Gender and Intersectionality: Understanding and Addressing Women's Mental Health within the Cultural Context of Saudi Arabia

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Abstract

Background: Intersectionality concerns the interconnected nature of social categories (e.g., race, gender, age, education) and how these 'intersect' to produce privilege and oppression. In the current context, this helps to understand women's mental health in socially disadvantaged positions, especially how intersections among gender inequality and factors such as socioeconomic status contribute to women's mental health inequalities and experiences. Yet this remains an under researched area. This study's overarching aim concerns understanding Saudi Arabian women's mental health disorders, risks, challenges, and issues. For this, it has three objectives: to review the effects of intersectionality on this group within extant quantitative literature; to identify and explore the significant interactions among variables relating to this population's social disadvantage and mental ill-health (e.g., gender and the risk of depression); and to analyse Saudi Arabia's current mental health policy and gender equality. This study's more specific aims involve furthering understanding of the effects of content, context, and actors behind mental health policies and programmes on Saudi women to help address their mental health needs. It takes the form of three studies.

Study 1. This systematic review investigated quantitative methods used to study the intersectionality of multiple social disadvantages in women with common mental disorders. It reviewed studies on the intersectional effects of gender with multiple social disadvantages from the PROGRESS-Plus inequity framework and examined the quantitative methods these studies employ. The most common and means of studying intersectionality in mental health studies in the included studies was statistical interaction analysis. Other methods such as multilevel modelling and mediation decomposition analysis were also used. These robust statistical methods facilitate research on intersectional effects on mental health and improve understanding of the complex intersection of gender and other social disadvantages concerning women's risk of common mental disorders.

Study 2: This study analysed the National Survey of Saudi Food and Drug Authority dataset, a nationally representative sample of individuals aged 18–88 in Saudi Arabia (3,408 participants: 1,753 males and 1,655 females). Evaluating variable risks of depression using the PHQ-2 screening questionnaire, it found significant correlations between depression risk and the variables of gender, education, family income, and employment status. Although a subsequent multivariate analysis found the only significant predictors of depression risk to be female gender and education below the bachelor level. No interaction effects were observed, implying an additive effect of gender and education on the risk of depression.

Study 3: This study analysed Saudi Arabia's mental health policies and gender equality. Using Walt and Gilson's health policy analysis framework, it highlights the need to address gender inequalities in the country's mental health policies. It provides evidence-based mental health policy recommendations relating to women in Saudi Arabia about enhancing their mental health and well-being and establishing an equal health system.

Conclusions: Examining women's mental health through an intersectionality lens can help policymakers address Saudi Arabian women's mental health issue . To reduce inequalities, advances must be made in women's education, training, employment, socioeconomic status, access and participation, equality, and overall independence. However, this must take place within a wider targeted and tailored reform agenda (legal, policy, political, PR, cultural, religious, economic, careers, educational) within which women must actively participate. Urgent inclusive, deep, and far-reaching intersectional initiatives, adjustments, research and reforms are needed to elevate Saudi women's circumstances, experiences, and mental health and thereby address the current issue and ultimately improve society overall.

Keywords: intersectionality; gender equality; inequality; mental health; women; culture; depression; mental health policy and services; social disadvantages; Saudi Arabia.

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Author`s Declaration

“I hereby declare that I am the sole author of this thesis, except where the assistance of others has been acknowledged. It has not been submitted in any form for another degree or professional qualification.”

Abbreviations and Acronyms

AVA	Against Violence & Abuse
CMD	Common Mental Disorder
EVITA	Evidence to Agenda
GAD	Generalised Anxiety Disorder
GBD	Global Burden of Disease
HEAT	Health Equity Assessment Toolkit
HiAP	Health in All Policies
KASP	King Abdullah Scholarship Program
KSA	Kingdom of Saudi Arabia
MHPAF	Mental Health Preparedness and Action Framework
MHRSD	Ministry of Human Resources and Social Development
MoC	Model of Care
MoE	Ministry of Education
MoH	Ministry of Health
MoI	Ministry of Interior
NCMHP	National Center for Mental Health Promotion
NSSFDA	National Survey of Saudi Food and Drug Authority
OCD	Obsessive–Compulsive Disorder
PHQ	Patient Health Questionnaire
PRISMA	Preferred Reporting Items for Systematic Reviews and Meta-Analysis
PTSD	Post-Traumatic Stress Disorder
SAMSHA	Saudi Arabia Mental and Social Health Atlas
SCFHS	Saudi Commission for Health Specialties
SDH	Social Determinants of Health
SES	Socioeconomic Status
SNMHS	Saudi National Mental Health Survey
SNMHTP	Saudi National Mental Health Transformation Plan
WHO	World Health Organization

Chapter 1

Introduction

1.1 Overview

This chapter introduces the topics of intersectionality, gender inequality and mental health policy in Saudi Arabia and provides a background to the three separate yet related research projects that this work subsequently conducts. It first introduces the concept of intersectionality and briefly considers important definitions of this concept (1.2.1) before investigating the quantitative methods employed to explore intersectionality in mental health research (1.2.2). Next, considering social and gender inequalities, especially regarding mental health (1.3.1), the chapter examines various methods across different contexts for studying health outcome inequities but particularly focuses on PROGRESS-Plus (1.3.2) – a representation of specific health opportunities and outcomes. Overall, Section 4 concerns the background context of Saudi Arabia but more pertinently considers the intersectionality of social disadvantage and depression in Saudi women while also examining Saudi Arabian literature and data relating to gender inequality and its relationship to mental health in the country. It further covers mental health policy and the impact of gender inequality on mental health services and policy in this context. As part of this it first considers broader and then progresses to more specific relevant facets of this work's context, providing background demographics of Saudi Arabia (1.4.1), the background of mental health in the said country (1.4.2), and gender inequality effects on and provisions for mental health in Saudi Arabia (1.4.3). Section 1.5 follows the preceding thread by specifically addressing depression in Saudi Arabia and Saudi Arabian women in particular, reviewing various studies on this and providing data that gives a background understanding of mental health and depression but also services for these in this particular context. The practical overview of relevant background considerations in this context concludes in Section 1.6, which first reflects on Saudi Arabia's more general healthcare system and policy matters (1.6.1) then specifically does likewise for the country's mental health provisions and policies (1.6.2). With both the broad and specific contexts being covered at this point, the chapter reflects on these from particular perspectives in the two ensuing sections that show the need for the current research. Specifically, Section 1.7 briefly conveys the importance of this quantitative intersectionality study in women's health for a more comprehensive and integrated understanding of this complex area that has many severe implications for so many women around the world. Section 1.8 then

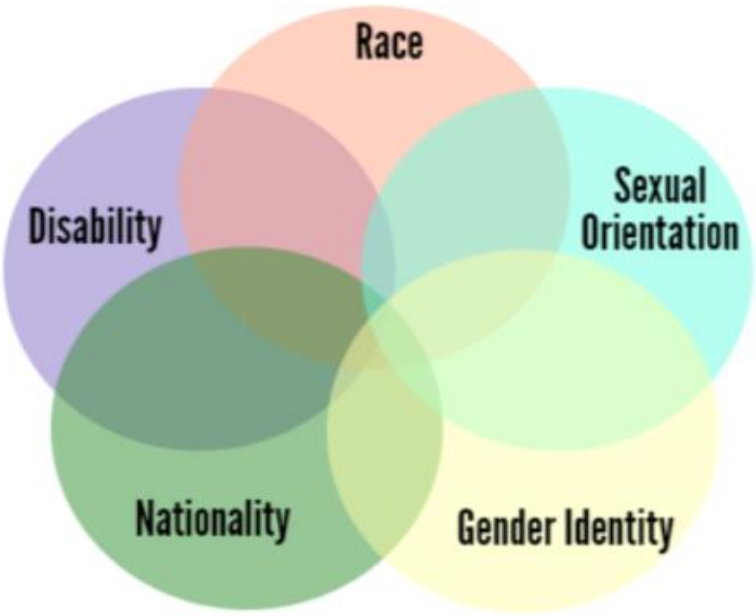
narrows its predecessor's focus by more specifically addressing the urgent need to explore the interrelated but too frequently neglected factors of intersectionality and gender within the particular cultural context of Saudi Arabia, where women are at severe risk of and often seriously suffer from depression and other mental ailments. Despite this, there remains a profound lack of holistic understanding on such matters. Hence, shortcomings and oversights in practical measures to address this issue in women's mental health persist, meaning so many women in Saudi Arabia continue to suffer. Having provided this background overview, this chapter then presents the overall study's aims and objectives (1.9) before providing an outline of the thesis that follows (1.10). Amid and throughout all this, the chapter subtly interweaves an initial literature review on arising matters as the chapter unfolds for three main purposes: to verify the study's exploration into quantitative methods of intersectionality, social inequality and gender inequality; to discuss gender equality in Saudi Arabia's mental health policy and services; and to give a research-based background understanding of matters that arise.

1.2 Intersectionality and methods

1.2.1 Defining intersectionality

Intersectionality refers to the multiple layers of social identity that are interconnected, intersectional, multiplicative and interdependent while also containing various dimensions such as race, class, gender, sexuality, nationality, ethnicity, culture, religion and personal experiences that operate within complex power relations with each other (Gines, 2011). Individuals' intersecting identities are multifaceted, shaping individual experiences and society's perceptions (Gines, 2011). Notably, as will be shown, the concept of intersectionality is an element of feminist theory. Overall, it provides a profound philosophical framework that conceptualises relations among multiple social identities and people's social locations within systems of oppression (Gines, 2011; Carastathis, 2014). Figure 1 portrays some broad background aspects to intersectionality.

Figure 1: Venn diagram on intersectionality



Source: Author's Own Graphic

Intersectionality theory is an analytic framework for capturing how social inequalities intersect and mutually reinforce one another, thereby significantly influencing the lives of individuals, communities, and even countries (Hartnell, 2011). The theory acknowledges that individuals have multiple social identities, such as race, gender, socioeconomic status, education, and others, and that these identities are not distinct but rather multiple and interconnected. This approach allows us to evaluate not just the advantages and disadvantages of several social identities but also how their intersections shape the lives of people and communities in ways that cannot be completely represented by one identity alone (Hartnell, 2011).

Crenshaw developed the term 'intersectionality' in 1989 to refer to the interaction and interplay of multiple identities as defined by power dynamics and discrimination. This consideration of various social levels together reveals how their interactions simultaneously affect health outcomes (Crenshaw, 1989). Highlighting the experiences of Black women in the intersection of sex and race, Crenshaw (1989; 1991) focused on how their experiences were not typically addressed in discourses around gender inequities and inequalities, race, class, and gender discrimination. The author also spoke about how systematic failures marginalised Black women and subsequently sought to address the racial and gender inequalities reinforced against these women. In terms of violence against

women, Crenshaw criticised the damning narrative about domestic violence being perpetuated as a problem affecting only minority women, which effectively highlighted the experiences of white women and obscured the experiences and struggles faced by women of colour in relation to domestic violence (Crenshaw, 1991). Although laws and policies endeavour to protect domestic violence survivors, they often overlook the complexities of the intersection of their multiple social identities and individual experiences, such as culture, religion, and social identities. By generalising the protection, the service provided for such victims becomes insufficient. For example, immigrant women without permanent resident status cannot use protective measures effectively because of language barriers and their limited understanding of US policies and the legal system (Crenshaw, 1991).

Intersectionality theory is a collection of ideas and principles that serve as a framework for empirical research on social issues (Veenstra, 2011). Intersectionality has earned a designation as the most significant theoretical contribution to women's studies in health and social phenomena (Harari and Lee, 2021). As such, the benefits of using and conceptualising intersectionality as a theory in scientific research go beyond treating race, class and gender as demographic variables and instead require in-depth theorising about the meanings of these demographic markers in specific contexts and how these social hierarchies are mutually influenced (Trygg et al., 2019; Viruell-Fuentes et al., 2012).

The conceptual framework of intersectionality has provoked discussions across humanities, social sciences and healthcare research. In health disparities research and psychology, intersectionality application in clinical medicine focuses on specific groups of individuals rather than groups with broader relevance (Wilson et al., 2019), and adopting an intersectional approach with such groups can provide valuable insights into the context of clinical medicine (Wilson et al., 2019). In fact, intersectionality is the only beneficial framework for alerting clinical medicine about patients' complex identities and to improve clinicians’ methods of shaping structural practices that suit various identities (Wilson et al., 2019).

1.2.2 Quantitative methods for analysing intersectionality in mental health.

The concept of intersectionality has been gradually introduced into studies on mental health and health inequality, providing scope and depth to approaches to health inequity studies (Trygg et al., 2019). Bauer's (2014) research of both qualitative and quantitative methods stated that qualitative research is more commonly used for researching

intersectionality than a quantitative intersectionality framework. In the form of in-depth interviews, focus groups, and narrative analyses, for example, qualitative methods can facilitate understanding of health inequalities. Specifically, among other things they help identify the power dynamics, structural barriers, and context-specific factors that influence mental health experiences across different social categories (Crenshaw, 1991; Bowleg, 2012). Qualitative research methods are primarily employed to clarify conceptual meanings of intersectionality and its implications for individual social experience, including health outcomes. In contrast, though, only a few quantitative studies explicitly apply intersectionality theory to health outcomes (Else-Quest and Hyde, 2016). The quantitative approach nevertheless provides various practical and theoretical benefits over traditional models, including analysing multiple intersectional areas and types of marginalisation to simplify complexities (Evans and Erickson, 2019). Quantitative approaches to intersectionality can also help public health by informing policy and highlighting gaps in the field of public health because it guides the research to appropriate measures and models for investigating the research gap (Jackson et al., 2016).

Else-Quest and Hyde (2016) discuss the importance of quantitative research on intersectionality within psychology for simultaneously considering the experience of and meaning behind belonging to multiple social categories, examining power and inequality, and understanding social categories as fluid and dynamic. The authors advocate six aspects of the psychological research process that should be followed in an intersectional approach: theory, design, sampling techniques, measurement, data-analytic strategies, and interpretation and framing. Moreover, Else-Quest and Hyde (2016) present analytical technique methods for employing quantitative intersectionality in research – multiple main effects, statistical interactions, moderators in the meta-analysis, multilevel modelling, moderated mediation, and person-centred approaches. However, using one of these quantitative techniques depends on the research questions and resources available for intersectionality research. Also, these techniques will be inadequate without intersectional interpretations of the data. As such, intersectionality must permeate various aspects of the research, including its analyses, and consider the experiences formed from power and inequality within multiple social categories. In sum, these techniques allow researchers to examine multiple social categories' multiplicative and compound impacts and explore the interactional experiences.

In the context of quantitative intersectionality, the current study will strategically employ quantitative methods that align with its research objectives. Firstly, its uses descriptive analyses and primary regression analyses to solve the complex relationships among intersecting variables to shed light on their contributions while considering their interactions (Bauer and Scheim, 2019). Additionally, regression analyses with interaction terms constitutes a pivotal aspect of the quantitative approach to intersectionality. Moreover, cross-tabulation analysis will explain the dynamic relationships among different factors, further enriching this comprehensive exploratory research (Spierings, 2012). Integrating these quantitative techniques purposefully into the study design is intended to provide insightful analyses of the multifaceted intersections under investigation.

Certain research is useful in this regard. Else-Quest and Hyde's (2016) research, for example, helps the quantitative approach to intersectionality in various ways as noted already, such as by seeing social categories as fluid and dynamic while understanding the meaning and experiences of these categories, and advocating aspects of the research to follow in interactional approaches. Their study is thus often used as a scholars' guide for clarifying quantitative methods to be used in incorporating intersectional approaches. In the systematic review of utilising quantitative methods to study intersectionality by Alghamdi et al. (2023), the one significant finding was that statistical interaction appeared as a common method researchers used in intersectionality research.

1.3 Social inequalities and gender inequalities

1.3.1 Social and gender inequalities in mental health

Social inequality involves the uneven distribution of resources and opportunities based on factors such as race, ethnicity, gender, income, and social class. It can substantially influence people’s health and well-being, for it can lead to restricted access to healthcare, education, work, and safe living circumstances, which all relate to poor health outcomes (Williams et al., 2019). In such inequality, then, certain groups have access to resources and opportunities, while others endure limited access to these. They also suffer discrimination.

Recent research indicates that people who encounter discrimination based on race or ethnicity have a greater risk of experiencing health issues such as mental health problems, stress, anxiety, and depression (Williams et al., 2019). Indeed, this and other forms of

discrimination can also lead to obesity and cardiovascular diseases, including hypertension, heart disease, and stroke, and resultant chronic stress and emotional eating (Williams et al., 2019). The health consequences of this particular type of discrimination are thus serious but also relate to other types, including those concerning gender.

Gender inequality involves discriminatory advantages and disadvantages due to different treatment of people according to their gender, with women having worse physical and mental health outcomes than men from this (Hartnell, 2011). Much of this form of inequality concerns discrimination based on gender identity, and it manifests in ways including unequal earnings and limited access to education and employment opportunities (Okojie, 1994). Gender inequality can, as with other forms of social inequality such as race and ethnicity, have a negative effect on health in general and on mental health specifically. Indeed, studies have shown widespread outcome inequalities between men and women regarding health concerns. For example, research has indicated that gender disparity relates to various significant effects on mental well-being (Cabezas-Rodríguez et al., 2021), with common consequences being feelings of helplessness, poor self-esteem, and depression. It is no wonder that Vigod, and Rochon's (2020) study highlights how gender discrimination is an integral factor to a woman's mental health and the authors point out that addressing this is crucial for improving women's mental health outcomes.

