sexual orientation and the type of school attended. Participants recounted varying levels of confidence in their own sexual health knowledge, which again varied by individual characteristics. Participants' responses to dissatisfaction with this traditional sex education varied. Some associated negative school experiences with motivation to seek information elsewhere, particularly online (this will be described in Section 4.4).

4.3 The peer and friendship context

The role of friends and other peers in providing peer support regarding sexual health emerged as a key aspect of participants' sexual health literacy environment. It should be noted that, as the sample primarily comprised participants who had agreed to take part in paired interviews with friends, the sampling strategy may have been biased towards young people who were positively disposed to discussing sexual health with friends.

It should also be noted that an intrinsic prerequisite of peer support is access to peers, and some participants indicated that they did not use friends for information because they did not have close friends. Three such participants described family members as their primary sources of sexual health information. Each of these participants (Tina, aged 18; Matthew, 17 and Charlie, 18) had additional support needs, and stated they would actively avoid using the internet to seek sexual health information. Tina, described approaching her mother and her mother's friend for any health information, primarily because they were trustworthy and well-intentioned: "cause you know, cause like, they'll probably want tae like look out for me and try and keep me safe". In contrast, many participants perceived family members, and particularly parents, as a 'last resort' in worrisome situations. However, Tina, Matthew and Charlie's accounts demonstrate that participants' without peer support networks valued informal social support.

Participants' discussions and behaviours shed light upon the various benefits of, drivers of, and barriers to friend and peer support in relation to sexual health, and these are examined in this section.

4.3.1 Exchanging knowledge and sharing experiences

Participants described learning about sexual health from friends, and some predicted that they would continue to do so in future. Participants typically identified specific individuals that they felt comfortable with and were helpful, knowledgeable or experienced. Kyle described Josie as "his Google", whom he consulted regularly if worried or seeking advice:

> *So what would you do if you were looking for information about sexual health?*
> Josie: Google it, probably
> Kyle: Aye, Google. Or ask her probably
> Josie: Or ask me
> Kyle: Aye she's the expert

(Kyle and Josie, aged 19)

Similarly, Martha (aged 16) explained that she had learned mostly from her friends, particularly from those with specific experience of relevant issues who could provide experience-based advice, which she valued above information learned online or in school. Similarly, Lily (aged 19) identified the value of 'personal' support: "I'd give friends my personal opinion rather than them going online. And I'd speak from like my experience and stuff…rather than going online and finding stuff that isnae personal tae you".

While some valued friends as sources of information, others perceived their friends as being equally inexperienced, and therefore not helpful. For example, Jess and Amelia, appeared to value the perceived authority of online information over the limited knowledge of their friends:

> Amelia: It's quite trusting because it's like some, it's got like some experts on it and like you can't ask your friend everything…cause they'd be like 'I don't know' like….
> Jess: Yeah I know
> Amelia: They'd be like 'look it up!'
> Jess: Yeah
> Amelia: There'd always be that usual like 'look it up'
> (Jess and Amelia, aged 16)

Here, Amelia indicats that, not only would a friend likely be unable to answer her questions, but they would likely suggest she searches the internet instead. This sharing of incompleteness of knowledge demonstrates a degree of trust, as well as shared learning and reassurance. This account also illustrated how different sources of sexual health information interact and overlap, with the online context being an ever-present part of the landscape of sexual health support.

Some participants described occasions when they used their knowledge to inform or correct friends, and some demonstrated such behaviour within the online activity. For example, whilst seeking information about safe sex during the online activity, Reece was concerned at Lucy's unawareness of risks related to anal sex:

> Lucy: …I suppose you could just tell your friend to have anal sex.
> Reece: Wow. Wow.
> Lucy: Can you still get an STI from anal sex?

Reece: Yeah, of course you can.

Lucy: [laughing] Oh. Was that a really silly question?

Reece: Yes.

Lucy: Okay. [laughing]

Reece: That's actually worse, there's a higher chance.

Lucy: Sorry. Really? Why?

Reece: Think about it.

Lucy: Because your bum's dirty?

Reece: Not only that, you usually, like, cut… like, imagine like a small hole.

Lucy: No, I don't want to. [laughing]

Reece: No, no, no, no, no. This is serious. Imagine a small hole and you put something big and the hole's going to, like, rip.

Lucy: Yes.

Reece: Open wounds. I'm guessing it hurts.

Lucy: Me too. [laughing]

Reece: [laughing] But yeah, that's actually worse.

Lucy: Okay, that makes sense.

(Lucy and Reece, aged 17)

In this excerpt, Reece demonstrates both his own knowledge on the topic and his ability to provide his friend with a relatively detailed, easily understood explanation, while Lucy exhibits trust in her friend's information. On another occasion, whilst looking up information about protective strategies, Darren (aged 17) also seemed surprised that condoms were necessary for anal sex and his friend Craig (aged 16) emphasised this to him: "Now you've tae use a condom no matter what you're doing, right end of."

For some participants, possessing sexual health knowledge seemed to make them feel protective of their peers, and responsible for dispelling myths. For example, Ruth and Joe, who had both taken part in peer education projects through their local youth organisation's involvement in their school, discussed sharing their knowledge with other young people to dispel myths:

I find it funny. There's, like, so many people that, like, like they've – like, if they're talking about sex and, like, they speak about like the pull-out technique and they aren't, like, (Oh, yeah) – honestly, the amount of times I turn round to them like "You're saying this to somebody who volunteers at the C-Centre [local youth

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organisation]." I was like "That does not work." Then go on a big massive lecture, so, yeah, it's like – it's something that, yeah, obviously gives you more knowledge but gets you dead protective about other people with it as well.

(Ruth, aged 16, paired with Joe)

Ruth's account suggests that her knowledge made her protective of others, highlighting how improving one individual's knowledge can benefit others within their peer network, as well as alluding to performative aspects and kudos associated with having better knowledge. While being empowered to dispel misunderstandings in others can exemplify the power of peer support, this impulse could also propagate myths. Michael and Aaron were particularly reluctant to admit to uncertainty about sexual health, and Aaron repeatedly espoused the importance of being aware of myths, but at one point he revealed his own incomplete understandings while attempting to demonstrate his awareness:

Aaron: But if something's silly but like like say you received a blow job and you think you had an STD out it

Michael: Yeah yeah right

Aaron: It would be such a waste of time booking an appointment and that appointment could be done and you know young kids still think they can get it that way and they'd waste time...it's about getting the information

(Aaron and Michael, aged 19)

Here, Aaron communicates a misconception that could conceivably lead to the avoidable transmission of an STI and failure to seek medical help, and highlights how peer support is only as good as the information being exchanged.

4.3.2 Gendered perspectives on seeking and providing support

Sometimes participants' motivations for seeking support from friends appeared to be based on an expectation of comfort and supportiveness, rather than the value of knowledge or experience. Seeking and providing personal and emotional advice and support was particularly valued by female participants, who typically conveyed a sense of mutual supportiveness, as exemplified by Laura and Courtney:

Laura: we talk about everything

Courtney: yeah we do

Laura: If we don't know something we'll help each other out

Courtney: Try and figure it out

Generally, female participants seemed more disposed to discussing relational and emotional aspects of sexual health, and valued their friends as sources of reassurance and support to ease anxieties and decision-making. Due to this, friends were often considered as first points of contact when worried about sexual health. Keira and Sophie typified this:

> Keira: I'd probably just talk to one of my friends first
>
> Sophie: Yeah friends
>
> Keira: 'Cause I probably wouldn't go straight to like…
>
> Sophie: the doctors
>
> Keira: …my doctors or clinic, I wouldn't…it would need to be something serious…I'd talk to my friends first and if they thought I should then I would go see…I would eventually go…I think
>
> Sophie: Yeah, probably the same
>
> (Keira and Sophie, aged 18)

They suggested that friends could give them confidence and help them to determine whether they needed to seek further help. A small number of female participants described experiences of providing practical support to friends to overcome barriers within sexual healthcare contexts. Abbie and Sinead both described experiences of accompanying friends to doctors and clinics. For example, Sinead described a situation in which she supported a friend:

> Sinead: Yeah. One of my old friends she came like crying to me one day saying, "My boyfriend's just telt me he's got chlamydia, I'm scared to get tested" and all this. And I was like, "Calm down." I was like, "I don't even know about any sexual health clinics." And I was like, "Just go to your doctors." "I'm too scared. I'm too scared." So I phoned the doctors and asked if they could get like a different doctor from her own doctor. And I went with her and they just gave her tablets and she was fine after a couple of weeks. Yeah. And I was just like, "Calm doon." She was on the phone in tears like, "What if I cannae have weans." And I says like, "Calm doon, like…

Abbie followed Sinead's story with an account of consulting with a doctor on behalf of an anxious friend. These experiences highlight the fear and anxiety associated with visiting doctors and communicating about sexual health, and the role that friend support can play in overcoming such barriers.

In contrast to many of the female participants, male participants were typically unenthusiastic about earnestly discussing sexual health with friends. When they did describe discussing sexual issues with friends, they typically described playful, flippant conversations. Jacob and Connor typified this:

> Connor: you'd talk to your friends about it but you'd never, it would never really be serious…it would be more joking about it
>
> Jacob: I wouldn't ask him or my other pals
>
> Connor: Don't think I ever have naw
>
> (Connor and Jacob, aged 18)

This playfulness was particularly apparent in heterosexual males, who typically joked throughout the interviews. Darren (aged 17) was particularly playful during the interview, laughing often, but also seemed uneasy with some topics discussed; at one point he described that he would be "too ashamed" to admit to a friend that he did not know about sex (before clarifying that he did), and seemed embarrassed when his friend Craig (aged 16) described the pair's lack of knowledge about STIs, explaining: "makes it sound wrong but he didn't know what herpes was and I didn't know the effects of syphilis, so, we just look at images". Thus, some of the playfulness may reflect reluctance to make the limitations of sexual knowledge and experience known. As noted in Section 4.2.5, most male participants described themselves as relatively confident in their sexual health knowledge, in comparison to female participants.

At times, male participants appeared keen to display their sexual experience and awareness, consistent with a normative masculine identity of sexual confidence and competence. Emma (aged 17) and Mia (aged 18) discussed boys and girls having different approaches to talking about sex, characterising boys as boastful about sexual activity, and more likely than girls to use slang terminology, such as 'shag', 'slag' or 'slut'. Aaron (aged 19) used such language on multiple occasions, and highlighted his sexual experience to his friend Michael, stating he was "doing three birds [females] a month". Aaron and Michael also shed light on different gendered expectations in relation to having sex, with later initiation of first-time sex being more accepted for young women. Aaron stated: "It's awright for girls to do that, it's quite hot...not for guys though...". This draws attention to the possible influences of performative masculinity and gendered expectations of sexual activity as barriers to openly communicating about sex and sexual health with friends. Such exhibitions of knowledge and

experience appeared to be more about status and identity construction than knowledge transfer as a practical or emotional solution to sexual health information and support needs.

4.3.3 The role of embarrassment and stigma in peer support

Despite participants primarily taking part in the interviews with friends, which suggests some level of comfort with discussing sexual health with friends, some participants raised concerns about, and identified barriers to such support. Amy, who described talking about sexual health as "really embarrassing", preferred less personal information-seeking:

> *And what do you think you'd do?*
> Amy: I'd probably just Google it, find oot for myself
> Kara: No' even speak tae me, no?
> Amy: Eh yeah…maybe
> Kara: I doubt that [laughing]
> (Amy and Kara, aged 17)

This exchange provided some insight into their friendship, with Kara exhibiting awareness that Amy would not approach her about sexual health issues, and gently teasing her for it. Amy described being very reluctant to use sources that necessitated talking to anyone about sexual health, and careful use of the internet was a tactic for avoiding this (discussed in Section 4.4).

Certain topics seemed to cause participants to be hesitant to seek support from friends due to stigma, particularly sexually transmitted infections, perhaps influenced by moral perceptions. Thus, while many participants described being comfortable discussing sexual health or exchanging knowledge with friends, some appeared guarded while doing so, appearing to distance themselves from personally needing sexual health support or services. On some occasions, participants, such as Ralph and Nicola, mentioned local sexual health services, but ensured that their friends knew that they had not personally needed those services:

> Ralph: Clinics in South Lanarkshire... That's literally a five minute walk from here.
> Nicola: So you just…
> Ralph: Oh yeah, I know where it is. I've not been, I'm just saying.
> Nicola: I went to a clinic once… Wasn't for me… it was one of my pals to get the implant.

(Nicola, aged 17 and Ralph, aged 19)

Within this example of Nicola providing support to a friend, both Nicola and Ralph were quick to make clear to each other that they had not needed to use sexual health services, which may highlight the role of stigma in stifling communication about seeking sexual health services. Barriers to accessing sexual health services will be discussed in greater detail in Chapter 6.

4.4   Using the internet to learn about sexual health

In addition to school and friends, the internet emerged as a key source of sexual health information. Most participants cited the internet as their current main source of sexual health information. Typical responses to the question 'what would you do if you were looking for information or advice about sexual health?' included "yeah I always go to the internet" (Claire, aged 17) and "just Google it usually" (Connor, aged 18). The internet was characterised "natural", "obvious" or "automatic" first port of call, particularly for teenagers:

> *So what would you do if you were looking for information or advice to do with sexual*
> *health?*
> Amelia: I'd go to the internet
> Jess: I think that for like anyone of our age, it would be like natural instinct to like
> check the internet first
> Amelia: Yeah you would just look it up
> (Amelia and Jess, aged 16)

Some participants alluded to the internet being intertwined with young people's identities, with "like ninety-nine percent of like teenagers now like using the internet" (Courtney, aged 17). However, some stated they actively avoided using the internet for sexual health information. These differing experiences and attitudes towards the internet as a source of sexual health information will be drawn out within this section.

This section will firstly describe participants' motivations for seeking sexual health information online, and examine what types of sexual health needs the internet was perceived as suited to addressing. The section will go on to describe what participants valued about using the internet for sexual health information and support, and which aspects they were wary of. These descriptions will illuminate both the drivers of sexual health

information-seeking online, and factors that may facilitate and obstruct effective use of the internet for sexual health information.

4.4.1 What sexual health needs did participants use the internet to address?

Most participants described previous experiences of seeking sexual health information online, with varying motivations. Participants primarily described experience of using the internet to seek specific sexual health information in response to significant concerns, for example about contraceptive use or STI symptoms. Alice and Cleo typified this approach:

> *Have you ever used the internet to learn about sexual health?*
> Cleo: The only thing I could really say is 'cause like I've got the coil so I would look up stuff to do wi' that. Before I wouldn't really have done that I don't think. I think only really if you've got a scare you do something like that
> Alice: Yeah, symptoms, you look up
> Cleo: Yeah
> (Alice, aged 18 and Cleo, aged 19)

While many participants, like Cleo and Alice, viewed online sexual health information as a resource to be used in reaction to a specific concern, other drivers were discussed. Some described using the internet to 'self-teach', to confirm or expand general sexual health knowledge due to their needs not being satisfied in school. As described within Section 4.2, these negative experiences were particularly prominent for participants who attended denominational schools and those who identified as gay, lesbian or bisexual. Indeed, these participants tended to describe turning to the internet to learn. Liam typified this approach:

> So I find that, you know, my knowledge is like reading online like going on to likes you know Pasante's or Durex, whatever their websites. That's mainly how I've got my knowledge…more just self-taught myself 'cause the school couldn't do that apparently...
> (Liam, aged 16)

Liam's friend Rowan, who also identified as gay, went on to provide a similar account:

> Rowan: Yeah I've learned almost everything I know from online or here [LGBT youth group] But, I mean, we did cover, you know, STIs an' all that in my school, you know. But not on a sexual basis though, just 'this is what it is, this is what it

does'. But that's all…Everything else I've ever learned was either through my own curiosity thinking 'Right, I haven't been taught. I need to self-teach now'.

(Rowan, aged 16)

Thus, Liam and Rowan identified their negative experiences of learning in school, which failed to meet their information needs with uncomprehensive, heteronormative content, as a driver to self-teach. Both participants described using the internet (as well as their local LGBT youth group) to do this, with Rowan in particular valuing the private nature of the online environment.

Some participants described using the internet to supplement information learned elsewhere, or to satisfy curiosity. Connor (aged 18), who attended a denominational school which he deemed to have provided 'one-sided' information about sexual health, recalled accessing Wikipedia to supplement sexual health classes: "sometimes when you'd read about it in there and I didn't think I'd been given enough information about it, I'd go what is that and I'd go check out about it myself, just cause I'm curious". Such accounts were not unusual, highlighting the possible role of negative or incomprehensive experiences of traditional sex education as drivers for seeking sex education online.

Participants described using the internet to seek assurance about sexual practices, behaviours and norms. For example, Maeve and Leah, during the online activity, recalled having used the internet to look up information about having sex for the first time:

> Leah: …oh my goodness, I've literally searched…
> Maeve: What did you search?
> Leah: I was like searching about sexual diseases and stuff. I feel like that's what people are nervous about when they…
> Maeve: Yeah for like the first time, they're nervous of what's gonna happen
> (Leah and Maeve, aged 16)

Some participants, particularly males, described accessing online pornogrhapy as a way to seek assurance about sexual norms and to learn about having sex in 'real life'. Participants across the sample tended to perceive pornography as a learning resource for males, but not females. Keira and Sophie typified this view:

> Keira: Guys probably use porn
> Sophie: Yeah guys do

Keira: Yeah they probably look up that more than girls do…cause I think girls would just kind of like…worry more and just like look up specific things whereas guys would just kind of go to that

(Keira and Sophie, aged 18)

Here, Keira suggests that girls have specific concerns and information needs, while boys' more general information needs can be satisfied by pornography. Indeed, some male participants presented pornography as an information source. During the online activity, Aaron and Michael recommended watching pornography to learn about first-time sex:

Aaron: I'd tell him to watch porn

Michael: You can't search for that…

Aaron: I'm not saying that

Michael: I'm sure they'll already have that

Aaron: Watch porn, get tips, do it…Do you think she'll give me into trouble for that?

Michael: No...it's an honest opinion int it

Aaron: I'd tell them to go and watch porn

Michael: Probably better cause you can't exactly demonstrate it for them...they need to watch...

(Aaron and Michael, aged 19)

This exchange raises the idea that pornography's visual nature makes it useful in preparing for real-life sexual encounters. Furthermore, Michael's hesitance at searching for pornography during the online task highlights the inherent conflict of pornography being both a potential information source and an illicit material. When providing feedback on the online activity, Aaron said: "we weren't taking the piss or anything but we'd tell them to watch porn to get tips and to see how it's actually done live". Similarly, Connor and Jacob (aged 18) both thought porn would be useful, with Jacob stating "it's a much better indication of what it's actually like", although Conner later mentioned that "porn's kinda not realistic". Thus there was some recognition of differences between pornography and 'real-life' sexual encounters, although they identified pornography as the best way for young people to learn about sexual encounters, regardless of realism.

A number of participants exhibited their critical health literacy skills in critiquing the influence of pornography on young peoples' understandings and attitudes. Sisters Emma and Mia discussed their perceptions of the influence pornography exerts on boys:

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Emma: Quite a lot of the influence on the internet, I think. Like, internet and…

Mia: Boys and pictures, and porn for boys

Emma: I think that's a big thing in boys though. 'Cause like, I dinnae really ken much lassies that are intae like porn and stuff like that but like, pretty much every boy that I ken is at least watched it once, and like, they all hey like photies of women w' their boobs out and stuff, like, so I think that's a big influence for males specifically.

Mia: Quite a lot of the pictures as well, and like, a lot of it is your ideal skinny supermodel, dolled-up lassie, and I feel like in the real world there's only maybe aboot a thirty percent that actually look like that. And probably none of them want to be wi' you.

Emma: And lassies that are insecure aboot that, that's what makes lassies really insecure. Like the images that boys find

(Emma, aged 17 and Mia, aged 18)

As well as negatively potentially creating unrealistic expectations for boys, this exchange illustrates Emma and Mia's critical understandings of how, as well as creating unrealistic expectations for boys, pornography can also be harmful to girls. Emma also indicated that young people misunderstand the artificiality of pornography, stating that "they don't realise that the man and the women are both porn stars". Mia worried that pornography could pressure young people into unwanted sexual activities, leading boys to "expect much mair fae lassies", and that "they always expect lassies to dae stuff like, anal and that, and like, some lassies are like…because they've seen it filmed and that and they think that's supposed to happen". Perspectives like these demonstrated participants' critical sexual health literacy in considering how pornography may influence expectations.

4.4.2 Perceptions of the internet as convenient and accessible

One of the primary advantages of seeking sexual health information online mentioned by participants was convenience of access, with most participants describing the internet as the most convenient and easily-accessible source of sexual health information. Lucy (aged 17) typified this, highlighting the omnipresent, instant availability of internet access on mobile devices: "yeah, uh, I think it's just because it's like so easily accessible. I mean it's just like there. I mean you can use it on your phone". No participants described experiencing barriers to accessing the internet, and they typically perceived the internet as accessible to all.

Just two participants expressed concern about others having limited internet access.

Samantha (aged 17) downplayed risks of people having no internet access at home by highlighting the free internet access in public libraries and the range of other information sources available. However, Joe (aged 16) expressed more concern about access inequalities, suggesting that, if the internet is not universally accessible, then schools remain the most important source of sexual health information as they are "somewhere, like, you can guarantee everyone's gonna get the information that – so, if you put it on, like, Facebook, you know, online stuff, not everyone, like, might not have access to it.". Aside from Samantha and Joe, participants either overtly or tacitly indicated the belief that all young people have access to the internet. However, this assumed universality of access, did not necessarily extend to being happy or confident in using that internet access for sexual health information and support. Participants' attitudes towards using the internet for such information and support will be examined in Chapter 5.

4.4.3 Support and individual nuance in online information

Many participants felt that online sexual health information tended to exacerbate worries and instil fear. Whilst Martha and Samantha reported regularly seeking information about both general and sexual health, they highlighted risks of online information causing distress and uncertainty:

> *So do you ever use the internet to look up information about your health?*
> Martha: Oh, all the time
> Samantha: Mm-hm. Yeah
> Martha: I'm like the worst for that. Like, I self-diagnose myself with everything [laughing]…it's really bad, like so bad […]
> Samantha: Sometimes when I look up something…to see if I've something wrong with me. But they seem…it sounds…they make it sound a lot more threatening than it actually is
> Martha: It makes me feel so much more paranoid though. Really like, really bad. I Google something about my sexual health, and it was coming up with stuff like 'you're allergic to semen'…just mental stuff. And I'm like 'Wow! Are you sure?'
> (Martha, 16 and Samantha, 17)

Others described similar situations in which seeking sexual health information online heightened anxiety by causing misdiagnoses. Combined with this was a perception that, while the internet can provide factual information, it does not provide the necessary support

to ease the anxieties that that information might create. Jess and Amelia encapsulated this perspective, suggesting that personal support is more effective:

> Jess: I think it's more of like a support thing as well…yeah it doesn't really give you like any support, because it's not a person
> Amelia: Yeah and it's just kind of like fact fact fact…I suppose it's meant to be like that
> (Jess and Amelia, aged 16)

For some, the internet's potential to exacerbate anxiety and lack of personalised and specific advice led them to favour face-to-face information seeking. Melissa typified the view that there are limits to what the internet can provide:

> I guess, like, if you're Googling something, like, if you were, like, maybe if you were wondering, like, what contraception would be good for you or something like that. You can't get that off the Internet. Like, you wouldn't really be able to figure that out, you would need to actually go into your doctor's and find out about that, like. So, yeah, I think that, like, the Internet doesn't have everything that you need to know. It's like if you're already using a contraceptive or if you're, whatever, like, then that'll be fine or, like, with STIs, like, people, like, try and Google whether they've got them or not and you can't 'cause Google can't tell you if you have it or not. Like, sometimes like that you have to, obviously you go to the doctor's, but I think that it does have some answers that you need
> (Melissa, aged 16)

From Melissa's perspective, the internet provided useful, but non-comprehensive, information, with the implication that online information is best used in conjunction with, not as a replacement to, traditional health services, particularly regarding complex issues such as diagnosing STIs. This sentiment was shared by others, such as Aaron, who specifically identified the internet's shortcomings in providing personalised advice and in diagnosing and solving problems:

> I hate the internet, it's crap…it's so bad, I've used the internet so many times and I've just patched it…I was just like... every time I've got a problem I just go straight to my doctor", explaining that, on the internet, "there's so many different things, you could type only one thing in and then like ten different things'll come up and it's just so bad and you'd rather just go to someone that's like specific and will just tell you exactly what's wrong with you and like you can get a test done.

(Aaron, paired with Michael, aged 19)

Here, Aaron typifies the perspective of some participants that a single authoritative information source is preferable to the internet, highlighting the difficulty of appraising a range of different online sources and identifying the best information to follow. While some participants valued the vast quantity of sexual health information available online, others perceived it as a barrier to finding useful information.

4.4.4 The anonymous nature of the internet

Many participants valued the relative anonymity provided by the internet, describing online information seeking as a means of avoiding embarrassing face-to-face discussions, and feeling comfortable saying things that they would hesitate to say to doctors or friends in person. Illustrating this, Amelia (aged 17) described saving "weird" topics for the internet, while Rowan valued the freedom of being able to receive anonymous advice online:

> So, I'll just put in a question, they'll answer it, they're actually willing to help but I'm probably never gonnae see them again. That puts that complete safety barrier on me an' I'm free to let loose any problems I have
> (Rowan, paired with Liam, aged 16)

Here, Rowan expressed a typical perception of the online context as safe from judgement, unlike face-to-face encounters. Some did not find discussing sexual health with other to be problematic (which may be partially due to the sampling strategy, as discussed in Section 4.3), but recognised this as a common barrier for other young people, and one that the online environment could alleviate. Melissa (aged 16) explained: "But I guess….because I feel comfortable speaking to people. Like some people wouldn't so I think they would prefer to message someone online 'cause again, like, they don't see you, so it's more private".

While some participants regarded anonymity and privacy as benefits of seeking information online, some expressed concern about privacy online. Amy explained such concerns to Kara:

> Amy: I think it's quite risky looking it up online though 'cause I don't really want that in my history either, like people seeing what I've... but then it's also that you have to watch how you word it 'cause anything could pop up. It's a bit...
> Kara: I think it's quite funny actually. Sometimes when you hit Yahoo some o' the things it's just funny… [overtalk] it's hilarious. [laughing]

Amy: Like, if I have a problem and I, like, Google it I don't want my network provider knowing what I'm Googling or anything. Like, that worries me a wee bit but...

(Amy and Kara, aged 17)

Amy worried that web searches could return 'anything', alluding to concerns about risqué or explicit online content, and had previously also described being embarrassed about talking about sexual health. While she described the internet as her primary source of information due to anxieties about discussing sexual health, she still harboured concerns about the online environment. Whilst Kara did not seem to share Amy's concerns, others did; Charlie, who actively avoided using the internet, explained:

I've never seen like look up the… like they kinda things. I've always been too like nervous and embarrassed about it. I've never looked. I'd rather ask like a parent or like no' like, no' a clinic, it's…I think it's, for me it's security. Not secu-, you're, not security, it's… I don't know, it's just I don't, I do trust the internet it's just in case…privacy I suppose.

(Charlie, aged 18, paired with Matthew)

Charlie, who attended a group for young people with minor additional support needs, explained that he had never sought sexual health information online due to nervousness, embarrassment and worries about security and privacy; he preferred face-to-face interaction with trusted people, like his parents.

Overall, participants tended to perceive the internet as broadly advantageous due to the anonymity it provides, but at the same time, bringing with it several unique privacy concerns. In Chapter 5, I expand upon this by exploring participants' experience of negotiating the advantages and disadvantages of the internet as a sexual health information source.

4.4.5 Issues of trust and reliability

In addition to concerns about the potentially unsupportive and insecure nature of the online context, participants discussed considerations about the reliability and trustworthiness of online sexual health content. A number of participants described having little concern about reliability, as typified by Kyle (aged 19), who stated "I don't really think about it". However, most conveyed some doubts. Some described being constantly wary of the untrustworthy nature of the internet, and prioritised reliability in information-seeking. As Ruth (aged 16) asked: "But you never do know on the internet do you?" to which Joe (aged 16) replied:

"You just never do". Nicola (aged 17), paired with Ralph, described reliability as having become a greater priority for her over time: "when I was younger like I never really used to like consider like different websites. I would just like see something and then probably laugh childishly, which I still do now, but I'm a lot more, you know, aware of what I'm going on and like okay this'll probably be the most accurate thing about it. So… [laughing]".

Participants' perceptions of the reliability of online sexual health content varied, with some preferring to avoid online sexual health information altogether, whilst others adopted strategies to help find reliable content (described in Section 5.3). Despite being active internet users, Mia (aged 18) and Emma (aged 17) exemplified the former preference, reporting frequently using the internet for social networking and searching for general information, but avoiding online sexual health information. Emma stated: "Google is my best pal for everythin'…even if I want to find a spelling of something I use Google", but she said neither of them would use Google Search for anything 'too deep'. Emma and Mia preferred talking to someone they trusted because the internet might confuse them:

> *And so have you, do you ever use the internet to learn about sexual health?*
> Emma: No' really.
> Mia: No.
> Emma: I feel if we were to use the internet I think it would just puzzle you even more. Right.
> Emma: Because it's so upside down, like one minute it's right and then the next minute it's wrong. So it's like..
> Mia: Like basically Wikipedia. [laughing]
> Emma: It's, it's lying to you basically [laughing]
> (Emma, aged 17 and Mia, aged 18)

This exchange highlights issues about the trustworthiness of specific online sources and online content in general. Similar concerns were echoed by other participants, who also described experiencing difficulties finding reliable information and expressed concerns about encountering information that is false, misleading, risky or explicit (explored in more detail in Chapter 5). The three participants with additional support needs all described worrying about finding accurate information online. Tina said:

> Because like, you never know, I mean, there's like – if there was like so many websites about sexual health then basically it'd be hard to find what one that, to like,

actually was the truth. So so, you're just better just to, just look and maybe just basically go, tell you, just go to your GP or something

(Tina, aged 19)

Tina also described preferring to go to her mum if she needed any advice, and perceived this as safer than going online.

Conversely, Courtney and Laura distrusted the online environment in general, but nonetheless described the internet as their preferred source of sexual health information. Courtney described often looking up symptoms, but expressed misgivings about the information she found:

> Courtney: I just don't believe it
>
> Laura: Yeah
>
> Courtney: I don't believe it, I just like checking. But it's not, nothing's right on that
>
> Laura: No no
>
> Courtney: So I'd never go to the doctor after I check it just because I don't believe what it says
>
> (Courtney and Laura, both aged 17)

Both Courtney and Laura described particularly negative experiences with healthcare professionals, and seemed to feel that they had no choice but to seek information online (the role of the healthcare context will be explored in Chapter 6).

4.5   Summary of findings

Participants varied in their learning experiences, their approaches to learning and their preferences for seeking sexual health information. Participants described learning from a diverse range of sources, of which the main three were school, friends and the internet.

School-based sexual health education was a primary site of learning that had been experienced by almost every participant. Some described schools delivering relatable and relevant content within comfortable and supportive learning environments. However, participants more typically recalled negative experiences, characterised by insufficient and infrequent teaching of narrow content focused on risk and abstinence. Teaching was described as being generally didactic and information-based, promoting messages without providing the skills-based teaching to enable students to act on those messages or to

negotiate sexual health either online or offline. Participants who identified as gay, bisexual or lesbian and those who attended denominational schools seemed particularly disadvantaged, with information needs not fulfilled. Heterosexual male participants typically had more positive experiences than female participants, who, irrespective of sexuality, were more typically troubled by the awkwardness of the school learning environment. Participants' negative experiences of school were often reflected in both their low confidence in their own sexual health literacy and their stated understandings of 'sexual health', which were predominantly narrow in nature, with few participants acknowledging the positive and relational aspects of sexual health.

Participants discussed learning with and from friends, often mentioning specific individuals who they identified as helpful, knowledgeable or experienced. Female participants described relying on friends for informational, emotional and practical support, both offline and online, while male participants generally did not seriously discuss sexual health with friends. Self-reported experiences of friend support were corroborated by demonstrations of such support during the interviews and online activity. For some, possessing sexual health knowledge made them protective, compelled to dispel myths amongst their peers, although the information they offered was not always accurate. Support from friends was valued for reliability, trustworthiness, supportiveness, relevance and relatability, but participants identified disadvantages including friends' limited experience and knowledge; embarrassment; and difficulties in maintaining serious conversations about sexual health. Beyond peer support, three participants, all with additional support needs, described specific family members as primary sources of sexual health information.

Analysis identified the internet as most participants' current primary source of sexual health information, using it for general information, addressing specific concerns and learning about sexual norms or behaviours. Some, particularly those who identified as gay, lesbian or bisexual, appeared to be driven to use the internet in response to dissatisfaction with their school-based sexual health education. For some male participants, pornography appeared to play a role in learning about sexual encounters, and some participants highlighted their critical health literacy skills in critiquing the influence of pornography on young peoples' understandings of, and attitudes to, sex.

Participants shed light on various of facilitators of, and barriers to, using the internet for sexual health information. Advantages included familiarity, convenience and anonymity;

while potential disadvantages related to privacy, reliability and supportiveness. A minority of participants, including those with additional support needs, actively avoided using the internet for sexual health information, preferring other sources such as friends, family and community organisations.

By describing how participants discussed learning and seeking sexual health information, as well as their understandings of 'sexual health' as a concept and their confidence in their sexual health knowledge, this chapter provides contextual background to various aspects of participants' sexual health literacy. The online environment, which is ingrained within young people's day-to-day lives, emerged as the main current information source for most participants, albeit not relied upon in isolation. However, online sexual health information and support are not without challenges, and, therefore, it is valuable to explore in more detail: participant's attitudes to different types of online content; their approaches to finding useful information online; the obstacles they encounter in the information-seeking process; and the techniques they use to overcome those obstacles.

5 The online context: locating, understanding and evaluating sexual health information

In Chapter 4, I examined how participants described learning about sexual health, and their preferences for different information sources. This chapter focuses more specifically on interpreting and evaluating sexual health information within the online context, aiming to address research question 2: How do young people describe and experience seeking, understanding, evaluating and using online sexual health information?

This chapter has two inter-related foci, drawing on data from the different stages of data collection: i) how participants described seeking, interpreting and evaluating online sexual health information in their discussions during the 'traditional' interview stage of the research?; and ii) how participants experienced and negotiated online information searching during the online activity? Thus, while a major focus of this analysis was participants' individual feelings, perceptions and experiences of searching, evaluating and using online sexual health information, the software also enabled insights into different processes and searching practices involved. This section takes an individual-level perspective, focusing particularly on the young people's sexual health literacy, but also the broader factors influencing these processes.

Chapter 5 begins by describing participants' general internet use patterns, before going on to examine: their preferences for different types of online content; the strategies they used to locate relevant and reliable content in the online activity; and the problems they faced, and sometimes overcame, during information-seeking. Data from participants' descriptions and experiences of negotiating sexual health content online will be drawn on throughout each section. Data drawn from the online activity are identified as such when they are reported, in addition to being highlighted in purple text.

As described in Chapter 3, participants took part in an online activity within the paired interview. Participants were provided with two scenarios (detailed in Box 5-1) and asked to use a laptop with internet access to seek relevant information. This chapter examines participants' reactions to each scenario, including their perceptions of the suitability of the internet to address them.

Box 5-1. Online scenarios

Scenario One: You had unprotected sex and are worried that you might have an STI. Use the laptop provided to find information that will be useful to you.

Scenario Two: Your friend is thinking about having sex for the first time and would like some advice. Use the laptop provided to find information that will be useful to them.

5.1 General internet access and use

A short survey of participants' use of, and access to, the internet indicated that they all had access to the internet and used the internet, often through multiple platform and in various locations. During the paired interviews and online activities participants reiterated these findings, conveying nuanced conceptions of internet use. Participants' frequent use of, and even reliance on, the internet was encapsulated in this exchange:

> *Do you use the internet?*
>
> Liam: Oh yeah. Every single day
>
> Rowan: Every five minutes [laughing]
>
> Liam: The internet is part of us. I think it's just like an extension of us at this point. YouTube is like our brain, basically [laughing]
>
> Rowan: No, seriously. I spend ten hours on YouTube a day
>
> Liam: Yeah
>
> (Liam and Rowan, aged 16)

Here, Liam and Rowan uses humour to emphasise the role of the internet in their lives. A similar tone was used by Charlie (aged 18), who described struggling to reduce his internet use: "I've tried but it's not happening. I'm trying no' tae use it as much and get back out tae reality [laughing] talk tae people on the phone. It's no happening though".

Most participants described primarily accessing the internet on smartphones, and Courtney (aged 17) highlighted the importance of mobile internet access: "it's really bad 'cause my phone just broke, so I'm like, without internet and I don't [laughing] know what to do with myself". Participants also described accessing the internet on personal laptops (n=23); tablets (n=11); family laptop or desktop computers (n=8); games consoles (n=2); and school computers (n=1). Rather than devices being equivalent means of accessing the same online content, participants' device preferences appeared to depend on the context, purpose and

topic of their internet use. Many participants conveyed the idea of there being two distinct types of internet use: casual, everyday social media use; and serious, intentional information seeking activities. While distinctions were often drawn between use of social media and use of 'the internet', delineations were not necessarily strict, as typified in Melissa's reflections:

> Yeah. Well, I don't always use Google an' that but I'm always on, like, social networking. I like to go on Twitter and stuff and see what's happening, so, yeah. But I do it – I guess, like, if you think aboot it, like, if you went and looked on, like, your search history on your phone, like, you do actually Google a lot of stuff. Like, whenever you've got a question you just Google it. Like, just about anything, you just, like, Google it
>
> (Melissa, aged 16)

Thus, Melissa, initially identified Google as part of the internet distinct from everyday social media use, but then reflected that she accessed Google Search with a frequency comparable with her use of social media.

The perspectives described in this section indicate that the participants perceived internet use as a universal, everyday activity, but drew distinctions between different types of internet use, and between different aspects of the internet. Understanding these delineations may be important to understanding and improving online sexual health information provision.

5.2 Preferences for different types of online content

In the interviews and online activities participants discussed and exhibited preferences for specific types of content when seeking sexual health information and support online. These perspectives highlighted the variety of ways in which information can be presented online, and the heterogeneity of young peoples' attitudes towards those types of content. This section introduces participants' attitudes to specific content types, including the broad range of social media and user-generated content, in addition to interactive features, videos and images. Participants' preferences regarding the formality of information are also examined.

5.2.1 Attitudes to social media and user-generated content

Some participants identified advantages of user-generated content, such as blogs or chat forums, comparing them favourably to more conventionally 'authoritative' information. Online content contributed by users was seen by many as a source of individually-relevant

and relatable information. Joe and Ruth expressed comfort in being able to access such content:

> Joe: I Google – if something goes wrong, I Google it. Like, 'what does this mean?
> Ruth: Yeah, or you'll, like, Google a scenario and you'll be like "Okay. Somebody else has had this, alright.
> Joe: Yeah. It's not just me this has happened to.
> (Joe and Ruth, aged 16)

Here, Joe and Ruth identify deriving reassurance from knowing that others experience similar sexual health issues to them. Similarly, Amy explained how such content could ease teenagers' anxieties about the 'normality' of sexual health concerns:

> I think also there's a lot o' problems you get, like, teenagers or with anything to do wi' sex that you think 'Oh my God, I'm the only person that's got this, it's so embarrassing' whereas if you go on there you can see other people have got the exact same thing so, like, it's normal and, like, it makes it easier to talk to people about it 'cause you don't think you're weird or anything
> (Amy, paired with Kara, aged 17)

Amy, seemed particularly concerned about sexual norms, and expressed anxiety in relation to *Scenario Two* as she had not had sex and had worries about expectations. These accounts illustrated how user-contributed content online could alleviate fears and reduce feelings of being alone in worrisome situations, potentially in preparation for seeking face-to-face support about an issue. Melissa (aged 16) specifically expressed a preference for the 'personal touch' of blogs, which she compared favourably to the formality of NHS websites:

> "The blogs are quite good because, like, the NHS is just basically facts. Like, just tells you this is this, this is that, this is how you treat this, this is how you treat that. Like, you can get pregnant, know what I mean? So, like that, but then, like, blogs actually have from people's point of views, like, how they feel about it, how they know other people have felt about it and that. So, I think the blogs are good 'cause you get a more personal touch, you get how people are feeling rather than just facts 'cause that's all the NHS really provided. They don't actually, any comfort or anything, it's just, like, it's just information. But then, like, the blogs tell you how people are feeling and stuff, so, it's a bit better 'cause you, kind of, feel like they understand you a bit more" (Melissa, aged 19)

Melissa (aged 16) described these blogs as "kind of like speaking to someone else", and helpful in making decisions due to the relatable advice they present. She also highlighted the value of emotional advice, rather than purely factual information. Melissa's enthusiasm for blogs was not shared by all participants. During the online activity, Connor and Jacob (aged 18) typified this by rejecting a blog on first impressions, deciding instead to read a non-profit website, of which Connor remarked "it just looks kinda more plausible". Generally, different attitudes towards user-generated content emerged across the sample, with female participants in particular valuing relatable, personal content.