According to a WHO multi-country report (2013) on women's health and domestic violence, up to 61% of women conveyed that being physically abused at least once in their lifetime is associated with adverse physical and mental health outcomes. Arab women have faced significant challenges in pursuing equality and empowerment in this regard, while Iraqi women have long struggled against gender inequality and this has led to substantial distress and disparities (Younis and Lafta, 2021). In Al-Atrushi et al.'s (2013) study of 800 Kurdish Iraqi women, 58% had been subjected to a lifetime of domestic violence, with obvious significant implications from this. Also, Younis and Lafta (2021) found gender-based violence and harassment to be linked to post-traumatic stress disorder (PTSD) and other mental health disorders. It is thus essential to address and combat gender inequality in all its forms to improve women's mental health and well-being (Vigod and Rochon, 2020).

1.3.2 Examining health inequalities: Progress-Plus

Many methods are available for studying health outcome inequities, and certain frameworks are mainly used to investigate intersectionality in relation to health inequality. Negi and Nambiar (2021), for instance, examined intersectional social-economic inequalities in breast cancer screening in India using the Health Equity Assessment Toolkit (HEAT) framework. In Edyburn et al.'s (2021) intersectionality research, they used the Social Determinants of Health (SDH) framework to explore social factors that affect health outcomes. Developed by the World Health Organization (WHO), this SDH Framework highlights the role of socioeconomic and political contexts, structural determinants, and intermediary determinants in influencing health outcomes (World Health Organization, 2010). In Canada, Shankardass et al. (2012) evaluated the effect of transport policies on health equity for low-income and ethnically classified communities using the Health in All Policies (HiAP) framework. Finally, Trygg et al. (2019) employed the PROGRESS-Plus framework to scope intersectional mental health inequities.

All these approaches are used in research and examining health inequalities, but the first three – HEAT, SDH and HiAP – are all frameworks with the same limitations as they all fall short of fully addressing the intersectional complexities that occur when multiple dimensions of identity intersect to create a cumulative effect from these identities. Additionally, to mitigate these limitations they require the integration of additional frameworks or methodologies that help capture intersecting identities and the implications for disparities (Edyburn et al., 2021; WHO, 2010; Shankardass et al., 2012), but this is not the case for the other mentioned framework.

The comprehensive PROGRESS-Plus method of investigating health disparities is based on various factors, including place of residence, race/ethnicity/culture/language, occupation, sex, religion, education, socioeconomic status, social capital, and age (O'Neill et al., 2014). Despite the other frameworks having advantages, for examining social inequalities PROGRESS-Plus is better for intersectionality research because it studies specific social problems and allows a comprehensive understanding of intersectionality's impact on health outcomes because it captures the intersectional effect on social identities. PROGRESS-Plus is a framework that provides a comprehensive method for studying inequalities in health outcomes (O'Neill et al., 2014). It was developed to capture overlapping and intersecting social factors of multiple dimensions, and their intersections make this framework ideal for intersectionality research – especially as it allows

researchers to uncover and analyse how social factors overlap and contribute to health inequalities (O'Neill et al., 2014). PROGRESS-Plus, then, is a robust tool for examining health inequalities and understanding the impact of demographic factors on health outcomes. Its comprehensive framework provides a substantial foundation for research in this area, and its flexibility allows researchers to explore various variables and outcomes. In sum, it is extremely suitable for intersectionality research.

1.4 Saudi Arabia: Demographics, mental health and gender inequality

1.4.1 The demographics of Saudi Arabia

Saudi Arabia is the Middle East's largest sovereign state, covering 2,149,790 square kilometres and almost four-fifths of the Arabian Peninsula. It is divided into thirteen administrative regions, each with unique cultural and economic characteristics. With a population of 33.4 million people, Saudi Arabia is one of the most populous countries in the region (General Authority for Statistics, 2018).

Saudi Arabia's demographic landscape is diverse, with a mix of Saudi nationals and foreign workers. Of the total population, 20.7 million are Saudi nationals, while 12.7 million are foreign workers (General Authority for Statistics, 2018). The country's population density is 17.1 persons per square kilometre, making it one of the most densely populated countries not just in the region but also globally (World Bank, 2021). However, most of its population (83.5%) lives in urban areas, with the capital city of Riyadh being the most significant urban centre (General Authority for Statistics, 2018).

Arabic is the official language of Saudi Arabia, and it is spoken by most of the young population, unless they are foreigners or expats. However, English is widely spoken, also particularly among the younger generation of Saudis and among those working in the business and tourism sectors. The country's official religion is Islam, and most of its residents are Muslim (Al-Subaie et al., 2020). Saudi Arabia is home to two of the holiest sites in Islam – Mecca and Medina. These two cities attract millions of Muslim pilgrims from around the world every year.

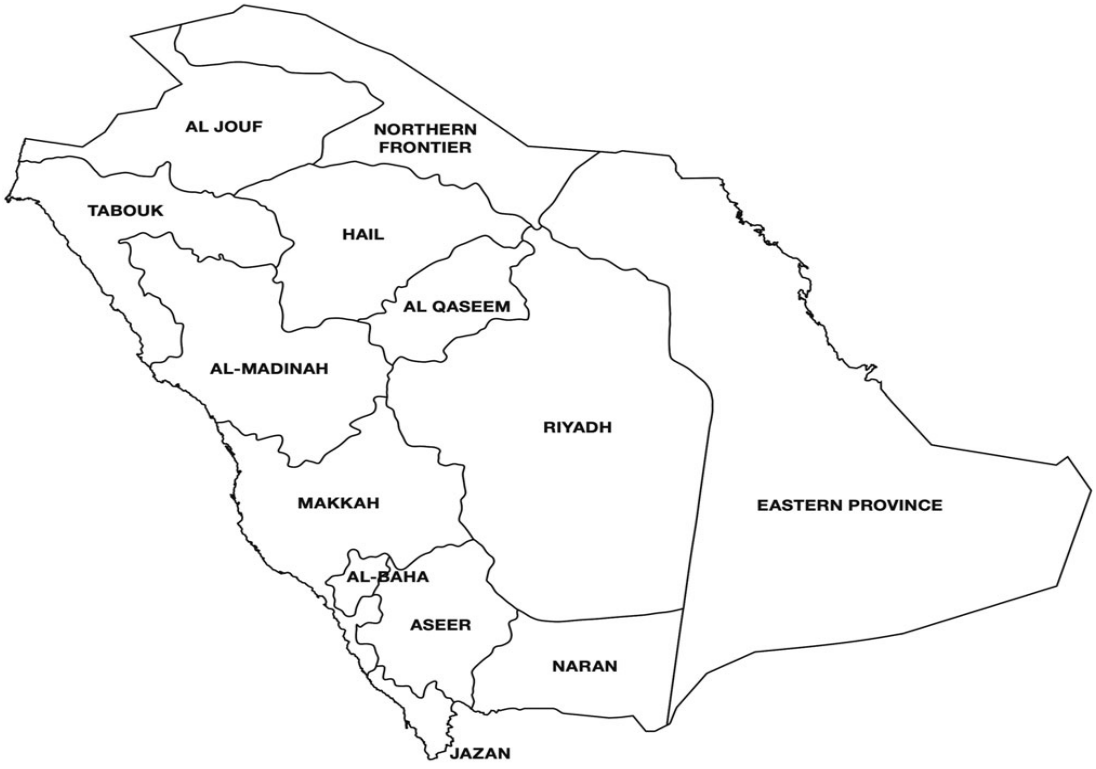
Males comprise 51% of the Saudi population, and females 49% (General Authority for Statistics, 2018). The population is predominantly young, with 30% under the age of 14, 19% between the ages of 15 and 24, 18% between the ages of 25 and 34, 19% between the

ages of 35 and 49, and 14% beyond the age of 50 (General Authority for Statistics, 2018). The country also has a high percentage of expatriate workers, who are mainly employed in the construction, oil and service industries. The presence of a large expatriate population has contributed to the development of a diverse cultural landscape with influences from around the world.

Despite its diversity, Saudi Arabia is a religiously conservative society with high cultural homogeneity for various reasons – including tribal and Islamic connections and a strong traditional culture. However, notably not all cultural practices in Saudi Arabia are based on Islamic law, and some may even conflict with it (Alhareth et al., 2015). For example, some conservative cultural traditions promote the suppression of women and limit their rights to work and select partners.

Saudi Arabia's demographic landscape is hence complex and diverse, with a mix of Saudi nationals and foreign workers, a young population, and a unique cultural heritage. Despite the challenges arising from its cultural and religious traditions, Saudi Arabia remains a fascinating country with a rich history alongside a vibrant modern culture.

Figure 2: Map of Saudi Arabia



Source: Al-Subaie et al., 2020

1.4.2 The background of mental health in Saudi Arabia

Before 1952, awareness of mental health in Saudi Arabia was extremely limited but was nevertheless officially recognised in this same year when a psychiatric hospital opened in the city of Taif within the country's southern region. Mental health, however, has traditionally been somewhat neglected in Saudi Arabia, as hospitals and services that help people with mental illnesses have been limited. People and government entities have even considered mentally ill people threats and risks to be around, which is why they used to lock them away in public buildings in Macca to ensure general safety (Al-Habeeb and Qureshi, 2010). Now, while the stigma surrounding mental health still exists in Saudi society, it has gradually reduced and is not as severe as before.

In the 1980s, mental health care in Saudi Arabia started progressing. An early record of the need for advancements derives from Dr Robert O. Pasnau and Dr Lawrence Hartmann, whom the Ministry of Health of the Kingdom of Saudi Arabia hired as consultants in 1982 (Pasnau and Hartmann, 1983). These doctors recommended international cooperation in the development of psychiatric care in KSA. In these doctors' words, this was mainly about the "quality of psychiatric treatment and in developing standards for a modern psychiatric hospital environment, outpatient care, psychotherapy, biopsychosocial approaches, and a mental health system adapted to Saudi culture" (Pasnau and Hartmann, 1983, p. 1493). Pasnau and Hartmann concluded that "American psychiatrists may have an important role to play in the future of psychiatry in Saudi Arabia" (Ibid.).

Pasnau and Hartmann (1983) strongly recommended exploring the possibility of improving psychiatric education in medical schools in the Kingdom of Saudi Arabia through other particular ways: formally establishing psychiatry departments; establishing connections among psychiatric hospitals, general hospitals and medical schools; and exploring consultation-liaison psychiatry, psychodynamic thinking and child psychiatry. The authors also emphasised the importance of developing psychiatric research in Saudi Arabia. Specifically, they suggested conducting research on the biopsychosocial dimensions of the Hajj pilgrimage on both the residents of Saudi Arabia and the pilgrims themselves. They further recommended researching the potential implications of psychiatric abuse in the absence of mental health law (Pasnau and Hartmann, 1983). The absence of explicit mental health legislation presents a potential vulnerability risk that needs suitable attention in this context, to prevent the exploitation of individuals with mental health challenges and improve psychiatric support. Establishing legal parameters for risks increases such

protection, or as Pasnau and Hartmann (1983) put it, establishing legal parameters for risks can significantly enhance the safeguarding of individuals in such cases.

By addressing legal parameters, the extended focus would be on examining the country's cultural norms. Cultural and social norms have historically discriminated against women, leading to the acceptance of domestic violence based on a gender power imbalance – that is, men having more power than women. Alhabib et al.'s (2017) study found that 43% of Saudi women reported experiencing domestic violence, and this was subsequently found to have contributed to the mental illnesses of these women. Also, importantly, the publication of this study led to the wider recognition of the experience of mental illness among women in this context and the more specific link between experiencing domestic violence and suffering adverse mental health (Alquaiz et al., 2021). For Dubovsky (1983), when studying mental health services in Saudi Arabia a key consideration is the cultural perspective on Islamic religious beliefs, which involves conservative interpretations of Islamic beliefs that nevertheless emphasises traditional gender roles, male guardianship for women, women's head covering in public and gender segregation. All this must be considered because it is deeply rooted in the social system and the social norms in Saudi Arabian society. Dubovsky (1983) also notes how Islamic religious beliefs attribute physical and mental health entirely to God's will. This perspective tends to downplay psychological issues such as depression or anxiety, instead considering mental illness to be physical symptoms manifested through aches and pains (Koenig et al., 2014). Another perspective within Islamic beliefs associates mental illnesses with a lack of definite faith, indicating that increasing religious devotion is the solution for healing the soul (Koenig et al., 2014). One of the most recognisable shreds of evidence of religion's influence on mental health, though, is traditional faith healing – for example, exorcisms and physical methods, including beatings or cautery – to remove evil spirits. Traditional faith healing was commonly used to treat mental illness until the early 1980s and still is, to some extent (Koenig et al., 2014). To have a holistic view of mental health in Saudi Arabia thus requires the understanding also of social factors, culture, and religious interaction with various elements, including domestic violence and gender inequality and how they affect and shape the mental health landscape in Saudi Arabia (Solaim and Okpaku, 2021).

In Saudi Arabia's cultural context, the patriarchal family structure and gender norms of Saudi society and religion are all deeply integrated into Saudi daily life, reflecting the mental health landscape and women's position in the country. The social contexts are key

factors in perpetuating and even increasing women's oppression. Saudi males have substantial authority in the system, including guardianship, traditional family patriarchal roles and higher socioeconomic status, while females have domestic submissive roles (Aldosari, 2017; Solaim and Okpaku, 2021). This cultural context imbalance creates a hostile environment for women that normalises violence and perpetuates gender inequality, which leads to mental health challenges and psychological distress, besides increasing the risk of adverse mental health among Saudi women. However, the societal structure has evolved recently, with women gaining more independence and power over their lives (Solaim and Okpaku, 2021). Credit for this change must be given to initiatives such as giving women equal optionality in higher education and including them in the international scholarship programme and Vision 2030 (a government initiative for diversifying the country's economy, society and culture – more on this soon). These have limited the male guardianship system, given women more independence and promoted women's participation in various sectors in the country. The new changes in the country are promising steps towards gender equality, but the challenge remains in aligning the new legal systems with deeply rooted traditions (Aldosari, 2017; Solaim and Okpaku, 2021) and there is still a long way to go to adequately address Saudi Arabia's mental health challenges for women.

A practical problem has been how Saudi universities lack students and training in mental health care, although perhaps this once partly related to a shortage of specialised hospitals (Koenig et al., 2014), even though Saudi Arabia established psychiatric residency training in 1997 (Gaffas et al., 2012; Koenig, 2014). A report by Al-Habeeb 2016 shows that Saudi medical students still demonstrated lower interest in specialising in psychiatry and limited interest in mental health teaching compared to international counterparts. Indeed, while 27 Saudi universities offer psychiatric programmes and graduate 400 psychiatric students per year this appears neglectful when compared with Jolly et al.'s (2013) study in the United States, where students graduating from psychiatry residency programme numbered around 1,302 per year. While 27 Saudi universities provide psychiatric departments, only three provide residency programmes (Gaffas et al., 2012) and subspecialty programmes in psychiatry remain underdeveloped. Consequently, most Saudi psychiatrists seeking fellowship training migrate to Western countries (Gaffas et al., 2012; Koenig et al., 2014), but there is clearly another problem here for those who return to work in Saudi Arabia: Saudi psychiatrists need to address the specific experiences and cultural backgrounds of Saudi people with mental health issues (Gaffas et al., 2012; Koenig et al., 2014), but

training programmes abroad often do not address this issue, despite practitioners' own personal cultural connections. As Dubovsky (1983) concluded, Western methods of identifying and treating psychiatric disorders need considerable change to suit Saudi Arabia and its conservative society. Furthermore, resultant possible conflict between these two compound existing issues. Rather than relying on fellowship training from Western countries, then, Saudi Arabia should invest in provisions for training its own people in this regard. Although the government and people have become more aware of the importance of mental health care in the country (Koenig et al., 2014), Saudi mental health has historically lacked significant investment and development in former times. There have nevertheless been signs and evidence of change in recent decades, but problems have persisted for much longer and many still prevail.

In 1983, Dubovsky implied that psychiatric disorders among Saudi women increased because of exposure to Western lifestyles and cultural ways, although he provided no supporting research for this theory. Significantly, this does not consider local cultural components, and it also goes against the aforementioned explanation of it being a result of God. Nevertheless, Dubovsky (1983) acknowledged that women are more willing than men to seek psychiatric services, but this is not particularly relevant with few such outlets for these women previously being available. Also at that time between 1960-1985 spouse abuse and child maltreatment were not considered crimes, and no interventions were made to address these issues, which possibly consequently worsened (Dubovsky, 1983).

Legal issues also influenced psychiatric practice. In 1983 psychiatrists began practising defensive psychiatry, resulting in long hospital stays for patients because of the risk of being held liable if a patient was released too early and committed an assault whereby, they harmed another, or even if they harmed themselves. Despite few psychiatric hospitals existing in 1983, anti-psychotic drugs were commonly used to medicate long-term chronic patients, while psychotherapy was rarely provided (Koenig et al., 2014).

Saudi Arabia's mental health care system has nevertheless substantially changed over the last three decades (Koenig et al., 2014). In 2006, the country introduced a mental health policy as a separate policy from health policy and designed primary health programmes in general medical settings for addiction, children, adolescents, and the elderly, providing many services to people seeking mental health care, with primary health care clinics as the initial point of contact for patients with mental problems. Moreover, fee-based private

mental health treatment is now accessible (Koenig et al., 2014). Furthermore, the Saudi Ministry of Health made its own mental and social health chart based on the WHO mental health atlas (Al-Habeeb and Qureshi, 2010). Saudi Arabia has relied on the WHO-AIMS 2.2 to track the progress of its mental health system over the past decade (Al-Habeeb and Qureshi, 2010; Qureshi et al., 2013; Al-Habeeb et al., 2016). Using the WHO-AIMS 2.2 highlights Saudi Arabia's commitment to monitoring and enhancing the mental health landscape.

As a result of this drive, the Kingdom of Saudi Arabia currently has 99 public mental health clinics, 27 public mental health hospitals, 38 rehabilitation centres for patients with intellectual and physical disabilities, 69 day-care units for people with mild and moderate intellectual disabilities and behavioural problems, five active consumer organisations and non-governmental organisations and five community-based psychiatric inpatient units (Altwaijri et al., 2019). Notably, 4% of the Ministry of Health budget is currently dedicated towards mental health, and there are over 20,000 psychiatrists, 110,000 nurses, 10,000 psychologists, and 20,000 social workers in the various mental health facilities and private psychiatric practices in the Kingdom of Saudi Arabia (Altwaijri et al., 2019).

1.4.3 Impacts of gender inequality on mental health and services in Saudi Arabia.

In 2020, the WHO defined gender inequity as the unequal treatment of and opportunities given to people based on gender. This issue particularly affects women worldwide, often arising from power imbalances and with women experiencing discrimination and marginalisation. As such, women face barriers to education, employment, and political participation (World Health Organization, 2020). Gender inequality impacts mental health, and this is particular so in a society like Saudi Arabia. As Mobaraki and Söderfeldt (2010) and Rajkhan (2014) note, Islamic laws, culture and social norms substantially influence women’s mental health and well-being, with an example being Saudi Arabia’s male guardianship system whereby women of all ages must obtain their male guardian's permission to travel, marry, study, or seek medical treatment (Mobaraki and Söderfeldt, 2010). Vision 2030 is a social and economic programme by the KSA aimed at diversifying the nation's economy and prompting multiple changes in its social, economic and cultural sectors, including healthcare, social programmes, education, infrastructure and tourism (Rahman and Qattan, 2021). This new vision of Saudi Arabia (Vision 2030) has brought significant changes to women's rights and legislation. In 2018, the government eliminated this male guardianship system from ministerial policies (Soekarba, 2019), so Saudi women

now own a passport and can marry, travel, and access higher education without the approval of a male guardian (Soekarba, 2019). The new legislation also allows women to contribute to society equally alongside men, thereby promoting greater gender equality in Saudi Arabia (Soekarba, 2019).

The Saudi National Mental Health Survey, conducted from 2011 to 2016, sought to investigate the prevalence of mental health problems and their burden in the Saudi community, and for this it looked at individuals who are most at risk and the best ways of offering mental health services in the Kingdom of Saudi Arabia (Altwaijri et al., 2019). With 4,004 respondents across the country's regions, this survey found that 34% of Saudis will receive a mental health diagnosis in their lifetime, with 40% of persons aged 15–24 and 25–34 being diagnosed with a mental health condition in their lifetime. Potential contributing factors are influences of modern lifestyle factors, increased exposure to the internet and social media, and the challenge of growing up in the current fast-paced era, all tempting a higher prevalence of these health conditions in young Saudis (Altwaijri et al., 2019).

Furthermore, a 2002 study in Saudi Arabia found a higher prevalence of mental illness among female primary care patients compared with male patients, with 22.2% among females and 13.7% among males (Al-Khathami and Ogbeide, 2002). This brings attention to the critical concept of gender inequalities, gender norms and gender biases in health research and healthcare systems in Saudi Arabia (Heise et al., 2019). Heise et al. (2019) developed a conceptual framework for how social identities intersect with varying forms of discrimination to structure poor pathways to health, and this notably gives credence to the theory of intersectionality – the "notion that one's social position is influenced by interlocking forms of advantage and oppression, including inequalities based on class, race, ethnicity, ability, and gender, among others" (Heise et al., 2019, p. 2441). This conceptual framework argues that persons who are privileged (for instance, Saudi men) experience the greatest advantages and least inequalities regarding access to quality healthcare. Conversely, marginalised persons who are also experiencing other intersecting forms of disadvantages (for instance, a Saudi woman who is poor, has a low level of education, is based in a rural area and has a disability) experience the least advantage and the most health inequalities (Heise et al., 2019). Gender-related health inequalities also play out in health research, as internalised gender norms contribute to the underrepresentation of marginalised groups, such as women.

1.5 Depression and gender in Saudi Arabia

According to Altwaijri et al.'s (2019) study, the Saudi National Mental Health Survey identified the five most common mental health conditions in the Kingdom of Saudi Arabia as separation anxiety disorder, attention-deficit/hyperactivity disorder, major depressive disorder, social phobia, and obsessive–compulsive disorder. The study also revealed notable gender differences, with Saudi females being more prone to experiencing separation anxiety disorder (13.0%), major depressive disorder (8.9%), social phobia (7.0%), and obsessive–compulsive disorder (4.9%) in their lifetime than men, who recorded comparatively lower rates of 11.0%, 3.1%, 4.3%, and 3.4%, respectively (Altwaijri et al., 2019). These findings are supported by with other mental health studies in the Kingdom of Saudi Arabia. In a cross-sectional national survey conducted between January 1994 and December 1995 involving 7,970 elderly subjects to evaluate the prevalence of geriatric depression using the Geriatric Depression Scale, 39% of participants were reportedly depressed, with 8.4% of them in the severe depressive symptoms group (Al-Shammari and Al-Subaie, 1999). Particularly pertinent here is that depressive symptoms were more strongly associated with factors such as being female (Al-Shammari and Al-Subaie, 1999).

Al-Qadhi et al.’s (2014) cross-sectional study in three primary care centres in Riyadh estimated the prevalence of depression using the Arabic versions of Patient Health Questionnaires-2 and 9.Results showed that out of 477 patients studied, 316 were female (66.2%), and 161 were male (33.8%), with a higher prevalence of depression among females compared to males, a significant relationship between depression and gender (Al-Qadhi et al., 2014). This study significantly associated depression scores with being of the female gender, with their high prevalence of depression deriving from factors such as cultural differences in symptom expression or inclusion criteria, and the insufficiency of primary care centres in identifying and managing depression cases. Further research can provide a better understanding of the gender depression association and develop gender-specific interventions.

A similar cross-sectional study by al-Rashed et al. (2019) on the prevalence and predictors of depression in the Eastern Province city of Al-Ahsa, Saudi Arabia, was conducted from June 2015 to January 2016 using the Arabic version of the Patient Health Questionnaire-9. It revealed that of 5,172 participants, 447 (8.6%) had a diagnosis of depression, which

showed a significantly low prevalence of depression within that province. However, this study still aligned with most other local studies regarding being female (65.9%) as a significant factor associated with a depression diagnosis.

Alamri et al.'s (2020) recent research on the psychological impact of the COVID-19 pandemic on public mental health in Saudi Arabia involved a cross-sectional study of 1,597 participants and used the Depression, Anxiety, and Stress Scale (DASS-21). It reported that 28.9% of participants experienced depression, with 11.8% mild, 10.1% moderate, and 7% severe (Alamri et al., 2020). Once more, the data showed that females were more likely to experience depression (33.6%) as opposed to males (25.0%), with other factors being relevant such as being younger than 35 years old, being unemployed and working as a health care practitioner.

Alshamlan et al. (2020) conducted a cross-sectional study among clinical-year (fourth, fifth, and sixth year) students at Imam Abdulrahman bin Faisal University, Dammam, Saudi Arabia. Using the Patient Health Questionnaire (PHQ-9), they reported that 39.27% of respondents were depressed, with 155 (29.41%) mild, 112 (21.30%) moderate, 64 (12.10%) moderately severe, and 31 (5.90%) severe. The study showed that mild depression was reported by 43.23% of male students and 56.77% of female students, but particularly striking within these results was severe depression being 12.90% among male and 87.10% of female sufferers. The high prevalence of depression in female students compared to their male counterparts, especially regarding severe depression, highlights the importance of addressing gender disparity in the country.

Alqahtani et al.'s (2018) cohort study on the prevalence of anxiety and depression in women attending antenatal clinics at the University Hospital of Imam Abdulrahman bin Faisal University used the Edinburgh Postnatal Depression Scale – an identifier for women with post-natal depression that uses a questionnaire with 10 items. It showed that among the 575 women participants a depression prevalence rate of 26.8% existed (Alqahtani et al., 2018). Depression in this demographic was significantly associated with histories of previous miscarriages, unemployment, unplanned pregnancies, and potentially negative impacts of pregnancy on life and work.

Extant literature thus shows that women in Saudi Arabia have a higher prevalence of depression mainly because of social disadvantage and gender inequality (e.g. limited

authority in their life, domestic violence, male guardianship), limited opportunities for women to contribute to decision-making in the country and to mental health issues in Saudi Arabia (Alhareth et al., 2015). Therefore, to improve mental health outcomes for Saudi women the government must address the root causes of gender inequality, promote gender equality and provide equal gender access to employment and health care so it also creates a more equitable society.

1.6 Healthcare policy and mental health policy

1.6.1 Healthcare system and policy in Saudi Arabia

Over the past century, the Kingdom of Saudi Arabia's healthcare system has gone through several transformations (Al-Hanawi et al., 2019), with early ones being establishing the first public health department in Mecca in 1925 by a royal decree and the establishment of the Ministry of Health in 1950 (Al-Hanawi et al., 2019), the latter having the responsibility of providing public health services to Saudi Arabian residents (Asmri et al., 2020). According to Article 4 of the Carlisle, 2018, the Ministry of Health has several main responsibilities: providing healthcare facilities in primary healthcare amenities, hospitals, and secondary and specialised treatment centres; preparing health statistics and biostatistics; formulating health strategies and plans to distribute accessible healthcare; developing the health workforce; preventing the spread of infectious, epidemic, and quarantine diseases; and controlling medicine and drugs regulations (Carlisle, 2018). It also has other supplementary responsibilities: licensing and monitoring private health institutions and their employees; developing and implementing standards for quality healthcare; monitoring health workers' professional practices; developing rules that govern medical and pharmaceutical research and experiments; promoting comprehensive health awareness; and cooperating with regional and global organisations within public health and healthcare (Carlisle, 2018).

The Saudi Arabia healthcare system provides three levels of healthcare services: primary, secondary, and tertiary (or specialised or referral) (Asmri et al., 2020; Carlisle, 2018). Primary healthcare provides and/or facilitates the following: a basic level of preventive, curative, and promotive services, including health awareness at the individual, family, and community levels; environmental sanitation; safe drinking water and food; awareness of healthy nutrition; integrated maternal and child healthcare; immunisation against infectious diseases; action to prevent the spread of endemic parasitic and infectious diseases;

diagnosis of common diseases and injuries; vaginal deliveries; and essential medication (Asmri et al., 2020; Carlisle, 2018). Secondary healthcare comprises services provided by general hospitals and specialist physicians, including diagnostic and curative services at emergency departments, outpatient clinics, hospitalisation, and minor surgeries (Asmri et al., 2020; Carlisle, 2018). Tertiary, specialised, or referral healthcare comprises healthcare services for specific diseases and requires advanced equipment and highly specialised physicians (Carlisle, 2018). Patients can also access rehabilitative services, and these facilities additionally serve as research and training centres (Asmri et al., 2020). As of 2000, the health system in the Kingdom of Saudi Arabia was ranked 26th out of 190 countries (World Health Organization, 2000). Recent statistics show that Saudi Arabia has a life expectancy rate at birth of 74.3 years and a healthy life expectancy rate at birth of 64.0 years, with a maternal mortality rate of 17 per 100,000 live births (World Health Organization, 2022). Between 2012 and 2020, per 10,000 population Saudi Arabia had an estimated 27.4 medical doctors, 58.2 nurses and midwifery personnel, and 8.6 pharmacists (World Health Organization, 2022).

Despite these advances in the Saudi Arabian healthcare system, numerous challenges still plague the system, including a scarcity of health professionals, changes in the patterns of disease shifting from communicable diseases to chronic diseases, poor accessibility to all levels of the healthcare system, demand for healthcare services surpassing supply, limited financial resources, high fertility rates, increased life expectancy, and low utilisation of electronic health strategies (Albar and Hoque, 2019; Al-Hanawi et al., 2019; Asmri et al., 2020; Carlisle, 2018). A solution in 2000 to the last of these involved a special task force for health reform developing an information technology strategic plan for healthcare (Albar and Hoque, 2019), which deployed e-health applications across Saudi Arabia to increase the efficiency of healthcare institutions and improve already existing e-health systems (Albar and Hoque, 2019). E-health continues its operations in Saudi Arabia, reducing the pressure on hospitals and facilitating accessibility. The system allows patients to register and schedule appointments at nearby primary healthcare centres. An ideal example of the Ministry of Health's (MoH) e-health strategy was evident during the COVID-19 pandemic. The MoH efficiently offered remote patient follow-up through digital health platforms and effectively managed COVID-19 outbreaks (MoH, KSA.2023).

To reform the healthcare system in Saudi Arabia, the government in 2016 also embarked on the National Transformation Program 2020 (al Khashan et al., 2021) to "improve the

planning, production and management of the health workforce [through] interventions for health system strengthening, health promotion and control of noncommunicable diseases, control of communicable diseases, health security, and improving partnerships for health development" (World Health Organization, 2017, p. 1). This strategy also prioritises better regulation of the private health sector, enhanced public-private sector partnerships, capacity building for healthcare personnel, and strengthening the monitoring and evaluation of national health plans (World Health Organization, 2017).

The National Transformation Program 2020 was designed as part of a subset of a larger healthcare reform strategy tagged Vision 2030 that includes improving the utilisation of primary healthcare (al Khashan et al., 2021). Vision 2030 seeks to enhance the standard and quality of healthcare services in Saudi Arabia by providing the highest quality of care, deepening collaboration and integration between health and social care, optimising the utilisation of healthcare facilities, enhancing the quality of therapeutic and preventive health services, and providing and promoting a healthy and balanced lifestyle in Saudi Arabia (Government of Saudi Arabia, 2016). It is expected that by 2030 a positive transformation in the healthcare system in Saudi Arabia will have occurred.

1.6.2 Mental health policy in Saudi Arabia

An early contemporary law and policy on mental health in the Kingdom of Saudi Arabia is the 2006 National Mental Health Policy (Al-Subaie et al., 2020; Carlisle, 2018; Koenig et al., 2014). This was designed to help persons with mental healthcare needs through special programmes for children, adolescents, adults, and others suffering from drug and alcohol addiction via established consultation-liaison services in general healthcare facilities (Al-Subaie et al., 2020; Carlisle, 2018; H. Koenig et al., 2013). Following the WHO's model of the 2000 World Mental Health Atlas, Saudi Arabia developed its first Saudi Arabia Mental and Social Health Atlas (SAMSHA-1) in 2007, which captured information on "mental health policies and legislation, budgeting mechanisms, community care, primary care psychiatry, rehabilitation centres, psychiatric beds, general hospital psychiatry, human resources, programs for special populations, rehabilitation centres, use of psychotropic drugs, and a section on information system" (Koenig et al., 2014). SAMSHA-1 also provides a detailed overview of mental health policies, legislation, budgeting mechanisms, rehabilitation centres, and other pertinent elements, thus facilitating a holistic approach to mental health care (Koenig et al., 2014). Furthermore, it incorporates a strategic four-year plan to modernise the nation's mental health infrastructure, enhance the quality of mental

health services, expand substance abuse services, and foster a research-oriented approach to mental health issues (Koenig et al., 2014). This pioneering initiative was updated in both 2010 and 2015 with SAMSHA-2 and SAMSHA-3, respectively (Koenig et al., 2014). According to Koenig et al. (2014), the SAMSHA programme has achieved many of its goals, including expanding mental health services across the country, developing ongoing medical education programmes, and establishing national indicators to measure the quality of mental health care services.

Furthermore, in 2014 Saudi Arabia passed the Mental Health Law, doing so by incorporating various recommendations from the WHO and the United Nations Principles for the Protection of Persons with Mental Illness and the Improvement of Mental Health Care (Al-Subaie et al., 2020).