A minority of participants valued YouTube specifically for its entertaining and relatable user-generated sexual health content. During the online activity, both Kara (paired with Amy, aged 17) and Abbie (aged 16, paired with Sinead) deliberately sought YouTube channels that they liked. Abbie valued YouTube channels that provide information in a fun way:

> When I watch like videos on it, the ones from YouTube and stuff, most of the information is given to you in a very light-hearted way. It's mostly through jokes and like, like short cut scenes between the person talking, like the person'll be—explain something quite seriously then show you a really funny clip of like them talking to themselves or whatever. "Is it supposed to look like that?" [laughing] It's like… funny ways that's like very relatable and… and you come back and they end it on a serious note. Like, "But, seriously…"
> (Abbie, aged 16, paired with Sinead, aged 19)

While Abbie valued the entertaining nature of such videos, she was also aware of their serious messages, and went on to express admiration at some YouTube channels' sophisticated techniques to engage viewers before delivering valuable, serious messages:

> I think my favourite thing when they do it, is when they click-bait it, so that more people will see it because there's a YouTuber I watch called Elspeth and Elspeth is a lesbian YouTuber. And a few, like a year ago or two years ago, she put a video of her like biting her lip, was like the… the thumbnail is like a picture of her biting her lip and it was like, "What I find really sexy?" And they clicked, and when you click on it, she goes, "Do you know what I find really sexy?" And then she goes, "Consent!" And you just hear a big talk on consent. I was like, "Yes!" 'Cause there will just be so many people that click on that, and be like, "Oh my God! Oh… oh, right listen that's actually…"

(Abbie, aged 16, paired with Sinead, aged 19)

Abbie valued these YouTube channels for their socially- and culturally-critical content, rather than simply informational or instructive information. She seemed particularly engaged with this type of content, and had previously described her information needs, as a lesbian, not being met in school. In describing a lesbian YouTube blogger, Abbie demonstrated confidence in identifying both the flaws of traditional school-based information and the benefits of alternative online sources that better addressed her needs. This demonstrates how young people, particularly those who find school-based sexual health content less relevant to their personal circumstances, may access alternative user-generated content online to find relevant sexual health information. However, participants described barriers to using multimedia content generally, which will be detailed in Section 5.2.3.

Participants described encountering sexual health promotion on social networking sites, primarily Facebook, and some described engaging with such content if it looked interesting (typically information presented in numbered formats such as 'top ten facts' or in a quiz format). Emma explained:

> When you're like scrolling through Facebook now, there's lots of things that pop up. And it's like: "Oh, when you're having sex, you should maybe do this, or – 'thirteen things you should know about sex', or…like, you get all they different factoid things that pop up and you're reading half of them and you're like: 'I would never do that…so why does it say that on a page?'
>
> (Emma, aged 17 paired with Mia)

Both Emma and her sister Mia worried about the influence of such readily accessible content on expectations about sex, particularly as they struggled to relate to much of the content they had encountered. Liam and Rowan described a post they had encountered that highlighted the heteronormativity of mainstream media:

> Rowan: In most Disn-, in fact in Disney and Pixar movies, Dreamworks an' all that exclusively, I've seen them have a woman fall in love with a bee yet…
> Liam: I've seen that post too and I know when…
> Rowan: Yeah, yet they're not allowed to show a homosexual relationship for more than five seconds per movie
> (Liam and Rowan, aged 16)

Here, Liam and Rowan demonstrated both their critical literacy in identifying problems with the banal sexual health imagery in mainstream media and the influence that shared social media messaging can have in developing critical sexual health literacy. However, few participants mentioned the role of social media in increasing social awareness and deconstructing sexual health myths. These accounts of participants engaging with content about sex and sexual health on social networking services highlight both the potential and the challenges of delivering sexual health promotions on such sites; while Rowan and Liam exhibited heightened social awareness, Emma and Mia's perspectives demonstrated how Facebook content can increase the pressures that young people experience in relation to perceived expectations of sexual behaviours.

Participants' tended to value user-generated content in a one-way format, typically describing consuming, rather than sharing or producing, such content. The use of interactive elements for sexual health promotion on social networking sites, like Facebook, was opposed by most participants, and engaging with sexual health content in a visible way was deemed unacceptable. Even participants who described being very open to communicating about sexual health opposed sharing of such content on social networking sites. For example, Kara, who appeared to have no hesitation about discussing sexual health with others, stated:

> I mean, my family's on Facebook so I'm no' gonna, like, I'll just share this blog post about, like, sex on my Facebook [laughing]. Like I'm no' gonna do that. Like, my uncle is going tae be, like, liking it an' that an' it's just a bit weird. So, nah, I wouldnae', an', like the same wi' like Twitter, like, I don't think I'd use it for that. (Kara, paired with Amy, aged 17)

Kara's friend Amy (aged 17), who struggled to communicate about sexual health, agreed: "No, I wouldn't want anything on Facebook". Participants' also worried about reactions from friends. On Facebook, simply 'Liking' sexual health content was deemed sufficient to attract judgement from peers, as Josie and Kyle explained:

> Josie: On Facebook you need tae like the pages to…
> Kyle: Aye, you need tae…suppose they come on your newsfeed. I don't think I would like anything like that
> Josie: Naw, I wouldnae like it 'cause then people, like, obviously it comes up as liked
> Kyle: Like you've liked it an' then everybody's like 'Oh, why?'
> Josie: Like, 'What's he dae'in that for?!' [laughing]
> Kyle: Yeah, 'What are you dae'in that for, you dirty?!' [laughing]

(Kyle and Josie, aged 19)

Here, Kyle's use of language highlights the influence of moral attitudes and stigma on sexual health information-seeking, particularly within a context within which identity construction is typically performed. Aaron (aged 19), who appeared comfortable discussing sex and sexual health, characterised seeking sexual health information on social media as highly undesirable, stating that young people would receive "dog's abuse" if seen interacting with sexual health organisations on Facebook. He later expanded on this:

Aaron: not Facebook, they'd just get abused on there…nobody would ever tweet saying oh I think I've got this symptom…you'd get absolutely slaughtered […]

Michael: If anything was to be put properly on walls and stuff it would be sarcastic and jokey

(Michael and Aaron, aged 19)

Here, Michael suggests that the only acceptable interactions would be flippant in nature, possibly as a protective measure. This is consistent with the finding, discussed in Section 4.3.2, that male participants appeared less willing to earnestly discuss sexual health, and more likely to present themselves as sexually confident and competent. From this perspective, the acceptability of humorous content may present potential solutions to barriers to engagement, particularly with young men.

Analysis highlighted a broad range of attitudes towards the distinct, but overlapping, spheres of social media and user-generated content, and those attitudes were influenced by a variety of factors, including gender, sexuality and platform preferences. It is insufficient to consider all social media and user-generated content as one homogenous category, as different platforms and content types fill different roles for individual users. Some participants, particularly young women and those who identified as gay, lesbian or bisexual, described some user-generated content (blogs, YouTube) as providing relatable, individually-relevant, supportive, entertaining, and socio-culturally critical content. Conversely, participants were less positive about engaging with sexual health information on social networking services such as Facebook and Twitter, despite such services being the primary focus of participants' general internet use. Engaging with sexual health content on social networking services was typically deemed unacceptable due to concerns about stigma and embarrassment associated with being seen seeking sexual health information by friends and family. Some participants identified potential for sexual health promotion on social networking services, describing engaging with interesting content (albeit of variable quality), but this perspective was

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atypical. A key distinction between social networking services and other sources of user-generated content may be that the former are sites of active identity construction, while services such as YouTube, despite being social platforms, are perceived as more anonymous sites of passive consumption.

5.2.2 Perspectives on presentation style and tone of information delivery

Participants' often evaluated websites based on the style of their language and content, and sometimes rejected websites they deemed to contain too much text. Emma and Mia typified this perspective:

> Emma: There's quite a lot of information
>
> Mia: I think, like in a way they've got lots of information but for a, a teenager or even maybe younger, they would get in and be like: "Aw, I'm not looking at that" - and just come back off it. Like…Like, if I go onto this one and it's, this one and there's like quite a lot of this, and then like, it all, it just continues the - whole way down the page of different things, I'd get bored wi' reading that
>
> Emma: It's just too much
>
> Mia: Like Wikipedia is the worst, like. What is that, what even is that?
>
> (Emma, aged 17 and Mia, aged 18)

In this exchange, Mia considers other young people's likely reactions to information-heavy sources, and illustrates the view expressed by many that too much content on one page can prevent engagement. In addition to being 'boring', participants perceived text-heavy websites as difficult to locate required information on, slowing down information-seeking. Participants identified a variety of preferable ways in which websites could present information, including: brief, concise text with links to further information; definitions of terms; bulleted lists; step-by-step information; question and answer formats; and images.

Charlie (aged 18, paired with Matthew), who had mild additional support needs and expressed distaste for excessive text, praised the Family Planning Association (FPA) website, where discrete sections were accessed by clicking links, instead of being presented on one long page (see Figure 5-1). Charlie commented: "Ahh, You can click on each o' them. HIV. Just gives you information on it and what it means…Information on what it means in case somebody doesn't know what it means. For people who know and people who don't know it'll be good for as well. 'What causes…' It's good for information this

one actually". Similarly, Courtney and Laura liked an NHS website that supported basic initial information with links to further information:

> Laura: I think it was quite basic at the start
>
> Courtney: Yeah
>
> Laura: But there was like further links for more information so they didn't put all the things at one bit
>
> Courtney: Yeah, so people don't get confused, everything's structured
>
> (Courtney, aged 17 and Laura, aged 16)

This exchange highlights the appeal of presenting information at different levels, offering both concise, focused information with further depth as required. Similarly, participants valued links to definitions of technical terms, as expressed by Claire and Ashleigh in their discussion of the Young Scot (national youth information charity) website:

> Claire: Young Scot was really good
>
> Ashleigh: Yeah, it was good, 'cause it, like, has a question. And then, like, the answer, kind of thing. So, like, that was always a good way to do it, really
>
> Claire: Yeah. And then it had, like, links at the bottom (*Yeah*.) for other stuff that you'd want to read
>
> Ashleigh: And it, like, links to, like, to the word, like, the words. And then, like, it was a link. All coloured like red. And it takes you on to, like, a different, whole different, like, thing that you can read… that's also important.
>
> (Claire and Ashleigh, aged 17)

A preference for bulleted lists over dense text was typified by Maeve and Leah:

> Maeve: Yeah, I feel like, like say we like Googled the symptoms, when it said it in bullet points rather than like a big paragraph…
>
> Leah: Yeah, when you have to like a big paragraph it was just like hard trying to find the bit you were looking for
>
> (Maeve and Leah, both aged 16)

During the online activity, Maeve and Leah liked a website called 'Think Contraception', which Maeve described as "appealing," and Leah agreed was "well set out" because of the use of bullet points. Keira and Sophie (both aged 18), who also valued bullet points, liked the step-by-step format of the website WikiHow:

Keira: I liked the steps one…like step one it'd tell you what to do and then it would explain it so then

Sophie: It was quite clear

Keira: And it had like pictures and stuff so it was like easier to understand than a big paragraph and then you're just like woah don't know where to look

Sophie: Cause especially…like I couldn't be bothered reading a huge paragraph like and I think like young people couldn't either

Keira: But if there's just like steps that just kind of shows you like then and then right and if you want to read more then it's there but if you want to just know the basics it's there as well

Sophie: Yeah

Keira: Cause I don't like reading big paragraphs…I just like something like quite bullet pointed like then and then sorta thing

(Keira and Sophie, both aged 18)

Keira and Sophie had read a WikiHow page entitled 'How to Overcome a Fear of Sex: 14 Steps (with pictures)', and appeared to digest the content in a linear, comprehensive way. Sophie commented "That's quite a good website", to which Keira agreed: "yeah, I like this website…I like the ten steps it gives you".

Figure 5-1: Example of preferred website layout
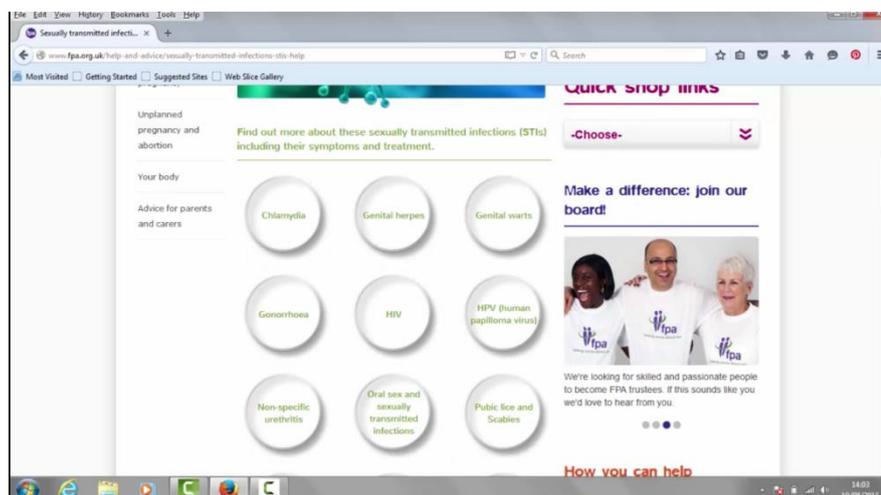
Participants' varied in their preferences for different tones , with some preferring a serious, straightforward tone, others preferring more informal, casual content, and valuing a balance between the two. Michael and Aaron described preferring factual information that delivered information efficiently without attempting to reassure:

What was the information you looked at like?

Aaron: Formal… formal and blunt...20% of folk have this...it's not like pure...but I actually prefer it that way

Michael: Yeah that's better

Aaron: Cause there's no point trying to be nice about it cause you need to know...probably not facts like that probably don't need facts like that...they should just tell you straight to the point

Michael: It's probably useful telling you that but

Aaron: yeah I suppose

Michael: It's not reassuring but

Aaron: it's useful

(Aaron and Michael, aged 19)

Some felt that less direct, more sympathetic or "jokey" content could cause readers to take topics insufficiently seriously, which Aaron suggested could have negative health impacts: "it's jokey and you could just think aw that's fine then obviously it doesn't matter and then…7 months down the line and you're screwed". Similarly, Liam and Rowan were averse to condescending or patronising information:

Liam: We're here… Like I said, we're here to be... we're talking about adult issues, you know, with our bodies. We're not here to watch like a Thomas the Tank Engine explain it or anything like that so [laughing]... 'cause wouldn't that be fuckin' freaky? I don't know about you. You know Thomas the Tank Engine say "Me and Gordon had fun last night. However, we did not use protection. Now we've got greasy downstairs." [laughing]

Rowan: Oh my God!.I prefer it to just be like completely plain. Like, okay, what's your problem? This, this, that or this an' then we click it an' then it brings you a list of 'Okay, these are the possibilities. This, this, that or this.' Okay, there you go. Okay, yeah, yeah, I've got my answer. Yay! [laughing]

Liam: Yeah, I'd probably go that's easiest. With things like this you don't want them to be fancy and like, you know, 'Oh, you poor wee thing. You think you've got chlamydia. Aww. Here, here's a hug.' [laughing] […] You don't want, like I said, to be all huggley and just 'Oh, you poor thing. Like how are you feeling?'"

(Liam and Rowan, aged 16)

Despite Liam and Rowan's stated preference for 'plain', serious information, during the online activity they reflected on how an amusing website could be helpful:

Rowan: 'Women's top ten sex worries.' Well, that's probably not...

Liam: That duck face though. [laughing] Can we just take a minute to appreciate that duck face?

Rowan: No, this isn't her face, she's just going... oh, okay. 'Oh, no, this isn't her sex face'. [laughing]

Liam: [laughing] See, that's probably good 'cause it relaxes you, you know, you could be quite nervous and quite stressed out.

(Liam and Rowan, aged 16)

A preference for serious, direct content was primarily exhibited by male participants. In contrast, eight participants, all young women, preferred more relaxed and reassuring content. Jess and Amelia regarded online content as too fact-based and unsupportive:

Jess: I think it's more of like a support thing as well…yeah it doesn't really give you like any support, because it's not a person

Amelia: yeah and it's just kind of like fact fact fact…I suppose it's meant to be like that [laughing]

Jess: I think it it's like us, because we're like teens, we'll like want to be comforted, like we won't want to be told 'right, go to your clinic like right away!'"

Amelia: You want it to be like right, we can sort it, we can deal with this yeah

(Jess and Amelia, aged 16)

Female participants' stated preferences for reassuring, relatable content were exhibited in the online activity. Keira (aged 18) described preferring "realistic stories" to factual information, and she and Sophie (aged 18) primarily accessed user-generated and commercial magazine sources in addressing *Scenario Two*. Similarly, Alice (aged 18) and Cleo (aged 19) liked 'Her Campus' (an online magazine), which Cleo compared favourably to the 'scary' content of an NHS website: "I think this one might be better because it's saying like it's normal tae do this, like it's normal tae do that and stuff…". For some, relatable, narrative information was reassuring. Many participants who preferred a more relatable tone turned to user-generated content ahead of more conventionally authoritative sources, as detailed in Section 5.2.1 and 5.2.2.

While participants exhibited starkly different tonal preferences, some communicated a need for content that balances entertainment, reassurance, relatability and seriousness. Charlie (aged 18, paired with Matthew, aged 17) explained that "I don't want it being, like too serious but at the same time be jokey, so that people don't worry about it too much like don't

get their self stressed or overly concerned I suppose over it". Abbie explained that making a serious subject light-hearted can be helpful:

> Just when it's light-hearted and it doesn't take it too seriously, it's like, I don't want to be reading something and feeling like I'm in an exam. I want to be reading something and be like, "Oh right, there's all the information I need" and it's not making me go... [gasp]
>
> (Abbie, aged 16, paired with Sinead)

Abbie's friend Sinead (aged 19) agreed that this kind of content was "interesting" and "funny". From this perspective, information must be relevant and reliable, but it can also be beneficial for it to be reassuring and engaging.

While participants generally preferred brevity, links to further information and step-by-step layouts, participants varied in their preferences for serious, humorous or relatable tones, and tonal preferences may be patterned by gender. Moreover, participants' reactions to different tones indicated that tone can be an important driver, or inhibitor, of engagement with information sources. Together, these findings suggest that, to effectively engage young people in online sexual health promotion, information should be presented in a range of different tones.

5.2.3 Attitudes to interactive and visual content

Some participants described encountering few visual or interactive features during the online activity and most described encountering predominantly written content. Reece and Lucy agreed that they had encountered only one page containing images:

> *And did you find that any of the websites you looked at had images or…?*
> Reece: Not a lot, actually. The only one that's actually used images was the example of wikiHow right there. It was usually more like listing things
> Lucy: Yeah yeah
> Reece: That was usually the layout
> Lucy: Yeah your different STIs and your side effects and how long they take to kick in. It's just kind of very listy and wordy
> (Lucy and Reece, aged 17).

Reviewing their online activity data confirmed that most websites they visited, which were primarily government and not-for-profit health websites, mainly relied on text, and some of

the websites quickly rejected had contained visible images or videos. Despite the widespread perception that information was mainly textual, images, videos and interactive features were relatively commonplace on the websites participants accessed during the online activity. Some participants actively chose to avoid engaging with interactive content, or appeared not to notice videos and interactive features.

Participants used interactive features within four interviews. Both Christina and Josh (aged 16) and Charlie (aged 18) and Matthew (aged 17) selected the interactive risk assessment tool on the Sexual Health Scotland website (see Figure 5-2), but neither pair engaged with it deeply. Christina and Josh briefly read out the information on-screen, and Charlie and Matthew did not interact at all. Charlie, who had minor support needs and tended to be wary of online information, wondered whether the tool might induce anxiety in users: "Would that be quite worrying for some people d'you think? Some people reading that like what is high risk?".

Figure 5-2. Example of an interactive tool used by participants
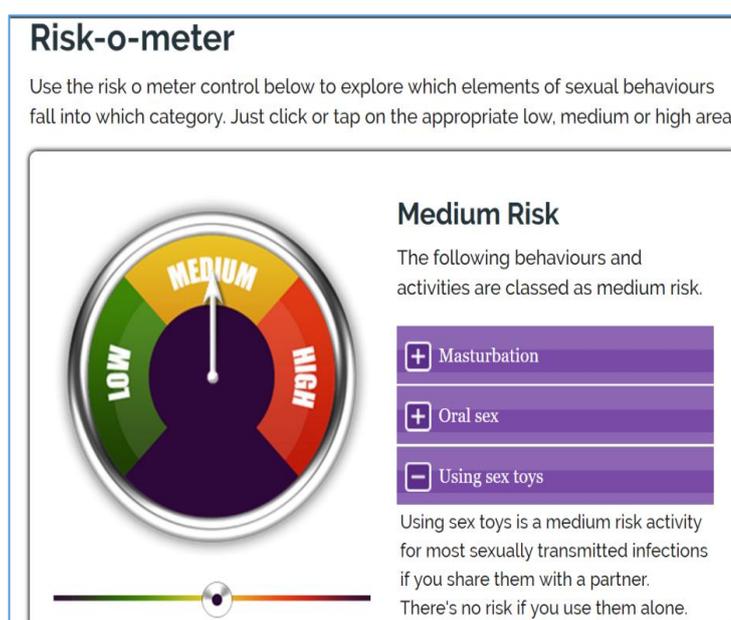
Both Joe and Ruth (aged 16) and Lily and Skye (aged 19) deliberately accessed interactive tools they had prior experience of. Joe had described an NHS symptom checker during the initial interview, and Ruth asked him to find it during the online activity. However, upon beginning the tool, Ruth expressed concern that it might be "a long one", potentially too time-consuming for their needs. Similarly, while seeking information about contraception, Lily, who seemed to favour visual and interactive content, recalled a contraception quiz on an NHS website: "D'you know you can do like a wee quiz thing I think on this and it finds

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oot whether like… (mumble) 'My contraception tool', look! You put it, like you put all the information in". When prompted to select the long or short version of the tool, Lily selected the short version (see Figure 5-3), exhibiting a desire to source information quickly. On a different website Lily noticed a video about genital warts on an NHS website and was keen to watch, but Skye expressed reluctance:

> Lily: Lovely, let's watch a video!
>
> Skye: Don't! That's about genital warts man [laughing]
>
> Lily: So?
>
> (Lily and Skye, both aged 19)

Lily continued despite Skye's protest, but the video failed to load, highlighting a potential technical limitation of multimedia content.

Figure 5-3. Example of an interactive tool used by Lily and Skye
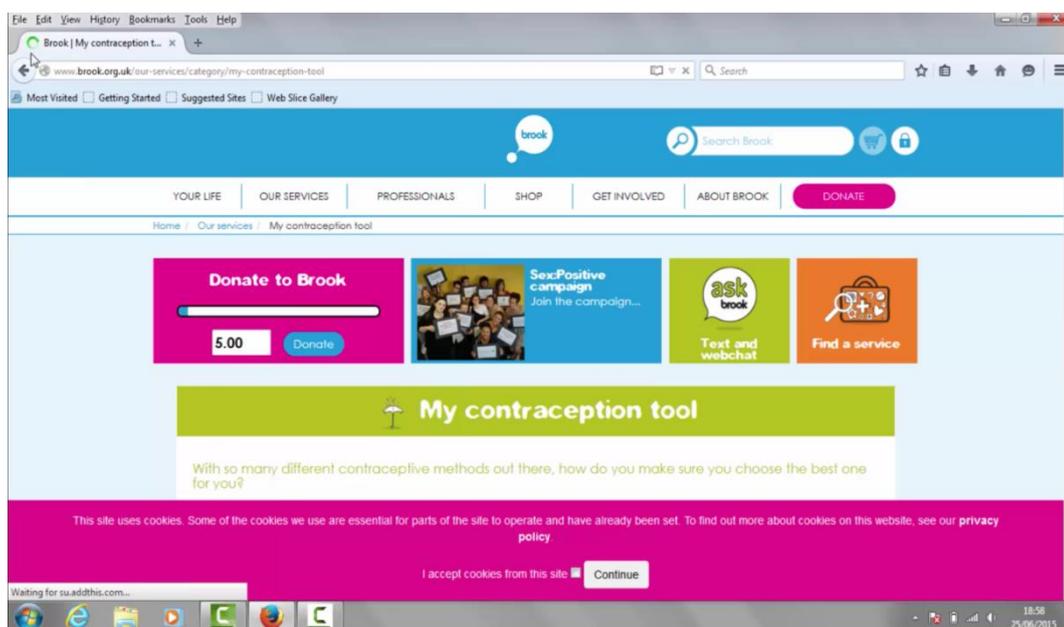
Despite some participants' enthusiasm, many avoided videos. Some, particularly those who favoured direct, straightforward information, perceived videos as useless and time-consuming. Jacob and Connor explained that, while videos might be useful for younger people, the passive process of watching a video is less efficient than actively seeking information within text:

> Connor: If you were young and you wanted to find out about things then aye
>
> Jacob: You'd need to have time as well, because sometimes when you're watching a
>
> video and you can't…it's like not the same as a website where you can just look up

and down sorta…like it can take time to load whereas with this you can just go up and down, see aw that's the main section I want to look at there pretty much and you can also do the control method and search for key words so…

(Connor and Jacob, aged 18)

Conversely, many participants perceived images as useful tools for helping to identify relevant content, in addition to being more engaging and entertaining than uninterrupted text. Courtney (aged 17) and Laura (aged 16) encountered images of different STIs on the Boots WebMD website, and scrutinised each image without reading the surrounding text. Courtney later recalled those images, but could not identify the infections they illustrated: "On the Boots website there's like pictures of like how to tell if you've got an STD, like pictures of like the symptoms and stuff…So—like I don't know which one it was but it was like ulcers inside your mouth and…Puss-y spots and stuff like that. So… so that like if you do have symptoms you can compare like them to what you have". During the online activity Laura suggested they select the Boots website, saying "I like the Boots one, I think the pharmacists at Boots are more nicer than my doctor", suggesting that familiarity and favourable experiences 'offline' influenced her searching practices.

Whilst seeking information relevant to *Scenario Two*, Claire and Ashleigh (aged 17), particularly liked a diagram on the Young Scot website illustrating different forms of contraception (see Figure 5-4), and felt that visual familiarity with contraception could prepare people for practical application. A small number of participants described visual information as easier to recall than text; Reece (paired with Lucy, both aged 17) explained that "pictures are better because it gives you something to visualise as well, whereas with words you kind of have to imagine everything, but a picture you have to visualise and it stays in your mind for longer". Lucy disagreed, stating "I'd rather just, if I was looking for something quickly, I just read it there an then".

Figure 5-4. Example of pictorial information diagram
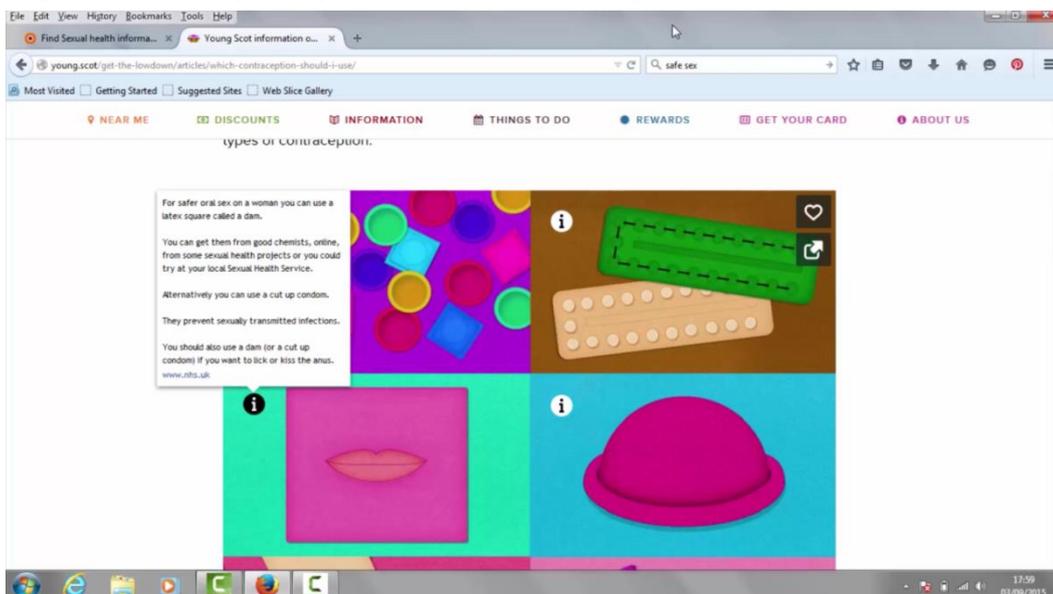
Few participants specifically searched for images during the online activity. Within five interviews, participants searched for images, predominantly of specific STIs, using Google Images. Darren (aged 17, paired with Craig, aged 16) assumed Google Images would be popular amongst boys: "I bet all the boys who've done this test went on Google images [laughing]". Craig laughed and agreed, possibly hinting to norms around young men's use of sexually explicit imagery. Indeed, Melissa (aged 16) was the only female participant to use Google Images, searching for 'chlamidia [sic]' before quickly closing the results page, perhaps out of concern or regret at the search. Some males exhibited wariness about image searches; when Aaron (aged 19) searched for 'first time having sex' on Google Images, Michael (aged 19) insisted "don't click on that". Participants' reactions conveyed a sense that images, like pornography, can occupy conflicting perceived positions as simultaneously useful and illicit.

While many participants found images useful, almost as many expressed concern about the indiscreet and potentially embarrassing nature of visual content, with text seen as easier to conceal from onlookers. Charlie (aged 18, paired with Matthew, aged 17) explained that "It'd make me embarrassed like looking at pictures, like it'd make me worry a wee bit, you know, what can happen etc". Josh (aged 16, paired with Christina) highlighted the risk of being heard watching videos, explaining: "Naw! In case my mum and dad heard me [laughing]". Again, participants' reactions hinted to stigma associated with viewing material about sexual health, and self-censoring searching practices (discussed in Section 5.4.5).

Perspectives on visual and interactive content varied across the sample. Participants typically valued images and diagrams for both their efficiency in communicating information and their eye-catching, engaging nature. However, participants exhibited less agreement about the value of videos and interactive features, which some perceived as too time-consuming, although this may have been partially a product of the time-constrained nature of the online activity. The eye-catching nature of images, videos and interactive features may not necessarily be advantageous, as participants expressed concern about their visibility making them difficult to conceal from onlookers.

5.3 Strategies for finding relevant and reliable sexual health information

Through their reflections in the paired interviews and in undertaking the online activity, participants conveyed their strategies for finding relevant and reliable sexual health information. Those strategies are described in this section, including: attitudes towards, and the use of, Google Search; making fast judgements based on aesthetic impressions of websites; familiarity as an indicator of reliability; and various other strategies.

5.3.1 Reliance on, and trust in, Google Search

All participants used Google Search during the online activity, with few navigating directly to specific websites of which they had pre-existing knowledge. Ashleigh and Claire typified the approach of open-ended searching through Google Search:

> Ashleigh: I don't really know of any [websites]
> Claire: I'd probably just look it up on Google if I want to know, just like, just hope for the best
> Ashleigh: Yeah me too
> (Ashleigh and Claire, aged 17)

During the online activity, participants never navigated beyond the first page of search results, with the exception of Emma (aged 17) and Mia (aged 18), who navigated to the tenth page specifically to demonstrate the low value of lower-ranked results. Participants unsatisfied by search results were more likely to revise their search strings than to work their way through those initial results. Of the 158 search results followed during the online activity, 74.1% (n=117) occupied the first three positions of the first page of search results, 17.7% (n=28) occupied positions four to nine, and 8.2% (n=6) were sponsored

websites/advertisements or links from Google 'featured snippets' (extracts from one of the search results automatically displayed above the search results) (see Figure 5-5).

Figure 5-5: Ranking/type of link selected by participants
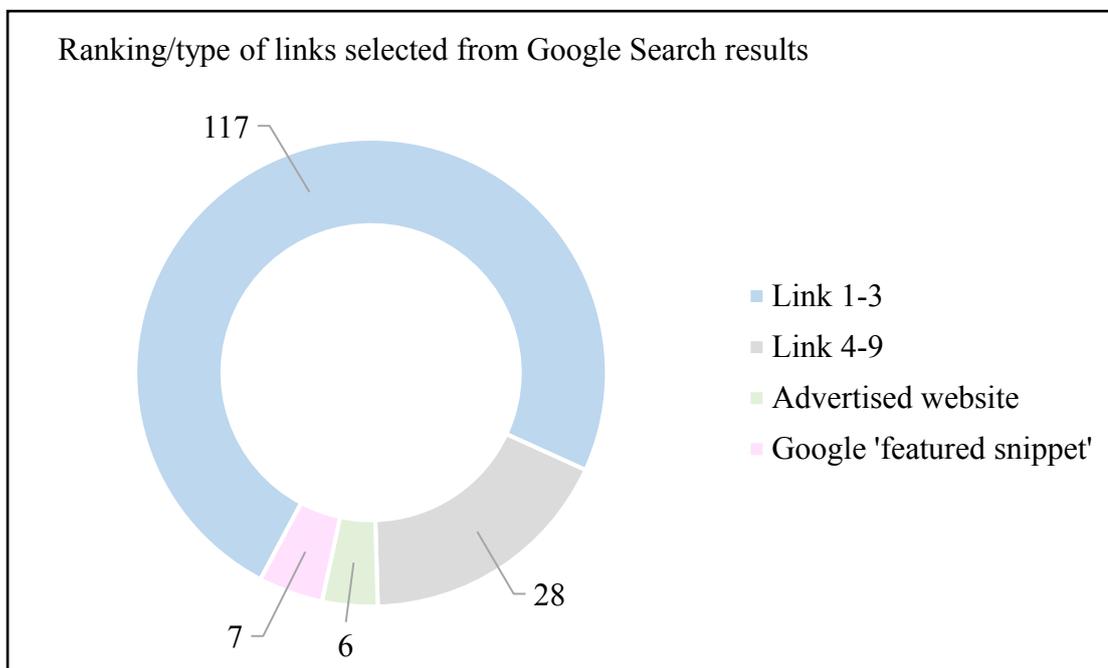
Many participants perceived the position of search results as a marker of relevance and reliability. Some described not knowing why they chose the top results (perhaps simply out of habit or convenience), while others described the top results as the most accurate and reliable, and lower-ranked results as less reliable. Josie and Kyle typified the view, common among participants, that choosing top results is a norm:

> *And how did you decide where to look for it?*
> Josie: I just clicked on the first one that came up
> Kyle: Which people tend tae do
> Josie: Aye
> Kyle: They don't usually go looking for a specific website
> Josie: But sometimes if the NHS still isnae the first one I'll go doon an' look for the NHS
> (Josie and Kyle, aged 19)

Notably, Josie indicated that she sometimes prioritises NHS sources over higher-ranked results, suggesting that search ranking was not necessarily the primary selection criterion.

Some, such as Jacob and Connor, assumed that top results were ranked by their past popularity:

> Jacob: Usually I'd go on the internet and I'd just Google it
>
> Connor: Yeah and the most reliable pages are the ones that come up first because they've been Googled so many times…so that's probably my best way of doing it
>
> Jacob: Yeah I'm the same pretty much, it would just be through Google
>
> (Jacob and Connor, aged 18)

Similarly, Aaron (aged 19) described the first search result as "the most respected one", reasoning that "that's the one most folk go on anyway so...most people can't be wrong". However, not all participants put faith in result rankings; during the online activity, Aaron's friend Michael (aged 19) complained at Aaron's immediate selection of top results, interjecting "don't just go for the first…you just went for the very first one". Later, Michael indicated that he preferred a more thorough approach, explaining that "if I'm doing work I'd normally scroll through it, I'd look first to find the best one but that's just me". Michael went on to elaborate that he would "just Google it and then filter it down mysel'…like if they end with things like gov or go on the website, visually, to see what it's like...but he'd just go for the first one...". Michael and Aaron's disagreement illustrates the range of approaches to using search engines, and suggests that Michael felt confident in his ability to evaluate search results.

Most results pages (particularly for *Scenario One*) included sponsored advertisements for websites within the top three results. Participants exhibited distrust in sponsored results, even when they linked to reputable health organisations, such as Brook or the Terence Higgins Trust. Sponsored links were excluded when coding the positions of participants' selected results, because they were so often intentionally ignored, and were selected on only six occasions. During the online activity Darren warned Craig against clicking a sponsored link:

> Craig: 'How can I have safe sex' [reading out link name], Young Scot, that's what I want.
>
> Darren: No, that's an advert.
>
> Craig: It's Young Scot. Oh, right, okay. 'Stopping STIs'…use condoms for anal and oral…
>
> (Darren, aged 17 and Craig, aged 16)

In this exchange, Darren expressed wariness about the link's sponsored nature, but Craig's prior knowledge of the source legitimised it. However, participants' perceptions of sponsored links as untrustworthy generally led them to overlook them.

In addition to presenting ranked search results, results were often preceded by a box containing an excerpt from one of the search results, described by Google as a 'featured snippet block'. Of the 16 times that these boxes appeared, participants selected them six. At times participants read information directly from these boxes without following the link to the source. Whilst looking up information about 'sti symptoms', Jess (aged 16) seemed surprised to see the answers provided in the summary box (see Figure 5-6), stating: "oh look, Google is giving us the answers!". Reflecting on the online activity, Jess and Amelia seemed to have found summary boxes useful:

> Jess: I think when we searched STI symptoms, Google gave you it straight away from like like yeah like obviously the addresses come up and it gave you like symptoms straight away, like an extract from a website
> Amelia: Yeah, if you're looking up like a word, it'll give you it like straight away, it'll give you the definition so if you're looking up...
> Jess: If it's like symptoms from there like, you'd be able to kind of like trust the websites know what I mean like, if Google can obviously trust it. I dunno, maybe they've like paid, they're probably like paid to do that and then...
> (Jess and Amelia, aged 16)

Here, both Jess and Amelia seem satisfied with information being presented in summary boxes. However, Darren (aged 17) and Craig (aged 16) decided to ignore such a box, instead following a link to an NHS website, with Craig suggesting "maybe not look at Google's translation, we'll go to the NHS". As in the example above, Craig demonstrated his searching preferences, going to sources that he considered reliable and had previous experience of. This further illustrates the variety of approaches to using search engines exhibited within my participants.

Participants' widespread use of, and trust in, Google Search also influenced how they formulated search strings. Participants' choices of search terms and strings are discussed in Section 5.3.2.

Figure 5-6: Example of Google 'featured snippet'
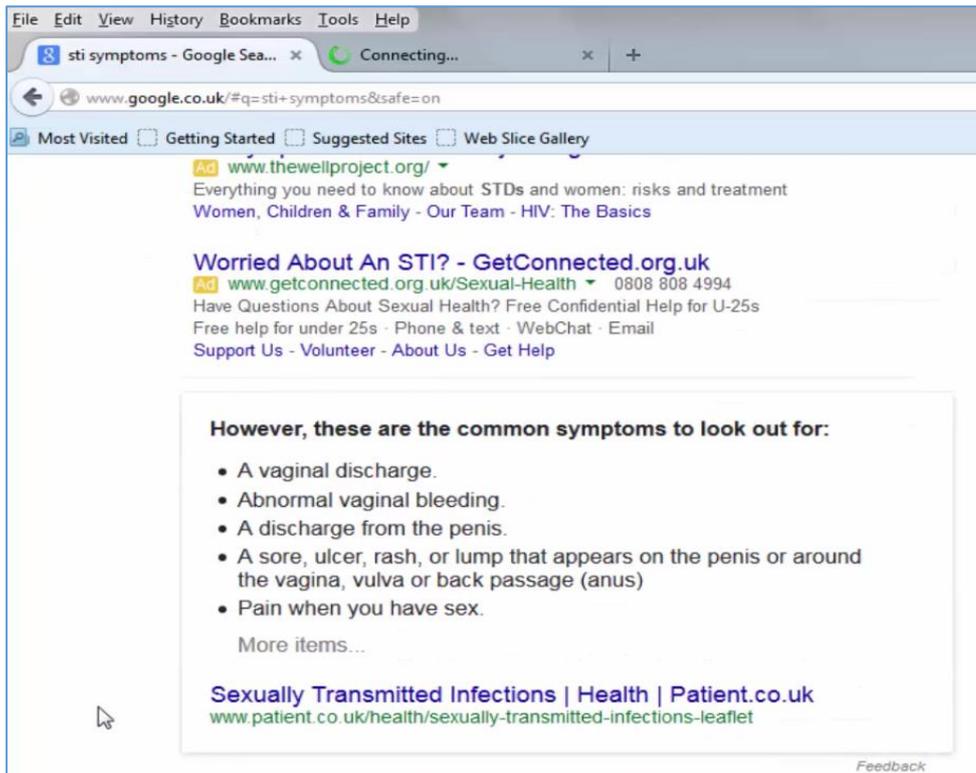
5.3.2 Formulating search strings

As all pairs used Google Search during the online activity, they all had to construct search strings to find information relevant to the scenarios. Participants predominantly chose and entered strings quickly, with little pause for thought or discussion. Participants' readiness to revise search strings when unsatisfied with initial results demonstrated a 'trial and error' approach to using search engines, in which they moved progressively closer to the required results by iterating on search strings in response to results. For example, Rowan (aged 16), curious whether there are any non-sexually-transmitted genital infections, initially searched for 'non sexuallt [sic] transmited [sic] male genital infections', then, being dissatisfied with the initial results, added the term 'sti'. This process relies on rapidly evaluating the relevance of search results, which is examined in Section 5.4. On average, pairs entered seven search strings during the online activity, but that number varied substantially between pairs. Kara and Amy (both aged 17), who performed 15 searches, frequently had new ideas and moved through search results and web pages quickly, while three pairs performed only one search, seemingly content to browse one or two websites from search results in relative detail.

Participants' chosen search strings varied between the two scenarios, and therefore the type of information being sought (Figure 5-7 and Figure 5-8). In relation to *Scenario One*, participants predominantly formulated search strings to find information about STI symptoms, transmission, timing and prevalence (n=40), or about testing, treatment and specific sexual health services (n=30). The remaining search strings were more general, seeking generic information and advice (n=13), such as 'I think I have an STI what do I do', and 'I may have an sti'. In relation to *Scenario Two*, 26 search strings targeted general information and advice about first-time sex, such as 'how to have sex', 'sex for the first time advice' and 'planning for first time with girlfriend'. Twenty-one strings targeted information about safe sex, risk and protection, such as 'how to have safe sex', 'condoms' and 'most reliable forms of contraception'. The remaining five targeted known organisations or websites such as 'the corner Dundee' or 'gurl.com'.