1.7 The need for quantitative intersectionality research in women's mental health

The need to consider intersectionality in women's mental health is a crucial one, especially since women's mental health experiences are complex and multifaceted (Vance et al., 2023) yet too commonly overlooked or merely addressed only unilaterally, leaving many women to suffer and deep gaps in the understanding that can relieve such suffering. In contrast, utilising the intersectionality framework acknowledges that race, gender, class, ethnicity, and other dimensions of identity intersect to create complex layers of oppression (Vance et al., 2023), and via such means necessary understanding can be achieved. Indeed, intersectionality is important for addressing gaps in mental health care, as intersecting social identities can compound inequalities in mental health. In fact, researchers will be able to understand the risk factors of mental disorders only once we move beyond standard models and methods of inquiry in epidemiology analyses (Banks and Kohn-Wood, 2002). Using the quantitative intersectionality method helps to measure a statistical relationship between two variables, such as discrimination and mental health (Yang and Lim, 2023), and is therefore suitable for such purposes. Intersectional quantitative methods are also used to examine the statistical significance of correlations. Therefore, quantitatively evaluating the relationship between intersectional discrimination and psychological well-being among marginalised women can help gather statistical data about participants (Yang and Lim, 2023) and goes some way to developing the required understanding in this area.

The intersectional approach thus shifts focus from direct effects and single-dimensional variables to a more comprehensive understanding of psychological phenomena (Banks and Kohn-Wood, 2002), and as noted there is much need for this in women's mental health. Many women need help and support in this regard, which can come only from a more complete understanding, and the effects and consequences of prevailing omissions and oversights are particularly pronounced for certain women. Vance et al.'s (2023) study in the Intersectional Suicide Risk Modell, for instance, uncovers the unique struggles of marginalised Black women who live intersectional experiences of multiple identities. In the current work, the focus moves towards Saudi Arabia, where a issue in women's mental health is causing much suffering for women (Aldosari's., 2017).

1.8 Intersectionality, gender, and cultural context in Saudi Arabia

The absence of a mental health framework in Saudi Arabia indicates a gap in awareness and legislation (Qureshi et al., 2013), and the lack of comprehensive research in this context on women's mental health accounts for why calls have been made for focused exploration (e.g. Koenig et al., 2014). This thesis tackles the urgent need to address intersectionality, gender and the cultural context within the framework of Saudi Arabia's mental health landscape and thereby contributes to a better understanding of the contextual, gender and discrimination factors – in an array of particular forms – that affect women's mental health in Saudi Arabia. By using an intersectionality perspective, the research will adopt a required holistic approach that avoids a limited unilateral approach and considers many factors, from the individual to the cultural and the broader context and background. This should further identify existing challenges and contribute towards much-needed solutions.

Aldosari's (2017) research emphasises that women's mental health is affected by gender norms that dictate access to healthcare and influence healthcare conditions. Gender norms and cultural values intertwine to create barriers to mental health support and care, making it essential to address these aspects within Saudi Arabia's cultural context. The intersectionality framework acknowledges that various social categories, such as gender, race, ethnicity, and socioeconomic status, intersect to shape an individual's experiences (Banks and Kohn-Wood, 2002). Applying intersectionality to the study of mental health in Saudi Arabia can provide a better understanding of women's challenges. The intersectionality approach says that gender and other social identities do not only define mental health but are also influenced by complex intertwined factors such as gender

inequality, cultural norms, stigma and societal expectations that can worsen mental health issues, especially among women (Vance et al., 2023).

The issue of insufficient research into and understanding of women's mental health issues in Saudi Arabia needs a fast solution. Developing a comprehensive mental health policy applicable to Saudi Arabia's unique conservative and religious values is urgently needed. Notably, conducting research using an intersectionality framework to analyse the effect of the intersection of social identities on women's mental health in Saudi Arabia can go some way towards this. By exploring the interactions between gender, culture, stigma, and other variables, researchers can help create recommendations to inform policy and practice in this regard. Raising awareness and advocating for change in such a cultural context in a way that suits Saudi Arabia, and its population is difficult but urgently required to help dismantle barriers, reduce stigma and promote mental well-being among the Saudi population, especially women who have endured significant challenges over an extended duration.

1.9 Thesis aims and objectives

This thesis is about broadening the understanding of the intersectionality framework's impact on mental health studies generally but also particularly within the specific context of women in Saudi Arabi. It looks at causal factors and assesses the risks of depression in women within Saudi Arabia and addresses the country's gap concerning gender inequality in mental health policy. By focusing on women and policy, this thesis provides a comprehensive understanding of the quantitative intersectionality framework in mental health studies, informing the evidence base for future research but also offering means of practical solutions for real-world problems.

The thesis has an overarching aim of

- understanding Saudi Arabian women's mental health disorders, risks, challenges and issues, especially concerning depression.

It also has more specific aims about providing a comprehensive picture of

- the effects of quantitative intersectionality and social disadvantage on these women's mental health.

- the contribution general inequality makes to their mental health.
- and how policies and programmes address (or do not address) Saudi women's mental health needs.

To achieve these, the thesis has the following objectives:

- to examine the quantitative intersectionality research around the effects of multiple social disadvantage on women's mental health.
- to explore the interaction between gender and the risk of depression, identifying and exploring particularly significant interactions among variables relating to this population's social disadvantage and depression.
- and to analyse (and ultimately inform) Saudi Arabia's current mental health policy.

In exploring these aims and pursuing these objectives, this thesis seeks to develop a comprehensive understanding of the intersectionality framework in mental health studies, mainly regarding its quantitative nature and in addressing gender inequality in mental health policy. The research conducted in this thesis will shed light on the complex and multifaceted nature of intersectionality and provide insights into furthering understanding of and developing practical strategies for addressing mental health challenges in Saudi Arabia. This exploration will highlight the absence of mental health policies for women and underline the urgent need for change to align with suitable aspects of developing social reforms, especially with facets of Saudi Arabia's Vision 2030, but also ultimately provide much more than what these currently do.

1.10 Thesis outline

This thesis applies an intersectionality framework to mental health research, employs a quantitative approach to the intersectionality method for investigating social disadvantage variables in mental health and adopts the intersectionality method to assess depression risk in Saudi Arabia and gender inequity in mental health policy. Following this first chapter, the study's main body contains three chapters that each conduct an independent research project that nevertheless builds on the results of the previous chapter or fills in the gaps highlighted by those results.

Chapter 2, ‘The Systematic Review’ (Research Project 1), uses quantitative methods to study the intersectionality of multiple social disadvantages in women with common mental disorders. It investigates studies that use statistical methods to explore the intersectional effects of gender with more than one social disadvantage from the PROGRESS-Plus inequity framework. This systematic review shows the type of statistical method used in interactional studies of multiple social disadvantages with risk of common mental disorders experienced by women.

Chapter 3, ‘The Secondary Data Analysis’ (Research Project 2), explores the impact multiple social disadvantages have on the risk of depression in Saudi Arabia. This chapter reports on a secondary data analysis that evaluated the National Survey of Saudi Food and Drug Authority (NSSFDA) and its nationally representative sample of 3,408 Saudis aged 18–88 (1,753 males and 1,655 females). The PHQ assesses depression risk.

Chapter 4, ‘The Policy Analysis Appraisal’ (Research Project 3), is a review of policy analysis on gender equality in Saudi Arabia’s mental health policy**.** It reports on a study which investigated Saudi Arabia's mental health policies and the gender equality of its mental health policies. By using Walt and Gilson's health policy analysis framework this review examines the overall implementation of mental health policy and gender sensitivity challenges in mental health policy within Saudi Arabia. Highlighting the need to address gender disparities in the country's mental health policies, the research presents evidence-based concepts aimed at improving the mental health and well-being of women in Saudi Arabia. This contributes to the establishment of an equitable healthcare system.

In Chapter 5, the thesis conducts a general discussion of the topics of concern but particularly focuses on the three research projects (those in chapters 2, 3 and 4). It ends with ‘concluding remarks’ on the thesis that concludes the overall study. Chapter 6 moves to a more personal conclusion to the overall study that reflects on the experience of studying for a PhD in a way that provides the bigger picture of a personal PhD journey.

Chapter 2

The Systematic Review (Research Project 1): Utilising Quantitative Methods to Analyse the Intersectionality of Multiple Social Disadvantages in Women with Common Mental Disorders

2.1 Introduction

Women's health, which encompasses a state of complete physical, mental, and social well-being (World Health Organization, 1948), is not just important for the individuals concerned but also integral to the health and well-being of modern society, for healthier women lead to better-educated and more productive societies and influence the pace of economic growth and societal development (Onarheim et al., 2016). In turn, women's health also crucially impacts the health and economic well-being of future generations (Onarheim et al., 2016). Despite healthy women being a cornerstone of healthy societies, women throughout the world continue to experience poor health (Kuhlmann and Annandale, 2010). By applying suitable methods to investigate the causes of women's poor health, then, the resultant further understanding can help address this issue and lead to practical improvements in women's health with such noted far-reaching implications.

A compelling body of evidence identifies social inequalities as having a crucial impact on women's health and access to health care. These inequalities are based on gender, age, income, race, disability, sexuality, ethnicity, and class, which all shape a women's exposure to health risks and access to health services (World Health Organization, 2009; Williams, 2012; Braveman and Gottlieb, 2014; Hsieh and Ruther, 2016; Trinh et al., 2017). Notably, these social inequalities rarely impact women's health in a unilateral way; instead, it is the experiencing of multiple social disadvantages that substantially impact women's health.

Health inequality is a global issue that often follows a social gradient whereby advantaged groups with more resources tend to be healthier (Trygg et al., 2019). Such outcomes extend to mental health, which relates to factors such as socioeconomic status, gender, and gender

identity (Trygg et al., 2019). For instance, mental disorders are prevalent in women worldwide (World Health Organization, 2009), and women have a higher rate than men of internalising disorders such as depression and anxiety (Rehm and Shield, 2019). Significant differences in mental health occur across various factors, with worse mental health observed in women, lower socioeconomic groups, and individuals with weak support networks (Lehtinen et al., 2005; Lehavot et al., 2019). The effects of these social determinants on health are nevertheless intricate and interconnected, extending beyond the simple sum of their individual effects. Therefore, it is essential to investigate the interconnected and multiplicative significance of social disparities to understand how they contribute to women's oppression and discrimination and ultimately impact on their health outcomes (Trygg et al., 2019).

Intersectionality is a framework for understanding the interactions among multiple social identities such as race, gender, and class to create unique forms of discrimination, oppression, inequality, and social injustice. Originally a Black feminist theory, this approach was the first to propose mutuality among factors – a proposal that cannot be understood within research that seeks to analyse one factor at a time (Crenshaw, 1989; Bauer, 2014). Regarding the health of particular populations, the concept of intersectionality offers much understanding to health inequality, as it has been recognised as an important public health framework for accurately identifying inequalities, solving interconnected complexities in the analytic stage of research and ensuring strong results regarding research outcomes because intersectionality methods focus not only on a unitary cause but also on multiple causes simultaneously (Bauer, 2014).

In qualitative designs within feminist studies, intersectionality provides a vital lens for understanding social phenomena by underlining interconnected social identities and their affiliated forms of oppression (Collins, 2015). From an epistemic perspective, intersectionality provides a more thriving, multifaceted analysis that allows for a subtle understanding of lived experiences, thereby giving a voice to individuals who represent intersecting identities (McCall, 2005). Furthermore, it highlights contextual factors such as socio-political systems and cultural norms that influence these experiences (McCall, 2005). Intersectionality therefore allows the researcher to examine and address the layers of inequalities individuals face at the intersections of multiple marginalisation’s (Crenshaw, 1989).

Despite such concerns about people's lived reality and personal experience, adopting a quantitative approach to investigate intersectionality has several advantages such as estimating the effect measure of statistical relationship between factors or variables. However, employing this theoretically rich technique in population health research nevertheless has limitations and methodological challenges (Bauer and Scheim, 2019). There are concerns, for example, about how quantitative terms used mathematically in a theoretical study can provoke difficulties concerning how to interpret intersectionality effects in research and how quantitative interpretation will reflect on the analysis and measurement of the outcome results (Bauer, 2014). As such, further investigation is required to determine the most appropriate quantitative approach(es), analytical method(s), and technique(s) for quantitative studies of intersectionality and to determine what would enable the integration of intersectional theory in a way that addresses the inequity about incorporating intersectionality in quantitative research (Else-Quest and Hyde, 2016).

This systematic review thus collects and examines evidence to do the following:

1. Identify the quantitative methods and study designs used in intersectional research to understand women's mental health and social disadvantage.
2. Determine whether these techniques help understand women's mental health and social disadvantage.
3. Analyse and underline the most significant statistical challenges in quantitative intersectionality studies, highlighting methodological limitations and improvement areas.
4. Assess and classify the overall strength and validity of using an intersectionality framework in quantitative research, focusing on its contributions to women's mental health and social disadvantage.

2.2 Methods

The systematic review was conducted in adherence with the Preferred Reporting Items for Systematic Reviews and Meta-analysis (PRISMA) guidelines (Moher et al., 2009) and the Cochrane Handbook for Systematic Review of Interventions (Higgins et al., 2011). No protocol for this review has been published.

2.2.1 Search strategy

A search strategy (see Appendix) was developed with the help of a research librarian specialist. The following electronic databases were searched during December 2019 and updated on 30 June 2022, selecting these databases: Medline, EMBASE, CINAHL, PsycINFO, and Sociological Abstract, for comprehensive scope and peer-review papers to ensure access to high-quality scholarly articles capturing the scope of our research. Followed by conducting hand searches during the same period, including articles and papers that suit the search terms in printed journals or general web searches to find journals and articles that might not be covered in academic electronic databases such as *the Journal of Mental Health*, *Journal of Health and Social Behaviour*, *Social Science and Medicine* and the *British Journal of Psychiatry*. The search strategy was developed using detailed search terms to capture the essence and key aspects of this systematic review. These aspects include:

a) gender and its synonyms;
b) social disadvantage and its synonyms;
c) intersectionality and its synonyms;
d) common mental disorders.

Gender keywords were adopted from the ‘Development of a PubMed-Based Search Tool for Identifying Gender and Gender-Specific Health Literature’ (Song et al., 2016). Keywords for 'common mental disorder' (CMD) were chosen from the study ‘Recruitment and Retention Strategies in Mental Health Trials–A Systematic Review’ (Liu, 2018). Social disadvantage keywords were developed from the PROGRESS-Plus inequity framework (O'Neill et al., 2014). In collaboration with my primary academic advisor, we carefully selected keywords to cover the meaning of intersectionality. After this preparation, we searched each eligible paper using specific terms such as ‘intersectionality’, ‘intersectional’ and ‘intersection’ along with terms such as ‘inequal’, ‘social inequal’, ‘marginalize’, ‘multiple inequality’, and ‘inequity’.

It is important in this systematic review to broadly define the concepts of sex and gender when examining potential differences between men and women. Sex refers to the biological characteristics that distinguish males, females and intersex, and these characteristics include hormone variations, reproductive organs, and chromosomes (Springer et al., 2012; Mauvais-Jarvis et al., 2020). Gender, however, is a psychosocial construct that encompasses societal expectations, roles, relationships, behaviours,

attributes, and opportunities considered suitable for men and women (Springer et al., 2012; Mauvais-Jarvis et al., 2020). Furthermore, gender identity refers to an individual's understanding and psychological connection to the societal categories and expectations relating to gender, regardless of whether they accept or reject these expectations (Sherif, 1982).

2.2.2 Study selection

The inclusion and exclusion criteria to determine eligible studies are listed below.

- Inclusion Criteria for Eligible Studies:

1. This systematic review includes only quantitative studies such as cross-sectional, observational, cohort and controlled studies. The main focus of the systematic review is to capture the utilisation of intersectionality in quantitative research techniques. Therefore, only quantitative studies will be considered for incorporation into the analysis.
2. Male and female participants – studies exploring heterogeneity will be included, even if they focus on specific subgroups within the female population.
3. Sample 18 years old or over.
4. Studies examining the relationship between two or more types of social disadvantage (PROGRESS-Plus) with common mental disorders among women.
5. Studies using one of the following analytical strategies used in quantitative intersectionality research (Bauer and Scheim, 2019)**,** including studies that do not explicitly adopt the intersectionality framework but still examine the influence of multiple social identities and the intersection effect:

    - statistical interactions
    - moderators in meta-analysis
    - multilevel modelling
    - moderated mediation
    - person-centred methods
    - decomposition analysis.

6. Study outcomes must be a common mental disorder recognised by the Mental Health Foundation (2016): depression, generalised anxiety disorder (GAD), social

anxiety disorder, panic disorder, obsessive–compulsive disorder (OCD), post-traumatic stress disorder (PTSD), and phobias.

7. Published in English.

(For statistical interactions (first sub-entry under point 5), included studies employ a regression model used in intersectionality research, such as logistic regression, without interaction terms or CART analysis.)

- Exclusion Criteria for Non-Eligible Studies:

1. Qualitative studies.
2. Conference abstract study.
3. Lab-based studies are incompatible with the reason for our study on capturing intersectionality and social disadvantages.
4. Studies including only male or female.

Myself (the first author), and the primary supervisor independently reviewed the titles and abstracts of the identified records. A consensus discussion resolved disagreements about inclusion / exclusion. In the second stage, my supervisor and I independently completed inclusion and exclusion checklists for each full-text paper The level of agreement was 40%, with Cohen's Kappa interpretation score ranging from -1 to 1. A score between 0.4 and 0.6 indicates moderate agreement.