Two broad styles of search string emerged: general, conversational, natural language strings (n=46, 33.1%) and focused, specific, keyword-based strings (n=93, 66.9%). In most cases, participants used both, but some seemed to favour one over the other. For example, fourteen participants (within 7 interviews) predominantly used direct key words, while four participants (within two interviews) only used conversational or informal general queries. The conversational search strings tended to be relatively informal, often personal, and posed as questions, such as 'I think I have an sti what do I do'.

A small number of participants explicitly discussed the importance of using effective search strings. Reflecting on the online activity, Courtney and Laura described how different search strings could affect finding relevant information:

> Courtney: I think sometimes like, it depends on how well you word it…The Google search words…'Cause sometimes it comes up and it's like really, really broad and you just don't know what you're really looking for
>
> Laura: Sometimes there's too much detail and sometimes it's not enough
>
> Courtney: Yeah, like you'll start off knowing what you want to find and then you'll look at all the information and think, 'What was I even looking for?
>
> Laura: Because there's just so much
>
> (Laura, aged 16 and Courtney, aged 17)

This exchange highlights an appreciation of the depth of information available online, and the need to balance breadth and specificity in search strings. Jess exhibited awareness of

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advanced search options available within Google Search, and how these options can empower users:

> Yeah I suppose you can find the more kinda like general stuff, like, just be browsing, like even if there's related links and stuff, em, but also if you put in certain like key words like, like even on Google and stuff you have all these like filters and it's like, where it's from, enter key words, like order of importance that your results come up in, like. I think you can just really search for anything
>
> (Jess, paired with Amelia, aged 16)

However, despite Jess' admiration of the flexibility of Google Search, she and Amelia became frustrated with unsatisfactory search results during the online activity:

> Jess: It's like what…don't type in 'first time sex'… because it comes up with 'Bill Cosby to perform live for the first time since November' [laughs]…ad campaign features the first-time same sex couple…em…I'm thinking about other key words
>
> Amelia: I mean there's not really much information
>
> Jess: yeah I don't think there's enough about…
>
> Amelia: like you expect loads to turn up about that one
>
> (Jess and Amelia, aged 16)

Both were surprised by the lack of relevant information produced by their search string, deeming there to be insufficient relevant content available. This may highlight problematic issues relating to misalignments between medical and lay terminology inhibiting effective searching.

Figure 5-7: Categories of search string (*Scenario one*)

Seeking specific STI information (symptoms, transmission, timing and prevalence) N=40 Participants n=37 (19 interviews)	'sti symptoms'; 'symptoms stds'; 'symptoms of sti's; 'signs of an sti'; 'I might have an sti what are the symptoms'; 'symptoms of STIs after unprotected sex'; 'what stds dont show symptoms'; 'sti symptoms in men'; 'nhs symptoms'; 'symptoms of an sti'; 'sti symptoms'; 'effects of an sti'; 'early symptoms of an sti nhs'; 'sti symptoms in women'; 'gonorrhoea'; 'chlamydia'; 'stis'; 'chlamidia'; 'difference between stis and stds'; 'common stis'; 'syphilis'; 'chances of getting an std'; 'chances of catching an sti in the uk'; 'chances of getting an sti from unprotected sex'; 'how can you contract an sti'; 'sti'; 'what stds can you get from one night stand'; 'I had unprotected sex last night what are the I have an sti'; 'consequences of unprotected sex'; 'unprotected sex'; 'how long does it take for an sti take to show up'; 'sti's time'; 'when do symptoms start to show of an sti'; 'how quickly after unprotected sex do you get symptoms'; 'how quickly after unprotected sex do you get symptoms sti'; 'non sexuallt transmitted genital infections'; non sexuallt transmited male genital infections'; 'non sexuallt transmited male genital infections sti'; 'do you get stds from oral'
Seeking information about STI testing and sexual health services N=30 Participants n=25 (13 interviews)	'std checking'; **'junction'**; **'the junction'**; 'how soon can I be tested for an sti'; 'sexual health centres Edinburgh'; 'sti testing kit'; 'sti test Edinburgh'; 'sti clinics Scotland'; 'tests for sti in Inverclyde area'; **'Sandyford'**; **'Sandyford Greenock'**; 'GUM'; 'GUM Clinic'; 'Gum clinic definition'; 'where can I get tested for an sti in Edinburgh'; 'where can I go to get checked for an sti'; 'local sexual health clinics Hamilton'; 'sexual health services Dundee'; **'Sandyford clinic'**; 'std tests'; 'sti screening UK'; 'what treatment is available for sti' ; 'are clinics confidential?'; 'are sti's curable'; 'day after std pill' (Google suggestion); 'how to check for an sti'; 'std checker online' (Google suggestion); 'how to check for an sti'; 'how to check for an sti teens'; 'where to get tested for sti in edinburgh'
Seeking generic information and advice N=13 Participants n=24 (12 interviews)	'I think I have an STI'; 'how do I know if I have a sti'; 'I may have an sti'; 'do I have an sti'; 'how do you know if you have a sti'; 'what to do if you think you have an sti';; 'I had unprotected sex last nighjt and im worried I might have a sti'; 'my friend thinks they have an STI'; 'I had unprotected sex and I'm worried I might have an sti'; 'I had unprotected sex worried about an sti what should I do'; 'I think I have an sti what do I do'; **'cool2talk'**; 'think I have sti'

*Search strings highlighted in bold illustrate times participants searched for known organisations or websites (n=5; participants n=7, within 4 interviews)

Figure 5-8: Categories of search string (*Scenario two*)

Seeking general non-specific information and advice about sex/first time sex N=26 Participants n=24 (12 interviews)	'first time sex'; 'first time having sex'; 'first time having sex guy'; 'first time having sex with girlfriend'; 'sex'; 'planning for the first sex (Google suggestion); 'planning for first time with girlfriend'; 'planning for first time having sex with girlfriend'; 'having sex first time'; 'first time having sex'; 'sex for the first time'; 'first having sex'; 'first time having sex'; 'first time sex'; 'first time sex'; 'first time sex for men'; 'sex first time'; 'sex guide'; 'how to have sex'; 'first time sex advice'; 'how to have sex'; 'sex for the first time advice'; 'first time sex how to make it not hurt' (Google suggestion); 'nervous about first time sex'; 'how to know you are ready to have sex'; 'first time sex worry advice'
Seeking information about safe sex (risk and protection) N=21 Participants n=30 (15 interviews)	'how to have safe sex for the first time'; 'how to have safe sex'; 'advice on how to stay safe during sex'; 'safe sex'; 'condoms'; 'staying safe in sex'; contraception; 'most reliable contraception'; 'the pill negative'; 'the pill'; 'staying safe sex'; 'safe sex'; 'different forms of contraception'; 'regulations to take on first time having sex'; 'safe sex'; 'safe sex for dummies' (Google suggestion); 'safe sex education' (Google suggestion); 'sex ed for kids'; 'safe sex'; 'if she has pill do I need condoms'; 'safe sex'
Seeking known organisations or websites N=5 Participants n=7 (4 interviews)	'being girl'; 'youtube' ('lacigreen'); 'gurl.com'; 'the corner Dundee'; 'the junction Edinburgh sex'

*Four search strings used demonstrated a lack of seriousness: 'sexy time'; 'lolololololol'; klu klux klan' and 'herpes of da penis' (participants, n=4 within 2 interviews)

5.3.3 Rapid information seeking

Participants' use of websites was often haphazard potentially due to a drive to find information quickly. When presented with large passages of text, some participants used search functions to find key words, but most scrolled through pages quickly, visually scanning for relevant content, often in headings or bold type. Sometimes this approach was successful; for example, Lily and Skye (both aged 19) scrolled through an NHS webpage and quickly found information relevant to the scenario. However, others using this approach unintentionally scrolled past relevant information.

While tables and bulleted lists were often seen as beneficial, they could cause participants to misunderstand the context of information. Connor and Jacob quickly judged the *Male Health Centre* website to be useful, with a clear layout and a table listing chances of contracting STIs:

> Jacob: aw see that's quite good
>
> Connor: That's quite scary...there's just so few that I know about
>
> Jacob: So if you have a 30% chance...
>
> Connor: That's quite high
>
> Jacob: ...of having genital herpes from having unprotected sex with some random, anyone
>
> Connor: Woah
>
> Jacob: Put that one down that's actually a really good one
>
> Connor: I'm telling everyone that...20% for syphilis, fuck that!
>
> Jacob: Is syphilis not the one that kills you?
>
> Connor: Aw well my lifes over
>
> Jacob: Aye well, so we've seen...the chances of getting it from having sex
>
> (Jacob and Connor, aged 18)

The information in the table shocked Jacob and Connor, but their interpretation was flawed; not having read the surrounding text, they assumed the table listed chances of contracting STIs from any unprotected encounters, while it actually listed risks associated with unprotected encounters with individuals who have already contracted the relevant STI. This example illustrates how hasty information-seeking can misinform, and, in Connor's case, how that information might be reproduced among friends. In another example, Laura (aged 16) and Courtney (aged 17), quickly scrolled through a website called 'POZ.com' to a section on risk, not realising that the website provided information specific to people living with HIV.

Participants were typically hasty in their searching behaviours and, while some exhibited competence in finding relevant information quickly, others were less successful, either missing relevant information or misinterpreting information in ways that could conceivably impact negatively on sexual health understandings. It must be acknowledged that participants' searches may have been artificially hastened by the time constraints of the online activity, however, participants generally expressed preferences for finding information quickly, so those observed practices may be reflective of real-life practices.

5.3.4   Trust in familiar and reputable sources

Throughout the online activity, participants tended to exhibit a preference for sources they had existing knowledge of and perceived as reputable. Familiarity alone was not necessarily sufficient if sources were not seen as authoritative, as illustrated by Jacob and Connor following the activity:

> *So how did you identify whether it was one you wanted to go on?*
>
> Jacob: So I'm trying to think what we done…I suppose under the Google thing there's descriptions that kinda says words that has that in it, so there's certain in the context of your key word…so we looked at that a lot and were like oh that doesn't look as if it's credible or we looked at the actual titles as well cause the Male Health Centre looks better than other places and stuff like that
>
> Connor: Yeah if they're a more official thing
>
> Jacob: Yeah Men's Health came up and we were like naw we're not gonna look at that because it's a magazine you know what I mean
>
> Connor: Yeah more professional
>
> Jacob: And Cosmopolitan came up and I was like I'm definitely not going to look at that…Just that, the stories and entertainment things, magazines things like that I don't think are very helpful...that's about it...if you know your way around it's pretty easy to know what's good to look at and what's not so...
>
> (Jacob and Connor, aged 18)

Here, Jacob and Connor describe choosing sources based on existing knowledge of them, and a preference for 'professional' websites to entertainment sources. When unfamiliar with sources, some participants made assumptions about reliability based on titles; Rowan worried about selecting a particular website, although Liam reassured him that it was not what he thought:

> Rowan: I don't feel really good about what 'Her Campus would bring up. That sounds…
>
> Liam: I've heard o' Her Campus…That's fine
>
> Rowan: Oh thank God 'cause I was thinking it was some kind of, I don't know, college porn website
>
> (Rowan and Liam, aged 16)

Similarly, Mia (aged 18) described not trusting sources with unusual names, suggesting that unfamiliar sources were fabricated by Google: "If it's got a funny name then it's Google and

it probably mair likely made up". Her sister Emma (aged 17) stated that "you can kinda trust the NHS. Like that they're no' gonna gie you false information". They were both particularly mistrustful of the internet in general, but specifically sought out NHS sources, perceiving the NHS as the only trustworthy source. Abbie and Sinead described similar perceptions of the NHS:

> Abbie: I think I would just look it up, like search it and then look for a reliable source
> Sinead: I'd just look through Google and then look at eh…look at like things that you've heard o' before. But I wouldnae go like search for a specific site, 'cause you know…
> Abbie: I'll usually go for anything NHS if it comes up, just because of it's a reliable site…
> (Abbie, aged 16 and Sinead, aged 19)

Many participants described specifically choosing NHS website links due to familiarity with, and trust in, their reputation. Liam and Rowan (both aged 16) described often seeking NHS websites, and at one point during the online activity they selected an NHS website link from the top of a search results page, and Rowan commented: "well, directly to the NHS, always". Within another interview, Charlie (aged 18, paired with Matthew, aged 17) described choosing a NHS website: "because like I know like they're proper if you know what I mean". Familiarity and reputation appeared to be valued highly. This was evident in the online activity, with familiarity or previous (positive) experience of websites representing a seemingly important in assessing reliability and usefulness. Nicola (aged 17) explained this approach: "Mainly just look at the like link to it, like if it's something that I know of and that I know is kinda popular then I'll give it a look. If I don't really know what it is then I don't fully trust it. And I keep on looking". Equally, participants described not choosing websites with which they had bad experiences. Nicola's friend Ralph (aged 19) actively avoided links to WebMD during the online activity, describing negative prior experiences of it.

These findings illustrate the power of familiar and reliable 'brands' in generating engagement with young people. This may have important ramifications for online sexual health promotion, as first impressions appear to be essential, and reliable, authoritative and carefully-tailored information may simply be bypassed if it carries branding that is unfamiliar or perceived as untrustworthy. As such, online sexual health promotion efforts

may benefit from being hosted by, or overtly associated with, familiar, trusted sources, such as NHS websites.

5.3.5   Evaluating websites based on initial perceptions

Participants typically assessed websites' relevance and reliability quickly, substantially based on aesthetic appearances. For example, upon one website loading, Martha (aged 16, paired with Samantha) almost instantly remarked "this looks good, this is legit'. Conversely, Nicola (aged 17, paired with Ralph, aged 19) quickly dismissed a website by declaring: "this is a very shitty website". Kara (paired with Amy, both aged 17) explained that she would visually seek sources that looked "the most un-dodgy", based on layout and graphics. Participants described sites that are visually unappealing and difficult to understand and navigate as uninviting.

In some cases, hasty appraisals of sources caused participants to dismiss websites erroneously. As Connie (aged 18) and Jamie (aged 16) searched for information about local STI clinics, they formed positive initial impressions of a private healthcare company website, *Better2Know*, with Connie stating: "Alright, oh right, this website then actually does sounds like a good one…". However, Connie soon dismissed the website upon seeing information about STI-STD testing clinics in London, reasoning that they were insufficiently local to be useful, but missing more locally-relevant information provided elsewhere on the page.

When reflecting on the aesthetic evaluation process, some participants found the relevant aesthetic criteria difficult to identify. Kara explained that "you can tell a dodgy website when you click on it…like, the fonts are no' great and it's just like…you can just tell it's no' a good website. It's hard to explain but you just know when a website's legit and when it's not! (Kara, paired with Amy, both aged 17). Here, Kara identifies font as one indicator of legitimacy, but conveys a sense that her evaluation processes are largely intuitive. Initial aesthetic dislike of websites often led participants to quickly dismiss them and return to their search results.

Participants described specifically seeking websites that appeared "professional", and equated this with reliability. However, prior knowledge of an organisation, as described in Section 5.3.4, could outweigh aesthetic judgements. Illustrating this, Emma (aged 17, paired with Mia, aged 18) initially reacted negatively to the aesthetics of a website, proclaiming

"What's this, I can totally tell when it's a fake", but quickly changed her mind upon noticing that it was an NHS website, concluding: "Oh no it's NHS, it's no' a fake".

As detailed in Section 5.2, while participants predominantly valued 'professional' websites, some preferred fun, visually-engaging content that organisations such as the NHS may not provide. Cleo (aged 19, paired with Alice, aged 18) explained that "The NHS, I think silly things like it could be a wee bit more fun rather than serious like the colours. It's… all like colour schemes like, you know, this page is gonna be boring like the Her Campus one it was colourful, the same wi' Cosmopolitan, it's gonna be fun tae read". Cleo's aversion to 'boring' websites, which she identified through aesthetic features, was common amongst participants.

5.3.6 Beyond first impressions: more nuanced markers of reliability

Beyond the primary strategies outlined in preceding sections, participants described and exhibited a range of more nuanced strategies to identify relevant and reliable information. Ten participants, within six interviews, described looking for particular markers of reliability when appraising online sources, including: top-level domains websites; authorship of content; recentness of content; whether content is biased or judgemental; and the country from which content originates. Following the activity, Kara described judging a website to be unreliable for a combination of these reasons:

> "And there was... at one point I went on a website and it was like... it didn't look very professional so I just came off. It was... it's one o' the last ones I go on actually. And it was... went on it and it was... it was black and white, there was no colour, and it was like there wasnae any - who wrote the article, like, what date it was published, there wasnae any o' that an' there wasn't... there was like a title and there was adverts, like, all about it. It just didnae seem very reliable"
> (Kara, aged 17, paired with Amy)

Kara appeared to supplement an initial aesthetic sense that the website was not 'professional' by seeking information about authorship and publication date, and rejecting the website when those details were not clear. Kara's hesitance about advertisements was echoed by others, such as Aaron (paired with Michael, both aged 19), who remarked: "if it's like a dodgy website where there's like promotions coming up then you know it's a dodgy website...".

While including authorship information was a positive sign in terms of the accountability of sources, it was not simply the case that sources that provided authorship information were preferred to those that did not. Rather, authorship information was a positive resource as it allowed participants to make decisions about the legitimacy of a source. For example, Abbie (aged 16) and Sinead (aged 19) decided to reject a post on the blog website 'Jezebel' upon seeing that it was authored by a user named 'slutmachine', and Abbie commented: "It's taken us onto like pure…oh right, this is written by 'slutmachine' oh my God!...I don't trust this website". Conversely, Liam and Rowan were pleased to find authorship details clearly provided in an article, and reassured by the 'professional' description of him (see Figure 5-9):

> Rowan: [reading] 'Expert chat. Let's talk about sex…sex/relationships educator'…
> Liam: It's good to see he talks about himself and why he's a professional
> Rowan: [reading] Yeah…'Justin has worked as a sex/relationships educator for over fifteen years. He answers questions about sex and love and help…You can find his website at blablabla.com
> (Liam and Rowan, aged 16)

Rowan and Liam were also sensitive to biased information, as illustrated in their reactions to advice provided by a doctor in reply to a user's concerns about first-time sex on the question and answer website 'NetDoctor':

> Rowan: [reading the Doctor's response]…'if you're not sure about going ahead then I urge you not to have sex for the first time'…Wow, that's…
> Liam: 'I want advice on having sex' and the doctor says 'don't have sex'
> Rowan: That is like a major Christian answer [laughing]
> (Liam and Rowan, aged 16)

On the same website, they read information about a Brook Advisory Centre stating: 'Alternatively, go to the family planning clinic in your home town. Female doctors there will be pleased to see you', which they perceived to be sexist and biased. As well as criticising perceived gender bias, Liam identifies the source as having an American bias, despite its .co.uk suffix. Liam expanded on this during the post-activity feedback: "An' it sounded very, like, American, if that makes sense? Like, just like the language it's using. You know, it's like..." and Rowan added: "Well, 'cause America's always crazy. [laughing]", conveying reservations about American content, and preferences for UK content. Similarly, Ashleigh

and Claire twice noticed that websites they had accessed were American. Ashleigh seemed particularly conscious of this:

> Ashleigh: Is this a… Is this… UK?
>
> Claire: Don't know
>
> Ashleigh: Oh, it's US. So it's gonna be different
>
> Claire: No, it'll be… It'll be like…
>
> Ashleigh: It'll be different. It won't have the NHS and all that
>
> Claire: True
>
> Ashleigh: We're gonna have to get the UK…
>
> (Ashleigh and Claire, aged 17)

While Ashleigh and Claire rejected an American website when addressing *Scenario One*, they later deemed the nation of origin of information less relevant to *Scenario Two*:

> Ashleigh: This is…this looks American. This looks very American [laughing]
>
> Claire: Aye, 'cause all American sites say 'In Spanish' at the top
>
> Ashleigh: Oh yeah, I mean it's fine, but sometimes UK ones are a bit better
>
> (Ashleigh and Claire, aged 17)

This exchange illustrates how familiarity with different styles of website allowed some to quickly categorise websites based on 'clues' such as language options. Later, in post-activity feedback, Ashleigh declared she would avoid "anything that wasn't from the UK, just because it's like different".

Courtney and Laura highlighted up-to-date content as an important concern:

> Laura: And if like a doctor writes it, 'cause you look who writes it, and who it's by, and who posted it. And also the like year. It's like the more recent ones are more updated and there's more information in them.
>
> Courtney: Uh huh, like I wouldnae, I wouldnae read an article fae like nineteen nineties like if I was looking up sex for like tomorrow. Like, because chances are the statistics are probably out of date, there's probably more contraception out there than what this article fae like ten years ago is saying. So I think I'd trust more up to date like websites than I would websites fae years and years and years ago
>
> (Laura, aged 16 and Courtney, aged 17)

Specifically, Courtney implied that sexual health content is vulnerable to losing value with age due to advances in medical knowledge. Excluding these few examples, most participants did not appear to investigate authorship or publication dates during the online activity, and no participants visited the 'about' section of any website.

Figure 5-9: Example of website providing author details
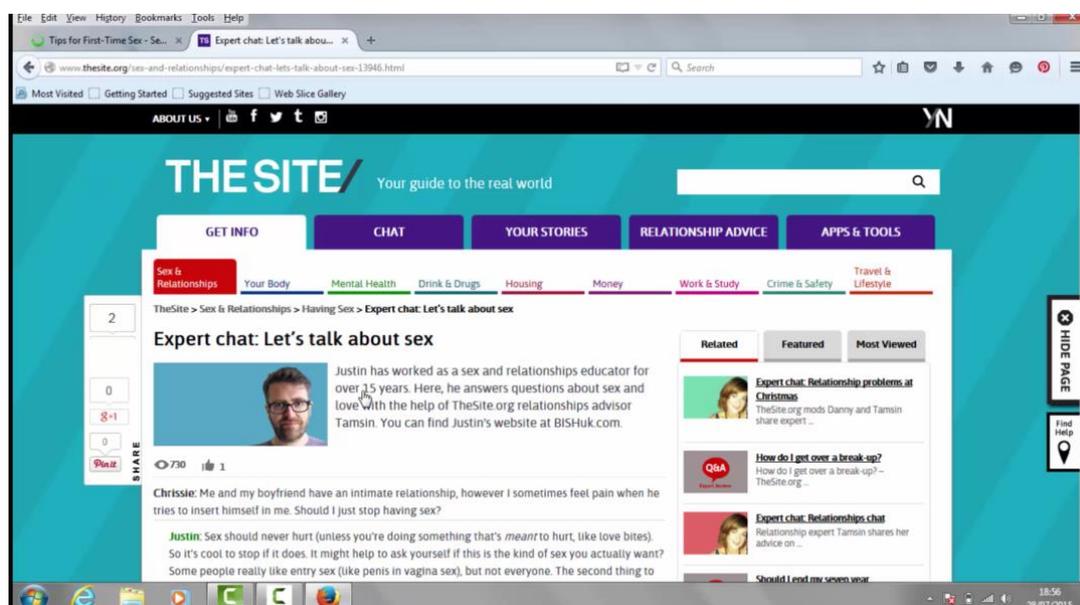
A minority of participants, particularly those identifying as gay, lesbian or bisexual, identified biases and judgmental views within online content. Abbie (aged 16, paired with Sinead, aged 19) was particularly critical of both style and content. In response to reading the sentence "After the jump the five things about sex most other women are too prudish or ashamed to share" on a user-generated website, Abbie objected: "Don't call people a prude just because they don't want to talk about sex". Similarly, she took issue with misogynistic content: "[reading from screen] 'Location, location, location, your pussy is prime real estate if your body was a monopoly board'…Prime real estate! Makes it seem like you can be owned". Abbie often identified information as being heteronormative, misogynistic, or false; in reaction to the sentence 'it feels better without a condom' she exclaimed "don't tell people that! That's not helpful!". Sinead tended to agree with Abbie, but was less vociferous in her criticisms.

Most participants discussed performing some form of triangulation of information by consulting multiple sources, often comparing online information with other sources such as friends, family or health professionals. Some explicitly stated that the more sources contain the same piece of information, the more likely that information is to be trustworthy. Lucy

(paired with Reece, aged 17) typified this perspective: "If you read a few and they've all got the same kind of information you know you're not going to go entirely wrong sort of thing. Like, as long as it's not just like ones telling you to, like, 'not use a condom and you'll be safe, and the rest are telling you to use it'. Go with, like, the majority sort of thing".

While participants described a broad range of sophisticated strategies for assessing reliability, they did not necessarily exercise those strategies during the online activity. Despite widespread recognition of the value of triangulating information from multiple sources, participants rarely demonstrated this within the online activity. Instead, they typically moved on to the next topic after finding the first relevant piece of information. To some extent, this could be explained by the influence of the research context; the online activity imposed artificial time pressures, and participants did not have access to offline information sources with which to triangulate online information. However, it is reasonable to assume that participants' self-reported strategies would diverge somewhat from the strategies they enact in real-life information-seeking, just as they did in the observational activity. Nonetheless, participants' ability to consider and describe nuanced strategies for appraising information demonstrates the capacity for sophisticated information-seeking skills that could perhaps be nurtured through skills-focused training.

5.4   Encountering and overcoming obstacles

While participants described and exhibited various strategies for locating and identifying reliable and relevant information, they encountered various obstacles to doing so. In some cases during the online activity, these obstacles were not overcome, leading to pairs cutting their searches short. Participants' perceptions of their performance in the online activity varied. Some, like Jacob and Connor were satisfied with how they had addressed each scenario:

> Connor: so we've seen your chances of getting it
> Jacob: And how long it takes
> Connor: And what you might have so I think that's it […]
> Jacob: We've totally bossed that
> Connor: We did actually
> Jacob: Google helped us
> Connor: Google is the boy
> (Jacob and Connor, aged 18)

Here, Jacob and Connor declare both their own success and highlight the utility of Google Search. Some participants, like Cleo (aged 19) and Alice (aged 18) and Keira and Sophie found *Scenario Two* easier to address:

> *So if you just go through each of the scenarios and talk a bit about how you got on?*
> Sophie: That was quite hard actually to type in what to find…like we weren't sure
> Keira: Yeah to find like after the unprotected sex was quite hard to find. It gave you loads of information like about all the different STIs and the symptoms to look for and everything but nothing really what to kinda do…as much…like once you've had unprotected sex…Yeah so it's quite hard […]
> Sophie: Yeah and then this one [Scenario two was easier]. You just typed in 'sex for the first time' and what to do
> Keira: And yeah loadsa things came up and em
> (Keira and Sophie, aged 18)

The first scenario also proved challenging for both Lucy and Reece (both aged 17) and Christina and Josh (both aged 17). Lucy and Reece (both aged 17) struggled to find information and became frustrated, with Lucy remarking that "It doesn't seem like there's anything", before deciding to progress to *Scenario Two*. Similarly, when Christina and Josh (both aged 16), encountered challenges in addressing *Scenario One*, Christina said "I don't know", seeming defeated, to which Josh reacted by moving on, with the apparent intent of comforting his friend: "Right. Well, we've got that one. So we can try the next one. Right so scenario two".

While participants were typically satisfied with their performances in the online activity, these accounts illustrate the difficulties they encountered. This section explores some of the key barriers participants encountered and identified, including: difficulties identifying situationally- and individually-relevant information; websites that malfunctioned or were otherwise difficult to navigate; inaccessible language; and facing an overwhelming quantity of content.

5.4.1 Overabundance of content and lack of guidance

Many participants identified the sheer quantity of content available as a barrier to effectively seeking sexual health information online. For example, when discussing how to address *Scenario Two*, Ruth and Joe felt that seeking information online could be counterproductive:

Ruth: Yeah. Like, that's more something that I would then say to them, like, "Well, if you're feeling unsure then maybe it's not the right time." Like, I would give them advice more than tell them to go on the laptop.

Joe: Exactly.

Ruth: 'Cause you're gonna get far too many answers on the laptop.

Joe: And they're just going to bury them aren't they?

Ruth: […] Or freak them out more. Well, we'll just tell her, eh? Tell, like, you would speak to them about if they're wanting a contraception and stuff, like, if it was a female.

(Ruth and Joe, aged 16)

This exchange highlights how the quantity of information available can be perceived as a barrier to informed choices, and why advice from friends may be a preferable, less overwhelming, alternative. Ashleigh (paired with Claire, aged 17) echoed these concerns when Claire suggested searching for 'sex for the first time': "no, 'cause then that's… People just shove loads of… Like, that's all, like, opinions. And it's all gets scrambled in your head". Ashleigh indicated that the process of managing the wide range of perspectives offered online could exacerbate confusion.

Some participants indicated that they would value knowing "firm websites" where they could find trustworthy information. Notably, few participants appeared to know of any specific sexual health websites to visit during the online activity. When faced with lots of information Courtney said "yeah, I think like most teenagers would look at some of they websites and just be like, "no" and just close it and deal wi' it themselves" and Laura replied "but if they knew there was like a specific website that gave them all the information then I think they'd use that". Laura and Courtney also thought young people should receive more guidance, and worried about Google Search:

How do you feel about Googling it?

Laura: Mm hmm. But I think we should be taught in school.

Courtney: Uh huh

Laura: And get more lessons on it

Courtney: Mm hmm yeah 'cause Google just covers the basics

Laura: And it's complicated, there's so many of them and no, I get confused

(Laura and Courtney, aged 17)

Several other participants identified school as a potential place to learn about reliable

resources. Kara and Amy (aged 17) discussed the value of teenagers knowing specific websites, and Kara suggested that school-based sexual health classes could refer pupils to online sources relevant to class content: "It'd even be good, like, talking about the internet, like, no' necessarily schools but maybe, like, you done things in school that were then, like, linked to websites. So, like, you do, like, something in class about, like, the pill or something and then the teacher was like 'What we've covered today is on this website'". As established in Chapter 4, school remains a key, albeit imperfect, source of sexual health guidance and information alongside the internet. Kara's suggestion that relevant websites be highlighted at school is an illustration of how school-based sexual health education might make more effective use of the internet, both adding value to information provided in school and enhancing young people's online sexual health information seeking by recommending specific relevant, accessible and authoritative websites.

There was also discussion of promotion of online sources beyond school. Ashleigh and Claire identified that an absence of advertising for online sexual health information sources may lead to low awareness of those sources:

> Claire: Because, like, you don't really hear about any sites like that. Like, (Yeah.) you'd have to, like, look it up yourself and…
>
> Ashleigh: Yeah. It's never, like, it's never really…
>
> Claire: You wouldn't really know where… I feel like you wouldn't really know where to start.
>
> Ashleigh: Yeah. It's never really presented to us. Like (overtalk)
>
> Claire: Yeah. If, like, you saw an advert for one.
>
> Ashleigh: You have to be, like, looking for it.
>
> Claire: Yeah. But like, even in, like, if there was an advert for it, it would seem, like, better as well
>
> (Ashleigh and Claire, aged 17)

This exchange illustrated how a lack of guidance about specific sources can present a barrier to using the internet. It is clear that perceptions of the quantity of sexual health information available online, and the challenges of negotiating that information, represent barriers to effective information-seeking. This may represent an opportunity for other sources to help ease online information-seeking processes; specifically, there may be an opportunity for school-based sexual health education to provide young people with specific recommendations of online sources, and practical advice about engaging with them.

5.4.2   Difficulty in sourcing locally-relevant content and navigating complex websites

As identified in Section 5.3.2, many participants considered locally-relevant information about services to be relevant to *Scenario One*, and some found success by including location-specific terms in search strings. However, others encountered barriers to finding locally-relevant information. Cleo and Alice searched specifically for STI clinics within their local area ('tests for sti in inverclyde area') and selected the Sandyford website, which was the first search result. When the website failed to load, the pair tried to locate the Sandyford website more directly by searching for 'sandyford' and 'sandyford Greenock':

> Cleo: I'll type in 'Sandyford' to see if that helps
>
> Alice: Don't think it's gonna work
>
> Cleo: Not working at all the Sandyford website
>
> Alice: They have a Facebook [laughing]
>
> (Cleo, aged 19 and Alice, aged 18)

While the website still did not load, during the search process Alice noticed the organisation's Facebook page, which surprised them both. They accessed the Sandyford Facebook page, but quickly left without vocalising why. Cleo expressed frustration at this process: "Right, so in other words Google's just scaring you wi' like, telling you all these STIs that you could have from… and not telling you where you could go and the Sandyford website's not working". Here, Cleo suggests that Google provokes anxiety by providing information about STIs without providing information about sexual health services.

Five pairs encountered barriers to locating information about local services on the NHS Choices website. Claire and Ashleigh (both aged 17) followed a link to 'find sexual health services near you', but upon entering her postcode, received a message explaining that the website only covered services in England, and suggesting that they access NHS24 for information on Scottish services. The pair seemed unsurprised by this, with Claire describing it as "classic" and Ashleigh remarking "always left out, Scotland". They followed the link to NHS24, where, following a series of unwieldy steps, they ultimately located information about local services.

Other pairs encountered the same initial problem with NHS Choices, with different outcomes. Kara and Amy (both aged 17) ultimately found locally-relevant information by returning to Google Search and entering a new search string. Liam and Rowan (both aged

16) followed the link to NHS24, but struggled to make sense of the website, with Rowan declaring "we're all doomed". Abbie and Sinead remained on the NHS Choices, but found the content frustratingly dense (see Figure 5-10):

> Abbie: What is this telling me at all?
>
> Sinead: I don't know
>
> Abbie: This is not telling me anything. Oh, God.
>
> Sinead: Right, we need to find somewhere like in South Lanarkshire. Under S maybe? Whit?
>
> Abbie: Scottish Health Service Centre.
>
> Sinead: Hmm, right…
>
> Abbie: Ok. [laughing]
>
> Sinead: We're so bad at this
>
> Abbie: We're not good at this at all
>
> (Abbie, aged 16 and Sinead, aged 19)

Abbie and Sinead eventually abandoned their search, blaming themselves. These experiences illustrate how some who encounter barriers adapt their strategies to overcome them, while others do not overcome them.

The examples in Figure 5-10 illustrate how the complex nature of the websites of large organisations can present barriers to finding information to the point that users may abandon their information-seeking attempts. This underlines the need for information providers to produce and maintain websites that are accessible, effective and fully-functional, particularly when they are intended to be gateways to health services.

Figure 5-10: Example of difficult to navigate websites
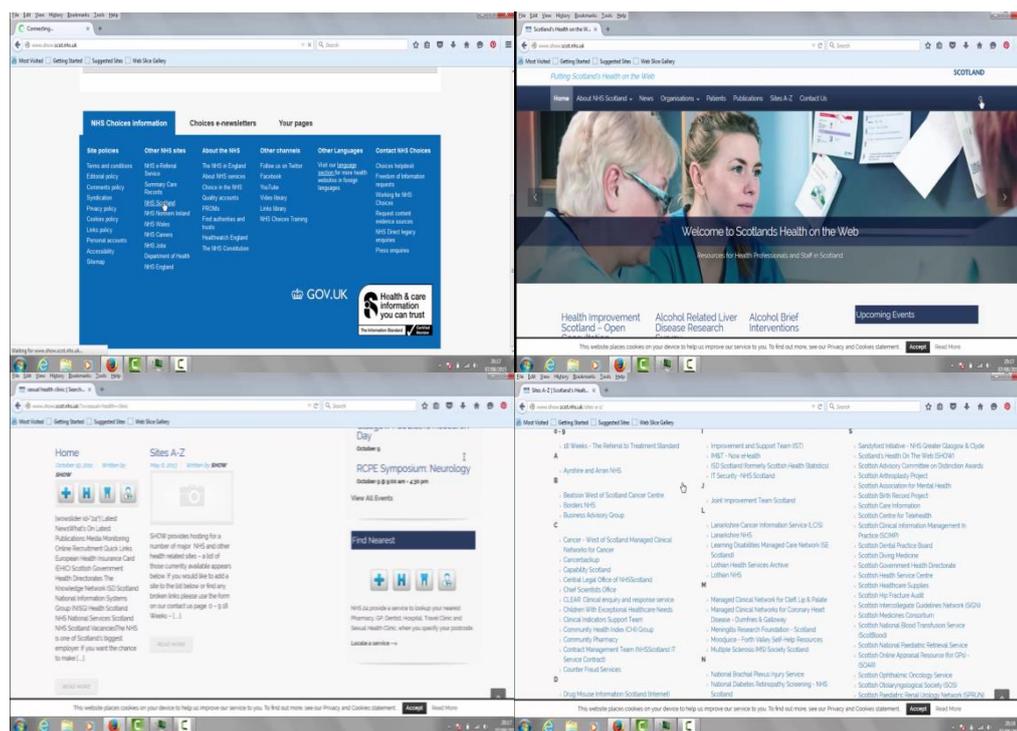
5.4.3   Obstacles to finding individually-relevant content

One obstacle that participants encountered to finding satisfactory information was in finding information tailored to their genders and sexualities. During the online activity, often in relation to *Scenario Two*, male participants often rejected websites they thought were targeted at women. Typifying this, Ben, Caleb and Dylan dismissed the online magazine 'Her Campus', concluding that much of the information relevant to first-time sex online was aimed at women:

> Caleb: Her Campus!
>
> Dylan: There's a lot of stuff aimed at women [...] there seems to be a lot aimed at women. Know what I mean? There's no' really… there's not really any tips for men.
>
> Ben: What sort of tips would you give a man?
>
> Caleb: Yeah Dylan!
>
> Dylan: I don't know…
>
> (Ben, Caleb and Dylan, all aged 17)

Caleb and Dylan bemoaned the perceived absence of information tailored for men on 'Her Campus', and their experience may be indicative of a need for online information on this topic tailored for male perspectives. This perspective was not only expressed by male participants, however; Cleo and Alice felt that 'Her Campus' provided insufficient

information on first-time sex for men, and suggested that a male-oriented equivalent could be useful:

> Cleo: But then maybe they should do like guys pages as well 'cause I don't think all guys wantae go ontae Her Campus and read stuff like that so maybe like, I don't know if there is a His Campus, I don't really…
>
> Alice: There's really not a lotta information for guys. We were looking at was all really more information for girls in't it? [laughing]
>
> Cleo: Yeah, like if it's sore for the girls
>
> (Cleo, aged 19 and Alice, aged 18)

On one occasion, Keira and Sophie rejected a source that they deemed to be relevant to lesbian, not heterosexual, first time sex. The pair valued 'Cosmopolitan' (a magazine) as an information source, and initially liked the content in an article entitled '10 sex tips for your first time with a woman', but then rejected it for a perceived focused on lesbian sex:

> Keira: [reading from the website]'girls have the same bits…yah!'
>
> Sophie: Wait, is this for lesbians?
>
> Keira: I don't know
>
> Sophie: I don't like this website
>
> Keira: I think this is for lesbians
>
> (Sophie and Keira, aged 18)

The examples in this section illustrate the importance that young people can place on information being tailored to their identities, and how encountering information that is not perceived to be individually-relevant can cause disengagement. The apparent gender imbalance of information about first sexual encounters, which was found to be more readily available from sources tailored to female audiences, suggests that, not only might young men be underserved by a lack of relevant information, but that the gendered nature of the information available could reproduce the norm that concern about emotional aspects of sex is a female trait.

5.4.4 Barriers to reading and understanding content

When reflecting on the online activity, participants typically indicated that they could easily comprehend most of the written information they encountered. However, some encountered challenges, particularly with medical terminology. Martha and Samantha struggled with some terms on an NHS website:

Samantha: Eh?

Martha: 'Immun-o-die-fien-cien'?

Samantha: Eh…Immuno-deficiency

Martha: Oh, right wow [laughing] Really I don't know that…these are random. What's that? How do you pronounce that?

Samantha: Eh it looks like 'papilloma' or something

(Martha, aged 16 and Samantha, aged 17)

Shortly after this exchange, Samantha and Martha left the website, with Martha declaring it "rubbish". Similarly, Charlie (aged 18, paired with Matthew, aged 17), who had additional support needs, described avoiding websites with "overcomplicated" and "big words". These accounts illustrate how inaccessible language can reduce engagement. Further, a misunderstanding of the term 'spermicide' on the NHS Choices website demonstrated how an unknown technical term could undermine the surrounding information:

Skye: Spermicide, what's spermicide.

Lily: Sperm

Skye: Oh sperm, just sperm. Why is it a '-cide'?

Lily: I pure don't understand why you put it, put sperm in it before you use it.

Skye: I know what's the point in that?

Lily: 'Depending on the type of cap you may need to add extra spermicide after you put it in.' [laughing] Whit! But that does not make any sense to me.

Skye: Think that's tae help people get pregnant.

Lily: No, it's sayin'…. Is it?

Skye: It sounds like it.

Lily: 'to prevent sperm from passing into the womb'?…

(Lily and Skye, aged 19)

This example indicated that substantial misunderstandings might be avoided through more accessible terminology or readily available definitions. Jess described valuing websites that provide definitions, indicating that they negate vocabulary problems, but also indicated confidence in searching for definitions:

Like there's not too much tricky language or anything and if you didn't understand anything you could always search it up or like, it just kind of gives you the meaning anyway…I mean especially like on like the NHS websites and stuff, it'll say like, if

it has a really complicated word on it, it'll just like give you the meaning for it anyway. (Jess, aged 16, paired with Amelia)

Although most participants were confident in their own ability to comprehend challenging language, some expressed concern that others might struggle. For example, Caleb (aged 17) described most of the information encountered as "pretty easy to understand", yet felt that some would be confused by medical jargon: "ones without slang, what if you don't know what you're looking for? Like, words like that, 'cause you might not have heard, like, a proper medical name for it. So they'd be like, wouldn't have like any idea what they're looking for then". Laura (aged 16, paired with Courtney) suggested that websites could mitigate this risk through more 'basic' language: "some of them were more detailed and more medical words…some people don't do biology and they don't know like the big long words and all the enzymes and whatever. So I think the basic is easier for everyone. 'Cause everyone will understand it".

As well as influencing accessibility, language may also be an indicator of relevance; Amy (paired with Kara, aged 17) suggested that young people are more likely to perceive simple, informal language as relevant: "Like, normally on most websites you can tell the age gap that the information's aimed at and I think if it's using all these big words an' it's not really aimed at our age I'd probably find something that's aimed at younger people I think". From this perspective, formal and technical language is not simply a functional barrier to comprehension, but can signify that content is not designed for them.

5.4.5   Censoring searches and concerns about sexually-explicit content

Some participants, particularly female, seemed concerned about inadvertently encountering explicit material online. During the online activity, Sophie and Keira (aged 18) exhibited an aversion to explicit material; while viewing a web page, Sophie said "that's quite a dirty page, I think", and Keira whispered "come off that". Similarly, as touched on in Chapter 4, gender differences in attitudes towards accessing pornography, or being seen accessing pornography, were apparent. Cleo (aged 19, paired with Alice) suggested that women would be less likely to want to access sexual information videos or watch pornography: "But females probably don't wantae watch like porn to find out about it so they might want tae see a diagram on a website or something, just in case…" and Alice agreed. This was apparent within the sample when discussing sources of sexual health information and pornography in

particular (see Chapter 4). Cleo and Alice agreed that they would not watch an online video in case it was sexually explicit:

> Cleo: I think I'd rather just read it. I'd be dead embarrassed. I'm a pure good girl [laughing]
>
> Alice: Yeah. [laughing] I would be too scared tae like look at the video in case it is gonnae come up kinda porn-ish
>
> Cleo: yeah
>
> (Cleo, aged 19 and Alice, aged 18)

These perspectives highlight issues around gender and the acceptability of sexually explicit content, with boys expected to access pornography, but not girls. Some participants implied that there is stigma associated with women seeking either sexually explicit content or sexual health information. Enthusiasm to avoid explicit content could be seen as part of building a normative feminine identity, or what Cleo described as being a 'good girl', avoiding stigma associated with appearing too interested in sex or sexual health.

Similarly, participants expressed concern about using search strings that might produce sexually explicit content, and appeared wary about searching for particular words or phrases, particularly when seeking information about first-time sex in relation to the second scenario. For example, Aaron and Michael (aged 19) felt that the initial search results they received were aimed at women, so decided to search specifically for information focused on men, but worried about which terms to use, apparently concerned about encountering content aimed at gay audiences. Michael said: "but if I put guy it'll bring up hingwy gay shit won't it" and Aaron replied: "Yeah, don't put guy! [laughing]". This highlights concerns about formulating precisely-worded search strings to avoid unwelcome search results. Participants worried that their search strings might lead them to sexually explicit content; Kara and Amy were trying to choose a search term for *Scenario Two*, and Amy expressed concern about the 'risk' of explicit content:

> Kara: Right, I say we just go em [starts typing 'first time...' into search engine]
>
> Amy: Oh no don't Google it it's too risky!
>
> Kara: Ken what? I ken what I'd hit up
>
> Amy: Dinnae type in 'how tae have sex'. Please dinnae
>
> Kara: I'm no going to type it intae YouTube…YouTube is dodgy like
>
> (Kara and Amy, aged 17)

Amy exhibited nervousness about online information throughout the activity, and was hesitant to select links that she felt might lead to risqué content. While Amy described primarily relying on online content due to embarrassment about talking about sexual health face-to-face, within school, amongst friends and with healthcare providers, her self-directed online information-seeking appeared to be marred by similar issues of fear and embarrassment as in 'offline' contexts.

Some male participants also seemed to censor their searches. For example Jacob (aged 18) said he would tell his friend to seek pornography, and Connor (aged 18) agreed: "that's what I was gonna say as well…but you can't really do it on this laptop [laughing]". In this example, the censorship appeared to be related to the non-private context of the online activity, rather than any personal aversion to sexually explicit content. Liam and Rowan exhibited sophisticated reflections on the importance of context and intent to whether content is categorised as explicit or educational. Liam explained: "It's amazing that, you know, just 'cause they say like 'This is not a porn site' or whatever, it's like... but technically you're showing nudity an', like, you're showing... people probably still see that as porn" and Rowan added: "But it is for educational purposes. Well, at least most of the time. [laughing]".

As discussed, within the previous section, some participants highlighted worries around visual content. When discussing the use of images or videos in sexual health promotion, participants generally thought of sexually explicit content, and some exhibited concern about accidentally accessing such images through 'innocent' searches. Some participants, such as Mia (aged 18, paired with Emma, aged 17), were particularly wary of sexually explicit content on YouTube: "Aye but they dinnae like, you can just get like, porn on YouTube…It's mair like in case a bairn clicks on it, then it's no' like showing you two folk gie'n it yaldy it's like. Probably, yeah". Rowan (paired with Liam, aged 16) described an occasion when he had accidentally encountered explicit material when searching for information: 'I mean, I've had surprise problems like that before. I looked up sex advice. "Okay, now note the discolouration here" an' then the music starts coming in an' then it turned intae a porn video an' I'm like "No, not what I'm looking for! Not what I am looking for!" (shouting) [laughing]'.

5.4.6   Emotions experienced during online sexual health information seeking

One barrier to applying critical health literacy may be emotions experienced during online sexual health information seeking. Participants described predominantly seeking online

sexual health information in response to specific information needs and concerns, which suggests that information seeking is often done in a heightened emotional state. Furthermore, some stated that online sexual health information often exacerbates fears, while some were even panicked by the hypothetical scenarios outlined in the online activity. For example, Jamie (aged 16) seemed to be anxious reading about STI's, stating: "that'd be frightening having one o' them would it no?". For Jamie, being more knowledgeable and aware of symptoms and treatment seemed to increase his anxieties: "that'd be scary but, even just knowing the fact…just knowing the fact is they're out there, it is scary". Connie (aged 18) repeatedly tried to comfort Jamie by highlighting accessibility of treatment: "they're more treatable now though, that's what they're like trying to tell you".

It is important to keep in mind how heightened emotional states may negatively influence young peoples' search strategies and assessment of information, affecting their sexual health literacy. Only one participant, Reece considered the importance of contextual factors when seeking information online, recognizing that assessing reliability while seeking information eased concerns:

> In this scenario it's easy to just look up something and know what's trustworthy. If you're panicking about something you don't really take that into account, you just go for what… yeah, so you just go for it, you find usually if it's something like that that it's not really reliable (Reece, paired with Lucy, aged 17)

Reece highlights that when feeling relatively relaxed, employing strategies to assess reliability were more straightforward, in comparison to looking for reliable information in a 'real-life' situation where panic is more likely to impair judgement.

5.5   Summary of findings

This chapter reported findings from analysis of data from the paired interviews and online activity, focusing on how participants described and exhibited seeking, understanding and evaluating sexual health information online. The participants all had internet access, and all used the internet, but substantial heterogeneity was identified in their approaches to online sexual health information, including: their attitudes to, and preferences for, different types of content; the practical strategies they reported and exhibited in seeking relevant and reliable information; and the barriers they encountered, and sometimes overcame, while doing so.

While all participants described being regular, comfortable internet users, they voiced concerns about finding relevant and reliable sexual health information online. Participants varied in the difficulty they associated with assessing reliability of online sexual health information. Some described difficulties, stating that they might benefit from training (from school or other authoritative sources) on critically assessing sources, while others exhibited skilled critical appraisal of online content, identifying limitations of search strategies, types of information, and specific content, and demonstrating awareness of social determinants of health.

Most participants employed a fast, trial-and-error approach to searching for and assessing sexual health content. Participants typically trusted and relied on Google. A small number accessed known websites directly, which were typically websites of services with which the participants had had prior contact, illustrating the impact that offline experience can have on online behaviours. Participants described their main aim in information seeking to be to find information as quickly as possible, fuelled by time-pressures and worries about 'being seen', and chose search results and appraised sources and content quickly. While some participants found success with fast visual scanning, at times hasty information-seeking resulted in haphazard searching, with participants sometimes bypassing or misunderstanding relevant information.

During the online activity, participants sourced information or 'facts' about STIs and symptoms relatively easily, but encountered some difficulties in locating locally-relevant information and resources and more general information about first-time sex. At times participants exhibited lower functional literacy, experiencing challenges in reading and understanding text, particularly medical jargon, but the majority demonstrated relatively high functional literacy, with comprehension problems being primarily perceived as something affecting others. Barriers to accessing information on websites included: inaccessible language; inappropriate or non-relatable information; non-user-friendly websites; and non-functioning websites, which at times caused participants to abort their information-seeking attempts.

Participants perceived online information as potentially unreliable, exhibited varying ability to identify reliable information, and reported uncertainty about evaluating information. Common strategies described to locate reliable content were choosing 'professional' and reputable sources, identified by prior knowledge or initial aesthetic impressions, and cross-

checking information with other sources on and offline. More nuanced strategies mentioned by small numbers of participants included checking top-level domains, authorship transparency, geographical location and publication dates. However, despite describing these strategies, participants rarely demonstrated them in the online activity. While some demonstrated critical evaluation of search strategies and content, many were unsure and stated they would benefit from receiving training on critically assessing sources.

Gender differences emerged in relation to information-seeking behaviours. Boys rejected information perceived as being 'for girls' and there was variation in attitudes to sexual health, and attitudes to pornography and explicit material. Sex and sexual health were typically portrayed as topics that females are more worried about. Participants tended to perceive pornography as a source of learning and guidance for males, but not females. Worries about encountering sexually explicit material seemed to influence search strategies, with female participants in particular demonstrating risk-averse strategies, sometimes 'censoring' their searched to avoid explicit content, and being image search services and websites containing visual material. Male participants also censored searches, but tended to attribute this to the interview environment, implying that they would not be so cautious outside of the research context. A number of participants highlighted their critical health literacy skills in evaluating the influence of pornography on young peoples' understandings and attitudes to sex.

6 Applying sexual health information in sexual and healthcare contexts

6.1 Overview of chapter

In Chapter 5, participants' descriptions and experiences of negotiating sexual health content online were explored. This chapter moves on to explore how participants described their perceptions and experiences of using and applying sexual health information within a variety of different contexts.

Individuals may apply understandings acquired online in a wide range of contexts. It is important to consider how different contexts and networks influence how sexual health information is experienced, used and applied to make decisions and negotiate sexual health. This chapter will examine how information learned online (and offline) is applied within a variety of different contexts (sexual, social, healthcare) and the kind of facilitators and barriers that exist in relation to this. This will be drawn from both participants' discussions with me during the 'traditional' interview stage and their discussions with each other during the interactive stage (online activity).

This chapter will begin by broadly looking at managing and applying sexual health information, describing participants' general perceptions as well as their own self-perceived strengths and weakness in relation to communicating about sexual health (Section 6.2), before focusing specifically on negotiating sexual health within sexual contexts (Section 6.3) and healthcare settings (Section 6.4). Lastly, this chapter will focus on possible ways to overcome and circumvent formal sexual healthcare barriers, within the online context (Section 6.5).

6.2 Communication skills in managing and applying sexual health information

Communication skills play a key role in seeking and using sexual health information, influencing how information is found, managed, employed and negotiated across different sexual health contexts. When people access sexual health information online, they must process that information and apply it within a range of predominantly offline contexts. Negotiating such contexts, whether traditional healthcare contexts or sexual contexts, demands many skills, particularly communication skills. Within interviews, participants

discussed their perceptions and experiences of barriers to applying information within different contexts. Within this section, participants' reflections on communicating about sexual health in general will be discussed, before going on to specifically focus on communicating in sexual contexts (Section 6.3) and formal healthcare settings (Section 6.4).

6.2.1 General perceptions of communicating about sexual health

Participants considered sexual health communication not just in relation to themselves, but in terms of what other young people might experience. Some participants, like Courtney and Laura, perceived those younger than them as more open and less embarrassed about discussing sex:

> Courtney: Like I think older people like nineteen, twenty, or maybe even older than that, like wouldnae talk about it so much. But see like now like people younger than us they just tell everybody. Like they don't care like
>
> Laura: Like I heard twelve or thirteen year olds at the bus stop talking when they had sex at the car park in some caravan. And how many boys they've kissed. Speaking about things they've been doing and they're like twelve, thirteen. So like they were telling everything
>
> Courtney: At that age they just tell everybody
>
> Laura: Like I don't mind talking about it, but…I wouldn't tell everyone just like my friends and if they ask me I'll tell them 'cause it's not a big deal
>
> (Courtney, aged 17 and Laura, aged 16)

Ruth and Joe (aged 16) shared this perception, with Ruth adding that she felt that openly discussing sex has become "a bit of a competition to them nowadays". Perceptions of younger people as engaged in a competition to appear more sexually experienced illustrates how some young people could feel pressured to be sexually active.

While some participants perceived younger people as more open to discussing sex, they did not necessarily see this openness extending to effective communication about reproductive and sexual health. Some pairs attributed high rates of teenage pregnancy to a lack of communication. Alice explained that:

> I just think they find it more embarrassing, but I personally think like just look at all the young mums. I just don't think they actually talk aboot it instead the just dive in and just getting on with it. I just don't think it's like a lot younger people are aware

of the kinda contraception and stuff you can get 'cause I really wasn't that aware until I'd went tae a clinic. So…

(Alice, aged 18, paired with Cleo)

Some participants attributed discomfort with communicating about sexual health to a lack of practice, suggesting that, in addition to failing to provide sufficient information (as detailed in Chapter 4), school-based sexual health education does not present young people adequate opportunities to practice communicating about sexual health. While school may not have developed young people's communicativeness, some participants, like Keira, suggested that online content could engender openness and confidence in communicating with friends about sexual health:

"Yeah I think so say one of your friends was worried about something but like you'd read up on it and knew something about it you'd feel more confident in telling them like don't worry it's nothing you'll be fine or if it's bad, I'd go get that checked out" (Keira, aged 18, paired with Sophie)

Aaron and Michael associated access to sexual health information online with building confidence in accessing formal healthcare services:

Aaron: yeah, the fact that it's everywhere, everyone talks about it…it's all over the internet, it's everywhere, so it makes you feel like when you go to the doctors that it's just a normal thing, talking about it or looking for it on the internet, it's not just weird, you don't feel like a pure weirdo, because it's everywhere, that's all everyone talks about now

Michael: aye, you feel like you know what you're talking about, you've got a bit of knowledge about it so you're not just going in confused

(Michael and Aaron, aged 19)

Applying information within the healthcare context is discussed in more detail in Section 6.4.

6.2.2 Participants' perceptions of their communication strengths and weaknesses

Participants displayed variation in their comfort in discussing sexual health topics, which was communicated both verbally and non-verbally. However, it is important to consider that participants were aware of the research topic when they had agreed to take part, and can therefore be assumed to have some degree of comfort in discussing sexual health.

Nonetheless, some participants, like Amy were outspoken about their difficulties with discussing sexual health:

> *And what about talking to other people about sex and sexual health?*
>
> Amy: I find it quite embarrassing, like. I find it difficult tae talk about that stuff.
>
> Kara: I dinnae actually care
>
> Amy: I do
>
> Kara: Maybe I think I've got this thing where I overshare. It's like a trait problem, eh? It's really bad
>
> Amy: Yeah, you share too much [laughing]
>
> Kara: I overshare too much. Some things are supposed to be kept to yourself so I don't find it…
>
> Amy: But I'm the opposite, like
>
> Kara: I talk to my mum an' that, like
>
> Amy: Well, I can't talk to, I don't talk to anyone about it. I find it really embarrassing. I don't know why, no, I wouldn't talk to anyone about that, like. I don't know, I just find that really embarrassing
>
> (Kara and Amy, aged 17)

In this quote, Amy and Kara reveal starkly contrasting attitudes to discussing sexual health. Amy described using the internet for information seeking to avoid face-to-face communication, but still expressed anxieties about being seen to be seeking information about sexual health.

Around a fifth of participants shared Amy's discomfort, while a similar portion shared Kara's approach. About half of the participants who reported being comfortable communicating about sexual health identified as gay, lesbian or bisexual, and most had participated in sexual health workshops or local youth groups. As described in Chapter 4, participants who identified as gay, lesbian or bisexual tended to have experienced poor sexual health based school education, prompting them to learn in other ways, primarily online but also from others, which could account for increased confidence and comfort in communicating about sexual health. In turn, this might highlight the importance of workshops and similar activities to improving skills and confidence in communication.

Many participants expressed anxieties around communicating about sexual health regarding specific topics or contexts. Confidence tended to vary by situation and person. As Lily and

Skye (aged 19) explained, comfort "depends what the issue is", "what age they are" and "what their situation is". Discussing sexual health with friends was generally seen as more agreeable than talking to parents, particularly amongst female participants, and trust was an important factor (as indicated in Chapter 4). In relation to applying and using sexual health information, two key contexts arose within which participants described having problems communicating and negotiating sexual health: sexual and formal healthcare environments. These will be explored in the following sections (6.3 and 6.4).

6.3   Communicating with sexual partners and negotiating sexual contexts

Participants generally indicated experiencing anxiety about communicating with partners and within sexual contexts. When asked about discussing sex or sexual health with partners, participants often became quiet and appeared uncomfortable. For example, when asked about communicating with partners, Laura (aged 16) quietly said "mm hmm yeah I suppose" and her friend Courtney (aged 17) said "mm hmm" and did not expand further. Some described being comfortable communicating with sexual partners. For example, Melissa (aged 16), who was generally very comfortable discussing sexual health, said she would often talk to her boyfriend, as did Lily (aged 19, paired with Skye) who described her boyfriend as someone she would go to with sexual health issues: "I'd probably speak to my friends first and then see what they think and then…oh and my boyfriend as well, I'd say tae him and then go if anything was wrong". During the online activity, Lily again demonstrated the importance she placed on communication by responding to a website that asked 'Can you discuss sex with your partner?', by remarking "yeah if you can't you shouldn't be in the relationship".

Some participants, like Liam and Rowan, who both identified as gay, had no sexual experience but assumed they would be fine discussing sexual health within sexual situations as they were generally confident and happy discussing sexual health:

> *And what about partners?*
> Rowan: I guess I would be, yeah
> Liam: Probably. I mean, I think it's hard to tell 'cause I don't know about you but I've not really had a proper partner in proper relationships as such so I think it's a bit hard wi' that sort of thing, it's like you don't know really. But I would've thought so
> Rowan: I feel like, you know, I mean, not that I've ever been with someone but if I was with someone I feel like the pers- like, of course you're gonnae be okay, like, to

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at least some degree talking to someone about a sexual issue or something sexual when that's actually the person you have sex with

Liam: Yeah

Rowan: Like, that's the person that you go all out with so of course that's the type o' thing you can talk about. [laughing]

Liam: Yeah. Well, if you say, like, you know, "Look, honey, I've got chlamydia. I think you should..." an' then you say "By the way, I think you should get checked, just in case." I mean, you wouldn't say "I've got chlamydia. Now, you just relax an' go have sex wi' everybody else." It's like...

(Liam and Rowan, aged 16)

Here, Rowan anticipated that communicating about sexual health issues with a partner should be a prerequisite for having sex. However, this perspective represented his perception of a hypothetical, future situation, not a lived experience, and may also be an example of participants trying to provide 'correct' answers to interview questions, regardless of the plausibility of applying his answer in reality.

Some participants described communication within sexual contexts as becoming easier over time. For example, Ruth and Joe felt that communication becomes easier with age and experience:

Ruth: I think it gets better the older you get

Joe: It does, yeah, because it's down to experience again, like, you kind of know more what you're talking about kind of things

Ruth: I think when it's younger because when you're younger it's like you don't know, like, if something happened you wouldn't know if that's normal…

(Ruth and Joe, aged 16)

Ruth and Joe were both sexually experienced and were involved in peer education within their school, which helped them develop communication skills and become less awkward discussing sexual health. Conversely, Emma described how she had been in a relationship for two years and had not yet had a 'proper' conversation about sexual health with her partner:

"I mean I've been in a relationship for two years and I still dinnae think we've had a proper conversation aboot it, so… Like, no' really. Just, I think because I would say I'm still really young, 'cause we are – we're only teenagers, we're only in our teens.

And even trying to talk to a boy about what you feel and what you don't feel is right, and stuff like that, I think it's really hard because they have their mind-set and you have yours. And trying to share that's a lot harder than just being like: "Right, this is what's happening and this isn't what's happening." It's not that simple"

(Emma, aged 17, paired with Mia)

Emma seemed happy to talk about sexual health with her sister (Mia) and within her local community hub, but less confident within the sexual context, attributing age and gender as factors. Indeed, female and male heterosexual participants at times exhibited different attitudes to sex and feelings about communication. Connor and Jacob suggested that communicating about sex and sexual health was something that females would do more readily than males:

What about talking to a partner or someone…?

Connor: I think…well are you talking about first time? You'd maybe kinda speak…

Jacob: It depends who you are

Connor: Aye

Jacob: Some people are really worried about it…like girls seem more worried about it than guys I think…they would talk to their partner but I think a lot of people wouldn't

Connor: I think if it was a girl they would probably speak to their pal before speaking to their partner

(Connor and Jacob, aged 18)

Females generally seemed more concerned about emotional and communicative elements of sex, particularly first time sex, than males, most of whom described not talking to partners, not necessarily due to communication challenges, rather due to deeming that communication unnecessary. Aaron (aged 19, paired with Michael) was very open about discussing sex and sexual health, but regarded it as unnecessary within a relationship. When asked about talking to sexual partners he said: "nah, nah I wouldn't do that…anytime I've had a girlfriend I wouldn't talk about that…if I thought I had an STD as well I'd keep that to myself". Worryingly, Aaron indicated that he would not communicate to a sexual partner that he had an STD, and he seemed to hold misconceptions about STI transmission and have relatively little knowledge of sexual health in general.

As described in Chapter 5, female participants more frequently mentioned being anxious about first time sex in relation to *Scenario Two*. Maeve and Leah discussed how their hypothetical friend would feel in anticipation of a first sexual experience:

> Maeve: Yeah, for like their first they're nervous of what's gonna happen…Like 'cause if she's having it for the first time that means like she'll be like…
>
> Leah: Nervous
>
> Maeve: Yeah, I know
>
> Leah: But like apart from the like the emotional stuff to it, like the physical stuff, like the pregnancy, the STDs, STIs, whatever. Or like them like pressuring you into it or something
>
> (Leah and Maeve, aged 16)

Here, Leah and Maeve identify both emotional concerns about sex and negotiating pressure from partners. Keira and Sophie found online advice about preparing for first time sex, but felt that the information would be too difficult to introduce in the moment in a real-life sexual encounter, exhibiting limited confidence in their communication skills:

> Keira: If sex does not feel pleasurable…(whispers)…ease into a comfortable sexual session…find a comfortable setting…this is like quite staged…like you couldn't really…like if you were actually in the situation like you couldn't
>
> Sophie: Yeah you'd have to actually be going out with them for like ages
>
> Keira: See I couldn't do that
>
> Sophie: Naw I couldn't do that either
>
> Keira: Like I'd just feel too uncomfortable
>
> Sophie: I'd be like 'be quiet'
>
> Keira: It says like tell your partner but I don't know…I think you'd have to be really comfortable with them like see if you
>
> Sophie: Like going out for ages
>
> Keira: Yeah see if you just had sex randomly like you couldn't do all this because it would be quite
>
> Sophie: Like weird
>
> Keira: Yeah…'communicate with your partner' [reading from website]..eh.
>
> (Keira and Sophie, aged 18).

Following the online activity, Keira described how negotiating sexual situations could be even more difficult in "casual" encounters:

"like if someone was just having like just sex like if they didn't know them that well doing all that would be quite…you wouldn't be comfortable doing that so I think most of the things we found were mostly like people in like relationships who have been together for quite a long time cause you need to be comfortable in saying that to them" (Keira, aged 18, paired with Sophie)

Here, Keira identifies the need for specific advice for negotiating different types of sexual situations.

One style of advice that Sinead and Abbie liked was a more light-hearted approach, which they encountered on a website that they thought provided useful information to help people communicate with their partners about sex:

Abbie: Well I think you could learn quite a lot from these websites as bad as they are.

Sinead: Yeah

Abbie: Like it's telling you what you need to know. The basics of what you need to know

Sinead: Yeah, but it's making it funny as well, like the way it's worded and stuff like that

Abbie: Yeah, it's all…"Size is very much to do with your ability as a lover"

Sinead: See how if the couple like read these together, they'll have a laugh, and they might feel like mair comfortable with each other [overtalk]..Do you know what I mean? Like, "Shit, will you get hard for me, big boy?"

Abbie: Will we come at the same time…Oh, I think you'll be a good lover…Oh, this is good

Sinead: I'm just writing this website, 'cause it's quite a funny website, health, twenty-four. Sex, great, top tips

(Sinead, aged 19 and Abbie, aged 16)

In discussing this humorous website, Sinead identifies the possibility that reading online advice as a couple could be an effective way to build a comfortable, communicative sexual relationship.

In general, the heterogeneity of participants' reactions illustrates the range of different relationship types, the diversity of types of online content and the variety in individuals' confidence and comfort in applying advice in sexual contexts. This variety highlights the

diversity of barriers to communication that young people may encounter, and the challenges faced by organisations seeking to create online content that is useful to a wide range of young people.

6.4 Negotiating sexual health information and services within formal healthcare settings

Formal healthcare settings are key environments within which sexual health information may be sought, used and applied to make decisions and negotiate sexual health. Most participants described some experience within such settings, although not always related to sexual health, and expressed general perceptions of what formal healthcare encounters were likely to be like. Most often, participants presented consulting healthcare providers (typically General Practitioners (GPs)) as a secondary or tertiary step to potentially take after initial information-seeking. Thus, GP surgeries and sexual health clinics tended to be viewed as places for diagnosis and testing facilities rather than providing information. During the online activity, particularly in relation to *Scenario One*, participants generally concluded that they would need to visit a formal healthcare location after seeking information on the internet.

6.4.1 Attitudes towards attending and interacting in formal healthcare settings

Participants' perceptions of negotiating sexual health (and illness) within formal healthcare settings varied. Some participants described ease in interacting within such contexts. These participants tended to have had previous positive experiences of healthcare, and were comfortable communicating about sexual health in general. However, most participants expressed anxiety about addressing sexual health within formal healthcare settings, and some stated that they would avoid such settings. These participants expressed concerns about both interacting with healthcare providers and being witnessed seeking sexual health information.

Participants varied in their confidence about making initial contact with a doctors or clinics. Some participants did not perceive it to be a challenge, indicating that familiarity and positive relationships with healthcare services may engender comfort. For example, Josie (aged 19, paired with Kyle) liked her GP and felt comfortable going to her for help in relation to her sexual health, explaining "I'd go to my doctor, she's heavy cool". She also described encouraging her friends to visit formal healthcare settings, stating that "I need tae force

everybody tae go tae the doctors". Illustrating how an individual's comfort in accessing services can potentially benefit their friends.

For sisters Emma and Mia, who had moved home frequently, building trust and familiarity with healthcare providers was crucial, and they describes a sexual health nurse in their local community hub, with whom they had built trusting relationships. Emma perceived the organisational configurations of health centres as barriers to building trusting relationships, making her reluctant to seek help in this way:

> See I wouldn't even know where to start like. If you went to your doctor and you were like: "Mm, can I have some contraception?" They'd probably, I think they'd look at you weird, like, especially when you're going to your doctor now, 'cause like you phone up and you make an appointment and you don't know who you're getting til you get there. And it's, oh, a new system that they've started and they're just down and your like. This is awkward if you're coming down here every time and you're meeting someone different and you have to explain what's going on.
> (Emma, aged 17, paired with Mia).

Many participants exhibited limited awareness of sexual health services, and uncertainty and unfamiliarity fuelled anxiety. For example, Kyle (aged 19, paired with Josie), upon reading information about local sexual health testing services during the online activity exclaimed: "Wait, so you can get tested for that, for STIs at your GP's surgery! I never knew that!". Sinead criticised inadequate promotion of, and information about, sexual health clinics:

> I don't think so, like, well, my friend the other day there was looking for a health clinic, like to get checked for something [laughing]. And she was like, "I don't know where to go." And I was like, "There's no' really that much information on places to go." And if there is it's no' advertised as well as what it should be […] Because there's quite a few like young people that might need it but cannae like don't know, and they don't want tae, they're too embarrassed to go to their doctors or—.'
> Sinead (aged 19, paired with Abbie)

Sinead identified how limited knowledge about services, a lack of promotion of services and embarrassment about consulting GPs can combine to create significant barriers to using health services. The perspective that sourcing information about available services is challenging echoes findings detailed in Chapter 5, in which some participants encountered barriers to locating local sexual health services during the online activity.

Many participants expressed worries and anxieties about local GPs or sexual health clinics. Amy (aged 17) expressed anxiety about consulting a GP to address *Scenario One*, saying "Oh nah, that would gi' me the fear". Lucy and Reece highlighted the confidence required to ask a GP for an STI test:

> Lucy: And then you'd be going to the doctor and be like "I had unprotected sex. Can you take my blood and see if I have HIV?
>
> Reece: Well, you kind of need to have a lot of confidence but if you did have it. It's better to catch this kind of thing, like, sooner […]
>
> Lucy: So you basically have to go to the doctor to find out if you had an STI?
>
> Reece: Yeah. Yeah, you would have to go to the doctors
>
> Lucy: I'd rather not [mumbling]
>
> (Lucy and Reece, aged 17)

Here, Lucy may implies that the admission of risky sexual behaviour implicit in requesting an STI test may fuel anxiety. Despite Lucy's stated reluctance to visit her GP for an STI test, she later explained that: "I think it'd be very awkward and embarrassing but if it was like a call that needed to be made I'd probably make it". Most participants were reluctant to visit formal healthcare settings, but recognised that certain situations were, as Maeve (aged 16, paired with Leah) put it, "definitely a go to the doctor situation". The reasons behind many participants' reluctance to access healthcare services are expanded upon in the following sections.

6.4.2   Communicating and interacting with healthcare providers

Participants raised a range of issues related to interacting and communicating with health providers. A minority of participants appeared comfortable interacting with health providers about sexual health. For example, Aaron, was generally at ease discussing sexual health, had previous experience being treated for an STI and preferred the direct and quick nature of such help-seeking, in contrast to his friend Michael:

> Aaron: The internet is so bad…I've used the internet so many times and I've just patched it, I was just like…every time I've got a problem I just go straight to my doctor…It's just there's so many different things, you could type only one thing in and then like tend different things'll come up and it's just so bad and you'd rather just go to someone that's like specific and will just tell you exactly what's wrong with you and like you can get a test done

Michael: I wouldn't want to go to the doctor…I've never went to the doctor to talk about anything…like I've never had a problem so I've been fine…I wouldn't, unless I had to…I wouldn't…unless I got into a big problem like Aaron [laughing]…I'd be embarrassed to talk about it

(Aaron and Michael, aged 19)

Here Aaron explains that he prefers to have his concerns quickly answered by a doctor than adding to his uncertainty by seeking information online. However, Aaron's friend Michael was much more reticent to consult with a doctor about sexual health issues due to feelings of embarrassment. Michael's experience typified most participants' descriptions of seeking information or help within healthcare organisation contexts.

A small number of participants expressed reluctance to use formal healthcare due to worries about being examined. Josh and Christina (aged 16) described actively avoiding formal healthcare settings for this reason, while Cleo (aged 19, paired with Alice) described a "mortifying" experience at her local sexual health clinic in which she "hated every single moment of it", explaining that online testing and self-testing would be more comfortable.. Her friend Alice (aged 18) appeared much more at ease within the clinical context, but understood others' anxieties, explaining: "I think some people feel comfortable but some other people like like Cleo, I'm not bothered about a woman being down and being able tae look at it, but she's like pure squeamish wi' it [laughing]". Cleo's perceptions of clinical settings and online and self-testing illustrate how anxieties about accessing formal healthcare settings can result in preferences for alternative options that offer greater anonymity and privacy. Participants' views on online testing will be described in more detail in Section 6.5.1.

Reluctance to consult healthcare providers often appeared to be related to embarrassment at discussing sexual health matters face-to-face. For example, Darren and Craig described being comfortable consulting their GP about non-stigmatised health issues such as broken bones, but not sexual health:

Darren: Nah, I wouldn't do that and plus it's a bit, it's not too formal but it's like your doctor's, like, your doctor, you don't really want to – it's like telling your uncle about it or something, it's just weird. So, I think I'd rather use self-diagnosis of some kind, yeah [laughing]

Craig: Yeah you walk in and they're like "Oh, hi" and shake your hand an' that and then you have to just sit down and talk to them about your problems, it's a bit too close. [laughing]

(Darren, aged 17 and Craig, aged 16)

Here, Darren expresses a preference for self-diagnosis over the formal, embarrassing context of consultation with a familiar GP. The barrier presented by familiarity with their GP was potentially exacerbated by Darren and Craig living in a rural area, where a GP might be a more integral to the local community than in urban areas.

Melissa highlighted the role of individuals' confidence in successfully communicating with healthcare providers:

"I've got some friends that are in the year below me and I think they feel quite scared to start contraceptions and stuff like that and they don't feel very comfortable speaking to people. And I know, like, quite a lot of people, like, get embarrassed when they have to come here [local youth information and sexual health organisation] to get contraception an' that 'cause they don't wanna go to the doctors and that but".

(Melissa, aged 16)

She explained how different personalities may have different approaches to seeking sexual health services: "So, I think some people are – don't like speaking about it and just like to keep it to their self but some people do just – don't mind speaking about it, just speak to people. So, I think it depends on the person".

While some participants, such as Melissa, considered how differences in individuals' confidence and personalities may determine their comfort with face-to-face sexual health services, many described negative perceptions and experience of healthcare professionals. Laura and Courtney both felt like they were "judged" by their GPs:

Courtney: I hate going to the doctor

Laura: Yeah, I feel like I'm judged, so I don't really like going

Courtney: Yeah, that's the same as me yeah

Laura: Yeah I just say to my friends…and if I need to go I'll take my friend with me 'cause I don't like…I won't go myself…I just feel like they judge me and like I don't feel comfortable by myself

Courtney: [...] 'cause, like, 'cause they sit there and they type while you're there and you don't know what they're typing and it freaks me out [laughing]

(Laura, aged 16 and Courtney, aged 17)

In this exchange, both Laura and Courtney relate experiences of feeling judged by healthcare professionals, and Laura identifies the value of bringing a friend for support. Laura and Courtney both described relying on the internet for health information , despite worries about reliability, primarily due to negative experiences with doctors. Ruth described a more specific experience of a sexual health nurse:

I don't really like – but I've got, like, personal experience wi' a doctor to like why I don't like it. But it's more of, like, 'cause what it was is I went to go on the rod and the girl had turned around, the nurse said, like, said like "Oh, so how many people have you slept with?" And I told her and I was like fourteen at the time and she went "And you're fourteen?" And I was like, yeah, so I was sitting there but my pal was sitting there at the time and she just, like, started giggling, like, that was dead snidey and I was like – but ever since then I've, like, hardly ever been to a doctor.

(Ruth, paired with Joe, aged 16)

Ruth's experiences highlighted how influential one bad experience can be, as it led to her actively avoiding going to a doctor. In contrast, her friend Joe had positive perceptions of sexual health clinics, which he described as "all just down to experience".

Some participants drew meaningful distinctions between specialist sexual health clinics and GP surgeries. Keira and Sophie suggested that GPs might judge young people discussing sexual health, while sexual health clinic staff would not:

Keira: Cause like they also like see so many people like with obviously like the same kinda thing whereas when it's just your normal kind of doctor you'd be a bit like

Sophie: Yeah if you had to walk in you'd usually be like 'oh I've got a cough' but you'd have to walk in and be like 'I think I've got a sexually transmitted disease

Keira: If you were in the clinic they'd expect that or something so you wouldn't be as embarrassed to say something like that

(Keira and Sophie, aged 18)

Thus, participants raised a range of potential barriers to confidently and effectively engaging with healthcare providers, including embarrassment and worry about being judged. However, it may be important to recognise differences between different types of health

services, and how they may vary in the extent and nature of the barriers obstructing their use; perhaps focusing on sexual-health-specific services may help young people to circumvent the embarrassment and stigma they might associate with seeking sexual health support in general health service contexts.

Participants also described difficulties in understanding information provided by healthcare professionals. During the online activity, Claire and Ashleigh encountered information about smear testing, and Claire recalled being asked about smear testing by her GP and being unsure of what it meant:

> Ashleigh: 'Pap test'? [reading from webpage]
>
> Claire: My doctor asked me if I wanted to do a smear test, but I didn't know what it was. I was just like no…
>
> Ashleigh: What is it?
>
> Claire: I don't know.
>
> Ashleigh: Slow down [in response to Claire scrolling quickly down the webpage]
>
> Claire: I think he said I didn't have to start 'til next year anyway, so… that'd be good to know.
>
> Ashleigh: See, that's the kind of thing you'd want to know
>
> (Ashleigh and Claire, aged 17)

Despite not knowing what a smear test was, Claire preferred to decline the test rather than ask her GP to explain. She had earlier described discomfort at discussing sexual health with her GP, which possibly influenced her response to that specific situation. This indicates potential limitations of communication skills on both Claire and her doctor's behalf, as providing a brief explanation could have helped Claire to make an informed decision. Sinead and Abbie also highlighted poor doctor-patient communication in a consultation with GPs:

> Sinead: Oh, I was at the doctors last week, I was just like, "What does that mean?" And he was just like, "Just go and take the tablet one day, like one time—one—once a day." And I was just like, "Oh, right." I was like, "What's it for?" And he's just like, "Just take the tablet." And I was like, "Ok." [laughing]… Uh huh, 'cause I was like, "What?" Like such a numpty, like I didn't even know what he was talking aboot. [laughing]
>
> Abbie: Yeah, when I was in the hospital I asked them to tell me what they did during my operation. They were like, "Oh, well…" (makes noise). They told me all this kinda thing and I was like, "In English please." And they were like, "Oh, right, we

cut a bit off your kidney. We cut a bit off your bladder." I was like, "Oh, right, ok. That's easier. But please don't tell me you did a cross sectional surgery on the lower abdomen followed by…" Like, I don't want to know. "Just tell me why I've got a scar please." [laughing]

(Abbie, aged 16 and Sinead, aged 19)

Unlike in Claire's case, Abbie and Sinead both responded to unclear information by requesting, and receiving, clearer explanations. Abbie seemed to prefer information in non-medical formats, preferring to talk to friends and access user-generated online content rather than engage with face-to-face formal healthcare: "It's like, it's so much easier 'cause it's like an actual person [referring to user-generated content], and it's not someone going, "well, in medical terms, let me just give you all these words you don't even understand, so that you leave here even more confused than before". As well as exhibiting confidence in requesting clarity from healthcare professionals and in discussing sexual health, Abbie had developed a critical approach to assessing health information, perhaps due to poor information provision in school. In this respect, Abbie and Claire illustrate two different reactions to being provided with unclear information within a formal healthcare setting, and highlight how limited communication skills and confidence can act as barriers to using services effectively.

Some participants described a lack of trust in health professionals and low confidence in their abilities. These participants typically had particularly negative experiences with healthcare professionals and applying information within healthcare contexts, and therefore preferred to avoid formal healthcare settings. This was typified by Laura and Courtney, who each described particularly negative experiences of healthcare. Laura described her GP as "useless" based on multiple incidents where they did not take her concerns seriously and misdiagnosed her:

Some doctors are not as educated as they should be and you tell them what's wrong with you and like you know what's wrong with you 'cause someone else told you and then you go up to them, "oh, it's just a cold"…and like, or "you're just not well, you've got the flu", when I came out to be anaemic and like really ill

(Laura, aged 16, paired with Courtney)

Experiences like the one described led Laura to avoid consulting with healthcare professionals in favour of self-diagnosis and online information: "I don't like going to them now. I would rather check the symptoms myself and if I'm kinda sure I'll get my own

medicine or like phone up and ask and then do it myself…cause I don't like doctors". Laura's friend Courtney had very similar experiences, feeling that doctors tend to "brush you off" and not take concerns seriously enough, resulting in misdiagnosis and erosion of trust: "I just don't feel like my doctor knows what they're doing". Due to such experiences, participants like Laura and Courtney felt like they had to find information in other ways, or felt helpless:

> *Can you think of other ways you might try and find out about sexual health?*
> Courtney: Not really no
> Laura: No, just Google it
> Courtney: Yeah
> Laura: cause the doctors don't really help you, or, if you like ask them for help…like I asked for, what vaccination for Malawi, he was like, "just Google it"…so…so I don't think doctors are much help and no one can really tell you about this. You just have to Google it yourself
> (Laura, aged 16 and Courtney, aged 17)

In this exchange, Laura, who had previously described encountering difficulties finding information online, describes her GP recommending that she use the internet to search for information on travel vaccinations.

While many participants described various barriers to accessing healthcare, Ruth described some measures in place at her local health centre designed to reduce embarrassment for young people accessing services:

> Ruth: So, that gives you, like, a bit more information and then we just checked the Google website – the [local youth organisation] website and just seen, like, what they actually have and I don't know if you've seen it but downstairs in the drop-in they've got, like, a tick sheet. So, like, when you go in you don't have to be like "Oh, I'm here for a pregnancy test." Like, they give you, like, a laminated card and you'll just tick it
> Joe: Once… so it's very confidential so you can see someone in that they won't actually know what they're in for
> Ruth: So, they've, like, what you do is, like, you'll just click, like, they've got the, like, a wee cartoon sheet of it and you'll just click on pregnancy test and it comes up like a wee cartoon picture and then it's got, like, information there about what they can do to help and stuff. So, that would probably be the best one, like, even just

saying to a pal, like, "If you go to the [local youth organisation]" and they're like "Well, I'm not sure" it's like "Well, go and see what they can actually do for you first 'cause they're not gonna be biased." Like, I wouldn't – like, I would support it completely. But obviously from their point of view they would be like "Oh, I don't know."

(Ruth and Joe, aged 16)

The measures described by Joe and Ruth are perhaps examples of how relatively simple changes can substantially mitigate concerns about embarrassment and privacy. Ruth's account also highlights the risk of stigma in being witnessed by others accessing sexual health services, which is an issue discussed in more detail in Section 6.4.3.