2.2.3 Data extraction

A data extraction form was designed specifically to identify certain information (i.e., country, sampling period, sample size, age, gender, participant characteristics, type of social disadvantage) using PROGRESS-Plus (a data extraction file was piloted and revised before final use). This review was designed to examine ways of incorporating intersectionality into quantitative methods regarding social disadvantage and mental health. The first author (NA) extracted data from all included studies, with assistive collaboration from the primary supervisor (CM) who also independently extracted data from half of the included articles. A dual review (NA)/(CM) compared extracted data, and disagreements were resolved through consensus discussion.

2.2.4 Quality assessment

The quality of the included articles was assessed with the Standard Quality Assessment Criteria – the most suitable tool for evaluating quantitative and qualitative research papers from various fields (Kmet et al., 2004). This assessment includes 14 questions to evaluate the study (e.g., Is the study design evident and appropriate? Is the objective of the study sufficiently described?). Each study has a summary score in the range of 0–1.0, with a higher score representing better quality.

2.3 Results

The search strategy generated a total of 5530 potentially relevant articles. Of these, 439 duplicates were identified and removed. Of the remaining 5091 potentially relevant articles, 4972 studies were screened against title and abstract. The resultant 114 papers were assessed for title and abstract review eligibility, and 70 were excluded for not meeting the specified inclusion and exclusion criteria. In sum, 44 articles were considered for full-text eligibility, and 12 were deemed suitable for the narrative synthesis (see the flow diagram in Figure at the end of 2.3.2).

2.3.1 Summary of study characteristics

Of the suitable 12 studies, three were conducted in the United States of America (Mair, 2010; Rosenfield, 2012; Pabayo et al., 2014), two in Scotland (Green and Benzeval, 2011; Green et al., 2014), one multinational study was conducted in Russia, Poland and Czech Republic (Nicholson et al., 2008) and one study was conducted in each of the following countries: Brazil (Moraes et al., 2017); Iran (Najafi et al., 2020); Canada (Cairney et al., 2014); Sweden (Gustafsson et al., 2016); United Kingdom (Lewis et al., 1998), and Czech Republic (Kuklová et al., 2021).

The population's race was reported in four studies (Lewis et al., 1998; Mair, 2010; Rosenfield, 2012; Moraes et al., 2017), with the reported groups being White, Black, Dark, African American, Native American, Asian, Hispanic and other race/ethnicities. Education level was reported in six studies, with this being school level (primary – university) in four studies (Nicholson et al., 2008; Cairney et al., 2014; Pabayo et al., 2014; Kuklová et al., 2021). In exploring education, different parameters were used. A single study investigated participant demographics using years of schooling (ranging from less than 4 to more than 12 years) (Mair, 2010). In two separate studies, separate types were selected, including specified classifications as Low, Medium, or High (Rosenfield, 2012; Moraes et al., 2017).

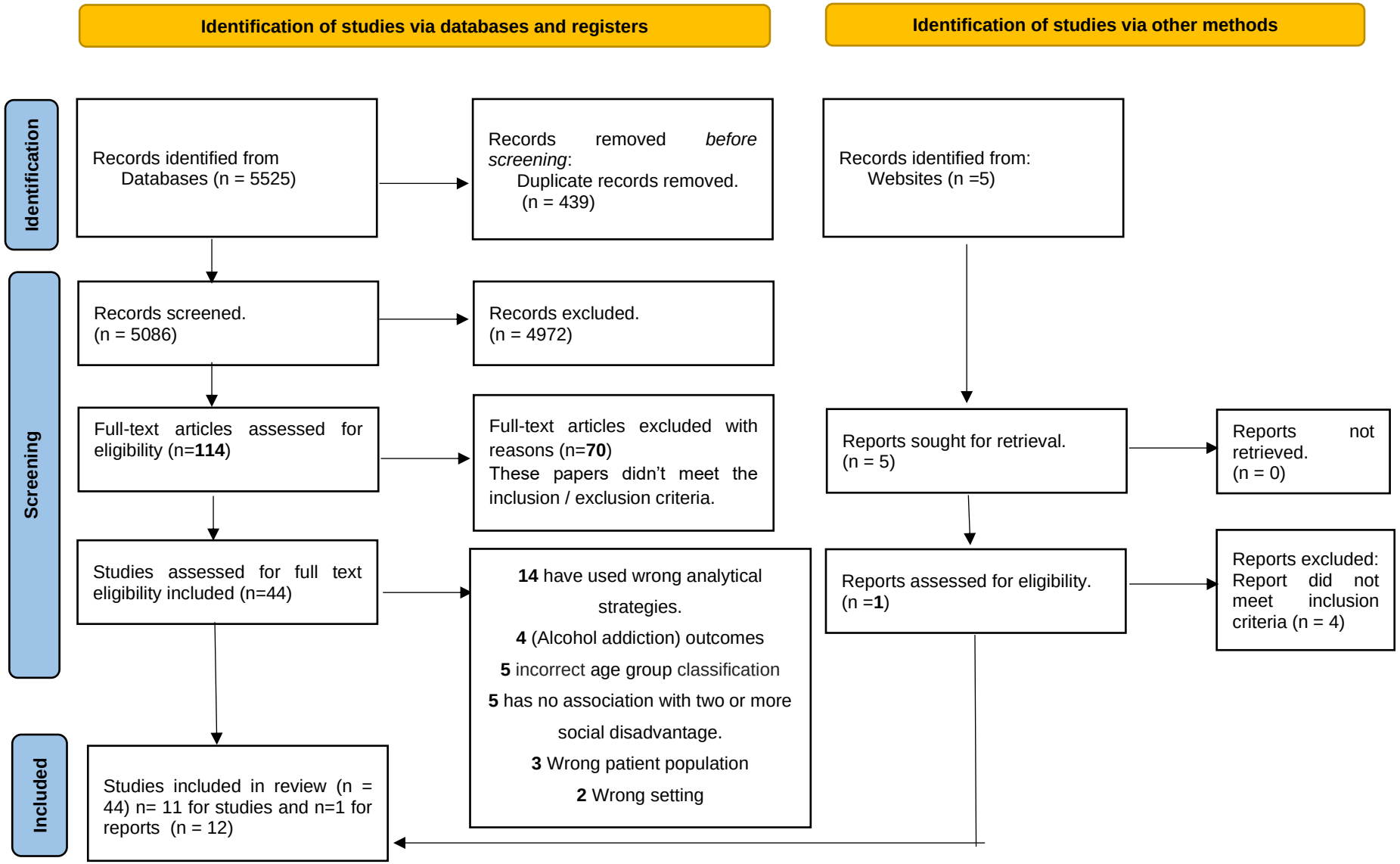
Moreover, qualifications were explored, ranging from No qualification to A-level, as employed by Lewis et al. (1998).

Employment status was reported in two studies – by manual or non-manual occupation in one study (Green and Benzeval, 2011) and full-time or part-time in the other (Lewis et al., 1998). Marital status was reported in seven studies – as single / married /divorced / widowed / never married in three studies (Nicholson et al., 2008; Mair, 2010; Najafi et al., 202); married / cohabitating / formerly married (separated, divorced, or widowed) / never married in two studies (Cairney et al., 2014; Moraes et al., 2017); couple or single in one study (Pabayo et al., 2014); and one-person family units / couples with children / couples without children / single-parent households / respondents living with parents in one study (Lewis et al., 1998). Financial status was reported in six studies – as low income / not low income in one study (Cairney et al., 2014); report of average net wealth in one study (Mair, 2010); report of financial difficulties and ownership of defined household items in one study (Nicholson et al., 2008); household per capita income in one study (Moraes et al., 2017); mean household income in one study (Pabayo et al., 2014); and housing tenure and car access in one study (Lewis et al., 1998).

2.3.2 Type of social disadvantage

Of the 12 overall papers, all reported on gender / gender identity, nine reported on socioeconomic status. Furthermore, six reported on education level, four reported on race / ethnicity, two reported on social cohesion / social ties, one reported on occupation, three reported on age, three reported on social class, and one study reported on marital status.

Figure 3: PRISMA flow diagram of the study selection process (2022)



2.3.3 Type of common mental disorder

All the studies reported affective disorders as common mental disorders, Depression, Generalised Anxiety Disorder (GAD), Social Anxiety Disorder, Panic Disorder, Obsessive-Compulsive Disorder (OCD), Post-Traumatic Stress Disorder (PTSD), and Phobias reported by (Cairney et al., 2014; Gustafsson et al., 2016; Mair, 2010; Pabayo et al., 2014; Rosenfield, 2012; Green & Benzeval, 2011; Kuklová et al., 2021; Nicholson et al., 2008; Moraes et al., 2017); dysthymia (Rosenfield, 2012; Kuklová et al., 2021), hypomanic and manic episodes (Kuklová et al., 2021) as common mental disorders. Studies also reported anxiety disorders, including social anxiety disorder by (Cairney et al., 2014; Kuklová et al., 2021; Nicholson et al., 2008; Moraes et al., 2017); anxiety/general anxiety disorder (Kuklová et al., 2021; Green & Benzeval, 2011); panic disorder (Cairney et al., 2014; Kuklová et al., 2021); obsessive-compulsive disorder (Kuklová et al., 2021); agoraphobia (Cairney et al., 2014; Kuklová et al., 2021).Multiple studies reported personality/behaviour disorders such as neurotic psychiatric disorder (Lewis et al., 1998); anti-social personality disorder (Rosenfield, 2012); conduct disorder (Rosenfield, 2012); and bipolar disorder (Cairney et al., 2014). Furthermore, two studies (Cairney et al., 2014; Kuklová et al., 2021) reported substance use disorders; 1 study reported insomnia (Green et al., 2014); one study reported somatic symptoms and decreased in vital energy (Moraes et al., 2017); 1 study reported anxiety and alcohol use disorders (Kuklová et al., 2021); one study reported phobias (Cairney et al., 2014); one study reported psychiatric distress (Green et al., 2014); and 1 study (Najafi et al., 2020) reported poor mental health as a general description for common mental disorders.

2.3.4 Summary of study design

Overall, 12 papers were accepted for inclusion within the narrative synthesis, of which five were cross-sectional studies (Lewis et al., 1998; Mair, 2010; Gustafsson et al., 2016; Moraes et al., 2017; Kuklová et al., 2021); five were cohort studies (Nicholson et al., 2008; Green and Benzeval, 2011; Cairney et al., 2014; Green et al., 2014; Najafi et al., 2020); one was a longitudinal study (Pabayo et al., 2014); and one was a secondary analysis (Rosenfield, 2012).

2.3.5 Summary of type of data-analytic techniques and statistical methodology

Ten studies used statistical interactions (Lewis et al., 1998; Nicholson et al., 2008; Mair, 2010; Green and Benzeval, 2011; Rosenfield, 2012; Cairney et al., 2014; Green et al., 2014; Moraes et al., 2017; Najafi et al., 2020; Kuklová et al., 2021); one used mediation decomposition analysis (Gustafsson et al., 2016); and one used multilevel modelling (Pabayo et al., 2014).

2.3.6 Summary of the studies' social disadvantage and mental health effects

This section briefly overviews the studies' findings on the intersection of social disadvantage with mental health. To improve clarity, the effects are organised based on each demographic factor such as socioeconomic status, race/ethnicity, educational level, age, marital status, social class, and place of residence.

- Socioeconomic status

Principally, social inequality involves variables that interact with gender, potentially increasing the likelihood of a mental disorder – particularly among women. In this context, 11 out of the 12 studies examined the aspect of socioeconomic status (Lewis et al., 1998; Nicholson et al., 2008; Mair, 2010; Green and Benzeval, 2011; Cairney et al., 2014; Green et al., 2014; Pabayo et al., 2014; Gustafsson et al., 2016; Moraes et al., 2017; Najafi et al., 2020; Kuklová et al., 2021). Among these, seven studies demonstrated an interaction between lower socioeconomic status and the presence of a mental disorder, a relationship that becomes more pronounced when women originate from middle or lower-income backgrounds (Lewis et al., 1998; Nicholson et al., 2008; Green and Benzeval, 2011; Cairney et al., 2014; Pabayo et al., 2014; Gustafsson et al., 2016; Najafi et al., 2020).

Gustafsson et al. (2016) found that mid-income women reported poorer mental health than mid-income men and high-income women. Certain studies have also found statistical interactions with more specific mental disorders. Nicholson et al. (2008) discovered a significant correlation between social inequality and depression in Eastern Europe, linked explicitly to economic circumstances. Their findings showed that women consistently conveyed higher levels of depression than men across all levels of the trajectory variable. This pattern held valid for every country within Eastern Europe. Furthermore, women who experience psychiatric distress and are socioeconomically disadvantaged were additionally

more likely to experience chronic insomnia symptoms, with psychiatric distress more likely to recur or still be present 20 years later than that for higher socioeconomic groups. Applying quantitative methods to socioeconomic status, standard of living and neurotic disorders in the context of the United Kingdom, Lewis et al. (1998) found a strong univariate relation between several socioeconomic variables and the prevalence of neurotic disorders in women, and this has also been reflected in usage of clinical facilities. For example, Cairney et al. (2014) found that women were significantly more likely to have pursued any clinical service with respect to mental health (OR 1.4, $p < 0.001$), and the authors' predictive CART analysis modelling indicated that low-income women aged 23–46 were most likely to use mental health services. Also, Najafi et al. (2020) found that people with lower socioeconomic status were more likely to have poor mental health, as there was a slightly higher concentration of poor mental health among less-advantaged participants.

In a Scottish cohort, Green et al. (2014) identified an association between gender and psychiatric distress, with women in late middle age more likely to develop insomnia symptoms than men. Furthermore, Pabayo et al. (2014) reported a significant cross-level interaction between depression and lower-income women.

- Race/ethnicity

The addition of race / ethnicity as an interaction in the aetiology of mental disorders has been identified in the current review. Four studies demonstrated an interaction between race / ethnicity and mental disorder, especially when present in women with lower socioeconomic status (Mair, 2010; Rosenfield, 2012; Pabayo et al., 2014; Moraes et al., 2017). With a Brazilian cohort, Moraes et al. (2017) identified that common mental disorders are more prevalent in women at lower levels of income, at lower levels of education, and who are Black.

In the context of 'triple jeopardy' as a minority, Mair (2009) observed that Black women might face increased vulnerability due to increasing age, which intersects with being an older woman. This demographic intersection could potentially lead to compounded challenges. Furthermore, race/ethnicity has been identified as a significant determinant in mental health disparities. Rosenfield's (2012) study found that Black females in lower

social classes experienced more significant mental health disadvantages than white males in higher social positions.

- Educational level

Findings on the interaction between educational level and common mental disorders were similar to those on socioeconomic status. Five studies (Lewis et al., 1998; Nicholson et al., 2008; Mair, 2010: Moraes et al., 2017; Kuklová et al., 2021) reported a high association of no education / low education level with common mental disorders, as opposed to lower rates of common mental disorders in persons with high school and/or university / graduate education.

- Age / Marital status

Regarding age, only one study shows interaction: Najafi et al. (2020) found that older adults more likely experience common mental health disorders as opposed to younger persons. Moreover, regarding marital status the systematic findings align with the observations of Najafi et al. (2020), who recognised a correlation between poor mental health and marital status among Iranian adults. It is important to note that although the current study's findings align with the authors results, not all the examined cases offer specific details.

- Social class

The interaction between social class and common mental disorders was explored by Green and Benzeval (2011), who found a non-linear decrease in the prevalence of anxiety with age and a non-linear increase in the prevalence of depression with age in people within the manual social class as opposed to those in the non-manual social class. Lewis et al. (1998) found that people of lower social class status – particularly men – were associated with a higher prevalence of neurotic disorders. Lewis et al. (1998) also found a strong correlation between social class and the prevalence of neurotic disorders in people aged 40–54 years.

- Place of residence

Only one study has shown interaction between a place of residence and poor mental health. Najafi et al. (2020) discovered that people living in Sistan and Balouchestan provinces in Iran had the largest prevalence of poor mental health. All 12 studies recognised gender/gender identity (Mair, 2010; Pabayo et al., 2014; Rosenfield, 2012; Green and

Benzeval, 2011; Green et al., 2014; Nicholson et al., 2008; Moraes et al., 2017; Najafi et al., 2020; Cairney et al., 2014; Gustafsson et al., 2016; Lewis et al., 1998; Kuklová et al., 2021). However, only eight studies showed strong interactions of gender as a variable with common mental disorders. All these studies found that women and girls were more at risk of experiencing and being diagnosed with common mental health disorders than men and boys; irrespective of other factors such as race/ethnicity, education or socioeconomic status, gender is an extremely predominant and strong factor.