While Joe and Ruth identified a system designed to engender confidence, more participants described systems that exacerbated concerns. Some, like Emma and Mia, perceived the organisational configurations of health centres as barriers to building trust, preferring to talk to a local sexual health community nurse who knew their personal situations. Sinead described feeling awkward about the number of personal and potentially unnecessary questions asked of her during a visit to the pharmacy to receive emergency contraception:

"I think like see how when you go in for the morning after pill into like the chemist or whatever. It is the only awkward thing about it is that, when they take you into the room and they ask you all these questions…Like they come in wi' sheets of paper and I'm just like, "So why do you need to know this? Like why do you need to know like how many times I've had sex?; Why do you need to know like, when the last, what time the last time I had sex was at?" And I was just like, "Why do you need to know if I'm with the guy?" Like it's pure awkward questions like, I don't really want to answer these like…And then, if you don't then she willnae gi' you it."
(Sinead, aged 19, paired with Abbie)

This highlights how routine systems can alienate young people seeking sexual health services, and also points to Sinead's critical awareness of barriers and stigma around sexual health.

6.4.3   'Being seen' seeking sexual health information and services

When discussing potential concerns about accessing formal healthcare settings, participants identified a range of issues related to interacting with staff and understanding information,

but most also expressed concern about 'being seen'. Participants described concerns about being observed seeking help or information related to sexual health in various contexts, including both healthcare services and the online environment, and being seen to be seeking help, even by friends or family, was described as a source of embarrassment and stigma.

Even participants who described being happy to communicate about sex and sexual health within healthcare contexts exhibited concern about friends seeing them visiting a doctor for sexual health reasons. For example, Aaron, who described being happy to communicate about sexual health (which was corroborated by his friend Michael) had concerns about confidentiality:

> Aaron: like if you go to your local doctor…because that was one of the things the first time I went…I didn't want to go into the room and see one of my mates and then I'd sit down and they'd be like 'what are you in for?' and then I'd have to explain it [laughing]…and they'd be sitting tweeting at the same time…that sort of thing…so it's like your local place and where we're from everyone knows everyone as well…
> Michael: yeah it's a small place
> Aaron: …you go in there and you see somebody and then you see them at the pub the next night and they're just thinking what were you in the doctors for and you'd just be so embarrassed"
> (Aaron and Michael, aged 19)

So Aaron did not seem to mind discussing sexual health with his family or his friends, but was worried about his reputation in his small town. This was an issue for many participants, but particularly those from rural areas and smaller towns, for whom their GP was typically 'the family doctor'. Kyle preferred going to the sexual health clinic for sexual health issues instead of using his family doctor to ensure confidentiality and to reduce the likelihood of encountering someone he knew:

> I think if I was tae go tae anywhere if it was aboot sexual health I'd go tae like the clinic, I wouldnae go tae my doctor… Aye, I don't think it's... I don't know 'cause like I've got the same doctor as my family an' a' that but I just... Just in case they slip up. Aye. Like "Aww, Kyle was in here getting condoms the other day.
> (Kyle, aged 19, paired with Josie)

This typified many participants concerns about parents and acquaintances finding out.

Within two interviews, whilst looking up sexual health services during the online activity, participants specifically searched for information about confidentiality. Martha and Samantha discussed the importance of finding a clinic that was confidential:

> Martha: 'What we offer in our clinics.' [reading from webpage] Oh, shall we type in if they're confidential? 'Cause if it…
> Samantha: I think it would all be confidential
> Martha: Yeah, probably. But…but I… like, that's what I would be worried about.
> Samantha: Yeah
> (Samantha, aged 17 and Martha, aged 16)

Kara and Amy (aged 17) were unsure of if they could get the pill without their parents' consent. Amy said "but can ye go on the pill withoot your parents knowing?, to which Kara replied: "Yeah think so... Go tae GP. Emma told me that…". This extract also highlights peer sharing of knowledge, as discussed in Chapter 4.

Some participants discussed specific concerns related to obtaining condoms, which were typically mentioned in relation to *Scenario two*. Male participants tended to seem more comfortable obtaining condoms, with some mentioning using the C:card scheme[2]. Liam explained:

> "'Cause like I've been getting free condoms in Glasgow. Like, you obviously get, like, the wee C:cards. You can just take that in, so that's obviously quite easy for me just to go, like, Boots, whatever, an' just pick them up for free. But, I mean, apart from that, I mean, that's all I really do"
> (Liam, aged 16, paired with Rowan)

In this account, Liam depicted obtaining condoms as a very straightforward process. Emma and Mia described how boys in their school would often talk about getting free condoms from their local community centre:

> Mia:…there's loads of like club posters and that, in the school that we used to go to and that, they had quite a few posters. Like when you come down here there's posters aboot the Hub and that. So like there's a lot o' like posters and like, people speaking

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[2] C:Card is a condom distribution scheme where young people are given a plastic cart which they can use to discreetly collect free condoms (http://www.ccard.org.uk/about-us/)

aboot it, and then. You've got a' the boys and they're like: "Hey I got condoms for free." And you're like, stuff like that gets aboot tae

Emma: The boys, the boys just kinda show it up a bit I think but

(Emma, aged 17 and Mia, aged 18)

In this exchange, Emma and Mia suggested that males are open, and perhaps boastful, about obtaining condoms. Condoms appear to be less straightforward for females; some female participants, like Maeve and Leah, were unsure of where to get condoms and anxious about the thought of picking them up:

Maeve: Where would you even buy a condom from? If you were like needing one

Leah: There's places to buy a condom....like…

Maeve: Like do you get them in the doctors?

Leah: Yeah. You can…

Maeve: I just feel like I'd be really nervous

Leah: Yeah me too, like I thought you'd get them for free at the doctors but then I'm not sure

Maeve: Don't know

Leah: I feel like if they were free why do you…

Maeve: I know, I would feel too nervous to take one

Leah: I know, like but then they have places like in bathrooms in like where you can buy them without having to have like have deal with people…

(Maeve and Leah, both aged 16)

Here Maeve and Leah highlight how condoms can be seen as taboo for young people, and young women in particular, and how concerns about stigma, embarrassment and confidentiality might prevent safe sex behaviours. Potentially, this discomfort with condoms could also obstruct communication about safe sex in sexual situations, leading to unsafe behaviours.

Acquiring condoms was one of a variety of aspects of sexual health that participants associated with a risk of 'being seen' by friends or family. However, while concerns about 'being seen' were common among participants, and applied to a diverse range of contexts, it is important to note that those concerns were not experienced equitably, with female participants experiencing greater concern when acquiring condoms, and young people in small towns and rural areas experiencing the risks of being witnessed accessing sexual health services more keenly than those in the relative anonymity of urban settings.

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6.5 Overcoming and circumventing formal sexual healthcare barriers

Most participants identified barriers to attending and using traditional formal sexual health services. As well as identifying ways to overcome those barriers such as using peer support (discussed in Chapter 4), participants' identified ways to circumvent them such as online STI testing and contraception services and online professional advice services. Some participants mentioned these services without prompting while others responded to questions about them. In this section, participants' perceptions of alternative sexual health services are explored.

6.5.1 Seeking alternatives to traditional sexual health services: online STI testing and advice

Some participants suggested alternatives to traditional sexual health services, such as online STI testing and advice services, in order to circumvent the need to attend formal settings. While addressing *Scenario one,* particularly when seeking information about STI testing, a small number of participants either specifically searched for or otherwise came across information about home testing kits. For example, Amelia described encountering information about home testing kits:

> Jess: [the website] also says like, it gives you good information like about what to do if you think you have an STI…and like on the website there it says 'find your nearest clinic'…
>
> Amelia: … plus there was things that came up like 'at home clinic' so you would get a wee bag you know to test...then you don't have to face the clinic, where your mum's friend might work or something d'ya know what I mean
>
> (Jess and Amelia, aged 16)

Here, Amelia highlights the benefits of home testing in terms of protecting confidentiality. Similarly, Amy identified home testing as an alternative to the anxiety of visiting a clinic:

> Amy: Can you no' get that personal STI kit?
>
> Kara: A personal…?! [laughing]
>
> Amy: I'm being serious!
>
> Kara: Has it got your name on it? [laughing]
>
> Amy: Nah, but, like, can you no' but it at like Tesco or that?
>
> Kara: I dinnae think so, no
>
> Amy: I'm pretty sure you can like

(Amy and Kara, aged 17)

As Kara was sceptical of the existence of home testing services, Amy searched the internet for further details:

> Amy: I'm pretty sure you can buy an STI testing kit
>
> Kara: Amy, I'm no' going tae test mysel'. Like, come on!
>
> Amy: See you can buy them online
>
> Kara: Aye, but I dinnae trust myself tae dae that
>
> Amy: 'Homehealth.uk', 'Superdrug', there you go
>
> Kara: Amy, eight test sticks for a tenner. Four tae me, four tae you [laughing]…nah, I'd just go to the doctor [overtalk]
>
> (Kara and Amy, aged 17)

Amy, who had described preferring to seek sexual health information online, seemed enthusiastic about the idea of home testing, while Kara, who preferred formal healthcare settings to online services, was not enthusiastic. Indeed, participants' reactions to online testing services were divided, with participants who found the healthcare context daunting tending to favour alternative testing services. Courtney (aged 17, paired with Laura) felt that online testing would risk less "judgement" and "embarrassment". She also felt that, with GP clinics, "all your information gets stored, so that can get passed to any doctor, any health professional", and indicated that she would prefer that her GP not be made aware that she had taken an STI test.

Participants identified that home testing services could reduce geographical barriers, as well as emotional ones, by improving access for people in remote areas, but also felt that people might abuse testing kits "for a joke" (Connie, aged 18, paired with Jamie), wasting resources and disrupting services for those in genuine need. Some participants reacted positively to the concept of home testing, but stressed the importance of accuracy and legitimacy; Lucy (aged 17, paired with Reece) noted that the idea could be helpful "if they were like scientifically proven to work", while Claire (aged 17, paired with Ashleigh) stated that "As long as it's, like, legit then I think it's pretty good".

Almost half of participants stated that they would avoid home testing services due to concerns about trustworthiness, validity and confidentiality. Emma recalled encountering online testing:

There's quite a lot of they things like when we go on Facebook and that, no' even Facebook, like you're gonna be on the internet and you're like: 'Oh, I've got, I don't know if I've got an STI.' Like, an STI test for thirty pound, basically, [laughing] like, why would you trust a computer? Like are you gonna take the swab, send it away, and let it come back and it possibly be dodgy? Why not just go down to your doctor? (Emma, aged 17, paired with Mia)

Here, the obfuscated identify of the online testing service appeared to be the foundation of Emma's lack of trust. Emma was generally very reluctant to use the internet for sexual health information due to concerns about trustworthiness, so this was not unexpected. Also, Emma was familiar with her local community centre and the sexual health nurse who worked there and therefore perceived no barriers to go in person to be tested. Similarly, Josie (aged 19) said "I'd just be worrying that it's some weirdo", to which her friend Kyle (aged 17) responded by highlighting worries around confidentiality: "I think it'd need tae be, like, really discreet packaging an' a' that as well". Martha (aged 16, paired with Samantha) expressed concern about an STI test being sent to her house when her father was in, and for that reason would prefer to access a formal healthcare setting, of which she had previous experience. Darren and Craig echoed these concerns:

Darren: Imagine your mum opened it [laughing] and saw, like, "Oh, I dunno, it must have been dad. It wasn't me." Yeah. [laughing]

Craig: No, I don't think I'd use it

Darren: If they e-mailed you, perhaps. Oh, you'd have to send it back 'cause it's a test, eh?

Craig: Yeah…yeah, I think I would avoid that;

Darren: I'd prefer to go to the doctor I think. 'Cause you think if your granny was over and she went and got the mail and it's like this thing. "Oh, this is addressed to you, I'll just open it for you." "No, Granny, it's alright." [laughing]

Craig: "Here's your STI test." [laughing]

(Darren, aged 17 and Craig, aged 16)

Notably, Darren and Craig had expressed concern about being witnessed at their local health clinic, but nonetheless preferred the clinical context to a home testing service.

Nicola (aged 17) and Ralph (aged 19) mentioned many of the same concerns as others, but added that receiving test results by email could be more difficult than the more supportive situation of receiving results in person; Ralph explained that "an email's very

unsympathetic…and professional", and Nicola added that "And I think if you can like know the person like if you know them physically, if you see them and stuff that's a lot more easier to talk about it". However, Nicola did identify that some would value anonymity over face-to-face discussion of test results.

In discussing online testing services, Joe and Ruth also discussed online services that distribute free condoms by post. As with online testing services, they identified this as potentially useful, but with some concerns about trustworthiness:

> Joe: there's, like, sites where you can get, like, free condoms in the post and things like that, I think they're quite handy…but, yeah, just – I wouldn't really like to have a test online because, say it came, like, a positive reaction then you start to panic thinking it was, like, a dodgy test you got or something, do you know what I mean? I'd rather go somewhere it's, like, more clinical and things like that. And, like, you know for sure if they're right or wrong, do you know what I mean?
>
> Ruth: I think I would find all of it dodgy, like, even getting condoms online, like, like I would still find that dodgy. But then again, that's another thing that you don't know-
>
> Joe: Don't know where it's coming from either do you?
>
> Ruth: Where it's coming from. Yeah, like, a lot of the stuff, like, it comes from, like, how many times have you bought something off of, like, Ebay and stuff and it's, like, turned out to be, like, the cheapy version of what you wanted. So, it's like you're wanting to get Durex and it's coming back some weird foreign thing. [laughing] So, you're just, like, it's just something you've got to watch out – like, again, I would go to the [local youth/sexual health service organisation]
>
> (Ruth and Joe, both aged 16)

In this exchange, Ruth identified the value of trusted brands and scepticism about cheap, foreign products, and, notably, perceived free condoms collected from a clinic to be more reliable than free condoms distributed by post. Ruth perceived no problem with going to her local sexual health centre for condoms in person, in contrast to other female participants referred to above, who described anxieties around being seen picking up condoms.

Participants discussed ways to break down barriers for people within the formal sexual healthcare context, particularly for those who struggled to communicate face-to-face and were in need of general advice. During the online activity, Maeve and Leah whilst looking up information about STIs came across a phone number for a helpline which popped up as

an advert on the screen. This was from an American website and was dismissed because of this, but Maeve thought a UK version would be useful, but also suggested an online chat to help with people who would not want to phone:

> Maeve: Oh there's a number […] I mean if that was in the UK and it was like a number I would possibly call it…but then I feel like it would be like a number that charges you
>
> Leah: I feel like they should have like, 'cause I feel like I would be okay with going to the doctor but I feel like there'd be lots of people that don't want to so like…and lots of people wouldn't want to phone either
>
> Maeve: Yeah, I feel like there should be like an online like chat thing
>
> Leah: Yeah…like even if they don't want to phone yeah
>
> (Maeve and Leah, aged 16)

An online sexual health messenger service was proposed by three sets of participants quite early on in the research, consisting of online sexual health advisors that could be messaged privately through social networking sites, such as Facebook, in order to receive advice. Amy (aged 17, paired with Kara) raised this as an idea, as she herself was extremely reluctant to interact within formal healthcare contexts and liked that this could offer an alternative private setting where her worries could be settled, rather than manifest: "'Cause you can worry about a problem for ages and not… be too embarrassed to do anything about it, but if you just do that, like, just gonnae be a random online just having a quick chat with and then that's it over. That would be so good, yeah". Thus, despite general scepticism across the sample concerning the use of social media for sexual health promotion (described in Section 5.2.1), participants were generally keen for such services to be available in more private ways to provide reassuring and personalised support within a confidential environment. The discrepancy between participants' general distaste for sexual health content on social media, and some participants' specific interest in sexual health messaging services might be explained by the more confidential, less public nature of the private message functions of social networks, which, to a large extent, are not relevant to concerns about 'being seen' interacting with sexual health content in the public aspects of social networking sites.

For some participants, however, their wariness of social networking sites like Facebook being used for sexual health promotion, and general concerns around the unreliable nature of online identities extended to these potential online professional support messenger services. For example, Kyle (aged 19) explained that "you don't know who's sitting at the

other side o' that profile", to which his friend Josie (aged 19) agreed: "aye, you don't know who you're talking to". Martha (aged 16, paired with Samantha) was also unsure about messengers on Facebook as she would be unsure if she could trust them: "I think it could be good if it wasn't, like, I don't know, Facebook and stuff, like, you don't know, like, how you were saying about the trust thing, like, how you would trust it. So…". Conversely, some participants, such as Jacob, indicated that young people's concerns about anonymity might be assuaged if such services were overtly presented as impersonal and authoritative:

> I dunno it might be good in a way but I think I think you need to make it sorta like not be them that are on it but the organisation because I think people asking sorta like organisations a question via messaging, but if you put a face to it, it kinda makes you think, I know you would never meet them but you think oh there's a person behind that and you start getting a bit more anxious towards it...even if they are really nice I think
>
> (Jacob, paired with Connor, aged 18)

Thus, Jacob explained that by presenting sexual health messaging services as faceless, impersonal organisations, young people may feel reassured that they anonymity will be protected. Generally, professionalism and legitimacy were important for participants. Craig (aged 17, paired with Darren) liked that such services could potentially provide the kind of support a chatroom provides, without worries about trustworthiness: "that's like a chatroom but with reliable sources".

Participants' attitudes to online sexual health services varied both between participants and between types of services. While some did not favour online testing, others perceived it as a potentially valuable alternative to the emotional and geographical barriers preventing effective use of traditional services, although there was a general acknowledgement that online services should, at best, complement, not replace traditional services. Participants were typically positive about the concept of online sexual health support services using the private messaging features of social networking services, despite widespread aversion to engaging with sexual health support in the more public areas of social networking services. Participants' differing attitudes towards sexual health promotion on different parts of social media illustrate the necessity for service-providers to have a nuanced, up-to-date understanding of the different aspects of social media services, and the different ways that young people use and perceive those aspects. Facebook, in its ubiquity, represents both a

large opportunity for sexual health promotion, and a complicated, ever-changing set of challenges for effective engagement.

6.5.2   Sexual health apps: useful or embarrassing?

Participants had very diverse views in relation to acceptability and usefulness of sexual health specific apps. While participants often described having fitness and general health apps on their smartphones, they reaction to being asked about a sexual app tended to one of worry and quick rejection. This was typified by Christina and Josh, who initially both described using a health symptom checker app:

> *What about health apps on your phone?*
> Josh: I do, I have…
> Christina: Well, does, like, exercise count? [laughing]
> Josh: Mine is kind of a doctor thing. You just type in your symptoms and it'll tell you, it'll give you a list of things it could be
> Christina: Oh yeah I've got that on my phone…
> And what do you think of it? Do you remember what it's called?
> Josh: I think it's DNS Doctor or something. It's like kind of a silly name. But every time I've been not well I'll use that
> Christina: I've never used it [laughing]
> Josh: Then I'd go to the doctor and they'd tell me what's what
> (Josh and Christina, aged 16)

Thus Josh seemed to have integrated this health symptom checker app into his information seeking practices when worried about his health. However, later on within the interview, when asked about a sexual health app, Josh and Christina quickly rejected the idea, primarily due to it being visible to friends:

> *What about having a sexual health app?*
> Christina: No! What if your pals got your phone, they'd be like "what's this on your phone?"
> Josh: Aye I wouldnae
> So do you think you…
> Josh: Just go online aye
> Christina: Yeah
> Josh: 'Cause you can always, like delete your search history

(Josh and Christina, aged 16)

This highlights stigma around being seen to be concerned about your sexual health, and benefits of being able to use the internet for a one-off search that can be quickly deleted, in contrast to having for a period of time, a visible application on a smartphone that would risk others seeing it. This was the main reason that most of the participants provided when asked about sexual health apps. Visibility was a key concern, and most felt that accessing information on the internet was more 'discreet'. Aaron and Michael highlighted that while there have been advances in relation to more open communication about sexual health, that on a personal level most young people would not want to be seen with a sexual health app:

> *And what about an app?*
> Michael: Ah I don't know I could see if folk saw that on your phone they might be a bit
> Aaron: Yeah, if you saw that on someone's phone you'd be like, aw what's that mad creep doing [laughing]
> Yeah?
> Michael: Yeah, even though it is something more and more people talk about you still don't want someone seeing you've got that on your phone
> Aaron: You'd get so much abuse
> Michael: That just seems to be the way it is
> (Aaron and Michael, aged 19)

In imagining a hypothetical scenario where himself or a friend had an app, Aaron suggested he would either be the perpetrator or victim of 'abuse', while Michael's last comment highlights an awareness and in a sense, a hopelessness around the ingrained stigma and taboo surrounding sexual health. Thus, while smartphones might be generally perceived as personal technologies, such accounts suggest that they function as social devices and are thus likely to be seen and used by others.

However, in contrast, some participants saw more potential in the idea of health apps as a means of accessing sexual health information and resources. Cleo and Alice both described regularly using exercise and fitness apps on their phone, and seemed favourable towards sexual health apps, and their potential for circumventing barriers to access such as embarrassment:

Cleo: I've never thought of using it but is there not like iCondom or something that you can download? I know there is that but I've never sort of…

Alice: I think that would probably be useful for people who are choosing tae use like condoms instead of like the rod or like coil or something. So that they know exactly where they can go tae get them 'cause obviously some people are too embarrassed to go and buy them

Cleo: Yeah

Alice: Like in case people see them buying them

(Alice, aged 18 and Cleo, aged 19)

Alice went on to say that "people might be embarrassed" about having the app, but Cleo dismissed this saying: "well they shouldn't because they've got a password, the majority of people have got passwords on their phone so could get but I don't have a password on my phone right enough but… people can go on my phone and see stuff I don't care [laughing]…so I wouldn't be embarrassed, it's just being safe". Thus, Cleo highlights that doing something to benefit your sexual health should not be embarrassing (there was a sense that some felt like this should be the case, but they could not help it). Kyle and his friend Josie, were both particularly keen on sexual health apps being developed to assess symptoms, to reduce having to go to a clinic and be seen by friends:

Josie: If you're sitting in the clinic and one o' your pals turns up you're like "Oh, hi. Just tae get information, honestly." [laughing]

Kyle: I've bumped intae a few people that I know an' I've only been the once an' I met like three people. It was so embarrassing[laughing]

Josie: Aye

Kyle: I think if there's no' an app they should make an app [laughing] That's a pure good idea

Josie: You just want an app. How can you no' make it for?

Kyle: I've no got a clue how tae time my shoes, never mind make an app [laughing] An' I think wae an app it's mair private tae you. You don't need tae, like, ask people awkward questions if you feel awkward aboot it. You can just go in an' see what's what

(Josie and Kyle, aged 19)

They both concluded by saying they thought an app would be popular and be used by lots of young people.

Participants seemed to particularly value apps, like the iCondom one mentioned by Cleo, that were practical in nature, concerned with helping an individual get access to contraception or find their nearest clinic. A few participants, like Connie (aged 18), specifically mentioned an app to help with locating services: "yeah, like, sexual health apps with where you closest clinic and that is…I think that would be a really, really good point". Her friend Jamie agreed. During the online activity, Connie and Jamie, like many other participants struggled to find information about local testing services. Thus, participants seemed to be favourable towards apps that would help them overcome barriers faced within the online context already or within school (where practical information was generally absent).

Two pairs of participants were favourable towards apps that would allow quick and relevant information to be accessed without having to navigate through a sometimes overwhelming amount of content on the internet. Amy and Kara (aged 17) both already had period tracker apps on their phones which they found useful and described as being 'discreet'. Kara was less keen on having a more general sexual health information app, as she was happy to explore content online, particularly user-generated content, but Amy, in contrast, liked that she would not have to search through lots of content: "I think if there was an app o' like all different answers stored in it aboot sexual health, I think that'd be quite good 'cause you're not sort o' searching the whole o' the internet, it's just all locked down in one place. That'd be good".

Across the sample, participants presented varied attitudes towards the acceptability and usefulness of providing sexual health support and information through mobile apps. While many participants regarded general health apps to be acceptable, everyday software, adoption of sexual health apps was limited by stigma. The risk of 'being seen' was, again, a key concern; one-off web searches were deemed to be more discreet than installing and using mobile apps. However, participants did identify some positive aspects of sexual health apps, particularly as sources of practical information about online services.

6.6   Summary

Evidently, communication skills play a central role in managing and applying sexual health information and negotiating sexual health within different contexts. Some participants attributed poor sexual health outcomes and high rates of teenage pregnancy to limited sexual health awareness and poor communication skills, which could be related to insufficient

knowledge transfer and limited opportunities to improve sexual health communication within school-based sexual health education. However, others perceived younger people as generally more open to discussing sex and sexual health, which has been normalised by the vast quantity of sexual health content available online. This was viewed in a positive light to an extent, having led to increased confidence in providing advice to friends or applying information within formal healthcare contexts. However, some worried about the increased pressures on young people face in relation to sexual activity.

Participants who identified as gay, lesbian or bisexual, or had previously taken part in sexual health workshops (within and outwith school), tended to be more comfortable discussing sexual health within most contexts, highlighting the benefits of having opportunities to improve skills and confidence in communication. However, most participants expressed anxieties around communicating about sexual health within specific contexts, such as sexual contexts and formal healthcare contexts, and some preferred to avoid face-to-face communication on the topic of sexual health.

Most participants described being broadly comfortable discussing sex and sexual health with friends, but less comfortable communicating with sexual partners and within sexual contexts. Age and gender both seemed to influence low confidence communicating within sexual contexts. Gender differences in attitudes to sex and feelings about communication in sexual situations supporting perceptions that females worry more about, and want to talk about, sex and sexual health while males are less concerned about communicative and emotional aspects of sexual relationships. The internet appeared to both facilitate and obstruct management and application of sexual health information within sexual contexts. On the one hand, unrealistic online advice was criticised as being difficult to apply within dynamic real-life sexual encounters, and on the other hand, relatable and light-hearted content was seen as a potential way to encourage communication about sex with partners. Generally, however, participants seemed to struggle within the sexual context, with various barriers obstructing the building of comfortable, communicative sexual relationships.

Participants varied in their perceptions of negotiating their sexual health (and illness) within formal healthcare settings. A minority, who typically had prior positive experiences and were generally happy communicating about sexual health, were comfortable interacting within formal sexual healthcare settings. However, most participants had anxieties about negotiating sexual health within traditional healthcare contexts, based on either prior

negative experiences of fear of the unknown, including worries about communicating and interacting with healthcare providers, to broader concerns around being seen or found out seeking information or help for sexual health. These worries caused some to be reluctant to access services, and some to completely avoid services. Lack of awareness of services and embarrassment about consultations interacted to create major barriers within the formal healthcare context, but participants highlighted ways that formal healthcare systems can work to engender confidence by reduce embarrassment and alienation for those accessing services.

Interviews explored the potential of overcoming barriers to traditional sexual health services through alternative services. Some participants suggested that online STI testing and advice services could allow young people to circumvent anxieties and embarrassment associated with formal sexual health settings, as well as geographical barriers faced by residents of remote areas, in which concerns of 'being seen' may be more acute. However, participants raised concerns trustworthiness, validity, confidentiality and lack of support with online services. These concerns perhaps illustrate why online services may not fully replace traditional services, but participants' general positivity towards online services suggest that they may complement traditional services effectively. Participants had contrasting views about the acceptability of sexual health apps, with some viewing them as discreet ways to overcome barriers of traditional healthcare and online contexts by, and others focusing on concerns about 'being seen' engaging with such apps, highlighting the real impact that stigma can have on communication and engagement with services.

This chapter has considered the influence of different contexts and networks on how sexual health information is experienced, used and applied to make decisions and negotiate sexual health and illness. Participants described personal, practical, institutional and emotional barriers to applying information within sexual, social and healthcare contexts. Problems and barriers that young people face have been identified, as have potential solutions, which will be revisited in the conclusions and recommendations chapter (Chapter 8).

7   Discussion

7.1   Overview of chapter

This chapter presents a summary and discussion of the findings presented in the previous three chapters (4, 5 and 6), considering how those findings relate to existing literature and the research questions:

1. What is the role of the internet within the broader landscape of young people's sexual health information and support?
2. How do young people describe and experience seeking, understanding, evaluating and using online sexual health information and support?
3. What are the individual, social and environmental contexts relevant to young people's experience and use of online sexual health information and support?

Sexual health literacy refers to an individual's knowledge, beliefs, attitudes, motivations and skills in accessing, understanding, evaluating and applying sexual health information in social, sexual, online and healthcare contexts to negotiate and make judgements and decisions concerning sexual healthcare, health promotion, relationships and wellbeing. It is dynamic in nature, developed and applied in complex ecologies, influenced by individual, system, interpersonal, contextual and societal factors. The model developed (Figure 7-1) illustrates how sexual health literacy enables the individual to both understand, interpret and evaluate information and apply that information within a variety of contexts.

Figure 7-1. Dynamic sexual health literacy model
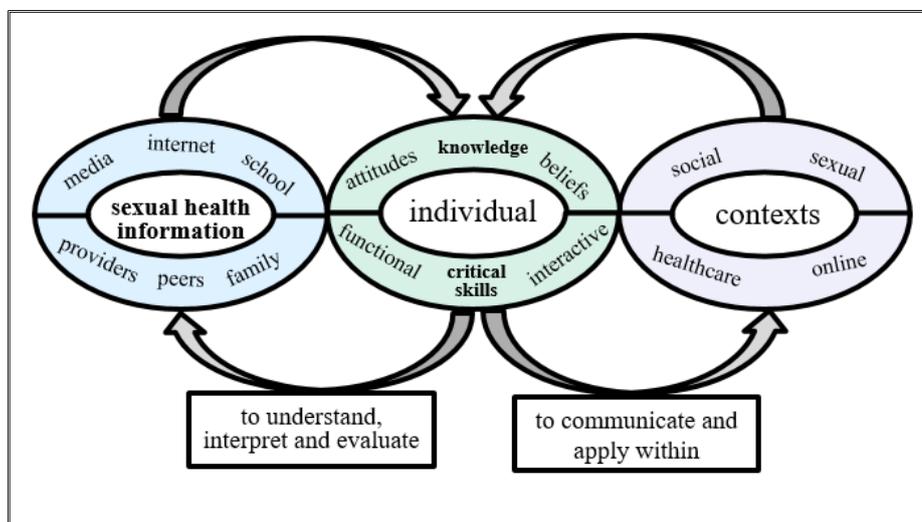
The findings from each chapter were integrated and assessed for synergies, as described in Chapter 3. The data integration process involved integrating findings from the 'traditional' part of the paired interviews with those from the online activity within a data integration table to allow for synergistic interpretations taking into account findings from the data collected across different stages of the research (see Data integration table in Appendix 12).

The first part of the discussion will explore young people's sexual health literacy within the school context (7.2). The school context is an essential starting point as school-based sexual health education is a near-universal influence on young people's sexual health literacy that informs how they engage with sexual health and support in other contexts, including the internet. Section 7.3 comprises an examination of young people's sexual health literacy within the online context, both on an individual level, examining Nutbeam's (2000) model of health literacy, and on a broader level, considering influences on sexual health literacy within the online context, with particular attention paid to socio-cultural and demographic factors. The final two sections of the discussion will focus on other key information provision contexts within which sexual health literacy is shaped and applied: amongst friends peers (7.4) and within the healthcare system (7.5).

In practice, most participants drew from multiple information sources, and their accounts highlight the need to manage a range of different sources with different strengths and weaknesses. It is insufficient to view online information in a vacuum because it influences interacts with other sources of sexual health information and support. As Ringrose and Barajas (2011, p.126) explain, "drawing a binary between online and offline or virtual and face-to-face experiences has been a weakness in prior research on teens and gendered identity on line", going on to argue that "digital interactions mediate everyday activity". With this interrelation between online and online contexts, this discussion will consider how school, peer and formal healthcare contexts contribute to young people's sexual health literacy, and the extent to which they are influenced by, and integrated within, the online context. Throughout, reference will be made to the literature, highlighting similarities and differences to my findings.

7.2 The school context: hindering or facilitating sexual health literacy?

7.2.1 Why is school important to sexual health literacy?

Due to advances in digital technologies and availability of online material, young people now inhabit a fundamentally different, and more dynamic, social and sexual information landscape. Despite this, research has shown that young people still wish to be taught sex education within school (Alldred and David, 2007; Parker, 2014). This was reflected amongst my participants, who cited the internet as their current main source of sexual health information, but school-based sexual health education as the key source of learning about sexual health when *'growing up'*.

Health literacy theorists have highlighted the importance of societal and environmental factors, such as the education system, in facilitating or hindering health literacy (Kickbusch, 2008; Mangello, 2008; von Wagner et al, 2009). School is a key sexual health information learning context for young people, in which knowledge, skills, expectations and norms around sexual health, gender and sexuality can be learned and shaped. Research within the UK has hinted to the role of school-based sex education in positively influencing health outcomes, demonstrating associations between receiving school-based sexual health education and lower reporting of negative sexual health outcomes (MacDowall et al, 2015; Wellings et al, 2013). As such, even within a rapidly evolving information landscape, school remains an important influence on sexual health literacy.

7.2.2 What hinders sexual health literacy within the school context?

While research has suggested that population-level school-based sexual health education may have reached its limits (Elliot et al, 2013), my participants' experiences indicate that there may be substantial variation in the scope and quality of the school-based sexual health education that young people in Scotland receive, and this is supported by research in the wider UK context (Bailey et al, 2015). Despite school being a key source of learning about sexual health, my participants' accounts predominantly characterised the school context as hindering, rather than being conducive to, development of sexual health literacy. As frequently reported elsewhere (Pound et al, 2016), participants typically described school-based sexual health learning as a negative experience, reporting poor quality and infrequent teaching, with narrow and negative content and a lack of skills-based teaching. My analysis indicates that school-based sexual health promotion continues to fail to provide young

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people with comprehensive sexual health education, which would both disseminate 'knowledge' and equip pupils with practical information and skills to negotiate their sexual health within sexual, social, and healthcare contexts.

The influence of socio-cultural and contextual factors on provision, access to and experience of sexual health education within the school context can be profound (Bailey et al, 2015; Livingstone and Mason, 2015). My findings suggest that young people attending denominational schools tend to receive sexual health education that is less frequent and less comprehensive than that received in non-denominational schools, highlighting the effects that cultural, systemic and infrastructural factors can have on young people's rights to comprehensive sexual health education, and thus, on the development of their sexual health literacy. Livingstone and Mason (2015), highlighted the influence of cultural and religious diversity in sexual norms, which influence acceptability of how young people access sexual information and experience. They highlight the complexity that this diversity adds to the process of creating information and guidance about presenting sexual information in a culturally-nuanced way.

Research has highlighted other contextual and socio-cultural factors influencing experience of school-based sexual health education, such as gender and sexuality (Couch et al, 2007). Young women's worries about engaging with sex education in school in the presence of young men has been a feature within the literature (Alldred and David, 2007; Measor et al, 2000). Within my study, female participants, in particular, characterised the school environment as not conducive to learning, with immaturity (of 'boys') and embarrassment identified as substantial barriers. In contrast, heterosexual male participants in this study primarily recalled school-based sexual health education favourably, as an enjoyable, positive learning experience. Literature has found that young men describe being disruptive within school sex education to divert attention from their own possible ignorance and to conform to male stereotypes of sexual knowledge and competence (Buston et al, 2002; Hilton, 2007; Limmer, 2010; Measor et al, 2000). Such gender performances were evident in heterosexual male participants' conversations with their interview partners in this study (see Section 7.4.2).

Perhaps unsurprisingly, research has found that some young women's concerns about humiliation within mixed-sex learning environments leads them to express preferences for the comfort and confidence that may be fostered by single-sex learning (Strange et al, 2003).

Some female participants within this study offered similar perspectives, suggesting that potentially disruptive male performances of heteronormative masculinities meant that mixed-sex environments tended to favour young men, but not young women, and that young men may be more likely to enjoy, and benefit from, mixed-sex delivery of sexual health education in schools. This finding does not necessarily lead to recommendation of gender-segregated sexual health teaching in schools, but might suggest that friendship groups of young people who share similar outlooks might learn best together. From this perspective, gender may be an appropriate line of division for some groups, but equally existing peer groups might be effective learning groups regardless of gender composition. Indeed, my reflections on using paired interviews in this research suggest that supportive peer groups may be suitable for encouraging sexual health discussion; pairs and triads can perhaps act as supportive peer-learning spaces, facilitating open discussion unencumbered by the social dynamics of larger groups. The potential of the friendship and peer context as a site for learning within school-based sexual health education will be discussed in Section 7.4.

Participants who identified as gay, lesbian or bisexual perceived their information needs as not having been met in school, consistent with previous research findings that school-based sex education tends to be incomprehensive, providing insufficient teaching related to non-heterosexual experiences (Formby, 2011; Kubicek et al, 2011). Participants who identified as gay, lesbian or bisexual described shortcomings in teachers' knowledge and training. Due to their schools' failure to provide non-heteronormative content, two participants described subtly trying to ask questions of their teachers, and, in response, their teachers suggesting that they teach the class. Both described embarrassment at being 'outed' as wanting to increase knowledge of homosexual issues, and worry about classmates' reactions. This mirrors research that has highlighted that the ingrained heteronormative narrative within school-based sexual education signifies an unacknowledged dialogue within the school context that does not prepare young people for sexual relationships and may contribute to experiences of prejudice and stigma (Allen, 2008; Fornby, 2011; Kubicek, 2010).

What participants were taught in school seemed to reflect on their understandings of 'sexual health', with the majority of participants presenting negative understandings focusing on risk, danger and spread and risk of infection, and little consideration of pleasure. Sexual health literacy may be hindered by negative attitudes to sexuality and a failure to consider the potentially positive and emotional aspects of sex (McMichael and Gifford, 2009), and a focus on risk may influence perceptions of morality, blame and responsibility (Gaspar et al,

2014). Fostering moral judgements about sexual behaviours and circumstances could lead individuals to seek to distance themselves from those engaged in negatively-constructed behaviours, or inhabiting negatively-constructed circumstances, with negative consequences for public health (Wellings et al, 2012). Research has highlighted how infrequent, negative, moralistic teaching that fails to confront sexual issues openly can contribute to anxiety and stigma, reproducing perceptions of sex as a 'taboo' that should not be talked about or prepared for (McKee et al, 2014; Woodcock et al, 1992). This has further implications for young people's interactive literacy skills and openness to communicating about sex and sexual health. A small number of participants in this study directly associated school-based sex education with young people's general reluctance and confidence to openly communicate about sex and sexual health, and many participants expressed anxieties about communicating about sexual health within certain contexts, such as sexual and formal healthcare environments.

7.2.3 What facilitates sexual health literacy within the school context?

While participants' accounts of the school environment were primarily negative, particularly in relation to teachers, who were generally regarded as unqualified and awkward, some participants described ways in which schools facilitated better learning by creating comfortable environments, incorporating community organisations and outside experts. Such views are well established within the literature (Langille et al, 2001; Lester and Allan, 2006). Research has reported that young people want educators, particularly in sexual health education, to be trustworthy, knowledgeable and non-judgemental (Alldred and David, 2007; Kimmel et al, 2013; MacDonald et al, 2011). The small number of my participants who had received teaching from outside 'experts' valued those experiences, with one describing it as the 'best thing in school', valuing the anonymity and the comfortable, safe environment that it fostered.

In addition to ensuring that the staff delivering sexual health classes in school are as credible and personable as possible, formal peer-education may represent another useful route of sexual health learning in school. Participants who had been involved in school-based, peer-led sexual health education initiatives, either as recipients or providers, valued the relatable nature of this delivery mode. These participants seemed confident in their knowledge, seemed more comfortable communicating about sexual health and typically described feeling a responsibility to share their knowledge to dispel myths amongst peers. These perspectives indicate the potential of peer education to develop sexual health literacy skills,

particularly interactive and critical, through both practicing communicating about sexual health and influencing the social norms of peers.

Research into the effects of peer-led interventions have typically highlighted improvements in knowledge, but not in behaviours (Chandra-Mouli et al, 2015; Salam et al, 2016). Chandra-Mouli and colleagues (2015) found that five meta-analyses of peer education programmes in a range of different contexts demonstrate that, whilst peer education may encourage knowledge exchange, it has little effect on promoting healthy behaviours (Kim and Free, 2008; Medley et al, 2009; Tolli, 2012). Furthermore, these reviews highlighted that peer education typically benefits peer-educators through the training provided to them, rather than benefiting their peers, who are the intended beneficiaries of such programmes. As such, despite the proven impact on knowledge, and the popularity of the method amongst young people (Stephenson et al, 2008), some have called for the approach to be discontinued due to ineffectiveness (Chandra-Mouli et al, 2015). While those conclusions are based on strong evidence, from a sexual health literacy perspective, there may be grounds to consider that, even in the absence of impacts on measurable sexual behaviours, positive impacts in young people's confidence in communicating about sexual health may reap benefits that are less directly-measurable, but no less valuable. Peer support is not limited to formal, school-based programmes; peer support in other contexts, particularly the online context, are discussed in Section 7.4.

Beyond criticisms of the efficacy of peer support programmes within schools in changing behaviours, researchers have suggested that school-based sexual health education at the population level, may have reached its limits (Elliot et al, 2013). Elliot and colleagues (2013) evaluated an intervention designed to augment existing school-based sex education in Scotland, and found that the additional intervention had limited effectiveness in terms of behavioural outcomes. The authors concluded that the intervention had been ineffective, highlighting only minor improvements to participants' behavioural outcomes, and suggested that interventions targeted at groups with poor sexual health outcomes may be more effective. While behavioural change is crucial, there may be a risk of focusing on behaviour change at the expense of the other aspects of a broad conceptualisation of sexual health literacy. For example, such an intervention, involving integrating access to sexual health services within schools, may positively impact upon pupils' critical and interactive sexual health literacy, which might, in the long term, contribute to a culture that fosters healthy choices and outcomes. While Elliot and colleagues' (2013) evaluation was necessarily

relatively brief, due to its focus on changes within school pupils, creating cultural change within schools is likely to be a slow process, demanding long-term change on the parts of institutions and staff. The school context may inherently be too complex for brief evaluations to adequately measure changes. Couch and colleagues (2006) explain that social and contextual interventions often have indirect effects which may be difficult to measure directly, and conclude that: "to ask of social and contextual interventions immediate and directly observable effects at the individual behavioural level is to misunderstand them profoundly" (p.22).

7.2.4   School-based sex education and the online context

Qualitative understandings of young people's experiences of receiving and seeking sexual health information from different sources, including the internet, has been highlighted as a gap within the literature (Simon and Daneback, 2013). Simon and Daneback's (2013) review hypothesised the possible influence of poor-quality school-based sex education on "open[ing] the door for emerging technologies to serve as resources for sexual script building" (p.305). While it is established that young people value the internet as an information source due to its anonymous nature and convenient access (which was supported in my participants' accounts), less is known about how young people's offline sexual education may drive them to seek sex education online. My study sheds light on how experiences of offline sex education may act as a catalyst for seeking sex education online. For some of my participants, online information acted as a replacement for the inadequacy of the traditional sex education described in Section 7.2.2, while for others who had not received any school-based sex education, online information offered a means of filling that void. Participants who identified as gay, lesbian and bisexual in particular described turning to other sources (primarily the internet) to 'self-teach' due to their information needs not being met in school. Indeed, research has shown that young people who identify as gay may 'come out' in the online world before doing so 'offline', indicating the potential importance of online connections and communities (Bond et al, 2009; Mustanski et al, 2011; Ross and Kauth, 2002).

Online information may also act as a solution to the narrow range of topics covered in traditional sex education. Research has shown that young people use the internet to learn about sexual norms, including sexual positions, behaviours and pleasure-based aspects of sex (Buhi et al, 2009; Gilbert et al, 2005; Harvey et al, 2007; Hooper et al, 2008). Such use of the internet may stem from the lack of coverage of these issues within traditional offline

sex education. Within my sample, this was hinted to by male participants in particular, who described using pornography as a way to learn how to have sex in 'real life', echoing the findings of previous literature (Buston and Wight, 2006; Hilton, 2007; Limmer, 2010) (pornography as a source of information will be discussed in Section 7.3.4.2).

Despite the important role of the internet in most young people's lives, there appears to be little recognition or integration of the online context within school-based sex education. Pound and colleagues' (2016) qualitative synthesis of young people's views and experiences of school-based sex and relationship education, primarily within the UK and US within the last 25 years, identified that, while online safety and sexting are covered in some school-based sexual health programmes, no literature examined young people's experiences and perceptions of that content. None of the participants within my study recalled learning about sexual health in relation to the online context; no mention was made of being taught skills to navigate the online environment to find sexual health information. Participants discussed how evaluating online information could be made easier if schools taught online sexual health information-seeking and assessment skills and promoted reliable websites. Elwick et al (2013) state that using the internet in this way should be actively promoted, and that 'digital literacy' should be a teaching priority for children and young people from all backgrounds.

7.3 Young people's sexual health literacy within the online context

In this section, I will explore young people's sexual health literacy within the online context. This section will take an individual-level perspective, focusing particularly on young people's functional and critical literacy, as well as a broader perspective, taking into account contextual and socio-cultural factors that influence experiences and shape how online sexual health information is accessed, understood and appraised.

7.3.1 Young people's motivations and drivers for seeking sexual health information online

Research has shown that the internet is a key source of sexual health information for young people (Benigeri and Pluye, 2003; Mitchell et al, 2014; Smith et al, 2000; Tanton et al, 2015). Adopting online technologies is seen to be ingrained within young people's lifestyles, and research has found that young people use the internet to seek educational content about a

wide range of sexual health issues (Borzekowski and Rickert, 2001a; Buhi et al, 2009; Kanuga et al, 2004; Levine et al, 2008; Ralph et al, 2011).

As identified in Section 7.2.4 dissatisfaction with school-based sexual health education may drive some young people to seek sexual health information online. In addition to offering an alternative, and potentially more comprehensive, source of sexual health information, the internet may provide additional advantages over traditional offline sources; young people's use of the internet as a source of sexual health information has been linked to its accessibility and the unique social context provided by the online environment. The anonymity and accessibility of the internet may help users to avoid some of the common barriers experienced when talking about or seeking advice about sexual health in offline contexts (Barak and Fischer, 2001; Simon and Daneback, 2013). My participants valued the internet for its familiarity, speed, convenience and anonymity, and enjoyed the comfort of avoiding face-to-face interactions. However, a minority avoided online sexual health information due to anxieties in relation to privacy and navigating an overwhelming choice of sources. Thus, the unique benefits for which the internet is often valued for are also seen as barriers by some.

Both my participants and those of Magee and colleagues (2012) described seeking online information in response to specific sexual health concerns. This typical motivation highlights the possibility that sexual health information-seeking may often be carried out in, and affected by, states of emotional distress. However, my participants also described encountering online sexual health content unintentionally, during everyday web or social media use. Literature has highlighted the role that such incidental health information can have on individuals' knowledge, understandings and practices (Tewksbury et al, 2001; Tian and Robinson, 2009). In a study of adults diagnosed with cancer, Tian and Robinson (2009) found encountering incidental health information in traditional media to be positively associated with health knowledge. Similarly, spending time in the online environment, potentially encountering more incidental health information, could possibly impact health knowledge, attitudes and practices (Tian and Robinson, 2009). The growth of social sharing of articles on social media could represent a new and developing route through which young people encounter sexual health information, and how certain content becomes widely-viewed (or 'viral'), but, due to the nature of the topic, sharing and engaging with sexual health content on social media is likely to be hampered by stigma, embarrassment and the

threat it may be seen to pose to identity construction processes (this will be explored in more detail in Section 7.3.4 and 7.5.3).

7.3.2 Young people's access to the internet: digital divide?

Studies have suggested that the influence of poor health literacy on health outcomes and behaviours begins at the stage of information-seeking, highlighting the importance of *access* to reliable sources and content (Birru et al, 2004; Ishikawa and Yano, 2008). Literature concerning online information seeking, has traditionally focused on access in practical and physical terms, using the concept of a 'digital divide', characterised by unequal access to online technologies (Chen and Wellman, 2004; Boonaert and Vettenburg, 2011). However, this focus, particularly within high income countries such as the UK, has largely been deemed redundant, with physical access to the internet having been shown to be approaching universality (ONS, 2016). This was supported by my finding that my participants all described themselves as active internet users with no problems accessing the internet, often on multiple platforms and in multiple places. However, it is important to situate this within my sampling strategy however, which aimed to sample for diversity, but was not necessarily representative; some groups, including ethnic minorities and those from remote rural locations, were not represented, and it is feasible that internet access varies by those demographic characteristics.

While a substantial digital divide in terms of fundamental access to the internet may no longer exist, theorists have argued that a divide continues to exist in terms of *how* individuals use the internet, influenced by a number of factors, including socio-economic status (Boonaert and Vettenburg, 2011; Elwick et al, 2013; Eynon, 2009; Lichy, 2011). Contrary to the narrative of 'digital natives', research has suggested that there may be digital divides between young people in relation to internet use (Gray et al, 2005; Lorimer and McDaid, 2013), and health literacy is key to understanding this. Gray and colleagues (2005) described the use of the internet to source health information as a useful example of the pressures placed upon individuals' health literacy: incorporating useful websites, relevant content, evaluating information and then contemplating how to incorporate or apply this information within their lives. Gray et al (2005) found, based largely on self-reported data, that students were relatively sophisticated internet users, but exhibited variety in their competence in locating, evaluating and using online health information. This illustrates how general internet competence does not necessarily correspond to digital health literacy and the ability

to successfully navigate, comprehend, appraise and use information (Gray et al, 2005; Skinner et al 2003).

Gray and colleagues' (2005) research was published 12 years ago, and the role of the internet in young people's lives has changed dramatically in the intervening time. The online context has taken a more central role in health information and service provision, such that the pressures placed on individuals' health literacy are likely greater today. While the internet has always been an interactive medium, developments in internet technology have led to a greater focus on social and multi-media content, meaning that the demands of negotiating the online context are not just more intense, but also different in nature. Boyd (2014) highlights the complexity of negotiating the online context:

> "familiarity with the latest gadgets or services is often less important than possessing the critical knowledge to engage productively with networked situations, including the ability to control how personal information flows and how to look for and interpret accessible information " (p.180)

However, despite this complex and changing environment, within my study, where participants were purposively sampled from areas with different SIMD scores, there appeared to be no stark differences in participants' use of the internet for sexual health seeking by socioeconomic status. This could be considered surprising, as socioeconomic status is considered a key factor in the 'second-level digital divide' and digital literacy inequalities (Eynon, 2009; Lichy, 2011; Livingstone and Helsper, 2007). If no substantial relationship between socioeconomic status and young people's use of the internet for sexual health information seeking were to be found within the wider population, this would call into question any conceptualisation of a 'digital divide'. However, my qualitative research design, in which I purposively sampled participants who varied by multiple criteria, was not suited to making any such definitive statements. Nonetheless, this topic may warrant further research.

It is important to recognise distinctions between physical and intellectual conceptualisations of a digital divide. It is possible that a socioeconomic divide in fundamental access to online information has been replaced by digital inequalities, not necessarily socioeconomic, in young people's ability to effectively access information, fuelled by unsatisfactory teaching and stigma. These inequalities may not be particular to sexual health, but could be enhanced

by the sexual health context, particularly for certain groups. Some of these issues will be discussed in the following sections.

7.3.3 Sexual health literacy: skills and challenges in online information seeking

7.3.3.1 Functional health literacy: locating and understanding information

Functional health literacy skills are key to locating and understanding health information (Nutbeam, 2000). Research has suggested that young people most commonly approach online information-seeking through search engines (primarily Google), entering key words and trusting search result rankings to present accurate information (Buhi et al, 2009; Gray et al, 2005; Mager, 2012). Similarly, my participants also exhibited reliance on, and faith in, Google, typically selecting the highest-ranked results. In contrast to Buhi and colleagues' (2009) findings, my participants largely avoided sponsored links, and at times voiced suspicion of them, despite many of them leading to reputable health organisations. Some participants did bypass Google to directly access known websites, typically of local sexual health information and service providers with which they participants had had previous experience, illustrating the interrelation between online and offline contexts, both for service users and providers.

Generally, my participants indicated that filtering the information available online was challenging, echoing findings of Jones and Biddlecom (2011), whose participants were frustrated by the time involved in finding accurate information amongst the vast quantity of less useful information. My participants indicated that they would value knowing "firm websites" where they could find trustworthy information, and, as described in Section 7.3.3, suggested that reliable websites could be recommended in school. Knowing that information exists, and where to find it, is key to accessing information effectively, and, as such, a lack of promotion of reliable information is a barrier to sexual health literacy (Burnett et al, 2008).

While my participants found information or 'facts' about STIs and symptoms relatively easily, they encountered difficulties locating locally-relevant information during the online activity, some of which corroborate the literature. Buhi and colleagues' (2009) observational study of American college students' online sexual health information-seeking found that most located correct answers to the sexual health questions asked of them, but a quarter reported frustration in trying to source locally-relevant information. My participants encountered barriers to locating information about local testing facilities, hindered by

unfocused search strings and websites that were not user-friendly. Some overcame these barriers by modifying their search strategies, while, as in Buhi and colleagues' (2009) research, others simply gave up. My qualitative interviews revealed that those who easily found local testing information generally had prior awareness of local services, highlighting once again how offline and online experiences influence each other.

In addition to struggling to find locally-relevant content, many of my participants experienced difficulty navigating the internet for more general information about first-time sex. Some felt that that the information provision on such topics was poor, particularly on 'authoritative' websites like the NHS, and they struggled to find relevant and credible information on commercial and user-generated websites. Here, issues of 'relevance' and 'reliability' interact, which will be explored further in the following section. Some female participants seemed to locate information about first time sex relatively easily, while some males rejected much of the information they found as being 'for girls'. This relates to notions that sex is a topic about which females worry disproportionately; it may be that more female-oriented information is produced in proportion with their heightened concern. In addition to potential concerns about underrepresentation of male perspectives, there may also be grounds for concern that the gender-imbalance of the information on first-time sex available online might act to reproduce societal perceptions that concern about emotional aspects of sex is a feminine trait. Gender norms will be explored in more detail in Section 7.3.4.

Research suggests that comprehending and spelling medical terms obstructs young people's use of the internet for general health information (Borzekowski et al, 2001; Hansen et al, 2003; Rideout, 2001; Skinner et al, 2003). Gray et al (2005) found that adolescents in both the UK and USA struggled to spell general medical terms and construct questions describing symptoms. While my participants expressed dislike of medical terminology, it rarely prevented comprehension, and spelling errors were minimised by Google's autocorrect feature. A small number of participants experienced challenges in reading and understanding text, particularly medical jargon, resulting in misunderstandings and abandoned searches. Participants who exhibited lower functional literacy included those with dyslexia (and reading difficulties) and those with additional support needs. Research suggests that most digital health tools and information neglect the varying demands they exert on different individuals' skills and knowledge (eHealth Stakeholders Group, 2014). eAccessibility is a crucial determinant of health inequalities that is often overlooked in the design of online tools and content, particularly in commercial interventions (eHealth Stakeholders Group,

2014). Such shortcomings fuel inequalities in *intellectual access* to health information (Jaeger and Bowman, 2005). Researchers have called for health providers and organisations to demonstrate greater awareness of the effects of varying reading ability on information uptake (Cline and Haynes, 2001; McInnes, 2011), and have recommended simplifying medical jargon and making information more accessible (Brodie et al, 2000; Borzekowski et al, 2001a; Hansen et al, 2003; Rideout, 2001; Skinner et al, 2003).

Examining the difficulties encountered by participants in filtering online information raised issues related to information provision, system demands and complexities that can represent major barriers to young people's sexual health literacy. Navigating less accessible websites requires sophisticated digital literacy skills, and at times caused participants to abort their information-seeking attempts. Some participants expressed surprise at the effort required to find information, and felt that information should be more accessible, particularly practical information about helplines and other services. This highlights the necessity for information providers to provide content that is accessible, functional and easy to navigate.

7.3.3.2 *Critical health literacy: critically questioning and appraising information*

One component of critical health literacy is having the skills to critically question and analyse information, and the ability to use or reject that information to exert more control over health decisions (Nutbeam, 2000). Another component of critical health literacy is an understanding of social, environmental and economic determinants of health, recognising the influence of structural and system demands on decision-making (Chinn, 2011). Insights into my participants' critical health literacy skills suggest they varied considerably.

Evidence within the USA suggests that young people predominantly distrust online sexual health information, regardless of gender, race or internet use habits (Simon and Daneback, 2013). However, it should be noted that the reality is likely more nuanced, with both my findings and evidence from the literature (Fergie et al, 2015) indicating that, while online information as a whole may be viewed as broadly unreliable, there are specific online sources that young people do regard as highly reliable. My participants described general wariness of online content, although there was variety between individuals in their degree of wariness, and there was variety in the trust afforded to different sources. Two extremes emerged, with some being highly conscious of reliability, and consequently either adopting strategies to find reliable content, or avoiding using the internet altogether, while others exhibited little concern for reliability. Participants who preferred to avoid seeking information online due

to concerns about the reliability of available information, or low confidence in their own ability to discern reliability, tended to prefer talking to friends, family or health professionals.

Previous research on information seeking and appraisal has found that internet users often make fast-paced judgements about sources, informed by heuristic approaches and initial impressions (often based on context, consistency of information, recommendations and personal tastes (Fergie et al, 2015; Metzger et al, 2010). My participants exhibited speed in choosing search results and appraising and making decisions about sources. Appraisals were often informed by aesthetic features, in addition to sources' perceived relevance to the individuals' locations, sexualities and genders. Geographical location was notable because, despite the supranational nature of the internet, locality did influence perceptions of relevance and reliability of information, with participants rejecting non-UK, and particularly American, websites. Participants were similarly rapid in seeking specific information within websites, with fast visual scanning at times causing them to bypass relevant information. It is important to situate these findings within the online activity context, where participants may have felt pressure to find information quickly. However, participants also described their 'real-life' search practices as also being focused on finding information quickly, for reasons, including 'laziness' and worries about being seen seeking sexual health information. Thus, in addition to information seeking being based on heuristic and initial impressions, as described by Fergie and colleagues (2015) and Metzger and colleagues (2010), I found evidence that searching can be influenced by socio-cultural factors, including the stigma associated with seeking sexual health information.

Research has highlighted common strategies used to assess reliability, including relying on reputable or well-known sources, being wary of particular types of sources and triangulating information (Buhi et al, 2009; Gray et al, 2005; Jones and Biddlecom, 2011). Similar approaches were demonstrated by my participants. Participants typically preferred websites they deemed to be 'professional' and reputable, identified through aesthetic impressions or prior knowledge. Similar to the findings of Gray and colleagues (2005) findings, my participants relied on "trusted brands", including Google and organisations such as the NHS. Preferences for familiar, well-regarded sources may be key to effective online sexual health promotion, as associating content with trusted brands, such as the NHS, could help drive engagement, while high-quality content may be more might be bypassed if associated with an unknown or untrusted organisation or source.

At a higher level than considering the organisation operating an online source, participants sometimes considered the type of source, with some expressing wariness of social media and user-generated content in comparison to more 'authoritative' and 'expert' content. However, this varied between individuals, and by the type of information being sought, for example, when seeking relatable advice, user-generated content was deemed more suitable. Participants were generally wary of editable sources such as Wikipedia, but many used WikiHow, valuing the pictorial, stepwise information style. Distrust of editable sources, particularly Wikipedia, is established in the literature, despite evidence that Wikipedia is often more reliable than traditional reference material (Boyd, 2014). Underestimations of the reliability of Wikipedia could have ramifications for teaching digital health literacy, as Boyd (2014) argues that young people tend to be encouraged to simply avoid Wikipedia, rather than developing the critical literacy skills necessary to critically evaluate the reliability of information.

While Wikipedia is typically regarded with suspicion, young people broadly trust Google, despite it providing no verification of the quality of search results, and being a for-profit company monetised through advertising and reliant on algorithms that people and organisations with vested corporate interests can actively manipulate (Boyd 2014). Boyd (2014) suggests that "the notion of the algorithm is foreign to most people, including most youth" (p.185), implying that users may not be sufficiently aware of the potential biases of the search engine, although one pair of my participants did discuss algorithms and the importance of carefully choosing search strings. The stark differences in both perceptions of Wikipedia and Google and the nature of these two information sources highlight the importance of considering different online information platforms as separate contexts, rather than viewing the internet as a monolithic information source.

While the reliability of sources was typically evaluated rapidly based on first impressions or prior knowledge of the source, some participants described more nuanced strategies, including checking for reputable top level domains, transparent authorship information, up-to-date content and an absence of advertising. Buhi et al (2009) and Jones and Biddlecom (2011) also identified the use of such key indicators. Another technique that participants described was to triangulate information through comparing online and offline sources. Similarly, Jones and Biddlecom (2011) and Buhi et al (2009) found that participants self-reported crosschecking information in this manner. However, while these strategies were described by participants, they were rarely demonstrated within the online activity. These

discrepancies illustrate the value of comparing self-reported and exhibited behaviours, as perceived ideal practices may not actually be carried out in practice.

A minority of my participants exhibited more advanced critical health literacy skills, and using Chinn's (2011) conceptualisation, demonstrated both a critical analysis of information and an understanding of the social determinants of health. These participants identified problematic sexual content in mainstream media, and often favoured user-generated content instead. As mentioned earlier, some participants, particularly those identifying as gay, lesbian or bisexual, demonstrated critical literacy in relation to dominant hegemonic practices and oppression within the school context, and its failure to prepare them to make sexual decisions. Some further applied this critical literacy to the online context, being critical of biased and judgemental sources, heteronormative and misogynistic content, and the effects such content has social norms and attitudes. Research has shown that the quality of online sex and sexual health information varies considerably, and can be negative in tone and narrow in scope (Bay-Cheng, 2001), with certain topics often side-lined, including sexual identity/orientation, masturbation and abortion (Simon and Daneback, 2013), as well as a general lack of information about young people's navigation of sexual health situations and conflicts (Isaacson, 2006; Keller et al, 2004). Some preferred to use 'unofficial', non-hegemonic, user-generated content for this reason. This can be seen as illustrative of the power of sophisticated critical sexual health literacy skills in overcoming some of the most commonly experienced challenges of seeing sexual health information online.

7.3.4 What are the specific challenges relating to sexual health literacy within the online context?

While sexual health literacy is beset by similar challenges to general health literacy, it is important to consider the challenges that may be specific to, or more acute in, sexual health literacy. Given that broad conceptualisations of access include the effective use and application of information in various contexts, free from worry about embarrassment and stigma, it is important to consider how socio-cultural and contextual factors may be particularly pronounced in the sphere of sexual health.

7.3.4.1   Social access and stigma

Young people face a range of barriers to effectively locating and applying sexual health information, including the different contexts within which sexual health learning occurs,

which can problematise sex and sexual health amongst young people (Kendall, 2013). Research in Australia has shown that young people demonstrate reluctance to seek information about sexual health due to stigma, as well as a perceived lack of services (Couch et al, 2006). Worries around confidentiality and barriers such as embarrassment and shame are considerable. Research has shown that young people have these worries in relation to talking about sex or sexual health with others in offline contexts (e.g. teachers; friends; family) (Harvey et al, 2008; McMichael and Gifford , 2009), and it seems these barriers can also exist in the online context.

As discussed in Section 7.3.2, my participants did not experience any barriers to physically accessing the internet, but did experience barriers in relation to what Burnett and colleagues (2008) refer to as *intellectual* access, or the ability to effectively navigate the online environment to access reliable and accurate sexual health information. Young people's concerns about the stigma of 'being seen' may contribute to hasty, flawed information-seeking, causing potentially valuable content to be overlooked, restricting what Burnet and colleagues (2008) refer to as *social* information access, concerning the sociocultural context of information seeking. Social access appear so be another area in which sexual health content presents barriers to access that may not exist for general health information. Participants' concerns about stigma highlight how even young people who demonstrate high functional health literacy may encounter barriers to effectively finding and interpreting sexual health information. Stigma may both drive young people's use of the internet and drive ineffective information-seeking strategies, and this illustrates the importance of taking broader contexts into account when considering sexual health literacy.

7.3.4.2   Sexually explicit material and gender norms

Most young people with internet access have encountered sexually explicit material online, intentionally or otherwise (Livingstone and Helsper, 2007; Mitchell et al, 2003; Owens et al, 2012). My participants discussed encountering explicit material in response to relatively innocuous searches, and worries about sexually explicit material seemed to influence my participants' search strategies, with some 'censoring' search strings or being wary of using image search services and websites containing visual material. This was more evident in female participants, whose embarrassment and concern about reputation manifesting in risk-averse searching. Males also censored searches, but tended to attribute this to the interview environment, implying that they would be less cautious outside of the research context.

Male participants referred to pornography as an information source, corroborating literature suggesting that young people use digital media to access pornography as a source of sex education (Albury, 2015; Allen, 2006; McKee, 2008), potentially in response to inadequacies of formal sexual health education (Kubicek et al, 2010). Allen (2011) suggested that young people may demonstrate interest in pornography due to: curiosity about specific practices, desires to demonstrate knowledge to peers and desires to follow normative gender roles. Research has highlighted the culturally-ingrained gendered nature of pornography, which is continually presented as more acceptable for men than women (McKee et al, 2008, Scarcelli, 2015). Similarly to participants in my study, participants in Scarcelli's (2015) research into girls' experiences with online pornography found that they presented pornography as something they were familiar with, but did not access.

From the early 1990's, sexually explicit material on the internet has generally been viewed as presenting risks to young people's sexual practices and well-being (Albury, 2014; Flood, 2009; McKee, 2010;), particularly young males (Crabbe and Corlett, 2010). Researchers have highlighted how pornography may affect young people's sexual practices and scripts, with young men's consumption of pornography associated with dominant attitudes and behaviours towards young women (McKee et al, 2008). Pornography must been seen within the wider context of media representations in their role in sexualising popular culture and promoting or 'eroticising' gender inequality (Attwood, 2009; Crabbe and Corlett, 2010; McNair, 2012). Some websites accessed during the online activity exemplified this, for example with misogynistic content including a 'men's health page' entitled '7 ways to give it to her good'.

While pornography is a problematic information source, it is important to acknowledge that it may provide benefits. Conversely, cautiously self-censoring searches to avoid explicit content could lead young people to overlook potentially useful information. There is a need to balance the potential benefits of accessing illuminating, realistic information with the potential disadvantages of being influenced by unrealistic portrayals of sex and sexual health. The key concern here is perhaps not the explicit media itself, but the critical health literacy skills of individuals; for young people to make safe, effective use of such content, it is necessary for them to extract useful information while remaining critical about the sexual and gender norms being illustrated.

Beyond pornography and explicit content, research highlights that new media contexts reinforce gendered norms and ideals (de Ridder and van Bauwel, 2013; Livingstone et al, 2011; Livingstone and Mason, 2015; Ringrose and Barajas, 2011). Livingstone and Mason (2015) highlight the challenges that girls and young women face online in "negotiating the line between performing the hyper-feminine sexuality that is often seen in the media, and stepping outside what is 'proper' behaviour for a girl" (which is policed through judgmental language such as 'slut' or 'slag' (Ringrose and Barajas 2011)), while boys face different pressures to performs "an emotionless, detached, and often aggressive masculinity" (Livingstone and Mason, 2015, p.23). Renold (2013) found that even children as young as 10-12, and particularly girls, felt pressured to conform to such gender norms.

Just as pornography occupies a complex position of being both problematic and a potentially useful information source, research has focused on how the online context presents both risks and opportunities to young people, and how these vary by gender. Livingstone and Haddon (2009) explain that boys are more likely to both encounter and generate risks in the online environment, while girls are more likely to be victims of risk. However, it may be necessary to use a broad conceptualisation of risk; Ringrose and Barajas (2011) called for traditional notions of risk as a binary proposition, in which risk and opportunity are opposite phenomena, to be expanded upon, recognising that practises can simultaneously present both opportunities and risks. As Ringrose and Barajas (2011) put it, "Gender relations are more messy and complex than rational agents doing risk aversion vis-à-vis risky or healthy options" (p.123). As such, in the 'messy' world of gender and sexual health, dichotomies of good and bad content may be unhelpful.

While the online context may often reinforce heteronormative and gendered ideals, some discourses within social media may help young people to challenge gender norms (de Ridder and van Bauwel (2013). As Ringrose and Barajas (2011, p.134) suggest, social media can provide 'opportunities for communication that opens up gender and sexual identity in new ways', enabling 'cultural resistance' of norms of gender and sexuality. This was found amongst my participants, although, as will be discussed in Sections 7.3.4.3 and 7.5.3, the extent to which social media develops critical perspectives appears to vary between different social platforms. For young people to effectively negotiate the online environment, and realise the opportunities presented by social media, it may be necessary for other sources of education to develop young people's critical and interactive skills (Albury, 2014; Allen, 2006). Within my study, participants highlighted different perspectives on, and reactions to,

sexually explicit content, and the range of these perspectives, combined with the complexity of the role of explicit content, suggest that media studies lessons might aid young people's negotiations of these issues (Bragg and Buckingham, 2009). Similarly, teaching 'porn literacy' to young people may help them to view pornography through a critical lens (Albury, 2014).

A minority of my participants exhibited sophisticated critical health literacy in discussing the potential influence of pornography on young people's attitudes towards sex, and the implications of using pornography to learn about sexual encounters, demonstrating awareness of harmful, unequal and oppressive socio-cultural beliefs and practices that may stem opportunities to exercise agency in making sexual health decisions, which Jones and Norton (2007) state is necessary to be critically health literate.

7.3.4.3 *Challenges for sexual health interventions on social media*

Social media is another area in which the challenges of sexual health literacy are particularly acute. Participants typically valued the internet as a private and anonymous means to avoid the perceived embarrassment and stigma of discussing sexual health within potentially embarrassing 'offline' contexts. However, the nature of the internet meant that 'being seen' was not restricted to offline contexts, as social media sites also present risks of being observed engaging with sexual health content. In relation to sexual health, young people tended to value aspects of the internet that provided privacy, rather than social interactivity. This distinction could have implications for sexual health interventions increasingly moving online (discussed in Section 7.5). However, it is important to note that, as will be discussed in Section 7.4.3, participants' distaste for engaging with sexual health content on social media was not uniform across social media platforms, with social content sharing platforms such as YouTube being less problematic than social networking platforms such as Facebook.

In discussing using social media for sexual health interventions, Fergie and colleagues (2016, p.53) highlight the importance of 'understanding common reservations about engaging online'. It is vital to understand how the social media environment might inhibit engagement, particularly in the area of sexual health, and how 'even the seemingly innocuous act of 'liking' pages (which initiates subscription to content on an ongoing basis) is subject to considerations about identity-management' (Fergie et al, 2016, p 53). While some of my participants did see some potential for sexual health promotion on social media, describing engaging with links to interesting content, these experiences were atypical. The

processes of identity construction that are actively performed on many social media services concerns must be a key consideration for sexual health interventions on such services (Evers et al., 2013; Fergie et al., 2016), and are a clear means by which sexual health content may face barriers to user uptake that do not necessarily apply to general health content.

7.4 The role of friends and peers in optimising sexual health literacy in online and offline contexts

7.4.1 Why are friends and peers important to sexual health literacy?

Health literacy theorists have stressed the importance of studying health literacy within such broader community and social realms, recognising the impact of situational determinants such as peer influence and social support on health literacy and health (Mangello, 2008; Nutbeam, 2008; Paasche-Orlow and Wolf, 2007; Sorenson et al, 2012). In their conceptualisation of health literacy, Sorenson and colleagues (2012) state that health literacy skills can be used to overcome personal, social, structural and economic barriers to health. While low health literacy has traditionally been considered as an individual trait (AMA, 1999), it is evident that the support individuals receive from their social environments can be key to shaping their health literacy. Buhi and Goodson's (2007) systematic review of literature on young people's sexual behaviour and intentions found peer norms to be a key influence on sexual behaviours.

Whilst my participants typically identified the internet as their current primary source of sexual health information, most described using and managing multiple information sources, and friends and peers emerged as a particularly important influence. The role of friends and peers is particularly important when considering sexual health literacy in a modern, connected information landscape, given that information and support are exchanged between friends and peers in online and offline. Theorists have identified growing integration of online and offline environments (e.g. dating apps), with the geographically-unbounded nature of mobile technologies blurring the boundaries between the two (Boyd, 2014; Pascoe, 2011). As young people use mobile technologies to share information, socialise with friends, and connect more broadly with communities (Boyd, 2014; Evers et al, 2013; Marwick and Boyd, 2014), their online activities are intrinsically linked to their offline social worlds.

My participants described spending considerable time online, particularly with social media, including social networking sites (SNS) (e.g. Facebook), messaging applications (e.g. Snapchat and WhatsApp) and social photo and video-sharing sites (e.g. Instagram and

YouTube). It is important to consider the role of friends and peers more widely in influencing sexual health, which Byron (2017) highlights as "particularly pertinent given current attempts to promote sexual health to young people via social media, where friendship and practice is central" (p.487).

7.4.2 Friends as a source of informational, emotional and practical support

The literature has primarily discussed friends and peers as sources of sex and sexual health information in relation to augmenting school-based sex education (Graf and Patrick, 2015; Sprecher et al, 2008), as discussed in Section 7.3.1. However, a growing body of literature examines the role of friends and peers in providing sexual health informational, supportive and practical social support outwith the school context (Byron, 2017; Cheetham, 2014; Mastro and Zimmer-Gembeck, 2015; McDavitt and Mutchler, 2014; Powell, 2008).

Research shows that young people cite friends as a source of information about sex and sexual health, and value trusted peers for their experience-based knowledge and non-judgemental advice (Byron, 2015; Byron, 2017; Powell, 2008). This was evident among my participants, who described learning with friends and from friends, highlighting ways that friends could provide informational, emotional and practical support in relation to sex and sexual health, both off and online. Echoing Byron's (2015) findings from research with Australian adolescents (aged 18-25 years), my participants described drawing on trusted friends, who were experienced and knowledgeable. However, pre-existing knowledge and experience were not always considered essential, with female participants in particular describing 'working it out together', alluding to the value of two-way communication in problem solving, contrasting with the dynamics of more traditional, didactic information provision.

The propensity to engage in friendship and peer-support was not universal within my study. Gender appeared to be a factor in engagement, and my analysis suggests that young women benefit particularly from friendship and peer support, both online and offline (discussed in Section 7.4.3). Research has found that young women in particular are open to discussing relationships and emotions (Allen, 2008; Day and Livingstone, 2003; Measor et al, 2000; O'Higgins and Gabhainn, 2010; Teitelman et al, 2009), and my female participants were more likely to discuss relational and emotional aspects of sexual health than male participants, who tended to be dismissive of this. Male participants seemed less willing to make the limitations of their sexual knowledge and experiences known, preferring to discuss

sexual health in a playful, sometimes immature, manner. Research suggests that young men are expected to be sexually knowledgeable (Buston and Wight, 2006; Hilton, 2007; Limmer, 2010; Measor et al, 2000). It is likely that, for males, maintaining a façade of jovial indifference about sexual health is a performative means of protecting masculine social status. This speaks to literature around performative masculinity as a potential barrier to young men talking constructively about sexual health with their friends (as discussed in Section 7.2.2). This evidence illustrates a mechanism by which inequalities in sexual health literacy may be somewhat patterned by gender, highlighting the influence of socio-cultural norms about masculinity and attitudes towards sex and communicating about sex.

Beyond friend and peer support being a means of gaining information, some of the knowledge exchange exhibited within my study highlighted the role of peers in potentially influencing norms within social groups. Participants in both Byron's (2017) and my research described sharing their knowledge and experience with their friends. Byron's (2017) participants described acting as educators to friends, sharing experiences and information to promote sexual health practices, highlighting informal sexual health promotion within the friendship context. My participants both described instances of promoting sexual health directly to friends and demonstrated ad-hoc peer education during the interviews and online activity. Possessing sexual health knowledge made some participants protective of others, feeling compelled to dispel myths amongst their peers. Those who described sharing or exchanging knowledge and support with friends were predominantly those with more confidence in their knowledge, sexual health experience or familiarity with seeking information, and there was some evidence that the desire to provide peer support and act as a protector was related to positive past experiences of sexual health learning. These participants demonstrated sophisticated sexual health literacy skills, illustrating their ability to potentially influence norms within their social groups, and demonstrating how friends can influence each other's understandings. However, this influence is not necessarily positive, as some participants shared misinformation and perpetuated myths, but nonetheless the friend-support exhibited highlighted how health literacy can go beyond the individual and influence wider community and society (Nutbeam, 2000).

The friendship context may also have a role to play in making health systems easier to navigate (Cheetham, 2014; Sorenson et al, 2012). Forrest's (2007) review of literature on young men's use of sexual health services found that supportive peer relationships were important facilitators of access. My participants described drawing on friends for practical

and emotional support to overcome barriers within healthcare contexts, and some provided tangible examples of assisting friends in overcoming sexual health literacy barriers by attending health services with them. Cheetham's (2014) study of the role of peers in uptake of a scheme designed to increase access to condoms found that individuals helped friends to access the resource, alleviating embarrassment and stigma, which are commonly associated with sexual health services (Stone and Ingham, 2003). However, Cheetham's (2014) sample comprised only people who had themselves registered for the C-Card scheme, and thus the experiences of those potentially unable to negotiate the barriers to participation were not captured. One of the aims of the C-Card scheme was to increase young men's use of sexual health services, and, notably, while addressing Scenario Two of the online activity, three male participants within my sample stated that they would tell their friend about the C-Card scheme, while, conversely, some female participants exhibited more wariness in relation to accessing condoms. Cheetham (2014) identifies a "need to revisit the dynamics of young people's peer relationships and harness their potential to influence sexual attitudes and behaviour in positive ways, rather than simply seeing these always as a source of negative pressure" (p 1). My findings support this call by demonstrating how young people can act help friends with low health literacy by sharing knowledge, and assisting them to overcome barriers to accessing health services.

While acknowledging the potential benefits of peer support, it is vital to consider the commensurate disadvantages faced by those who have limited friendship groups or find face-to-face interaction challenging. On this issue, my sampling methods may have generated a somewhat skewed sample in terms of comfort in discussing sexual health with friends, but, nonetheless, some participants described embarrassment at discussing sexual health with friends. Barriers such as embarrassment and shame are substantial, and research has shown that young people experience these when talking about sex or sexual health, including when talking with friends (Kendall, 2013; McMichael and Gifford, 2009). A small number of participants who reported being particularly uncomfortable talking about sex and sexual health (exhibited at times within the interview) preferred to seek information online in relative privacy.

The relationship between offline support and online engagement has been highlighted within the literature. Fergie and colleagues (2016), in their study exploring production and consumption of user-generated content about diabetes and mental health, found offline experience of support to be a key determinant of young adults' engagement with online

content. For example, 'non-engagers' typically had reliable offline support systems, which seemed to negate the need for engagement with online content. This was also found within my study, with some participants preferring to use a trusted personal support system than engage with a potentially untrustworthy online source. Wyatt et al (2002) discussed how non-use of technologies does not necessarily relate to inequality, typifying within policy and academia, providing an alternative typology of types of users, including 'resisters' and 'rejectors', which recognises multiple reasons for non-use, including having adequate alternative sources or a personal support system (p.76).

7.4.3 Peers in the online context

Friendship and peer support related to sexual health is an area in which the overlap and interrelation between young people's online and offline environments is particularly relevant. The opportunities and challenges presented by the interrelation between the online and offline spheres in peer and friend support are discussed in this section.

The social connectivity enabled by digital technologies can enhance access to information (Evers et al, 2013; Niland et al, 2015), particularly experiential knowledge and information about 'taboo' subjects (Suzuki and Calzo, 2004). Research shows that young people want information about the normality of sexual practices and behaviours (Harvey et al, 2007), and, for those reluctant to talk to friends in person, user-generated content online provides non-judgemental, relatable information and peer advice (Hillier et al, 2012; Suzuki and Calzo, 2004). Over a decade ago, both Suzuki and Calzo (2004) and Bay-Cheng (2005) examined the popularity of online bulletin boards among young people, illustrating how these communal online spaces, which preceded today's social media, allowed young people to openly share information and experiences without barriers encountered elsewhere. Some of my participants (particularly female) sought such relatable content online (such as in blogs or vlogs), seeking the comfort of knowing 'it's not just me', and some specifically complained about a lack of relatable content on government and health provider websites. Some social media contexts can provide spaces for community empowerment and effective venues for developing sexual health literacy, as clearly illustrated in some of my participants' positive experiences with YouTube content. Two of the YouTube bloggers accessed by participants during the online activity demonstrated social awareness by deconstructing myths and discussing consent, illustrating the influence that good user-generated content might have on young people's critical sexual health literacy.

However, not all aspects of social media are popular venues for sexual health information and support, and engaging with sexual health content on social networking services such as Facebook and Twitter is fraught with concerns about 'being seen' seeking stigmatising information. While privacy can be an appealing feature of using the internet to access sexual health information, young people's use of social media requires that privacy be continually negotiated, as user interactions on social media can be visible to wider networks beyond friendship circles (Boyd, 2008). Thus, while the internet is broadly seen as an anonymous source of information that mitigates concerns about stigma and embarrassment, social networking sites may represent a sphere of the internet in which young people are beholden to similar expectations of propriety to those found in the offline environment. Contrary to the strategies to control information shared on social media, as identified by Boyd and Marwick (2011), my participants primarily described entirely avoiding social media in relation to sexual health information. Similar preferences were identified in young Australian people, due to concerns about privacy, stigma, and bullying (Byron, 2015; Evers et al, 2013). This strict separation drawn by my participants between sexual health information and social networks may be a result of the deliberate processes of identity creation that take place on social media (as discussed in Section 7.3.4) and the heightened awareness of the environment they occupy, as described by Byron (2015).

It is evident that while the strength of social media is in the provision of two-way communication (Bruns, 2009) that dynamic complicates sexual health promotion. It may be important to draw distinctions, as my participants did, between social networking services, which present challenges for sexual health promotion, and other user-generated resources such as blogs, video sharing sites and question and answer forums, which may deliver appealing information without the risks to social status associated with social media. However, this is not to say that sexual health promotion on social networking services is impossible; content that is sufficiently engaging can be shared without fear of stigma, and can still provoke serious discussion. Evers et al (2013) found that young Australian people suggested that humour, particularly in YouTube videos, could overcome some challenges related to bullying and stigma, as humour can distancing information creators' personal lives. Similarly, Byron (2013) identified a preference for sexual health information that can be shared without reflecting negatively on the sharer. Participants in my study supported these assertions, describing content that they had seen shared on social media, including advertisements and quizzes. Perhaps, as Evers and colleagues (2013) suggest, "there is the potential that after humorous content is shared, a discussion or debate among peers will

emerge" (p.272). As such, humorous content may be a stigma-free way to ultimately provoke serious consideration of sexual health issues.

As well as humour, more serious, socially-critical sexual health content may thrive on social media. My participants typically viewed content focused on risk and 'scare tactics' as less likely to be shared, but some accounts illustrated how serious shared content may be particularly powerful is in exercising critical health literacy by challenging mainstream media content. Two participants illustrated this in describing socially-shared content that presented critical perspectives towards the banality and heteronormativity of mainstream media. This demonstrates the potential for young people to access critical perspectives through user-generated content and social sharing that they might have been unlikely to encounter otherwise.

My findings illustrate how the online environment represents an important sphere of support within which individuals can interact with their peers, with its own set of advantages and concerns. These interactions may in influence individuals' functional and critical literacy, as they encounter new information and perspectives that might stimulate awareness and analysis of socio-cultural beliefs, attitudes and practices that might undermine healthy decision making, autonomy, individual agency and sexual self-expression. As with peer and friend support offline, it is necessary to question how individuals without robust and broad friendship groups may be disadvantaged, but the unbounded nature of social media platforms may be such that barriers to building peer groups are less significant than in the 'offline' world.