2.3.7 Summary of statistical findings

In this systematic review, nine of the 12 studies reported statistically significant findings (summarised in this section), offering valuable insights into social disadvantage and mental health intersections. Analysing the social determinants of mental health service using intersectionality theory and a CART analysis (Cairney et al., 2014), the main effects model (logistic regression) revealed that being female was significantly associated with seeking any service for mental health (OR 1.4 $p < 0.001$). Gustafsson et al. (2016) found that mid-income women experienced poorer mental health compared with both mid-income men (effect size: 0.42, 95% CI: 0.14-0.71, $p < 0.001$) and high-income women (effect size: 0.44, 95% CI: 0.13-0.74, $p < 0.001$). Also, Mair (2010) showed the moderating effect of race and gender on the relationship between social ties and depressive symptoms, with the three-way interaction effects explaining 22.4% of the variation. Moraes et al. (2017) identified a higher prevalence of common mental disorders among females, Blacks with lower education and income levels, and those who are divorced, separated, or widowed, with females having a CMD prevalence of 20.5% compared to 7.4% among males. Nicholson et al. (2008) consistently found higher odds ratios for depressive symptoms in women than men across all trajectory variables in all Eastern European countries, with odds ratios for depressive symptoms being 2.03 (95% CI: 1.75–2.35) for women and 2.10 (95% CI: 1.82–2.43) for men in Russia, 2.31 (95% CI: 2.03–2.62) for women and 2.39 (95% CI: 2.12–2.71) for men in Poland, and 1.64 (95% CI: 1.40–1.94) for women and 1.79 (95% CI: 1.53–2.08) for men in the Czech Republic. Higher-income inequality was associated with an increased risk of depression among women in the fourth quintile (OR 1.37, 95% CI 1.03 to 1.82) and the fifth quintile (OR 1.50, 95% CI 1.14 to 1.96), and women in states with higher-income inequality had a higher risk of developing depression (Pabayo et al., 2014). Lewis et al. (1998) observed a significantly higher prevalence of neurotic disorder in women with no qualifications than those with higher educational

attainment (odds ratio: 1.26, 95% CI: 1.06–1.49). Green and Benzeval (2011) reported a higher prevalence rate of anxiety among females (34.8%), while depression among females was 12.0% in the West of Scotland. Lastly, Najafi et al. (2020) revealed a higher prevalence of poor mental health in women (17.2%) compared with men (13%), indicating a gender difference in the prevalence of mental disorders – that is, to reiterate, a higher rate for women. The reporting of effect measures and statistical results provides a quantitative understanding of variable associations, while the complex interplay among social disadvantage factors and mental health outcomes increases the clarity and comprehensiveness of the systematic review's findings.

Table 1: Characteristics of included studies (Research Project 1)

Author Year Title of Paper Country	Study design	Type of data-analytic techniques and methods	Sample size (n)	Gender (female (%)/ male (%)/ other (%)	Type of social disadvantage	Type of CMD	Evidence of intersectionality relevant to gender reported (Yes/No)	Quality assessment
Green and Benzeval, 2011: 'Ageing, social class and common mental disorders: longitudinal evidence from three cohorts in the West of Scotland' **Scotland**	cohort study	statistical interactions (hierarchical repeated-measures models)	4510	male and female, but the distribution is not specified	• age • socioeconomic status	anxiety depression	yes gender and social class	High Quality
Kuklová et al., 2021: Educational inequalities in mental disorders in the Czech Republic: data from CZEch Mental health Study (CZEMS) **Czech Republic**	cross-sectional study	statistical interactions	3175	male (46%) female (54%)	• education • gender • age group • socioeconomic • health	affective disorders anxiety disorders alcohol use disorders substance use disorders.	no (there was only an interaction effect between gender and education for substance misuse, but this is not	Satisfactory Quality

							included in the list of common mental disorders in this study)	
Najafi et al., 2020: 'Decomposing socioeconomic inequality in poor mental Health among Iranian Adult population: Results from the PERSIAN Cohort study' **Iran**	cohort study	statistical interactions	131,813	male (45%) female (55%)	• socioeconomic status • age group • physical activity • gender • region of residence	poor mental health	yes gender and sex gender and age gender and place of residence	Satisfactory Quality
Rosenfield, 2012: 'Triple jeopardy? Mental Health at the Intersection of Gender, race, and Class' **USA**	cross-sectional study	statistical interactions	7185	male (50%) female (50%)	• gender • race • education	depression anti-social problems.	no	Satisfactory Quality
Cairney et al., 2014 'Exploring the social determinants of mental health service use using intersectionality theory.	cohort study	statistical interactions	1213	male and female, but the distribution is not specified	• place of residence • gender • education	depression social anxiety panic disorder phobias bipolar disorder	yes gender and income	High Quality

and CART analysis' **Canada**					• socioeconomic status	substance abuse agoraphobia		
Green et al., 2014: 'Social Class and gender patterning of Insomnia symptoms and psychiatric distress: a 20-year prospective cohort study' **Scotland**	cohort study	statistical interactions	999	female 54.3 % male 45.7%	• occupation • gender • socioeconomic status	insomnia and psychiatric distress were determined using the twelve-item general health questionnaire.	no	Satisfactory Quality
Gustafsson et al., 2016: 'Meddling with middle modalities: A decomposition approach to mental health inequalities between intersectional gender and middle economic groups in northern Sweden' **Sweden**	cross-sectional studies	mediation decomposition analysis	25585	female 46% male 54%	• gender • education • socioeconomic status	mental health symptoms were assessed using the general health questionnaire -12 (ghq-12).	yes gender and income	Satisfactory Quality
Mair, 2010: 'Social Ties and Depression: An Intersectional	cross-sectional studies	statistical interactions	10441	female 59% male 41%	• race • ethnicity • culture	depression	yes gender and race	High Quality

Examination of Black and White Community-Dwelling Older Adults' **USA**					• gender • socioeconomic status			
Moraes et al., 2017: 'Social Inequalities in the Prevalence of common mental disorders in adults: a population-based Study in Southern Brazil' **Brazil**	cross-sectional studies	statistical interactions	1720	female 55.5% male 44.5 %	• race • gender • education • socioeconomic status	cmd: common mental disorder	no	High Quality
Nicholson et al., 2008: 'Socioeconomic Status over the life course & depressive symptoms in Men & women in Eastern Europe' **Russia, Poland and Czech Republic**	cohort study	statistical interactions	25635	female 47% male 42%	• place of residence • gender • education • socioeconomic status	cmd: common mental disorder	yes gender and sex	High Quality
Pabayo et al., 2014: 'Income inequality among American states	longitudinal study	multilevel modelling	34653	female 52.1% male 47.9%	• place of residence • race • ethnicity	depression	yes	Satisfactory Quality

and the incidence of major depression’ **USA**					• gender • social capital			
Lewis et al., 1998: ‘Socioeconomic status, standard of living, and neurotic disorder’ **UK**	cross-sectional studies	statistical interactions	9570	female 54% male 47%	• occupation • gender • education • socioeconomic status • social capital	cmd: common mental disorder	yes gender and social class	High Quality

2.4 Discussion

This systematic review has sought to address a crucial gap in quantitative intersectionality by focusing on the methods for incorporating intersectionality into understandings of mental health disorders among women.

2.4.1 Overview of findings on intersectionality and multiplicative effects

The findings from previous studies have observed consistent associations between mental disorders and social disadvantage in women. However, the results of this systematic review highlight that the cause of mental disorders in women is not simply the effect of an independent unitary social disadvantage. Instead, it emerges from complex multiplicative and simultaneous interactions, emphasising the indispensability of intersectionality approaches in comprehending and addressing the dynamic health issues relating to gender (Bauer and Scheim, 2019).

This systematic review explored quantitative intersectionality's unique field of research; besides observing pertinent findings, the current study intended to identify the methods used to analyse the various causal factors in the intersections of gender and social disadvantages that lead to mental health disparities. Collecting evidence from studies that used a quantitative methodology to offer precise statistical insights into the interaction effects, this systematic review also showcases the variables of social disadvantages that influence women's mental health disorders.

The term ‘intersectionality’ was initially introduced by Kimberle Crenshaw in 1989 (Crenshaw, 1989), though the first quantitative intersectionality paper appeared 11 years later in 2001. Bauer et al. (2021) stated that quantitative intersectionality analyses offer to explore the research data and the statistical effect on both micro and macro aspects of health issues, solving complicated multiplicative and compound effects within large datasets (Bauer et al., 2021). This quantitative approach to the theory enables policymakers to create strategies for addressing the root causes of health disparities. By illustrating the impact of social disadvantages on mental health disparities in women through statistical techniques involving numbers and percentages, this approach offers a more precise description of intersectionality's impact.

The concept of intersectionality, implanted in feminist theory and discussed by scholars like Hancock (2007), provides a crucial framework for understanding marginalised women (Collins, 2015). While it is predominantly explored through qualitative research, this systematic review used a quantitative perspective on intersectionality to identify useful findings such as those from the quantitative analysis of Moraes et al. (2017), which indicated the complex relationship between lower education and income levels and their impact mental health outcomes. Validating the power of quantitative methodologies offers much to feminist theory in terms of evidencing on the social factors that shape women's mental health experiences.

This systematic review, as noted, identifies the quantitative methods and study designs used in intersectional research to understand women's mental health and social disadvantage and assesses whether particular techniques were beneficial for understanding social disadvantage effects on mental health disorders among women. The findings from the study show that the most commonly used statistical methods were statistical interactions, mediation decomposition analysis, and multilevel model. Statistical interactions, a method in intersectional research, focus on how two or more categories interact to create combined effects. For example, discrimination against Black women is more than just the sum of racism and sexism; in fact, its multiplicative effects imply the descriptions of discrimination when one factor's impact depends on another factor's existence (Else-Quest and Hyde, 2016). Statistical interactions thus allow research to comprehend the multiplicative effects of multiple variables, such as gender, socioeconomic status, and race, on mental health outcomes (Bauer, 2014).

Mediation decomposition analysis allows for the breakdown of the total effect of gender on mental health into direct and indirect effects through socioeconomic status. Because of this approach, the study explored how socioeconomic factors mediate or explain the gender inequality observed in mental health outcomes. Integrating mediation analysis adds depth to understanding how specific social categories contribute to the mental health landscape (Gustafsson et al., 2016).

Multilevel modelling captures the complex interactions between social disadvantage factors at both individual and contextual levels, and this offers insights into the interpretations of mental health outcomes across different groups (Pabayo et al., 2014).

The strategic use of quantitative techniques not only facilitated the extraction of data from the studies but also enabled a robust analysis of the multiplicative effects of social disadvantages on women's mental health (Bauer et al., 2021). Employing quantitative methods to analyse intersectionality thus helps to present accurate statistical data, including prevalence and numerical figures, which are significant indications of effective research; statistical data works as compelling evidence that guides the policymaker in terms of practical solutions, such as implementing specific policies for improving women's economic status, addressing gender inequalities and promoting mental health outcomes for marginalised women. An ideal example from the systematic review comes from a study by Lewis et al. (1998), which investigated complex socioeconomic indicators on neurotic disorders using statistical interactions. The authors observed a significantly higher prevalence of neurotic disorder in women with no qualifications than those with higher educational attainment (odds ratio: 1.26, 95% CI: 1.06–1.49). The same study also provided other valuable insights: this analysis revealed that 10% of neurotic disorders are linked to living standards. Such insights assist policymakers in designing targeted interventions that address specific socioeconomic inequality and enhance public health to improve mental health outcomes for women as well as men nationwide.

This systematic review facilitates understanding of if and how particular quantitative techniques help identify factors relating to social disadvantage effects on women’s mental health. In the analyses of 12 reviewed studies, nine have shown that the most significant variable contributing to social disadvantages affecting women's mental health is socioeconomic status (Lewis et al., 1998; Nicholson et al., 2008; Mair, 2010; Cairney et al., 2014; Pabayo et al., 2014; Gustafsson et al., 2016; Moraes et al., 2017; Najafi et al., 2020; Kuklová et al., 2021). The analysis by Moraes et al. (2017) found a prevalence of 20.5% of common mental disorders in women with lower education levels and occupations with lower socioeconomic status compared to 7.4% among men. Quantitative data on social inequality (e.g., income level, education and occupation) is linked to a high

prevalence of common mental disorders in women. Results help identify these inequalities' causes and potential solutions (Bauer, 2014).

Solutions can also be extracted from quantitative results of intersectionality analyses, such as improving marginalised women's educational opportunities and enhancing their skills as these two endeavours will elevate their financial income and give them independence, which will help improve their mental health.

A synthesis of the systematic review findings reveals a significant and consistent interaction between socioeconomic status, gender, and race/ethnicity that affects common mental disorders. Women from ethnic minorities with lower socioeconomic face compound challenges and experience increased rates of mental disorders. Therefore, incorporating a quantitative intersectional lens will help to investigate the accumulative impact of various social indignities to determine the root causes of mental health disorders among women. Such actions can help policies and programmes tackle gender inequality and effectively promote mental health and well-being among marginalised women.

2.4.2 Strengths and limitations

One of the strengths of the systematic review is the heterogeneity of methodologies and population of the included studies, which is important to consider when interpreting the findings. The review highlights consistent trends and associations between social disadvantage and mental health outcomes, and the diversity in sample sizes and study designs, such as cross-sectional, cohort and longitudinal studies, along with the use of various measurement tools to estimate common mental disorders and social disadvantage variables, and indeed the demographic characteristics, including age, race/ethnicity, and socioeconomic status, all offer much to this review. Specifically, for example, certain variations show diversity in the factors that influence mental health and underline the complexity of intersectionality relations between social disadvantage and mental health outcomes.

In terms of limitations of the systematic review, the restricted number of studies is far from ideal but reflects the lack of quantitative research papers that conduct such research to investigate mental health challenges among women and in relation to gender inequality.

Nevertheless, the results indicate that self-reported data collection methodology is preferred with such study designs, being used within ten of the 12 studies (Lewis et al., 1998; Nicholson et al., 2008; Mair, 2010; Green and Benzeval, 2011; Cairney et al., 2014; Green et al., 2014; Gustafsson et al., 2016; Moraes et al., 2017; Najafi et al., 2020 Kuklová et al., 2021). Self-reported data is a common method for gathering information about individuals' social identities. Self-reported data means that participants in these studies are asked to describe their social identities, such as gender, race, ethnicity, and socioeconomic status. Their interpretations of personal identity influence people's self-reporting, which can present perceptions bias in reporting the data (Schellings and Van Hout-Wolters, 2011).

In conclusion, to the best of the researcher's knowledge this systematic review is the first to collectively analyse the quantitative methods and study designs used in quantitative intersectional research on mental health disorders among mixed-gender populations to determine whether these techniques are practical and effective for quantitative intersectionality research. The 12 observational studies included in this review highlight the use of quantitative intersectionality methods to explore the complex relationships among various social disadvantages and effects on common mental disorders. By representing accurate statistical results, quantitative intersectional research can guide policymakers to improve women's mental health.

In light of the findings from the systematic review, future research is recommended to explore the intersection of social inequalities' effects on women's mental health using the quantitative technique of intersectionality with large-scale data. The accurate statistical results can lead to a better understanding of women's social identity from an intersectionality perspective and help to address social inequalities and thereby improve women's mental health.

Chapter 3

The Secondary Data Analysis (Research Project 2): The Impacts of Multiple Social Disadvantages on Risk of Depression In Saudi Arabia

3.1 Introduction

Mental health is a significant and rising public health concern worldwide. According to the Global Burden of Disease (GBD) report, depressive disorders are the third leading contributor to Years Lived with Disability worldwide (GBD 2019 Mental Disorders Collaborators, 2022).Common symptoms of depression include low mood, a lack of interest in previously appreciated activities, and sleep and/or appetite disturbance, which all affect an individual's ability to perform at work and live functionally at home (American Psychological Association, 2019). About 280 million individuals worldwide are believed to suffer from depression (Global Health Data Exchange, 2019). Depression can be a serious health issue (World Health Organization, 2020) and can have a significant impact on physical health, increasing the risk of cardiovascular disease (Dhar and Barton, 2016) and overall morbidity and mortality (Kinser and Lyon, 2014; Mattina et al., 2019). Additionally, the prevalence of depression increased during the COVID-19 pandemic (Santomauro et al., 2021).

Females have a higher prevalence of depression than males. Epidemiological studies have shown that the international annual prevalence of major depression was 5.5% in females and 3.2% in males, indicating that females had a 1.7 times higher incidence of depression than males (Albert, 2015). Various biological and social risk factors may explain disparities in depression between males and females. Biological risk factors for depression contain genetic and neurobiological characteristics that contribute to mood vulnerability disorder. Genomic studies have shown gender-specific genetic variations that may contribute to this phenomenon. Human genes such as 5HT2A, TPH, and COMT have been recognised as particular genetic profiles that amplify the risk of depression in females and influence the mental health of males (Zhao et al., 2020). Furthermore, the genetic variations within the serotonin and dopamine systems, like the serotonin transporter gene (5-HTTLPR) and dopamine receptor genes, can regulate neurotransmitter levels,

potentially affecting depression vulnerability (Zhao et al., 2020). Gender-specific effects of these genes further underscore the genetic basis for differing depression rates between males and females. Additionally, genome-wide association studies (GWAS) have identified specific genetic markers associated with gender differences in depression, reinforcing the notion that biological and genetic factors play a pivotal role in the prevalence of depression in females and mental health disparities among genders (Zhao et al., 2020).

According to social risk factors hypothesis, females are more frequently exposed to cumulative social and economic disadvantage because of different structural positions: lower levels of education, lower income, less skilled occupations, poverty, increased likelihood of widowhood and financial difficulties (Eugenia Alvarado et al., 2007; Albert, 2015). Females also face inequalities in unequal distribution of socioeconomic resources, and this leads to lower earnings, particularly among employed females, with a 23% gender wage gap compared to males. Unequal pay increases the risk of depression for women because of the cumulative impact of multiple social disadvantages along with lower income adding to mental distress for women, regardless of similar work responsibilities (United et al., 2017).). When exploring potential differences between males and females, it is critical – as has been previously noted – to understand the meaning of sex and gender. Gender is a psychosocial construct containing societal expectations, roles, relationships, behaviours, attributes, and opportunities considered suitable for males and females (Springer et al., 2012; Mauvais-Jarvis et al., 2020). Gender identity, meanwhile, refers to an individual's understanding and psychological connection to the societal categories and expectations related to gender, regardless of whether they accept or reject those expectations (Sherif, 1982). However, sex refers to the biological factors distinguishing males, females, and intersex, encompassing hormone variations, reproductive organs, and chromosomes (Mauvais-Jarvis et al., 2020; Springer et al., 2012).

Crenshaw developed the word ‘intersectionality’ in 1989 to refer to the interaction and interplay of multiple identities defined differentially by domination and oppression. When multiple social statuses are considered simultaneously, their interactions also affect health outcomes (Crenshaw, 1989). Intersectionality theory is a collection of ideas and principles that serve as a framework for empirical research on social issues (Veenstra, 2011), and has received the designation of "most significant theoretical contribution to female studies in

health and social phenomena" (Harari and Lee, 2021, p.146). Despite the popularity of intersectionality theory and the growing body of intersectionality research that incorporates both qualitative and quantitative methodologies, very little quantitative research explicitly applies intersectionality theory to health outcomes (Veenstra, 2011).

To comprehend the concept of intersectionality in quantitative research, it is important to distinguish between additive and multiplicative effects methods when dealing with multiple social disadvantage variables. Quantitative intersectionality explores the disparity in variable outcomes using additive and multiplicative effects methods (Abichahine and Veenstra, 2017). Therefore, social identities have different values and significant results that depend on the method used and how the data interact quantitatively as predictors of health outcomes (Becker and Cote, 1994; Veenstra, 2011). For example, when examining statistical interactions among social identity variables such as sex, education, and socioeconomic status, the multiplicative effects are more significant than additive effects because an additive effect implies a consistent and separate influence of a variable on an outcome, regardless of other variables. Conversely, a multiplicative effect is influenced by the interdependence of variables (Becker and Cote, 1994; Veenstra, 2011). The intersectional approach proclaims that simultaneous disadvantages are more noticeable than those indicated by an additive model in health disparities outcomes. The additive methods are based on the variables' summation, while the multiplicative approach depends on their interaction (Becker and Cote, 1994). All this implies that the simultaneous effect of multiple disadvantages performs multiplicatively, leading to a more significant impact on health outcomes (Becker and Cote, 1994).

The concept of intersectionality has been gradually introduced into studies on health, providing scope and depth to approaches to understanding health inequalities (Trygg et al., 2019). Even though intersectionality is a holistic approach, quantitative techniques explain the complex interaction of individuals' identities and people's experiences with multiple social dimensions, including race, gender, and socioeconomic status. This involves combined effects to analyse the data, and whether these be additive or multiplicative will help discloses hidden social inequalities that influence mental health struggles faced by those at the intersections of multiple marginalised identities, which traditional analyses approaches have overlooked (Jackson et al., 2016). In incorporating quantitative

intersectionality analyses, certain researchers, policymakers and health practitioners can identify the root causes of mental health inequities and this enables them to develop effective strategies for addressing mental health issues.

Previous use of the quantitative intersectionality approach to explore the risks of depression has improved understanding of the complex roots of inequality that contribute to causes of depression (Evans and Erickson, 2019). In a Canadian based study, Wu (2003) found da that the multiplicative effect of combined social identities of race and socioeconomic status could exponentially increase the risk of depression. Similarly, Ostrove et al. (1999) observed interactions between socioeconomic status and race in the United States, predicting self-rated health and depression, which highlights the interaction between these variables in shaping mental health outcomes.

The current project investigates the interaction between social disadvantage and the risk of depression among Saudi females using the National Survey Data from the Saudi Food and Drug Authority (NSSFDA). It applies quantitative intersectionality methods to explore the risk of depression among women, using the social disadvantages present from the survey's social demographics to test the combined effect (multiplicative or additive) of social demographics on the risk of depression. This particular project hypothesises that the intersection of sex, age, marital status, education level, employment status, and family income at the macro-levels of Saudi society increases depression at the individual level. In examining this it proposes three specific research questions:

1) Is there a significant difference in the risk of depression between males and females in Saudi Arabia?
2) How do multiple social disadvantages (sex/income/education/employment status) interact to impact risk of depression in Saudi Arabia?
3) Is there evidence for additive or multiplicative effects of the interaction of multiple social disadvantage on depression in Saudi Arabia?

3.2 Methods

3.2.1 NSSFDA study design

This research project conducted a secondary data analysis on the NSSFDA, authorised by The Saudi Food and Drug Authority Ethics Committee (SFDA18-0004). This cross-sectional nationwide survey was conducted among Saudi residents aged ≥ 18 years, and the current research used a stratified quota sampling technique to get an equal distribution of participants across the 13 regions of Saudi Arabia. Data were collected between March and August 2018. The research employed a web-based computer-assisted phone call method, with each call lasting approximately 10 minutes. The QPlatform® data collection system incorporated eligibility and sampling modules to control sample distribution (Althumiri et al., 2018). The study aimed to recruit Arabic-speaking Saudi residents (n = 3699). For recruitment, a randomised phone number list was generated from a national database, including the Sharik database, which participates in health research. Initial contact was established with 3,640 participants via phone calls, while the remaining 59 participants engaged in face-to-face interviews conducted in public venues such as shopping malls (Althumiri et al., 2018). After data cleaning and thorough analysis of coded responses, a total of 3408 participants remained, with 1655 females and 1753 males.

3.2.2 Secondary data analysis

3.2.2.1 PROGRESS-Plus

The PROGRESS-Plus framework is suitable for investigating the interaction effects of multiple social disadvantages on mental health (Cochrane Methods Equity, 2022). This framework builds on fundamental concepts that help evolve our comprehension of health inequalities originating from biological and social health determinants. It also aligns with the agenda of improving equal opportunities and implementing anti-discrimination regulations (Oliver et al., 2008).

Moreover, the PROGRESS-Plus framework allows the researcher to apply interactional analyses, which help to identify socially marginalised groups and individuals facing vulnerabilities systematically (Oliver et al., 2008). It includes the following types of social disadvantage: place of residence, race/ethnicity, occupation, sex, religion, education, social capital, and socioeconomic status. The Plus components were added to the original PROGRESS framework and are as follows:

1. personal characteristics associated with discrimination (e.g., age, disability);
2. features of relationships (e.g., smoking parents, excluded from school);
3. time-dependent relationships (e.g., leaving the hospital, respite care, other instances where a person may be temporarily at a disadvantage).

The specific components of PROGRESS-Plus that were used in this research project were determined by the data available from the NSSFDA survey (sex/income/education level/ employment status).

3.3 Survey measures

The dependent variable 'risk of depression' was assessed using the Patient Health Questionnaire-2 (PHQ-2) (Kessler et al, 2002). (PHQ-2) is a widely used screening instrument developed to estimate the risk of depression in individuals. It was introduced to help healthcare professionals identify individuals who may be at risk for experiencing symptoms of depression. The PHQ-2 consists of two simple questions that ask individuals to reflect on their experiences over the past two weeks:

1. Over the last two weeks, how often have you been bothered by feeling down, depressed, or hopeless?
    - Never: 0
    - Some days: 1
    - More than half of the days: 2
    - Nearly every day: 3

2. Over the last two weeks, how often have you been bothered by having little interest or pleasure in doing things?
    - Never: 0
    - Some days: 1
    - More than half of the days: 2
    - Nearly every day: 3

Responses ranged from 'not at all' (0) to (3) 'nearly every day'.

The total score = Score for Question 1 + Score for Question 2

Make the total of (6) number of responds with a score of 3 or higher is suggested as a cut-point for depression screening. The scale ranges from 0–6, where a cut-off score of 3 is the optimal cut-off point for screening purposes. Therefore, we used a cutoff score of 3 or higher to make the score dichotomous or binary variables as when entering the data into

SPSS, create a new variable (Risk of Depression) to represent the dichotomous outcome with a value of '1' to participants categorised as 'High risk of depression' and '0' to participants categorised as 'Low risk of depression.'

- Risk of Depression :
- 1 = High risk of depression (yes = depressed): Total score ≥ 3
- 0 = Low risk of depression (no = not depressed): Total score < 3

PHQ-2 is a straightforward tool for evaluating the risk of depression by inquiring about feelings of sadness and a lack of interest over the past two weeks. It serves as a valuable initial screening tool to identify depression symptoms and low mood (Kessler et al, 2002).

Variables collected for the NSSFDA study on exploring the risk factors of depression with the intersection of social disadvantages in KSA were selected for secondary analysis based on the PROGRESS-Plus framework and with the consensus process involving all research team members. These variables included sociodemographic characteristics as independent variables, such as sex, age, marital status, education level, employment status, and family income. All the independent variables were converted to categorical variables for the purpose of the analyses.

Age: This was converted from a continuous variable into categorical variables using a median split (18-36 and ≥37) to make the analysis more straightforward.

Marital status : The question in the NSSFDA survey was, what is your Marital status ? and the answer selection are 4

1. I had never married.
2. Married
3. widow
4. Divorced

Marital status variable was changed from multivariable to dichotomous or binary variables containing just two categories (Married / Not Married)

Education: The question in the NSSFDA survey was, 'What is the highest level of education you have achieved?' The response was measured on an eight-point scale.

1 = not completed / elementary education
2 = primary certificates

3 = intermediate certificate
4 = high school diplomas
5 = diplomas
6 = bachelor - university
7 = masters
8 = PhD).

The Education variable was changed from multivariable to dichotomous or binary variables containing just two categories. This alteration to the dataset helps statistical analyses and facilitates straightforward comparisons, limiting complexity in the analyses.

- ‘Less than bachelor’s degree’
- ‘Bachelor’s degree and higher study’

Employment status: The question was, 'What is your employment status? The answer was measured on a nine-point scale.

1 = employed at a governmental institution
2 = employed at a private institution
3 = self-employ
4 = seeking employment
5 = home worker
6 = retired
7 = unable to work
8 = student
9 = looking for a job.

The Employment status variable was changed from multivariable to dichotomous or binary variables containing just two categories.

With a new dichotomous employment status:
0 = unemployed (categories 4, 5, 6, 7, 8, 9)
1 = employed (categories 1, 2, 3)

This alteration to the dataset helps statistical analyses and facilitates straightforward comparisons, limiting complexity in the analyses.

Family income: 'What is the family's total monthly household income for all members of the family? The answer was calculated on a four-point scale.

1 = less than 5000 riyals
2 = from 5,000 riyals to less than 10,000 riyals
3 = from 10,00 riyals to less than 15,000 riyals
4 = 15, 000 or more, 444= not to disclose).

The Family income variable was changed from multivariable to dichotomous or binary variables containing just two categories This alteration to the dataset

helps statistical analyses and facilitates straightforward comparisons, limiting complexity in the analyses.

- <’ 10,000 riyals’
- ‘>10,000 riyals’

In our research, we conducted a data-cleaning process that involved excluding participants who chose not to respond to specific survey questions. We took this step to ensure the quality and accuracy of our following statistical analysis.

- To provide context, 232 respondents did not provide information about their employment status, and 551 participants (constituting 18.7% of the total 3,408 participants) chose not to disclose their family income information. After completing the data-cleaning process and fitting a multivariate binary regression model (a larger model) to the variables, we employed a backward stepwise approach. This led us to a final dataset containing 2,977 participants, which included 1,613 males and 1,364 females. This refined sample size was then used for our subsequent statistical analysis, ensuring the robustness and reliability of our findings.

3.4 Data analysis

All analyses were conducted using the SPSS 28 IBM statistical software (IBM Corp, 2021). The sex frequency distribution was compared to other sociodemographic characteristics such as age, marital status, level of education, employment status, family income, and risk of depression using descriptive statistics. The marital status data shows that among males, 75.9% were married, and 24.1% were never married. Among females, 64.4% were married, and 35.6% were never married. Statistical significance was determined at $p < 0.05$. Significant predictors of depression risk were determined using binary logistic regressions.

A logistic regression model was used to explore risk of depression within the Saudi Arabian cohort using a backward stepwise logistic regression. Based on the intersectional approach described above, this study used two modelling approaches to explore the impact of multiple social disadvantages on the risk of depression. The first was additive and the second multiplicative. The additive technique used multivariate logistic regression modelling that included sex, marital status, education, employment status, and family income as independent variables on the risk of depression. The main effects model focused on each variable independently used as a foundational approach to assess depression risk.

This main effects model acted as a baseline for following intersectional analyses. A potential multiplicative effect of multiple social disadvantages was modelled using statistical interactions among sex, marital status, education, employment status, and family income for risk of depression. If the two-way interactions were statistically significant, this would suggest a multiplicative effect of multiple social disadvantages. If the interaction was nonsignificant, however, then a multiplicative intersectional effect did not exist in this model. The full logistic regression model for analysing depression risk factors involved a six-step approach, as Hosmer et al (2013) advocated a six-step approach to model building using logistic regression for analyses.

Step 1

The study conducted a series of bivariate analyses to examine the relationship between various predictor variables and the outcome variable. This approach aimed to select variables that would be carried forward for multivariate analysis. The predictor variables considered for analysis were Gender, Age, Education Level, Family Income, Employment Status, and Risk of Depression. Notably, marital status was excluded from the analysis due to the belief that it does not significantly contribute to social disadvantage or have a substantial impact on the risk of depression. A test significance of p-value of < 0.25 was used for this initial stage to screen variables for their potential relevance to the risk of depression. Only variables that met the criteria were taken forward to the multivariate analysis.

Step 2

A multivariate binary regression model (larger model) was fit to the variables (sex, age, education level, employment status, family income) that met the criteria in stage one ($p < 0.25$). A backward stepwise logistic regression model was conducted to sequentially remove nonsignificant variables, developing a smaller model that contained only statistically significant variables (Wald statistic $p < 0.05$). The fit of this smaller model was compared to the larger multivariate regression model (calculated by the difference in log-likelihoods and interpreted using the chi-squared distribution).

Step 3

The coefficient values (beta) for each variable in the smaller model were compared to the beta values in the larger model. If a change in beta of ±20% between the two models wasobserved, this indicated that variables excluded were important to the model, in terms of adjusting an effect. These were then entered back into the smaller multivariate model.

Step 4

Variables that were excluded at Step 1 were entered (forced entry) one at a time into the smaller multivariate model (identified at the end of Step 3) to test their contribution to the model (assessed using the Wald statistic $p < 0.05$). Although they were not independent predictors of depression risk at stage one, re-entering these variables into the smaller model tested whether they make a significant contribution to the model in the presence of other contributing variables.

Step 5

The model at the end of Step 4 is the preliminary main effects model. Interactions between the variables in this were assessed for significance – one at a time using log-likelihoods to test their significance ($p < 0.05$). Interactions that were conceptually plausible and statistically significant were entered (forced entry) into the smaller model. The significance of all included interactions was then assessed using the Wald statistic, with any nonsignificant interactions ($p > 0.05$) removed from the model. The variables remaining in the model represented the final main effects model.

Step 6

The overall fit of the final main effects model was assessed by the Hosmer-Lemeshow goodness of fit statistic (Hosmer et al, 2013). A large *p*-value ($p > 0.10$) indicates a good fit of the model relevant to the data (Hosmer et al, 1980). The final model was assessed to ensure it met the assumptions of logistic regression. Residuals were checked using standardised residuals (< 5% outside ±1.96) and Cook's assumption (< 1). The assumption of multicollinearity (tolerance < 0.10 and VIF > 10) was also assessed (Hosmer et al, 2013) This section summarises a complete six-step approach to forming a logistic regression model to analyse the risk factors associated with depression. The method involves systematic variable selection, model comparison, and evaluation steps to reach the final main effects model. Each step, guided by statistical criteria and significance tests, clarifies the model's design and assesses its goodness of fit.

3.5 Results

3.5.1 Participants' characteristics and the bivariate analysis

Of the 3408 participants in the NSSFDA, 431 were at high risk of depression and 2977 were at low risk of depression. Females (OR= 2.46; 95% CI 2.0, 3.04: p< 0.001) had a significantly greater odds of depression in the bivariate analyses (**Error! Reference source not found.**). Individuals with higher levels of education (OR= 0.82; 95% CI 0.67,

0.98: p=0.47) and people in employment (OR= 0.65; 95% CI 0.53, 0.8: p<0.001) had a statistically significant lower odds of depression.