It is clear from both the literature and my data that, both online and offline, friendship and wider peer groups can play important roles in young people's sexual health literacy. The friendship context is often perceived as a risk to young people's knowledge, and health promotion rarely focuses on how support from friends can be an asset, and how young people can make best use of it (Byron, 2017). Byron (2017) highlights how formal discourses of young people's sexual health typically present learning as an individual and private responsibility, devaluing and discouraging drawing on friends and peers (instead encouraging focusing seeking information from 'legitimate' sources like doctors and official websites). A narrow perception of sexual health literacy in terms of individual knowledge ignores the role of friends and social support more generally in aiding negotiations of sexual health. Friends and peers can provide support that more formal resources cannot, and my

findings support a shift in focus towards the socio-sexual contexts within which sex and sexual health are negotiated.

7.5   Formal healthcare context: traditional and online

In addition to the friendship and peer context, health literacy is also relevant to the formal healthcare contexts within which individuals interact. As Baker (2006) explains, "health literacy is a *dynamic state* of an individual during a health care encounter. An individual's health literacy may vary depending upon the medical problem being treated, the healthcare provider, and the system providing the care" (p.878). Therefore, in addition to functional and critical health literacy, individuals require interactive health literacy, which comprises the networking and social skills necessary to effectively apply knowledge in practice (Nutbeam, 2000). In formal healthcare settings, sexual health information is sought, used and applied in making decisions and negotiating sexual health. Here, I examine the role of the formal healthcare context in both facilitating and hindering young people's sexual health literacy, and how this is integrated within the online context.

7.5.1 Traditional healthcare system: facilitating or hindering young people's sexual health literacy

While online sexual health information and offline healthcare services are distinct contexts, it is useful to understand how they overlap and interact with each other. Researchers have highlighted a gap in knowledge concerning how young people apply online information offline, such in interactions with health services and health professionals (Gray et al, 2005; Simon and Daneback, 2013). Thus, it is important to consider the relationship between online information-seeking and accessing offline healthcare contexts. Buhi and colleagues' (2009) self-reported survey found that a third of students described being eager to share online health information and raise concerns with health providers, indicating that accessing online health information can drive young people to seek offline healthcare services. Few of my participants described being "eager" to share online health information in offline contexts, but they tended to perceive the internet as a place to find initial sexual health information before attending a consultation with a healthcare provider, if appropriate. From this perspective, the internet can be seen as having taken over much of the information-provision role of GP surgeries and sexual health clinics, but those formal healthcare contexts remain important for their primary purpose of delivering diagnosis and testing facilities.

Participants' descriptions of negotiating sexual health (and illness) within formal healthcare settings varied. Some described relative ease and comfort interacting within such contexts, based on prior positive experiences. As with online information sources, familiarity seemed to be a key driver of trust in health services, with positive experiences of services engendering trust in those organisations both online and offline. Just as familiarity with health services engendered confidence for some participants, uncertainty and unfamiliarity fuelled anxiety in others. Many displayed limited awareness of both their local sexual health services and sexual health services more generally (such as understandings of available testing procedures and what they involve) and, as demonstrated in the online activity and within literature, participants faced barriers to locating information about local services (Section 7.3.2). Awareness of health services is identified by Nutbeam (2000) as an individual benefit of functional health literacy, but it is evident that some of my participants lacked such awareness, fuellings anxieties about seeking help within sexual health services. Research with young people in Australia and Canada also found low awareness and knowledge of sexual health services (DiCenso et al, 2001; Janssen and Davis, 2009). Gray et al (2005) noted that lack of awareness and promotion was a significant barrier to health literacy.

Research suggests that young people in the UK, North America, Australia and New Zealand face a range of barriers to using formal healthcare systems (Booth et al, 2004; Lindberg et al, 2006; Lorimer et al, 2009). Internal barriers included worries about stigma, shame and embarrassment (Booth et al, 2004; Couch et al, 2006; Lindberg et al, 2006), while external barriers included lack of confidentiality, disrespectful or unskilled health care providers and challenges related to access (Booth et al, 2004; Lindberg et al, 2006; Thomas et al, 2006). My participants alluded to similar barriers, predominantly related to embarrassment in interacting with healthcare providers about sexual health issues, as well as concerns about 'being seen' accessing sexual health care. Even participants who described being comfortable communicating about sex and sexual health within healthcare contexts exhibited concern about friends or family witnessing them visiting doctors for sexual health reasons. Research has suggested that young people associate talking to healthcare providers about sexual health with embarrassment (Harvey et al, 2008; Klein et al, 1999) and that concerns about stigma can discourage accessing services (Booth et al, 2004; Lindberg et al, 2006). Lorimer and colleagues (2009) found that both young males and females in Scotland described embarrassment at being offered STI screening in front of others within a sexual health setting, with female participants in particular describing worries about being seen as

"that sort of person" (i.e., one seeking STI testing). This perhaps exemplifies what Wellings and colleagues (2012, p.21) identify as 'the tendency to distance oneself from people at risk of STIs" based on moral judgements about the assumed actions or characteristics of such people, which can negatively impact upon public health'.

My participants regarded confidentiality as essential, with some searching specifically for information about confidentiality when researching local testing providers, and some female participants worrying about having to inform their parents before using services. Existing research supports the finding that confidentiality is a major concern for young people (Booth et al, 2004; Lindberg et al, 2006). Thomas and colleagues' (2006) survey of young people in the UK found that confidentiality was considered the most important feature of sexual health service provision, cautioning that, if confidentiality is not ensured, young people may not attend services. Such barriers were potentially exacerbated for participants within my study living in smaller towns or rural areas, where a GP may be a more integral part of the local community than in urban areas. Indeed, Garside and colleagues' (2002) mixed methods research found that young people from rural and smaller communities in England were more concerned with barriers to anonymity due to greater visibility and lower privacy in smaller communities. They describe how, for those young people, "issues of confidentiality and anonymity permeate every stage of the consultation – going into the doctors, in the waiting room, going to the chemist, and future consultations." (p.24)

Literature has focused on health providers' attitudes and behaviours as being key to facilitating or hindering access to services and information (Couch et al, 2006; Kwan et al, 2006; Pleasant, 2008). My participants raised issues related to interacting and communicating with health providers, including worries about being examined, worries about being judged and potential shortcomings of provider communication. Participants described examples where doctors failed to clearly communicate with them, and they described responding to these situations in a variety of ways. Some had the confidence and health literacy skills to question doctors' unsatisfying explanations, while others felt too embarrassed to challenge doctors, and came away with unsatisfactory understandings as a result, highlighting how limited interactive skills and confidence can restrict effective use of services. Health literacy theorists have highlighted the importance of effective patient-provider communication in relation to health literacy (Paasche-Orlow and Wolf, 2007; Rudd et al, 2005). Paasche-Orlow and Wolf (2007) emphasise that the problem is not simply about individuals' low-health literacy, but about providers within the system and their

responsibility to communicate effectively. Thus it is important to consider both individual and system-based factors (Kwan et al, 2006; Pleasant, 2008).

Some participants spoke of the role of the internet in informing their interactions with healthcare providers, describing how online information optimised their interactive health literacy, building their confidence to use formal health services armed with information acquired online. Similarly, Gray and colleagues (2005) found that participants would use information found online to 'stimulate' discussion with healthcare providers, and the researchers argue that health providers should be prepared to discuss information brought to consultations by young people, and perhaps suggest ideas for further independent research. Some of my participants related experiences of health service providers' unwillingness to engage with service users' online-sourced information and understandings, illustrating why young people might feel unsure about introducing online information in offline healthcare contexts.

As well as describing doctor-patient level barriers, a minority of participants identified further systemic facilitators and barriers. Participants who were comfortable and familiar with services often recognised the barriers that existed for young people generally, and the daunting nature of visiting a service for the first time. Participants' discussions also highlighted how formal healthcare systems could work to engender confidence by reducing embarrassment for those accessing services, such as identifying systemic features (such as asking non-essential personal questions) that might alienating young people. While health literacy proponents highlight the importance of increasing personal health literacy through education, it is also important that systems be made easier to navigate (Sorenson et al, 2012). Lindberg and colleagues (2009) highlight the importance of healthcare providers working to change procedures, policies and physical surroundings to make them more comfortable and welcoming.

It is evident that young people experience a broad range of barriers to negotiating sexual health within formal healthcare contexts, including low awareness, poor provider skills and embarrassment, which combine to create challenges to interactive literacy and impose barriers to using sexual health services. Such barriers affected participants differently. Addressing sexual health within formal healthcare settings incited feelings ranging from relatively mild reluctance to attend, to complete avoidance and preferences for self-diagnosis, ignoring health issues, or seeking alternative means. Social and psychological

research has shed insight on information-seeking and avoiding processes, highlighting that individuals actively avoid information at times, particularly if they feel that it will result in uneasiness or conflict, and particularly in relation to cancer information (Case et al, 2005). Shoveller et al (2012) stress the importance of researching alternative settings within which young people might go to seek help, particularly online, and they argue for the development of training resources to help health practitioners redesign their practices to supplement online services, and thus "respect contemporary youth culture" (p.17).

7.5.2 Integrating the traditional offline healthcare system with the online context

7.5.2.1 Circumventing barriers through online sexual health services

There is a growing body of evidence regarding the acceptability and effectiveness of online sexual health services in overcoming practical and cultural barriers to use of traditional offline services (Bailey et al, 2012; Estcourt et al, 2017; Gkatzidou et al, 2015; Gold et al, 2011; Kang et al, 2010). Research suggests that young people are generally open to such services (including STI/HIV testing and online counselling services), valued for convenience, privacy and immediate access (Lorimer and McDaid, 2013; Shoveller et al, 2012), and has suggested that young people want online technologies to be used to provide convenient and confidential non-clinical testing services (Lorimer et al, 2009). Indeed, some of my participants suggested alternatives to traditional sexual health services, such as online STI testing and advice services, which might circumvent the need to attend formal settings and thus reduce anxiety and embarrassment. Participants identified that such services could reduce both geographical and emotional barriers by improving access for people in remote areas and providing more conducive environments for frank discussion of concerns. These participants were typically daunted by 'offline' services, and therefore stood to benefit from alternative sources of sexual health services.

Despite the potential advantages of online services, both literature and my findings suggest that their acceptability is commonly mitigated by concerns around trustworthiness, validity and confidentiality, and almost half of my participants stated that they would avoid online testing services because of these concerns (Bailey et al, 2015). The importance of privacy has also been identified by other research, covering a range of contexts, illustrating the importance of embedding confidentiality within online health services (Gkatzidou et al, 2015; Lindberg et al, 2006; Lorimer et al, 2009; Shoveller et al, 2012). Concerns about legitimacy were particularly applicable to online testing due to perceptions that medical

procedures should be entirely administrated by medical professionals. As such, online services might foster confidence in potential users by raising awareness about their legitimacy and associating themselves with established, trusted healthcare brands (Bailey et al, 2015).

My findings illustrate that online services should at best complement, not replace, traditional services. Estcourt and colleagues (2017), developed a complex intervention in the form of an online eSexual Health Clinic to diagnose, manage and treat chlamydia, and found preliminary evaluations to be effective, although they call for further research, stressing the need for comprehensive services. Online services such as this may reduce barriers for those who face them accessing traditional services, however they stress that, to reduce chlamydia incidence at a population level, eHealth services should be one component within a wider approach to sexual healthcare provision (Estcourt et al, 2017). Furthermore, Estcourt and colleagues (2017) specifically highlight the need for digital infrastructures within the NHS to be updated to support such interventions.

My participants' attitudes to online sexual health services varied not only between individuals, but between service types. My participants identified potential in sexual health information through private messaging services, such as Facebook, which could provide access to professional advice with some degree of privacy and anonymity, which both my findings and the literature suggest are important to young people (Byron, 2013; Evers et al, 2013). It is noteworthy that participants were typically positive about the concept of accessing online sexual health support via the private messaging features of SNS, despite common aversion to engagement in more public areas of SNS (as detailed in Section 7.5.3). The differences in participants' attitudes towards different parts of SNS as venues for sexual health support highlight the need for service-providers to have nuanced, up-to-date understandings of different aspects of social media services and the varying ways that young people use and perceive them, so that the potential of SNS for sexual health promotion can be reached.

7.5.2.2   Complementing formal healthcare services with mobile apps

Mobile applications (apps) are increasingly viewed as a unique opportunity for tailored health messaging and outreach, and valuable alternatives to clinician-delivered interventions, the use of which may be obstructed by barriers of time and cost (Ownby et al, 2013). While most mobile-phone-based interventions thus far have been SMS-based (Lim

et al, 2008; Swendeman et al, 2010; Ybarra et al, 2007), the growing popularity of smartphones and apps have increased opportunities for interventions to use mobile apps to deliver tailored and interactive services (Gibbs et al, 2016; Muessig et al, 2013). This has been supported within policy strategies in the UK, which encourage digitalisation of health services and a movement to self-management and care (National Information Board, 2014).

Despite growing emphasis on developing mobile health apps, awareness of available sexual health apps was low amongst my participants. Indeed, while research has found that apps for exercise and diet are commonplace, apps specific to sexual health are relatively rare (Bailey et al, 2015; Gibbs et al, 2016). Those sexual health apps that are available (mainly HIV and STI prevention apps) have been evaluated as being incomprehensive and inaccurate (Gibbs et al, 2016). Gibbs and colleagues (2016) carried out a review of STI apps and found that such apps were relatively sparse, challenging to identify, out-of-date, and "highly variable" (p.6) in the comprehensiveness and accuracy of their content. They conclude that "there is no easy way for the consumer to recognise apps that are likely to provide legitimate, trustworthy content" (Gibbs et al, 2016, p.6) and recommend that, in addition to better apps being developed, potential users should be provided with education in assessing reliability and guidance on legitimate and accessible apps. One aim of the strategy to digitise the NHS is to develop an endorsed app library to provide such guidance (National Information Board, 2014).

It is important to consider issues of accessibility, particularly in relation to varying health literacy levels. Broderick and colleagues (2014) stress that the potential benefits of mobile devices and apps are negated if they are not developed for varying health literacy levels, as they may simply exacerbate the existing challenges faced by individuals with low health literacy. To avoid this alienation, Broderick and colleagues (2014) call for developers to build "health literacy apps", defined as those whose development is informed by health literacy and usability strategies, as outlined in 'Health Literacy Online: Strategies for Writing and Designing Easy-To-Use Health Web Sites' (U.S Department of Health and Human Services, 2010). The strategies include learning about targeted users, writing actionable content, displaying content clearly, organising and simplifying information, engaging users and revising content.

A review by Muessig and colleagues (2013) highlighted that most sexual health apps have received very little engagement and have failed to draw user attention or positive user

reviews. While this may be due to poor development and lack of trustworthiness, comprehensiveness and accessibility as described above, it is also important to consider wider factors relating to users perspectives on such technologies being used for this purpose. This lack of engagement may be a due to issues of privacy, a lack of demand for such apps or, a lack of awareness, and negative user reviews may reflect sexual health apps being perceived as out of date, failing to keep pace with rapid developments in commercially produced apps (Bailey et al, 2015).

Beyond considering the quality of apps themselves, it is important to think more widely about how target audiences perceive mobile applications. There may be a tendency for information and services providers to see mobile apps as a perfect platform for engaging with young people in relation to sexual health promotion and services. Researchers may assume that, because STIs are stigmatised, and young people are 'digital natives', apps are a perfect solution. However, it is important to be sceptical, and first understand the role of mobile apps in young people's lives and consider the extent to which sexual health content is likely to be welcome in the form of apps. While many of my participants regarded general health apps to be acceptable, they were typically wary of sexual health apps, feeling that stigma would prevent their widespread adoption. One-off web searches were seen as more discreet and less risky in terms of 'being seen', as the on-screen icons of sexual health apps might be observed by others.

Gkatzidou and colleagues (2015) carried out focus groups exploring young people's perspectives on design and acceptability, and found that privacy and visibility were their key concerns. Beyond understanding how young people perceive mobile apps, Oudshoorn and Pinch (2003) described how, unlike researchers and information providers, who may view smartphones as inherently personal technologies, young people perceive them smartphones as social devices that are likely to be seen by others. They describe technological development as a "culturally contested zone", and state the need to account for "the multiplicity and diversity of users, spokespersons for users, and locations where the co-construction of users and technologies takes place" (Oudshoorn and Pinch, 2003, p.24). Kline (2000) and Laegran (2008) suggest that potential users may resist or reject technologies when their developers construct them in ways that do not align with their values or identities (Oudshoorn and Pinch, 2003), which may be an important consideration for future development of interventions delivered through mobile apps. It is important to make sure that apps are accessible, promoted, designed with potential users' values, identities,

skills and environments in mind, as well as taking into consideration users' concerns about privacy and anonymity, which might be mitigated through tailored privacy settings and discreet designs (Gkatzidou et al, 2015; Oudshoorn and Pinch, 2003). Furthermore, Gkatzidou and colleagues (2015) highlight that a 'one size fits all' approach to design may be insufficient, given the range of different user preferences, and suggest that building customisation options into apps may help to "encompass the four way fit between person, technology, task and context" (p.10).

7.6 Summary

In this chapter I have examined young people's sexual health literacy within four key contexts (school; online; peers; formal health care), illustrating the complex interactions between the individual and the ecologies within which sexual health literacy operates. I have discussed and highlighted similarities and differences to the literature, with a focus on the influence of and interactions between each context in optimising and hindering young people's sexual health literacy. Within the next chapter, I outline the conclusions that can be drawn from this research, and the implications of those conclusions for policy and future research.

8 Conclusion and recommendations

8.1 Overview of chapter

This chapter will present the main conclusions drawn from this study, as well as the policy implications and recommendations of these. This will be followed by a discussion of the strengths and limitations of the study, and finally, recommendations for further research.

8.2 Study aims

The aim of this research was to explore the key information contexts within which young people's sexual health literacy is developed and shaped, with a specific focus on the online context. The research questions were as follows:

1. What is the role of the internet within the broader landscape of young peoples' sexual health information and support?
2. How do young people describe and experience seeking, understanding, evaluating and using online sexual health information?
3. What are the individual, social and environmental contexts relevant to young people's experience and use of online sexual health information and support?

The main conclusions in relation to each of these research questions, will be detailed in the following section.

8.3 Main conclusions

8.3.1 What is the role of the internet within the broader landscape of young people's sexual health information and support?

While every participant was an active internet user, using the internet for sexual health information and support was not universal. Participants varied greatly in the extent to which the internet played a role in seeking sexual health information and support; while some favoured the internet above all other sources, others resolutely avoided online sexual health information. More typically, participants described using a range of sources, including: the internet, school-based sexual health education and friends, and their perspectives illustrated the importance of understanding how online and offline sources interact as part of an information and support landscape. Key findings related to the internet, school-based sexual

health education, peer support, sexual health services and the ways that these contexts overlap and interact are detailed below:

The online context:

- All participants were self-described active internet users, often on multiple platforms and in multiple places; my sample provided no evidence of a socioeconomic 'digital divide' in terms of fundamental internet access.

- The internet was most participants' current primary source of sexual health information, valued for its accessibility, convenience, familiarity and anonymity, but a minority would avoid the internet due to concerns about reliability and preferences for face-to-face support.

- Online sexual health information can, for some, alleviate barriers to seeking information in 'offline' contexts.

The school context:

- Almost all participants described experiences of school-based sexual health education, and their reflections were broadly critical, characterising such education as insufficient in scope and quantity, typically focusing on a negative, narrow, conceptualisation of sexual health.

- Sexual health education at school may hinder sexual health literacy through a focus on 'knowledge' and messages, rather than providing practical information and building skills to negotiate sexual health; participants' negative and risk-based understandings of 'sexual health' appeared to mirror a focus on risk within school-based sexual health education.

- School-based sexual health education may be improved through the incorporation of outside 'experts' and community and youth organisations.

- Dissatisfaction with school-based sexual health education may be a catalyst for seeking sexual health education online, but participants' experiences suggest that school-based sexual health education does little to equip young people for negotiating and using the online environment effectively.

The friend and peer context:

- Some preferred learning and talking to friends, particularly those who lacked trust in the online context and felt like the internet would increase worries and provide little reassurance.

- Participants, particularly females, described and demonstrated the potential for peers to influence sexual health understandings and norms and reduce practical and emotional barriers to accessing sexual health services.
- Participants' who described sharing or exchanging knowledge and support with friends were predominantly those who were more confident in their sexual health knowledge and communication, and had positive prior experiences of sexual health learning or had experience seeking information or negotiating sexual health.

The formal healthcare context:

- The varied barriers to negotiating sexual health within formal healthcare contexts included: low awareness, difficulties locating relevant information online, poor provider skills, and embarrassment. Participants expressed anxieties around communicating with health professionals and identified shortcomings in patient-provider communication.
- Familiarity with organisations was a key driver of trust, with positive experiences engendering trust in those organisations both online and offline. Just as familiarity with health services engendered confidence for some participants, uncertainty and unfamiliarity fuelled anxiety in others.
- Online alternatives to traditional sexual health services may reduce geographical and emotional barriers, circumvent the need to attend formal settings and thus reduce anxiety and embarrassment. However, participants raised concerns about trustworthiness, validity, confidentiality and a lack of support.

8.3.2 How do young people describe and experience seeking, understanding, evaluating and using online sexual health information and support?

In the face-to-face and observational stages of the interviews, participants both described and exhibited their approaches to seeking, understanding, evaluating and using online sexual health information. Participants expressed nuanced perceptions of different types of online sources, highlighting that 'the internet' is not a monolithic, homogenous information source, but one that consists of different types of sources and media, which may be perceived differently by different users and for different types of use. As well as presenting varied perspectives on different types of online sources, participants exhibited varied approaches to appraising specific sources, and preferences for modes of information presentation. In carrying out, and reflecting upon, information searches, participants exhibited variety in their experiences and perceptions of the challenges involved in finding reliable information

online. While many participants found locating and evaluating reliable and relevant information to be challenging, some exhibited sophisticated search strategies and critical appraisal of source types, sources and content. Key findings in relation to platform and information preferences; critical evaluation of sources and information; and challenges to locating relevant and reliable content, are detailed below:

Platform and information preferences:

- Preferences for different types of online content varied, including differing attitudes towards: user-generated content; pornography; relatable content; light-hearted content; visual and interactive content; commercial content; and government-provided content.

- Participants typically viewed familiar sources, and those they deemed as 'official' and authoritative' and reputable (such as NHS websites) as the most reliable, although not always useful in providing information.

- Participants typically preferred websites with clear layouts; stepped information; brief text; easy to understand language and realistic and practical content.

- Pornography and sexually explicit content was typically viewed as a norm for young men, rather than for young men, and gender differences were apparent in participants' embarrassment and concern about stigma associated with sexual health information-seeking; many female participants adopted risk-averse search strategies to avoid sexually explicit content; at times visual and interactive content appeared to be dismissed because of this.

- Participants drew important distinctions between social networking services (which present problems for sexual health promotion related to stigma, status and 'being seen') and other user-generated platforms, such as blogs, video sharing sites and question and answer forums (which were typically regarded as appropriate settings for sexual health information, albeit with some concerns about reliability). Most participants rejected the former, while some participants, primarily females and those who identified as gay or lesbian, tended to value the latter as a source of relatable and relevant advice that was sometimes missing from more 'authoritative' sources.

- Participants identified potential in sexual health information and service provision through private messaging services, and mobile applications, however participants also expressed concerns about privacy on each of these platform types.

Critical evaluation of sources and information:

- Finding information quickly was deemed important for most. Search processes typically involved rapid searching for, and evaluation of, sources and content, based on either recognition of known organisations or instinctive, initial aesthetic perceptions of relevance and reliability. At times, such rapid evaluation led participants to bypass relevant information or arrive at misinformation.

- The minority of participants who engaged in deliberate, critical evaluation of sources did so by considering: the top-level domains (and therefore geographical provenance) of websites; the presence of authorship information; the creation date of content; and the absence of advertising.

- Participants who identified as gay, lesbian or bisexual highlighted heteronormative content during the online activity, and sought out sources (particularly user-generated content) that they felt might provide more relevant information. Similarly, some participants identified misogynistic, homophobic or otherwise problematic content, and reflected on how it might influence norms and attitudes. These observations and behaviours highlight sophisticated critical sexual health literacy skills within a minority of participants.

- Social media may be an important context for exercising critical health literacy by challenging mainstream sexual health content; social sharing enables young people to access and share critical perspectives that they would be unlikely to encounter in more traditional information contexts.

Challenges to locating relevant and reliable content:

- Participants varied in their confidence and ability to find and identify reliable information, there was little awareness of specific sexual health websites and many regarded filtering the extensive information available to be challenging.

- Some websites malfunctioned or were otherwise difficult to use (text-heavy; unclear layout), and in some cases these websites led participants to abort searches, highlighting the importance of both fostering digital literacy skills and developing user-friendly websites. Complicated and non-user friendly websites acted as a barrier to participants who appeared to generally be confident in navigating the online environment.

- While finding fact-based information (specifically about STIs) seemed to be relatively straightforward, finding more general information and advice (about first-time sex) was more challenging. Failing to provide relatable advice about realistic

sexual health circumstances may be a shortcoming of 'official' and 'authoritative' sources, such as NHS websites, which may lead young people to seek information on commercial and user-generated websites, as well as from peers.

8.3.3 What are the individual, social and environmental factors relevant to young people's experience and use of online sexual health information and support?

This study has shed light on the different circumstances and experiences that can influence individuals' sexual health literacy, highlighting the impact of individual, socio-cultural, information provision and system factors. Several key individual and environmental factors were highlighted, including: the failure of school-based sex education in preparing young people to negotiate their sexual health; the role of peer support in developing and overcoming sexual health literacy barriers; the influence of gendered norms on sexual health information seeking practices and communication; and the impact of stigma in online and offline contexts and in shaping searching practices. While a greater focus on critical and interactive aspects is important in all forms of health literacy, it is particularly key in relation to sexual health literacy, which is applied within fundamentally relational situations, which are often intimate and emotionally-charged, complicated by social stigma and taboos. Many factors converge and intersect around sexual health literacy, including gender, sexual identity, stigma, system barriers, and social support, and all of these factors influence how individuals negotiate their sexual health. These dynamic and ever-changing sexual health-specific contextual concerns exacerbate health literacy challenges, and stigma and negativity should be seen as key focuses for sexual health literacy promotion, which may benefit from greater emphasis on interactive and critical skills in particular. Key findings are detailed below:

- Concerns about the stigma, embarrassment and shame of 'being seen' seeking sexual health information, or support, presented barriers to finding and using information in various contexts, both online and offline, from being seen attending a sexual health clinic (particularly in rural areas) to being seen engaging with sexual health promotion on social media. Embarrassment may also play a role in limiting effective communication within intimate sexual scenarios.
- Stigma may both drive young people's use of the internet and, conversely, lead to ineffective use of the internet; hasty information-seeking may lead to misinformation, even among those who otherwise demonstrate high functional

health literacy. Therefore, stigma may be a barrier that transcends traditional epidemiological risk groups.

- In addition to gender differences identified in sections 8.3.1 and 8.3.2, female participants were more open to engaging in informal peer education and support, while males' reluctance may be due to masculine norms of projecting sexual experience and competence. Similarly, females were more likely to identify relational, emotional and interpersonal aspects of sexual health, which are all crucial to negotiating healthy and happy relationships.

- Females, those who attended denomination schools and participants who identified as lesbian, gay or bisexual appeared to be disproportionately underserved by sexual health education provision at school.

- Critical health literacy is particularly important within the sexual health context, due to the roles of social and cultural norms in fuelling stigma and risky, problematic behaviours.

- A minority of participants, particularly those who identified as gay and lesbian, exhibited sophisticated critical engagement with socio-political aspects of sexual health. As identified in Section 8.3.1, these participants critiqued aspects of school-based sexual health education, including biased, moralising, heteronormative and insufficiently practical content. These participants appeared less encumbered by embarrassment and stigma, being more open to communicating about sexual health than most participants.

8.4 Policy implications and recommendations

In this section, I offer recommendations emerging from the research findings with potential implications for: schools; policy makers; information and service provision; and intervention development.

8.4.1 Implications for schools: optimising sexual health literacy through school-based sexual health education

It is evident that the school context is a key environment within which young people's sexual health literacy skills could be developed, yet both existing literature and my participants' accounts suggest that schools instead hinder development of sexual health literacy. Young people do look to school-based learning about sexual health, but the content and learning environment are not conducive to developing practical health skills, and sexual minorities

and those attending denominational schools are particularly poorly served. It seems that curriculums may not be keeping pace with the information contexts relevant to young people. My findings suggest that inadequate teaching in schools drives young people to seek sexual health information online, but also that schools do not support development of young people's skills to effectively navigate the online environment. Given that most participants identified school as their main source of early learning about sexual health, and the internet as their current main source, school logically represents a valuable opportunity to develop skills in navigating the online environment.

Broadly, school-based sexual health education may be improved on both delivering information about sexual health, and on developing the necessary critical and interactive literacy to independently find, appraise, understand and apply sexual health information. Specific recommendations concerning content and information provision include:

- Provision of comprehensive, sex-positive, inclusive, non-judgemental and practical content that is relevant to all young people's lives. Practical skills that should be developed include navigating both online and offline environments to safely and confidentially seek help and services.
- Inclusion of activities to foster development of interactive and critical literacy to empower young people to: negotiate sexual and healthcare contexts; engage in peer support; appraise information; understand and challenge gender norms, expectations and stereotyping (Banister et al, 2006); understand the roles of power and privilege; be aware of the social, economic and environmental determinants of sexual health (Nutbeam, 2000); and analyse beliefs, attitudes and practices that influence their opportunities to exercise agency and make safe and healthy decisions (Jones and Norton, 2007).
- Schools provide training on critically assessing online search strategies and information sources. My findings suggest that developing critical sexual health literacy is related to overcoming barriers to effectively using online sexual health information.

Specific recommendations to improve delivery modes and learning environments to foster comfortable and effective learning include:

- Giving young people opportunities to learn within single-sex classes and smaller peer groups. Supportive peer groups, including small groups such as pairs and

triads, appear to create positive conditions for sexual health discussion removed from some of the disruptive social dynamics of larger groups.

- Providing teachers with continuing training on delivering school-based sexual health education (Kirby et al, 2007).
- Collaborating with local youth, sexual health and charity organisations to run workshops delivered by external specialist teachers.
- Integrating digital technologies in sex education delivery (both in classes and through companion mobile apps and websites) to maximise young people's engagement and prepare them for effective, adaptive online self-teaching. Acknowledging within curricula that 'online' and 'offline' sources overlap as part of one dynamic information landscape. Promoting reliable websites to ease the burden of evaluating information sources. Further, sexual health promotion messages could be embedded within school's internal IT systems used for accessing class resources (Bailey et al. 2015).
- Introducing education about sexual health, sex and relationships earlier in the curriculum.

8.4.2 Implications for policy makers

Access to effective sexual health education is crucial in reducing sexual health inequalities, yet sexual health education provision in the UK is variable and inequitable (Bailey et al, 2015). Within Scotland, comprehensive sexual health education has yet to be made a compulsory part of school curriculums. The Scottish Government's most recent statutory guidance on the conduct of Relationships, Sexual Health and Parenthood Education in Schools was released in 2014 as an acknowledgement of the Marriage and Civil Partnership (Scotland) Act 2014 (Scottish Government, 2014b). This guidance is presented from a rights-based approach:

> "The Scottish Government is committed to ensuring that all children and young people receive high quality relationships, sexual health and parenthood education (RSHP) in order to respect, protect and fulfil their human rights as they grow up" (Scottish Government, 2014b, p.1)

The guidance also states their intention of such education to be "inclusive of, and responsive to, all, regardless of their sexual orientation" (p.2). However, despite this pledge of commitment to inclusivity, young people's rights to such comprehensive sexual health education are somewhat undermined. Schools and local authorities implement guidance

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inconsistently, resulting in substantial variety in the sexual health education that young people across Scotland receive, potentially exacerbating inequalities in sexual health literacy. My research highlights some of this variability in terms of the frequency of education provision, the content provided, and the influence exerted by socio-cultural and demographic factors. These findings draw attention to how cultural, systemic and infrastructural factors can undermine the right of young people to comprehensive sexual health education.

One area where cultural and institutional factors may exert a profound influence on young people's sexual health education is denominational education. The Scottish Government upholds religious authorities' power to determine the sexual health education provided within corresponding denominational schools. Furthermore, that right is exercised: the Scottish Catholic Education Service, which establishes and implements education policy on behalf of the Roman Catholic Bishops of Scotland, states that "Catholic schools in Scotland are *enabled* by the Scottish Government and *required* by the Church to follow Church guidance, provided via the Scottish Catholic Education service, to give witness to the Catholic faith and to uphold the tradition of Catholic education" (Scottish Catholic Education Service, 2015). My findings suggest that young people who attend denominational schools do tend to receive sexual health education that is less frequent and less comprehensive than those in non-denominational schools.

- Recommendations of areas of consideration for policy arising from my research findings include:
- Making high-quality, comprehensive and skills-based sexual health education compulsory in all schools that recognises sexual diversity.
- Monitoring and evaluating implementation of comprehensive school-based sexual health education and training.
- Recognising the increasing move towards digital services, and the corresponding need to prepare all young people to engage with online information and support safely and effectively.

Recognising the need to maintain both online and 'offline' services, and that moves to replace existing services with online-only services might exacerbate inequalities.

8.4.3   Implications for information and service providers

While supporting young people to critically engage with sexual health information and services is crucial, the accessibility of the information and services available is of fundamental importance. The onus cannot be on young people to increase their individual health literacy, rather providers must seek ways to better communicate with young people, promote available services, and reduce embarrassment and alienation.

A variety of recommendations for reducing barriers to making use of both online and offline information and services emerged from my research findings. Recommendations relevant to the traditional, offline information and services include:

- Raise awareness of local sexual health services, potentially through collaboration between schools and services.
- Structure services in ways that best minimise service-users' concerns about 'being seen' seeking sexual health information or support.
- Structure services and train healthcare providers in ways that engender confidence and comfort and minimise embarrassment and alienation in young people accessing those services.
- Encourage the use of peer support in reducing barriers to accessing services, for example by publicising the acceptability of service-users being accompanied by friends.

Recommendations relevant to the online environment include:

- Make young people aware of reliable, high-quality online sources by promoting those sources in schools, in offline services and in broader publicity campaigns
- Ensure that sexual health information and support websites are simple to navigate and have complete content; invest in maintenance to ensure technical aspects of websites remain functional.
- Ensure that online resources use accessible language, appropriate to the functional literacy levels of the groups likely to access them.
- Be inclusive of a broad range of digital literacy levels when designing resources
- Acknowledge that concerns about 'being seen' apply in the online environment, as well as offline, and develop resources that will not overtly resemble "sexual health" resources to onlookers.

- Acknowledge young people's varied preferences for different styles of information delivery, producing resources that offer prose, bulleted lists, images and videos, and present both straightforward, authoritative information and more relatable, narrative information grounded in real-world situations.
- Harness many young people's preferences for user-generated content, and that type of content's strengths in developing critical health literacy, by developing safe, controlled, reliable online environments for moderated user-generated content.

8.4.4 Implications for intervention development

Many of the recommendations listed above highlight opportunities for interventions to improve sexual health literacy in both online and traditional, offline education and service contexts. Conversely, the findings of my research highlight various potential pitfalls of interventions that embrace digital media. I found that young people were resistant to the notion of engaging with sexual health information on social media platforms such as Facebook or Twitter. As Fergie (2015) suggests, "it is important that health content delivered online does not conflict with the everyday identity work that constitutes a large portion of many young adults' engagement with social media platforms such as Facebook and Twitter" (p.235). While the ubiquity of some social media platforms in young people's lives may mark them as important targets for health promotion, the development of sexual health promotion interventions in social media must take into account young people's reluctance to tar their constructed social media identities by 'being seen' engaging with sexual health information. However, young people within my study tended to draw distinctions between social media platforms (i.e. Facebook, Twitter), and other social content-sharing services such as video sharing (i.e. YouTube) and blogging platforms, with participants exhibiting much greater comfort in engaging with sexual health content in the latter. As such, social media interventions would benefit from recognising the heterogeneity of social media and considering high levels of specificity with regards to form of delivery.

The individual differences illustrated in this thesis suggest that a comprehensive range of different interventions is necessary to ensure that every young person's needs, capacities, attitudes and preferences can be catered for, and thus it is fundamentally important to present comprehensive sexual health information in a variety of formats and presentational styles to accommodate different learning styles. However, beyond simply improving information provision, it is crucial to acknowledge and develop critical and social aspects of sexual health literacy, and to contextualise the role of the internet within the broader information

landscape. Instead of considering the internet as a discrete, alternative source of sexual health information and support, interventions should harness the potential benefits of embedding the online environment within traditional sexual health education, building information-seeking and appraisal skills to empower young people to safely and effectively use the internet to develop their own sexual health literacy. In addition to embracing the online information, sexual health education may also be usefully enhanced by integrating peer education, and my findings highlight the value of informal support and advice, both online and offline, as an alternative to more traditional, 'authoritative' sources. Beyond education, sexual health service providers may harness the benefits of the internet by continuing to offer online alternatives (but not necessarily replacements) to 'offline' sexual health services. Such interventions could have a range of benefits, including saving costs and reducing barriers to access, particularly those related to concerns about 'being seen'. However, while my participants identified potential advantages of such services, they also identified risks around security and reliability, highlighting the need for such interventions to be safe and robust, and for potential users to be reassured.

Finally, the development of sexual health interventions must be supported by the development of dedicated tools for measuring sexual health literacy, for which this thesis' contribution to establishing the fledgling concept of 'sexual health literacy' may prove instructive.

8.5   Strengths and limitations of the study

This study has provided a range of insights into young people's sexual health literacy, enhancing understandings of young people's experiences of, and perspectives on, finding, interpreting and applying online sexual health information in a rapidly-changing health information landscape. More specifically, it has provided exploration and analysis of young people's experiences with online sexual health information, using a broad and comprehensive approach that embodies an expansive conceptualisation of sexual health literacy. This study was novel in considering the relationship between traditional, 'offline' sources of sexual health information and the 'online' environment as a means of understanding the interactive aspects of sexual health literacy. It was also crucial to explore young people's sexual health decision-making within various information and support contexts, including school, peers and social media, and to consider what influences those contexts might have on decision-making. A key strength of the research is that it provides insights into a diverse range of experiences and practices of young people within the Scottish

context, while previous research on this topic has primarily been conducted with college/university-aged and educated groups in the USA. There was a need for up-to-date, qualitative research within the Scottish context, exploring the variety, importance and sufficiency of young people's different information sources. Further, given the potential of digital technology in sexual health care and prevention, there was a need for quality research to examine young people's perceptions and experiences of online sexual health information and support, identifying ways in which new technologies might be used to promote young peoples' sexual health in both the short and long terms.

A specific strength of this study is that it enabled me to observe young people's experiences of negotiating sexual health information online, in addition to collecting their self-described perceptions and practices. This was achieved through an innovative research design that integrated interview and observational methods to allow for more complete understanding of participants' perspectives and practices. The observational online activity allowed exploration of how participants actually experienced searching for and evaluating sexual health information in real time, albeit under artificial conditions, which reduced the need to rely on, and prompt participants for, self-reported descriptions of information-seeking practices, which are often considered 'natural' and therefore difficult to recall. Thus, data from each part of the interview could be used to compare findings from multiple research studies, elaborate upon findings from each research stage in the other and discover contradictions between multiple stages (Greene et al, 1989).

While this study has several substantial strengths, it is crucial to reflect on its limitations. Regarding the sample, while the young people recruited were diverse, some groups were not represented, including those who did not have access to the internet, young people from ethnic minorities and young people from very remote, rural locations. Thus, it must be recognised that the findings may not be directly transferable to groups not represented, such as those without internet access or little social support. Another potential limitation of the sample is that the perspectives of the young people who chose to take part in the research may differ from those who did not, or would not, choose to participate. Further, while a range of recruitment strategies were used in order to access a range of experiences, many participants were recruited through gatekeepers within youth and community organisations, and were therefore engaged within their communities to some extent. For these reasons, participants may have been somewhat self-selecting for both a willingness to discuss sexual health and for having a social support network to draw on, and the sample may have

underrepresented those who do not have such social support, may struggle the most to communicate about sexual health, and may be more likely to instead seek support online. Another potential limitation of the sample is that, because asking participants' about their own sexual experience or behaviours was deemed to be beyond the scope of the research, it is not clear whether the sample is representative of the population in terms of engagement in risky sexual behaviours; while indications of participants' behaviours emerged from many of the interviews, I did not seek to comprehensively collect such data. While acknowledging these important considerations about the potential limitations of the sample, it is appropriate to note that truly randomly sampling is unlikely to be feasible for research of this type; those young people most averse to discussing sex and sexual health are unlikely to participate in research about those topics, and questioning participants about their own risky sexual behaviours is unlikely to engender trust and openness.

It is important to properly situate the findings, which were based on both my interpretations and on the participants' own narratives and representations of their experiences. Further, it is crucial to be consider to context of data collection when interpreting the findings; the relatively artificial interview context in which participants made their contributions may have influenced those responses. Within that context, participants' responses were subject to influence from both myself, as a researcher, and also by their friend. As with much qualitative research, this research was highly reliant on each participant's presentations of self. While the online activity afforded more opportunities for participants' self-presentations to be compared against their practices than would be afforded solely by an interview, the artificial nature of the online activity will have inevitably influenced the data generated. Observational methods can be illuminating and insightful, but it is crucial that researchers remain aware of their limitations, particularly in how their artificial parameters and participants' awareness of being observed may result in practices that differ from those carried out in natural, unobserved circumstances.

In taking stock of limitations of research, it is important to identify areas where data collection did not produce data relevant to specific topics of interest. Specifically, details of how participants used and applied sexual health information found online proved challenging to access. Participants struggled to recall specific examples of applying online sexual health information, so I opted to approach the issue in more general terms, exploring the general process of applying sexual health information within a range of different contexts, and the barriers that might be encountered. Another opportunity to gather more

comprehensive data might have been to perform detailed analysis of the specific websites accessed during the online activity. This analysis was beyond the scope of this research, but a greater understanding of the content and presentation of the online sources used might provide further insights into participants' experiences of negotiating sexual health information online. Further research might build upon emerging understandings by producing a scoping review of sexual health websites available for young people and their health literacy requirements.

A limitation inherent to research into digital technologies relates to the rapidly-changing nature of online technologies and the dynamic nature of online practices. While my research generated broad data that captured the breadth of both participants' self-reported perspectives and experiences and their online information-seeking practices, it is important to note that the relevance of those data may diminish more rapidly than the findings of research concerned with less dynamic contexts. In addition to being limited by their relevance to specific social groups in specific types of location within Scotland, my findings are limited by their relevance to: contemporary digital technologies; the contemporary information-seeking practices of young people; and the contemporary information available on the internet. Conversely, the time-sensitive nature of my findings also highlights their heightened value as a contribution to literature, as previous research into similar topics will likely be of diminished relevance to current technologies, practices and information. The nature of how online information-seeking experiences and practices evolve may be a useful topic for further research.

8.6   Recommendations for future research

This study raises a number of issues that require further research. This is the first UK-based study focusing on sexual health literacy amongst young people, and has provided a range of insights into experiences of, and perspectives on, finding, evaluating and using online sexual health information and support, identifying ways in which new technologies might be used to promote young people's sexual health in both the short and long terms. This work could potentially be expanded using quantitative methods and through comparative work in other global contexts. The findings could also be further explored with particular groups, including further research into the experiences of young people with learning disabilities and young people from ethnic minority backgrounds. Such research could contribute to a more comprehensive understanding of the varied sexual health literacy experiences of specific social groups, including the barriers to, and facilitators of, sexual health literacy encountered

by young people within those groups, particularly within the online context, which could inform the development of better information sources and interventions.

Beyond considering the internet as a monolithic information source, this study provided insights into how young people engage with different types of online content, and how certain types of content, such as YouTube bloggers, might be particularly well suited to supporting young people's critical sexual health literacy. This analysis illustrated the impact that good user-generated content can have on young people's critical sexual health literacy (both social sharing and action), and enhanced understandings of different forms of social media as contexts for engagement with sexual health information and support, whilst considering contextual issues related to the identity construction that takes place in such spaces. This may be an important area for further research exploring the specific online environment, and specific types of content, that best support young people's engagement and critical sexual health literacy.

As well as further research into young people's perspectives and experiences, further research may usefully contribute by further triangulating my findings through interviews with healthcare providers and content creators. Similarly, it may also be useful to review the quality of sexual health information currently provided online from the perspective of health literacy demands, accessibility of websites, inclusivity of information, and applicability to young people's diverse skills, means and competencies. Such mapping of the content and quality of information available to young people both online and offline could inform the development of improved resources. Similarly, further research mapping out variations in content, style and quality of school-based sexual health education across Scotland could develop better understandings of how these variations may exacerbate inequalities in sexual health literacy, and potentially how those inequalities may be addressed. In recognition of the substantial role of informal peer support, in addition to the online and formal education environments, further research might also seek to better understand the strength and weaknesses of informal peer support, potentially understanding how the power of peer support could be harnessed to encouraging the social reproduction of accurate information and positive messages related to sexual health.

Finally, further exploration and development of sexual health literacy as a concept, and as a measurement tool would be beneficial. Research has highlighted a relationship between health literacy and health outcomes, with an updated systematic review from Berman et al

(2011) finding that low health literacy is associated with poorer health outcomes and less health care service use. To be able to intervene to improve sexual health literacy, it is necessary to first develop practical, reliable measures of sexual health literacy, so that better-tailored sexual health education can be built upon empirical understandings of young people's existing sexual health literacy. As highlighted in my literature review, most health literacy measurement tools have been one-dimensional, not recognising the multidimensional nature of health literacy, and none have focused on sexual health literacy (Jordan et al, 2011; Sorenson et al, 2012). Nutbeam (2009) calls for more work on developing health literacy measurements that are specific to defined health content and contexts. Due to sexual health literacy's underdevelopment as a concept, no measurement tools have been developed that are specific to sexual health literacy. This study has further contributed to developing sexual health literacy as a concept, and could serve as a basis upon which to create a sexual health literacy measurement tool.

In this thesis, I used a combination of paired interviews and observational activities to analyse young people's experiences of sexual health literacy, exploring the role played by the internet within a wider landscape of information and support, and examining the influences of various individual, socio-cultural, information provision and structural factors on sexual health literacy. While similarities were identified between young people's perspectives, the findings revealed many stark contrasts in experiences, attitudes and preferences, illustrating the complexity of improving young people's sexual health literacy. These observations suggest that, for interventions designed to improve young people's sexual health and sexual health literacy to be effective, they must be expansive in terms of scope and flexible to individual differences. Seeking to replace an offline service with an online one may be too simplistic, given both the interactions between the two environments, and the variation in young people's ability to effectively use online information and services. Instead, effective interventions may be multi-faceted, seeking to provide information and support through a range of different media and in a variety of different styles, to cater to the breadth of young peoples' preferences and needs. Thus, further research should develop and evaluate tailored multimodal interventions that recognise three key needs: the need for a broad conceptualisation of sexual health literacy; the need to recognise the individual, socio-cultural, structural and environmental factors that shape sexual health literacy; and the need to support development of sexual health literacy across key online and offline contexts, including peers, school, formal healthcare and online.

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Appendix 1 – Participant information sheet

University | College of
of Glasgow | Social Sciences

CHIEF SCIENTIST OFFICE

MRC | Medical Research Council

Young people & sexual health information

Information Sheet

Who am I?

My name is Susan Martin and I am a PhD student from the Social and Public Health Sciences Unit at the University of Glasgow. I would like to invite you to take part in a research study.

What is this?

This information sheet is to tell you about why the research is being done and what it will involve. If you are interested in taking part, please read this and discuss it with others if you wish. If you would like more information, do not hesitate to contact me (see below).

What is this research about?

This research study hopes to develop an understanding of what young people (aged between 16 and 19) think about sexual health information online and their experiences of finding and using sexual health information.

Who can take part?

If you are between 16 and 19, then I would really like to talk to you and hear what you think. Taking part is entirely voluntary. It is your decision.

What will you have to do?

We are looking to talk to people in groups of two. This will involve discussing your thoughts and experiences of looking for sexual health information. There will also be an activity where you search with your friend for some specific sexual health information on a laptop provided.

There are no right or wrong answers – I just want to hear what you think. You don't have to answer any particular questions if you don't want to. It should last about an hour and will take place at a location and time you are happy with. The discussion will be recorded so that I can catch everything that you say and listen to it again later. I will also make a recording of the pages you look at online and your discussions with each other when searching for sexual health information. After completing the discussion group, you will each be given a £20 gift voucher to thank you for taking part.

Is it confidential?

Yes. If you take part you will not be identified. Any information that is collected about you during this research will be kept strictly confidential. No information that could identify you will be given out to anyone else.

What will happen to the information?

The discussion will be recorded, typed up into a document, and the files stored securely. The online recording will be kept on a secure file. Any identifying details, like your name, will be removed and no information that could identify you will be given to anyone else. Once the project is finished, the information will be kept safely by the MRC. It may be used by other genuine researchers, with the MRC's approval, under the strict rules protecting the confidentiality of your information. So again, your name, or any material that might identify you, will never be used or given to anyone.

What will happen to the results of the research?

They will be used in research articles, presentations and a PhD thesis about online sexual health information. Your contributions will be anonymous (no one will be able to identify you in anything written about the project).

What will happen if you decide to take part?

You can contact me to arrange a time and location that suits you using the contact details below.

What should you do if you have any more questions?

You can ask me...
Email – susan.martin@glasgow.ac.uk   Phone - 07818474815

You can also speak to my supervisor:
Email – shona.hilton@glasgow.ac.uk   Phone – 01413537537

If you would like to speak to someone independent of the research, you can contact the College of Social Sciences Ethics Officer: muir.houston@glasgow.ac.uk

Many thanks for taking the time to read this. I would be delighted if you would take part!

Appendix 2 - Participant consent form

Young people & online sexual health information

Participant Consent Form

Please tick as appropriate:

1. I confirm that I have read and understand the information sheet for the 'Young people and online sexual health information' study and have had the opportunity to think about the information and ask questions. ☐

2. I understand that participation in the study is entirely voluntary and that I am free to withdraw at any time, without having to give a reason. ☐

3. I agree to an audio recording of the discussion being made, and I understand that the information I give will be recorded and stored securely. ☐

4. I agree to the pages online I visit during the 'online sexual health information' activity being recorded, and I understand that the information I give will be recorded and stored securely. ☐

5. I understand that extracts of what I say may be used by the researcher in future reports, articles or and/or presentations, but this will be done in ways that do not identify me. ☐

6. I understand that my name will not appear in any reports, articles and/or presentations. ☐

7. I understand and agree that the information from my interview may be used by other researchers in the future, but that this would be overseen by the MRC and in accordance with their strictest rules of confidentiality. ☐

I agree to take part in this study and agree that my participation has been fully explained to me. ☐

_____   _____   _____
Name of Participant   Signature   Date

_____   _____   _____
Researcher   Signature   Date

Appendix 3 – Basic questionnaires

Online sexual health information study

1. **Do you have access to the internet?**

   Yes, at home ☐

   Yes, but not at home ☐ Where? _____

   I do not have access ☐ Go to question 5

2. **How often do you use the internet?**

   Every day ☐

   A few times a week ☐

   Less than once a week ☐

   Less than once a month ☐

3. **What do you usually use to access the internet?** (e.g. family computer, my own tablet, mobile phone etc.)

   _____

4. **Where do you usually access the internet?** (e.g. at home, at school/college, library, friend's house etc.)

   _____

5. **How confident are you at using the internet?**

   Very confident ☐

   Confident ☐

   Not sure ☐

   Lacking in confidence ☐

   Not at all confident ☐

   ☐

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Online sexual health information study - demographics

1. **Age:** _____

2. **First 3 letters of postcode:** _____

3. **Gender**
   Female ☐   Male ☐

4. **Ethnic background**

a. **White**

Scottish	☐
Other British	☐
Irish	☐
Gypsy/traveller	☐
Polish	☐
Other white ethnic group please write in:	☐

b. **Asian, Asian Scottish or Asian British**

Pakistani, Pakistani Scottish or Pakistani British	☐
Indian, Indian Scottish or Indian British	☐
Bangladeshi, Bangladeshi Scottish or Bangladeshi British	☐
Chinese, Chinese Scottish or Chinese British	☐
Other, please write in:	☐

c. **African**

African, African Scottish or African British	☐
Other, please write in:	☐

d. **Caribbean or Black**

Caribbean, Caribbean Scottish or Caribbean British	☐
Black, Black Scottish or Black British	☐
Other, please write in:	☐

e. **Mixed or multiple ethnic groups**
Any mixed or multiple ethnic groups please write in: ☐

f. **Other ethnic group**
Any other ethnic group please write in: ☐

d. **Prefer not to answer** ☐

5. **Sexuality**

Heterosexual or straight	☐
Gay or lesbian	☐
Bisexual	☐
Prefer not to answer	☐

6. **Religious background**

None	☐	Roman Catholic	☐
Church of Scotland	☐	Other Christian	☐
Muslim	☐	Buddhist	☐
Sikh	☐	Jewish	☐
Hindu	☐	Other please write in:	☐
Prefer not to answer	☐		

Appendix 4 – Interview topic guide

The internet and sexual health information

- Do you ever use the internet to learn about sex/to answer sexual health questions?
    - Why/why not?
    - What are your reasons/motivations for seeking sex information online or not?
- Could you describe to me how you would look/have looked for sexual health information on the internet?
    - Would you search in a particular way? (use particular sources?)
    - How have you found it?
    - Has it ever been difficult to find what you're looking for?
    - Can you think of a time where you've came across information that has been really useful?
    - Do you find that you remember information better if it's provided in a particular way?
    - Has there been a time where you have found information that has led to a specific decision? What would be the next steps after finding information?
    - When offline, how would you use this information in your everyday life?

ONLINE ACTIVITY (approx. 20 minutes)

- Two scenarios
- Work together to find information that you think might be useful to your friend/what might be important to them
- This isn't a test – there are no right or wrong answers
- Take notes if you come across anything particularly useful/or not useful

---

Post-activity questions

- How did you find the activity?
- Locating information
    - Can you go through each of the scenarios and describe how you found finding the information?
    - How did you decide where to look for information?
    - Did you use particular strategies?
    - How did you find navigation?
    - Was it easy to find relevant/accurate information?
- Understanding information/preferences

- What did you think about the information you found?
  - What's the best/worst way that information was presented?
  - What sites did you like/did not like?
- Assessing reliability
  - How do you identify where information/site is useful/reliable?
  - What helps you decide that information is trustworthy/useful?
  - Are there particular sources you wouldn't use?
  - Are there particular ways to check for a websites credibility/reliability?
- Applicability
  - How useful was the information you found?
  - Do you think this information would help you know what to do?
  - Would you use any other sources of information?
  - If you were in that situation, generally, how did you feel about the information you found – relieved, comforted, confused, and reassured?
- Sharing
  - If you found useful information online, do you think it would be something you would share?
  - How easy is it to use the information you find to improve your health/within sexual situations?
  - What sort of barriers could there be to this?

Sexual health promotion and services

- Is there any ways you think sexual health information online could be improved?/is there anything you think that is important to change?
- Is there anything that you think is needed concerning sexual health information provision or services for young people?
- What do you think you would like more information about?
- What do you think about apps being used?
- Services moving online - What about accessing free STI testing online? Would you use this? What do you think about it?
- Sexual health promotion on social media?

Appendix 5 – Online activity scenarios

Online Sexual Health Information Activity

Scenario 1

You had unprotected sex and are worried that you might have an STI. Use the laptop provided to find information that will be useful to you.

Notes

Scenario 2

Your friend is thinking about having sex for the first time and would like some advice. Use the laptop provided to find information that will be useful to them.

Notes

Appendix 6 – PhD study timetable

Task	|1st year| Oct - Dec 13	Jan - Mar 14	Apr - Jun 14	Jul - Sep 14	|2nd year| Oct - Dec 14	Jan - Mar 15	Apr - Jun 15	Jul - Sep 15	|3rd year| Oct - Dec 15	Jan - Mar 16	Apr - Jun 16	Jul - Sep 16	Oct-March
Reading relevant literature	■	■	■	■	■	■	■	■	■	■	■	■	■
Literature review write-up	■	■											
Developing research questions			■										
Developing research design			■	■									
Applying for ethics				■									
Pilot study data collection					■								
Pilot study data analysis					■								
Reflecting on pilot to refine main study design					■								
Applying for ethics for main study					■								
Main study data collection						■	■	■					
Data analysis								■	■	■			
Writing up									■	■	■	■	■

Appendix 7 – Gatekeeper letter

Online Sexual Health Information Study

Dear.....,

My name is Susan Martin and I am a PhD student at the MRC/CSO Social and Public Health Sciences Unit at the University of Glasgow, supervised by Dr. Shona Hilton, Dr. Lisa McDaid and Prof. Paul Flowers.

The focus of my research is on how young people find, understand and use online sexual health information. As sexual health information is increasingly being provided in digital format, it is important to understand how young people assess the accuracy, trustworthiness and usefulness of this information.

I am interested in talking to young people (males and females, aged 16-19) in groups of 2 about their experiences of this. The interview should take around 60 minutes and any information that is collected will be kept strictly confidential and participants will be given a £20 gift voucher in appreciation of the time given to participate in the study. I have attached the information leaflet related to the project for further information.

I wondered if you might be able to help me recruit young adults, either by distributing information directly to groups of individuals or by placing recruitment information in public spaces (waiting rooms or common areas). I have also attached a proposed advert.

If you would like further information about any aspect of the research, please do not hesitate to contact me.

Yours sincerely,
Susan Martin

Email: susan.martin@glasgow.ac.uk
Phone: 07818474815/0141 353 7604

Appendix 8 – Recruitment poster (online and offline)

Young people & online sexual health information

Are you between 16 and 19?

If so, we would really like to hear what you think about sexual health information online. Even if you think you don't know anything about this topic, we are interested in your opinion.

We are looking to talk to people in groups of two. Would you and a friend or partner like to take part in a discussion, lasting around 60 minutes, to share your views and experiences?

If you do, please contact me, Susan Martin – I am a researcher from the MRC Social and Public Health Sciences Unit at the University of Glasgow. I will give you more information about the project and how you can participate. I can answer any questions you have. Email: takepart@sphsu.mrc.ac.uk

Taking part is entirely voluntary. It is your decision. You will receive a shopping voucher worth £20 to thank you for participating.

Appendix 9 – Participant demographics and recruitment details

Interview	Name	Age	Gender	Sexuality	Religious Background	Location	Recruitment	Urban/Rural
1	Amelia	16	Female	Heterosexual or straight	None	East Kilbride	Convenience Sampling	Small Urban Area
	Jess	16	Female	Heterosexual or straight	Roman Catholic	East Kilbride	Convenience Sampling	Small Urban Area
2	Michael	19	Male	Heterosexual or straight	None	Kilmarnock	College	Accessible Small Town
	Aaron	19	Male	Heterosexual or straight	None	Kilmarnock	College	Accessible Small Town
3	Connor	18	Male	Heterosexual or straight	None	East Kilbride	University	Small Urban Area
	Jacob	18	Male	Heterosexual or straight	Roman Catholic	East Kilbride	University	Small Urban Area
4	Keira	18	Female	Heterosexual or straight	Roman Catholic	East Kilbride	University	Small Urban Area
	Sophie	18	Female	Heterosexual or straight	Roman Catholic	East Kilbride	University	Small Urban Area
5	Kyle	19	Male	Gay or lesbian	Roman Catholic	Glasgow	Youth Centre (SIMD 1)	Large Urban Area
	Josie	19	Female	Heterosexual or straight	Roman Catholic	Glasgow	Youth Centre (SIMD 1)	Large Urban Area
6	Lily	19	Female	Heterosexual or straight	None	Glasgow	Youth Centre (SIMD 1)	Large Urban Area
	Skye	19	Female	Bisexual	None	Glasgow	Youth Centre (SIMD 1)	Large Urban Area
7	Kara	17	Female	Heterosexual or straight	None	Edinburgh	Convenience Sampling	Large Urban Area
	Amy	17	Female	Heterosexual or straight	None	Edinburgh	Convenience Sampling	Large Urban Area
8	Connie	18	Female	Heterosexual or straight	None	Shotts	Community Centre (SIMD 5)	Accessible Small Town
	Jamie	16	Male	Heterosexual or straight	Church of Scotland	Shotts	Community Centre (SIMD 5)	Accessible Small Town
9	Christina	16	Female	Heterosexual or straight	Roman Catholic	Shotts	Community Centre (SIMD 5)	Accessible Small Town
	Josh	16	Male	Heterosexual or straight	Roman Catholic	Shotts	Community Centre (SIMD 5)	Accessible Small Town

10	Cleo	19	Female	Heterosexual or straight	None	Greenock	Youth Centre (SIMD 1)	Small Urban Area
	Alice	18	Female	Heterosexual or straight	None	Greenock	Youth Centre (SIMD 1)	Small Urban Area
11	Liam	16	Male	Gay or lesbian	None	Glasgow	LGBT Youth Group	Large Urban Area
	Rowan	16	Male	Gay or lesbian	Other Christian	Glasgow	LGBT Youth Group	Large Urban Area
12	Martha	16	Female	Heterosexual or straight	None	Edinburgh	Charity Organisation	Large Urban Area
	Samantha	17	Female	Heterosexual or straight	None	Edinburgh	Charity Organisation	Large Urban Area
13	Sinead	19	Female	Heterosexual or straight	None	Hamilton	Youth Centre (SIMD 2)	Small Urban Area
	Abbie	16	Female	Gay or lesbian	Atheist	Hamilton	Youth Centre (SIMD 2)	Small Urban Area
14	Ralph	19	Male	Blank	Atheist	Hamilton	Youth Centre (SIMD 2)	Small Urban Area
	Nicola	17	Female	Bisexual	None	Hamilton	Youth Centre (SIMD 2)	Small Urban Area
15	Matthew	17	Male	Prefer not to answer	None	Larkhall	Youth Centre (SIMD 3)	Small Urban Area
	Charlie	18	Male	Heterosexual or straight	None	Larkhall	Youth Centre (SIMD 3)	Small Urban Area
16	Tina	18	Female	Heterosexual or straight	None	Larkhall	Youth Centre (SIMD 3)	Small Urban Area
17	Dylan	17	Male	Heterosexual or straight	None	Dundee	Charity Organisation (SIMD 5)	Large Urban Area
	Caleb	17	Male	Heterosexual or straight	None	Dundee	Charity Organisation (SIMD 5)	Large Urban Area
	Ben	17	Male	Heterosexual or straight	None	Dundee	Charity Organisation (SIMD 5)	Large Urban Area
18	Joe	16	Male	Gay or lesbian	None	Dundee	Charity Organisation (SIMD 5)	Large Urban Area
	Ruth	16	Female	Heterosexual or straight	None	Dundee	Charity Organisation (SIMD 5)	Large Urban Area
19	Melissa	16	Female	Heterosexual or straight	None	Dundee	Charity Organisation (SIMD 5)	Large Urban Area
20	Courtney	17	Female	Heterosexual or straight	Roman Catholic	Glasgow	Charity Organisation (SIMD 1)	Large Urban Area
	Laura	16	Female	Prefer not to answer	Roman Catholic	Glasgow	Charity Organisation (SIMD 1)	Large Urban Area
21	Maeve	16	Female	Bisexual	None	Aberdeenshire	School Youth Forum (SIMD 5)	Accessible Rural Area
	Leah	16	Female	Heterosexual or straight	None	Aberdeenshire	School Youth Forum (SIMD 5)	Accessible Rural Area

22	Lucy	17	Female	Heterosexual or straight	None	Aberdeenshire	School Youth Forum (SIMD 5)	Accessible Rural Area
	Reece	17	Male	Blank	None	Aberdeenshire	School Youth Forum (SIMD 5)	Accessible Rural Area
23	Darren	17	Male	Heterosexual or straight	Church of Scotland	Aberdeenshire	School Youth Forum (SIMD 5)	Accessible Rural Area
	Craig	16	Male	Heterosexual or straight	None	Aberdeenshire	School Youth Forum (SIMD 5)	Accessible Rural Area
24	Claire	17	Female	Heterosexual or straight	None	Edinburgh	Convenience Sampling	Large Urban Area
	Ashleigh	17	Female	Prefer not to answer	None	Edinburgh	Convenience Sampling	Large Urban Area
25	Emma	17	Female	Heterosexual or straight	None	Fife	Community Centre (SIMD 4)	Accessible Small Town
	Mia	18	Female	Heterosexual or straight	None	Fife	Community Centre (SIMD 4)	Accessible Small Town

Appendix 10 – Thematic framework

1. Understandings of, and attitudes towards sexual health
   a. Understandings of 'sexual health'
   b. Attitudes towards sexual health
   c. General sexual health awareness/knowledge
   d. Influences on knowledge, understandings and attitudes
   e. Other

2. Sources of sexual health information and learning
   a. Learning 'growing up'
   b. Preferred source of sexual health information
   c. Difficulties in accessing information about sexual health/barriers
   d. School (experiences and perceptions of scope, quality and learning environment)
   e. Internet (motivations, experiences, perceptions and attitudes)
   f. Family
   g. Health providers (doctors/sexual health clinic)
   h. Community organisations/practitioners
   i. Media
   j. Other

3. Locating, evaluating and understanding online sexual health information (practices and perceptions)
   a. Previous experience of using the internet to learn about sexual health
   b. Preferences for and attitudes to different types of content
   c. Facilitators to locating relevant content
   d. Barriers of locating relevant content
   e. Strategies for finding relevant content
   f. Strategies for assessing reliability
   g. General concerns about online sexual health information
   h. Facilitators understanding content
   i. Barriers of reading and understanding content
   j. Reactions to information/attitudes to information encountered
   k. Views on information provision

4. Using and applying sexual health information
   a. General perceptions of communicating about sex and sexual health
   b. Communication strengths and weaknesses
   c. Applying information in social contexts (peers and family)
   d. Applying information in sexual contexts (partners)
   e. Using information within a healthcare context

5. Perspectives on the use of online sexual health services and social media for sexual health promotion

a. Perceptions/experiences of online testing
b. Sexual health promotion on social media
c. Sharing on social media
d. Apps
e. Online counselling

6. Pair dynamics and interactions
   a. Talking about relationship
   b. Adding insights to friends accounts
   c. Comfort and assurance
   d. Laughing and joking
   e. Arguments
   f. Taking control
   g. Working together
   h. Other

Appendix 11 – Example of a pairs 'biography'

Demographics

Kara is a 17-year-old female, currently at school, and living in Edinburgh, a large urban area. She was recruited from an area within the 15% most deprived in Scotland. She describes herself as white Scottish, heterosexual and of no religious affiliation.

Amy is a 17-year-old female, currently at school, and living in Edinburgh, a large urban area. She was recruited from an area within the 15% most deprived in Scotland. She describes herself as white Scottish, heterosexual and of no religious affiliation.

General internet access and use

Kara has internet access at home and uses it every day, mostly on her own laptop computer or her own smartphone. She and describes herself as a very confident internet user.

Amy has internet access at home and uses it every day, mostly on her own laptop computer or her own smartphone. She and describes herself as a very confident internet user.

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1. Understandings of, and attitudes to, sexual health

Amy described her understanding of "sexual health" in terms of 'infections and diseases'. Similarly, Kara associated "sexual health" with consultations with doctors, as well as sexual health lessons received at school. Their risk- and ill-health-focused conceptualisations of "sexual health" appeared not to include relationships, and Amy exhibited worry and anxiety in relation to sexual health throughout the interview.

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2. Sources of sexual health information and learning

Both were critical of the teaching provided to them in school. Amy described negative experiences of learning about sexual health 'growing up', particularly at school, describing insufficiently-frequent teaching and ineffective information provision. She also described

being embarrassment at teachers discussing sexual health, and disliking being in the same class as "immature boys". Similarly, Kara felt that immature boys undermined classes by not taking them seriously. Amy had low confidence in both her sexual health knowledge and her ability to seek sexual health information, and she blamed those shortcomings on unsatisfactory school-based sexual health learning. Both Kara and Amy, identified teachers' existing professional relationships with students as major barriers to sexual health teaching and learning. In contrast, Kara described a one-off sexual health conference conducted within their school and run by external staff as "the most useful thing in school".

Amy described the internet as her main source of sexual health information, particularly valuing its familiarity and anonymity, as well as the comfort of avoiding face-to-face interactions. She had some anxieties in relation to privacy (including the risk of her friends, family and internet provider seeing her search history), but, despite these concerns, she valued online sexual health information for its relatability and its ability to help her overcome feelings of embarrassment and being alone. Kara seemed to draw on wider variety of sources, including friends, family and the internet, but, like Amy, claimed to have learned most about sexual health online. She described learning about sexual health out of curiosity and when bored, rather than purely purposeful information-seeking. Both Kara and Amy stated that, if they needed sexual health information, their first action would be to 'Google it'. However, Kara felt that one should not rely solely on the internet, and expressed the need to supplement online information by talking to others. She described being happy to talk to friends, family or anyone about sexual health, while Amy regarded face-to-face discussion of sexual health as very embarrassing. Kara exhibited awareness that Amy would not approach her regarding sexual health issues, gently teasing her for it.

3. Locating, evaluating and understanding online sexual health information

In the online activity, Kara and Amy performed 15 searches, frequently having new ideas and moving through search results and web pages quickly. At times, they seemed to select search results quickly, with little consideration. For *Scenario One,* Kara and Amy visited six websites: four governmental health organisation websites (2 NHS, 1 NHS regional (Scotland); 1 Scottish Government); one non-profit health organisation (a Scottish youth health charity); and the website of an American magazine. For *Scenario Two,* they visited six websites: three UK and American commercial websites (one news and lifestyle online magazine; two health information and lifestyle websites); one governmental health organisation website (NHS); and two user generated or social media websites (one community question-and-answer website and one online video network). Both Amy and Kara favoured websites with pictures (specifically wikiHow) and Buzzfeed-style articles. However, the two disagreed about question-and-answer websites, which Amy liked, but Kara did not. They spend most of their time on two websites that Kara had prior knowledge and experience of using (Gurl.com and YouTube), browsing them in relative detail.

Amy described the sheer quantity of different sexual health websites as a challenge, while Kara appeared to be more confident in negotiating the online environment to find relevant content. At one point, they encountered barriers to locating information about local sexual health services on navigationally difficult websites. Ultimately, Kara overcame this barrier by returning to Google Search and entering a new search string that helped them find the information they sought. Kara also demonstrated more awareness of markers of reliability, describing how she assessed websites visually to judge their reliability, and identifying potential indicators of low reliability, including advertisements, poor graphics and an absence of information about authorship. By comparison, Amy did not exhibit using such markers of reliability, but did indicate having perceptions of different sources' reliability. Towards the end of the activity, both girls confessed that finding information to address the scenarios was harder than they thought. Both Amy and Kara agreed that school could be a useful place to learn about negotiating the online environment, and that it might be beneficial if teachers recommended specific websites.

The embarrassment that hindered Amy's experiences at school appeared to have a continued limiting effect in other contexts; while she valued the internet as a source of remedial self-teaching, that learning was limited by fears and embarrassment. During the online activity, Amy expressed and exhibited concerns about privacy, and voiced confusion and frustration. She worried about unwelcome explicit content, derived from previous experiences of seeking health information online, and thus censored her search strings, and exhibited wariness of watching videos online. In contrast, Kara laughed off Amy's worries about sexually explicit content, and described liking videos. She valued YouTube for its entertaining and relatable content, and deliberately sought out a YouTube channel that provided information in an entertaining way during the online activity. The specific channel, which she described watching regularly, delivered serious, critical messages about social and cultural topics, rather than simply informational or instruction.

4. Using and applying sexual health information

Amy's reluctance to seek sexual health support from friends, family or doctors, and her discomfort with discussing sexual health issues face-to-face, which she both described and exhibited during the interview, may be symptomatic of limited interactive sexual health literacy skills, as well as anxieties about being seen to be seeking sexual health information. Amy recalled specific negative experiences with her GP in relation to general health, and her aversion to accessing face-to-face services was so strong that she described keeping concerns to herself despite mounting sexual health worries, suggesting that she might 'prefer not to know' about potentially-frightening health issues. She described self-diagnosing sexual health issues using information found online. Her perspectives illustrated the value of the internet to those daunted by face-to-face support, but also highlighted the importance of being able to use the internet safely and effectively.

In contrast, Kara stated that did not have any difficulties in discussing sex and sexual health. She described having had such discussions with her mother. She said "I think I've got this thing

where I overshare. It's like a trait problem, eh?", to which Amy agreed and then said "But I'm opposite, like".

5. Perspectives on the use of online sexual health services and social media for sexual health promotion

Despite being largely well-disposed towards communicating about sexual health, Kara expressed reservations about sharing sexual health context on social networking sites, explaining "I mean, my family's on Facebook so I'm no' gonna, like, I'll just share this blog post about, like, sex on my Facebook [laughing]". Amy agreed, sharing Kara's concern about peers' reactions. However, Amy did raise the possibility of communicating with sexual health advisors through social networking sites as a potential alternative to anxiety-provoking formal healthcare services. She posited that such a service could enable worries to be dealt with instead of growing over time. Similarly, Amy identified home testing as an alternative to visiting a clinic. Kara, who was much more enthusiastic about seeking face-to-face sexual health services, expressed scepticism of both the existence and potential reliability of such services.

Both Amy and Kara had period tracker apps on their smartphones, which they described as useful and 'discreet'. However, Kara expressed less enthusiasm about more general sexual health information app, stating that as she was happy to seek information on the web. In contrast, Amy thought that an app might help streamline the information-seeking process, and did not perceive others seeing the app on her smartphone as a risk.

6. Relationship and pair dynamic

Kara and Amy have been friends through childhood and school and seemed to be close and familiar, happy to say what they thought in front of each other, even when disagreeing, such as when carrying out the online activity. Throughout the online activity, they laughed, shared personal stories and commented on (or alluded to) each other's personal traits.

Field notes

Kara was particularly enthusiastic and forthcoming, while Amy was more reticent.

Appendix 12 – Data integration table

	Chapter 1: Understandings of sexual health and experiences of different sexual health information sources	Chapter 2: Perceptions and performances of locating, understanding and evaluating online sexual health information	Chapter 3: Perceptions and experiences of using and applying sexual health information	Interpretation and synthesis
Online context	Internet was most participants' current primary source of SH information. Benefits include: familiarity; speed; convenience; anonymity; and avoidance of face-to-face interactions. Disadvantages include: privacy; overwhelming range of sources; explicit or risky content; and challenges accurately diagnosing and solving problems. A minority of participants avoided the internet, preferring face-to-face interaction, particularly those with additional support needs; Most participants used multiple information sources; highlights need to manage a range of different sources with different strengths and weaknesses. Cannot view online information in a vacuum due to interactions with other information and support sources; Pornography considered by some to be a source of sexual health understandings and attitudes, particularly online; Gender differences in perceptions of pornography as an information source: acceptable norm for males, not females.	All participants identified as regular, comfortable internet users, but some had doubts about finding reliable SH information online, which was perceived as a potentially stigmatising activity, separate from everyday internet use; Gender differences in information seeking: boys rejecting information 'for girls', and varying attitudes to SH, pornography and explicit content. Some concerns about inadvertently accessing explicit content; Visual and interactive features rarely used, perceived as time-consuming and/or embarrassing (repercussions for content creation), but some participants with reading difficulties valued their accessibility. Male participants more likely to seek images; Most exhibited rapid information-seeking, judging sources and content quickly. Haste led to some misinformation. More methodical approaches seemed more successful; a minority exhibited critical thinking about search strategies, search tools, sources and content; Participants varied in perceptions of the reliability of: user-generated content; commercial content; relatable information; and government information. Trust driven by familiarity; positive real-life experiences of organisations; and geographical relevance. Sexual health promotion on social media largely deemed unfavourable; Accessing information on websites restricted by: inaccessible language; inappropriate or non-relatable information; poor navigability; and technical malfunctions. High digital literacy skills required.	Despite some concerns and difficulties about using the internet for SH information, the internet appears to have a broadly positive contribution towards enabling communication about SH; To be applicable in real life, information should be relatable, realistic and practical. Light-hearted information was generally preferred; Most described embarrassment and difficulties communicating about SH within sexual, social and traditional healthcare contexts. While mobile apps were perceived as a way to overcome some privacy concerns, participants still had concerns about mobile device screens being overseen. For some, their anxiety around seeking information resulted in avoidance; 'Being seen' seeking SH information and help is a significant anxiety source online and offline, leading some to avoid seeking information; Mobile apps may reduce concerns, but can still be overseen and worries about confidentiality.	The internet a key source of sexual health information, valued for its accessibility and anonymity which can alleviate barriers to seeking information in 'offline' contexts; Particular challenges with engaging with sexual health info online, nature of the internet means that 'being seen' seeking sexual health information is not restricted to 'offline' contexts; Stigma may both drive young people's use of the internet and drive ineffective information-seeking strategies, illustrating importance of taking broader contexts into account when considering sexual health literacy; Worries about encountering sexually explicit content seemed to influence search strategies (censoring searches and avoidance of videos), gender norms appeared to fuel risk-averse searching practices; Avoidance of social media in relation to sexual health, 'being seen' interacting with or sharing sexual health content on social media a risk; suggests the socially interactive nature of the internet may not be suitable for young people's SH promotion; Insights into critical health literacy skills suggest they varied considerably, minority displayed more advanced skills critiquing heteronormative nature of info provision and sought out user-generated content to overcome, illustrating power of critical health literacy in overcoming challenges of seeking SH info online; Worries about navigating overwhelming amounts of content to find relevant info were confirmed during the activity for some. Navigation of some of these complicated and non-user friendly websites required high-level digital literacy skills, with real demands placed on the user, and different ways of coping with this. At times, such demands resulted in participants aborting their information-seeking attempts. Barriers to information provision highlight responsibilities of providers in providing accessible and easy to understand content to aid accessibility; Some participants did access known websites directly, and
School context	School described as primary source of learning about SH, but participants typically described negative SBSHE learning experiences: infrequent and poor quality teaching; narrow negative content; focus on promoting messages over practical information; SBSHE was deemed as not conducive to learning by female participants particularly, with immaturity of males and embarrassment identified as barriers (heterosexual male participants tended to view more positively). Participants who identified as gay, lesbian or bisexual, as well as those who attended denominational schools described being particularly disadvantaged due to a lack of relevant information - focus on moral messages; Teachers typically viewed as awkward and unqualified, while SBSHE delivered by external 'experts' deemed preferable; Participants largely exhibited narrow, negative understandings of SH, and many lacked confidence in existing knowledge; Some reacted to negative experiences in school by complementing knowledge with other sources (particularly participants who identified as gay, lesbian or bisexual)	Participants perceived online information as potentially unreliable, exhibited varying ability in identifying reliable information, and reported being unsure about how to evaluate information; None described being taught about online information in school; Some discussed how the process could be made easier by better promotion of reliable websites and being taught information seeking and assessment skills in school	Participants described being provided with little practical information, aobut how to use condoms, where to get condoms, how to talk about sex, where to get tested etc.	School is a key context where knowledge, skills, expectations and norms around sexual health, gender and sexuality can be shaped; Analysis indicates for most, their school-based sexual health education failed to provide comprehensive sexual health education, and hindered development of sexual health literacy with a focus on promoting 'knowledge' and messages, rather than equipping with practical information and skills to negotiate sexual health; Females, sexual minorities and those attending denominational schools disproportionately disadvantaged by teaching content and learning environments; What participants were taught in school seemed to reflect understandings of 'sexual health', with most presenting understandings focusing on risk, danger and spread and risk of infection (sexual health literacy could be hindered by negative attitudes to sexuality and failure to consider potentially positive and emotional aspects); Schools could facilitate better learning by creating comfortable environments and incorporating outside experts; Appeared to be no recognition of or integration with the online context; evaluating online information could be made easier by being taught online sexual health information-seeking and assessment skills in school and through better promotion of reliable websites

Peer context	Participants described learning with friends and from friends (particularly those with experience); Sharing SH information with peers could be useful, but not all participants did so; embarrassment a barrier for some; participants with positive learning experiences were more confident in sharing their knowledge with peers; Female participants in particular seemed more likely to turn to their friends for support or find out information together, while some of the heterosexual male participants seemed less likely to do so, seeing their friends as unlikely to take it seriously; Gendered attitudes to sex and differnt approaches to talking about sex - male participants more likely to be boastful of sexual activity to friends, want to be seen as sexually competent and knowledgable (humour to deflect).There were hints to sex and sexual health being something that girls worried about more, they had more specific information needs;	The importance of peer influence was highlighted while looking up information during the online activity, with participants frequently turning to each other, and offering advice about information sources and presenting sexual health information (or misinformation) (7) ;Some of the participants valued relatable content from peers online (user-generated content) particularly females, however generally participants worried about the reliability of such sources; wariness of being seen by peers on social media doing anything related to sexual health and impact this might have on reputation, identity.	Some female participants described helping friends overcome barriers to accessing SH information and help within traditional healthcare contexts - going with them to the doctors to alleviate embarassment for example.	Potential of informal peer education and support in influencing sexual health understandings and practices, and in reducing emotional and practical barriers to accessing sexual health services; Potential of peers to influence norms within their social groups (although not always positively); Role of socio-cultural factors in engagement with informal peer education and support, more likely and acceptable for females, while masculinity norms of being seen to be sexually competent and experienced may constrain engagement; Major barriers include embarrassment and shame, in 'offline' contexts ('being seen' by friends in a SH clinic' and 'online' contexts (seen by peers talking about SH on social media); Distinctions between user-generated content such as blogs and Q&A sites, which can provide relatable advice from peers (particularly valued by female participants) and SNS like Facebook and SnapChat being used for sexual health promotion (risks to social status)
Formal healthcare context	A small number of participants described learning within healthcare contexts, primarily whilst attending sexual health clinics.	During the online activity, participants typically showed low awareness of sexual health services, and at times struggled to locate locally relevant informaiton about services. Barriers included complicated and difficult to navigate websites; broken links; haphazard searching practices; Geographical location was identified as an important factor, bot affecting accessiblity of services and as an indicator of relevance and reliability of online sources; Familiarity is a key driver of trust; positive real-life experiences with services can engender trust in those organisations online.	Low awareness of sexual health service generally, although some had experience of attending services; Most participants expressed anxiety with (and some avoidance of) sexual health information and services in traditional healthcare contexts; Barriers particularly prominant for those in rural areas; Worries about 'being seen' accessing services common barrier; Participants expressed anxieties around communicating with health professionals and identified shortcomings in patient-provider communication; Online alternatives to traditional SH services were largely popular with participants, who saw them as removing multiple barriers to access, although concerns about confidentiality and trustworthiness were identified	As with online information sources, familiarity seemed to be key driver of trust in health services, with positive experiences engendering trust in those organisations both online and offline. Just as familiarity with health services engendered confidence for some participants, uncertainty and unfamiliarity fuelled anxiety in others; Broad range of barriers to negotiating sexual health within formal healthcare contexts experienced, including lack of awareness, difficulties locating relevant information online, poor provider skills, and embarrassment; Worries about 'being seen' seeking sexual health care were exacerbated for those within rural areas due to greater visibility and lower privacy; Issues raised in relation to interacting and communicating with health providers highlighted importance of patient-provider communication; Low interactive literacy major barrier to using sexual health services; Alternatives to traditional sexual health services could reduce geographical and emotional barriers, circumvent the need to attend formal settings and thus reduce anxiety and embarrassment. Concerns raised about trustworthiness, validity, confidentiality and lack of support which could impact on uptake of such services