- **Table 2: Gender and Sociodemographic characteristics of the participants.**

Sociodemographic characteristics	Male (n=)		Female (n=)		Odds Ratio	CI (95%)		p-value
	N	%	N	%		Lower bound	Upper bound	
Age								
18-36 (Ref)	881	50.3%	869	52.5%	Ref	Ref	Ref	Ref
≥37	872	49.7%	786	47.5%	0.91	0.79	1.045	.189
Marital status								
Never Married (Ref)	423	24.1%	589	35.6%	Ref	Ref	Ref	Ref
Married	1330	75.9%	1066	64.4%	0.57.	0.49	0.67	<.001
Level of education								
Less than Bachelor study (Ref)	783	44.7%	820	49.5%	Ref	Ref	Ref	Ref
Bachelor and higher study	970	55.3%	835	50.5%	0.82	0.72	0.94	.004
Family Income								
< 10,000 Riyals (Ref)	670	42.8%	721	55.8%	Ref	Ref	Ref	Ref
>10,000 riyals	896	57.2%	570	44.2%	0.61.	.510	0.69	<.001
Employment status								
Unemployed (Ref)	363	20.7%	1098	66.3%	Ref	Ref	Ref	Ref
Employed	1390	79.3%	557	33.7%	0.13	0.11	0.15	<.001
Risk of depression								
No (PHQ <3 (Ref)	1613	92.0%	1364	82.4%	Ref	Ref	Ref	Ref
Yes (PHQ2 ≥ 3)	140	8.0%	291	17.6%	2.46	1.98	3.05	<.001

Table 3: Participants' sociodemographic characteristics and risk of depression

Sociodemographic characteristics	**Risk of Depression**				**Odds Ratio**	**CI (95%)**		**p-value**
	No	%	Yes	%	Odds Ratio	Lower bound	Upper bound	
Sex								
Male (Ref)	1613	54.2%	140	32.5%	Ref	Ref	Ref	
Female	1364	45.8%	291	67.5%	2.46	1.98	3.05	<.001
Age								
18-36 (Ref)	1520	51.1%	230	53.4%				
≥37	1457	48.9%	201	46.6%	0.91	0.75	1.12	.371
Level of education								
Less than Bachelor study (Ref)	1381	46.4%	222	51.5%	Ref	Ref	Ref	
Bachelor and higher study	1596	53.6%	209	48.5%	0.82	0.67	0.8	.047
Family Income								
< 10,000 Riyals (Ref)	1216	48.1%	175	53.0%	Ref	Ref	Ref	
>10,000 riyals	1311	51.9%	155	47.0%	0.82	0.65	1.03	.094
Employment status								
Unemployed (Ref)	1236	41.5%	225	52.2%	Ref	Ref	Ref	
Employed	1741	58.5%	206	47.8%	0.65	0.53	0.85	<.001

3.5.2 Multivariate analysis and final model (steps 2–6)

Sex, level of education, family income and employment status were all associated with the risk of depression at a level of $p < 0.25$ and were taken forward to the multivariate analysis (**Error! Reference source not found.**).

The backward stepwise logistic regression multivariate model (**Error! Reference source not found.**) found that sex and education level were the only variables retained in the final model as significant, combining to have an additive effect on the risk of depression. No interaction terms were significant and are not shown in the final model, suggesting that female sex and level of education did not have a multiplicative effect on the risk of depression (**Error! Reference source not found.**).

Table 4: Final multivariate logistics regression model for the association between sociodemographic characteristics of participants and risk of depression

	B	S.E.	Odds Ratio (95% C.I.)	P-value
Sex	.753	.120	2.12 (1.68, 2.78)	< 0.001
Education Level	-.243	.118	0.79 (0.62,0.99)	0.40

Table 5: The interaction of sex and level of education on risk of depression

		Level of education				
		Less than bachelor's degree		Bachelor's degree or higher		
		Low risk/ high risk (N)	High risk depression (%)	Low risk/ high risk (N))	High risk depression (%)	Odds ratio (95% CI)
Sex	Female	661/159	19.4%	703/132	15.8%	1.3 (1.0 to 1.7; p =0.06)
	Male	720/63	8.0%	893/ 77	7.9%	1.0 (0.7 to 1.4; p= 0.93)
Odds ratio (95% CI; p-value)		2.8 (2.0 to 3.7; p < 0.001)		2.2 (1.6 to 2.9; p < 0.001)		

- The Hosmer and Lemeshow goodness of fit test for the final model indicated a good fit (X2[2] =1.7, $p > 0.41$). This statistical test assesses how well a logistic regression model fits the observed data. The result ($X^2 = 1.7$, $p > 0.41$) suggests the model fits the data well. The X^2 value of 1.7 is associated with a p-value (probability) greater than 0.41, indicating that the model's fit is statistically acceptable.

- Collinearity Diagnostic and Tolerance Test: Collinearity refers to a situation where two or more predictor variables in a statistical model are highly correlated, affecting the model's reliability and interpretation. The tolerance test examines collinearity by calculating the tolerance value for each predictor. A high tolerance value suggests low collinearity. The text states that the collinearity diagnostic and the tolerance test confirmed a good model fit, implying that no significant collinearity issue exists.

Since sex and education were both included in the final model but there was no significant interaction between these two variables, an additional post-hoc analysis explored the

relationship between sex, level of education, and risk of depression further. Table 4 provides the number and percentage of females and males, with different levels of education, at low and high risk of depression. Females have greater odds of being at higher risk of depression compared to men in both the lower (OR 2.8, 95% CI 2.0 to 3.7; $p < 0.001$) and higher education (OR 2.2, 95% CI 1.6 to 2.9; $p < 0.001$) groups, which suggests that education may not have a significant effect on the sex inequalities in mental health experienced by females in Saudi Arabia. However, the odds of females with lower levels of education being depressed is approaching significance (OR 1.3, 95% CI 1.0 to 1.7; $p =0.05$) compared to females with a bachelor's degree or higher level of education. This suggests that education may influence risk of depression within females, whereas there does not seem to be any effect of education on the risk of depression in males (OR 1.0; 95% CI 0.7 to 1.4; $p= 0.93$).

3.6 Discussion

This research project used data from the NSSFDA to examine the relationship between depression risk and demographic factors such as sex, level of education, family income and employment status. A multivariate analysis using backward stepwise logistic regression found that only sex and education level were retained as significant variables in the final model. Since our study found no statistical interaction, sex and level of education seem to have an additive effect on the risk of depression. However, the results from the post-hoc analysis suggest that a multiplicative effect may exist and that supporting females to access higher education is likely to alleviate the risk of depression.

3.6.1 Comparison with previous studies in Saudi Arabia

This project agrees with the findings of Alosaimi et al. (2014), who found the most common factor associated with mental health issues to be sex, and they noted that symptoms of sadness and anxiety were more prevalent in females than in males. Additional significant variables contributing to the high prevalence of depression among females were a lower level of education, unemployment, and a lower monthly family income.

The results of the first ever Saudi National Mental Health Survey (SNMHS) were recently published, and this examined the 12 month and lifetime prevalence of common mental health problems (Altwaijri, et al, 2020). Similar to the current research project, that data

shows that females were at higher risk of depression and anxiety. Education level was not found to have a significant association with the 12-month prevalence of any type of mental health problem (Altwaijri, et al, 2020a). However, in contrast to our findings the lifetime prevalence of depression, anxiety, and eating disorders was significantly higher in participants with higher levels of education (Altwaijri, et al, 2020b). The contradictory associations between education level and risk of mental health problems in our study and the SNMHS highlight the need for further research examining the relationship between education level and mental health in Saudi Arabia.

3.6.2 Interpreting the key findings.

Two key findings emerged from this project.

1) Sex and the risk of depression

In keeping with previous studies in KSA (Al-Zahrani et al., 2021), the current research reported that Saudi Arabian females have a higher risk of depression than males. Notably, Saudi Arabian females have less liberty and rights than males and are often vulnerable to discrimination and violence (Human Rights Watch, 2021). Males are also granted authority over females in Saudi Arabia, which may contribute to many forms of inequality through sex segregation, guardianship (females must seek permission for primary life decisions from their guardian), and violence against females (Aldosari, 2017). Sex roles and expectations are based on the higher social status that males are afforded in Saudi society, and such roles are rigorously enforced through legal and social mechanisms. Consequently, females may find that their access to public services is restricted, and cultural justifications of sex norms limit the independence of females (Aldosari, 2017). In this way, depriving females of fundamental freedoms and regular and unrestricted participation in society seems an underlying risk factor for depression (Almuneef et al. 2017). Risk factors may also be traced back to the childhoods and developmental experiences of females. For example, Almuneef et al.'s (2017) study with 10,156 participants (48% females) revealed that more female respondents (65%) were affected by adverse childhood experiences compared with males (35%). The higher prevalence of adverse childhood experiences reported by females may be because of the cultural role of females in Saudi Arabia, where males are more privileged than females and have more freedom in the outside world compared with females (Almuneef et al. 2017).

2) Educational effects on the risk of depression

The current research found that the effects of education on the risk of depression were largely in the form of higher levels of education reducing the risk of depression within females. Higher levels of education can give people a sense of purpose, social support and access to economic opportunities, all of which can help to reduce the risk of depression (Bauldry, 2015). Education can also help people learn the skills and knowledge they need to deal with stress and problems in a healthy way, which may also lead to better mental health (Bauldry, 2015).

The data suggests that access to education may have a protective effect on the risk of depression in females and reduce inequalities in mental ill-health. However, since this effect was only approaching statistical significance, further research is needed to examine this further in a larger sample size. This is nevertheless a potentially important finding because there have been many changes in the education system in recent years. Specifically, more females can access higher education in Saudi Arabia, which has a secondary effect on employment opportunities (Barry, 2021). Also, previously females were limited to courses that prepared them for specific occupations, such as teaching and nursing (Aldosari, 2017), so females were prohibited from taking engineering or law courses as their school or university majors, for example. Education programmes for males, however, mirrored those of international programmes in emphasising fundamental topics and advanced training in business, computers, finance, etc. (Hamdan, 2005). Since females in Saudi Arabia are now accessing education in greater numbers and are able to study a greater range of subjects, future research should test whether education to degree level is having a protective effect on the risk of depression in females (Barry, 2021).

3.7 Strengths and limitations

The strength of this project is that it was based on the NSSFDA, which included a population-based sample that is representative of the demographic complexity within the 13 regions in Saudi Arabia. It used an intersectionality approach to explore the effects of multiple social disadvantages on the mental health of the adult Saudi population. One limitation is that its data was obtained from a cross-sectional study design, so findings cannot be generalised, and causation can be implied because the study design can affect the

comprehensive aspect and inclusivity of the analysis and potentially exclude some suitable social factors. This research was also limited by the predetermined NSSFDA study design in terms of which types of social disadvantage from the PROGRESS-Plus model it could include in the analyses. In addition, the survey relied heavily on self-reported judgements, which often have low validity and desirability bias (Chung & Monroe, 2003)and can affect the accuracy of the results.

While the PHQ-2 has been shown to be a valid indicator of the risk of depression in large population-based studies (Kessler et al., 2002), the two-item screening measure of depressive symptoms has reduced sensitivity and specificity compared with the PHQ-9 and other measures with more comprehensive coverage of depressive symptoms (Levis et al., 2020).

Measuring intersectional effects can be challenging because of the complex and multi-dimensional nature of intersectionality. Researchers may need help identifying and controlling for confounding variables in obtaining appropriate statistical tools to measure intersectional effects accurately (Bauer, 2014). The finding that there was no interaction effect between sex and level of education, but the effect of level of education within women was approaching significance suggests that sample size in the NSSFDA may lack sufficient power to detect multiple social disadvantages through statistical interaction terms in the Saudi population because the limited number of the sample size in the study and its impact on detecting significant interactions in intersectional studies as limitations of the data set.

3.8 Conclusion

The current research project indicates that females in Saudi Arabia are at higher risk of depression. Increasing access to higher education for females is one means of helping reduce the inequalities in mental health that women experience. Future research should examine whether the structural changes in the Saudi educational system that have increased the number of females graduating with a university degree (Barry, 2021) has reduced the health inequalities experienced by females. Additional research is needed to better understand the broader mechanisms that contribute to health inequalities, and this evidence should be used to develop culturally sensitive policies and services that address the underlying societal and cultural factors that impact on female health.

Chapter 4

The Policy Analysis Appraisal (Research Project 3): Gender Equality in Saudi Arabia's Mental Health Policy

4.1 Introduction

The Kingdom of Saudi Arabia is an economically growing Middle Eastern country with a population of over 36 million people (Population Stat, 2023). Its main ethnic group is Arab, and its main religion is Islam. Arabic is the official language, but English is also widely spoken. The Saudi population is younger than most high-income countries, with 88.73% being within the age group 0–54 and only 11.27% being 50 years and above (see Figure 4). On gender, 57.64% of the population is male and 42.36% female (see Figure 5). Saudi Arabia is the largest sovereign nation in the Middle East and has the largest free market economy in the Middle East and North Africa (Al-subaie, 2020).

Figure 4: Age groups in Saudi Arabia

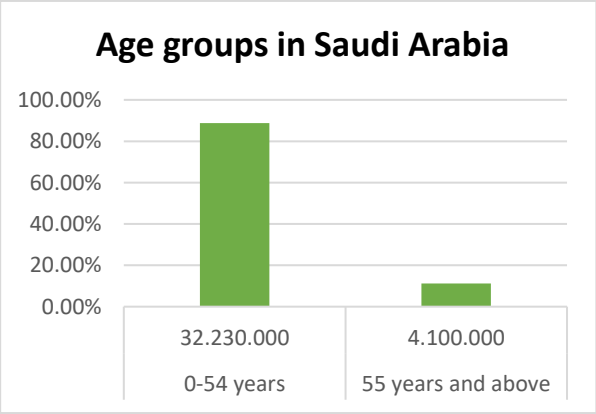
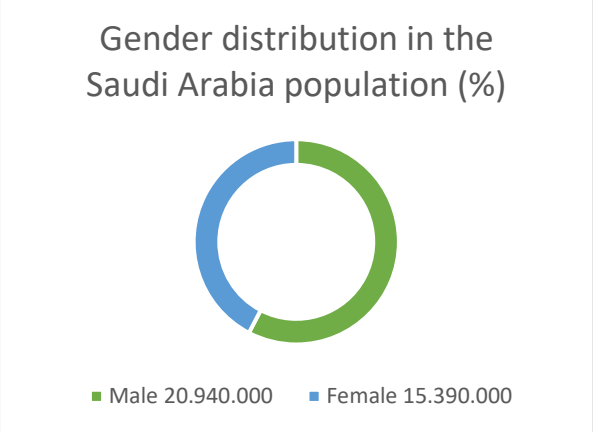


Figure 5: Gender distribution in Saudi Arabia



The mental health system in Saudi Arabia has shown significant progress in recent years, evidenced by the establishment of a national mental health strategy and policy in 2014 (Al-Subaie et al., 2020). A positive factor contributing to this progress is Saudi Arabia's health expenditure; according to data from the WHO, Saudi Arabia allocates 4% of its total healthcare spending to address mental disorders, which exceeds the global average (Al-Subaie et al., 2020). Also, the recent Saudi National Mental Health Transformational Plan (SNMHTP) was made to improve mental health policy and access to care, service quality, awareness, prevention and family support to align with Saudi Araba's Vision 2030 (Solaim and Okpaku, 2021).

Despite this progress, Saudi Arabia's mental health system faces many challenges. Al-Subaie et al. (2020) shed light on some of these challenges, such as the deficiency in the ratio of mental health workers specialising as psychiatrists in Saudi Arabia (7%) compared to the international average of high-income nations (20%) (Al-Subaie et al., 2020). Besides this and other shortcomings in relevant provisions, Saudi Arabia has other major barriers regarding mental health treatment. The Saudi National Mental Health Survey (SNMHS), launched in 2010, found that 80% of Saudis with severe mental health disorders do not seek professional treatment. Instead, about 9% of the total population consult religious healers or other non-medical resources about their own personal health concerns. Much of the reason for this reluctance to seek care from mainstream mental health experts stems from cultural stigma and other social barriers, such as gender norms and attitudes (Koenig et al., 2014).

The most significant challenge in this system and a central subject to this study is the lack of a comprehensive mental health policy that covers all divisions of society, which has contributed to and aggravated a significant mental health issue in its population, especially in women. Disregarding women's mental health in the past and even in the new National Mental Health Plan is particularly concerning. This neglect reflects the explicit gender biases deeply ingrained in Saudi Arabian culture, religion, and societal norms. If policy, services and interventions were focused on these biases to address specific needs for women, improvements would have been likely. Studies have nevertheless long noted a high risk of mental illness in females more than in males in Saudi Arabia, as is evident in a

study among Saudi students that showed a 40.2% risk of depression in females compared to 29.4% in males (Asal and Abdel-Fattah, 2007). Alas, no specific mental health policies or social initiatives have been implemented for women, and this is evidently reflected in research. The country needs to take urgent action to address the issue and advise policymakers to address the evident gaps in mental health support for women in a way that acknowledges Saudi Arabia's gender inequalities in mental health policy.

In 2022, the Word Health Organisation defined health policies as “the plans, decisions and actions made to help society achieve its health goals” and mental health policy as “an organised collection of values, beliefs, and goals for enhancing mental health and minimising the prevalence of mental diseases in a community” (World Health Organization, 2022). This description of mental health policies pervades documents authored by governments or Ministries of Health with the aim of improving the mental well-being of a country's residents. These policies provide guidelines for strategies at the national level (Saxena and Sharan, 2008). Nevertheless, only 62% of countries across the globe currently have mental health policies, that include aspects such as treatment, prevention, rehabilitation, promotion and advocacy. This observation highlights the global lack of comprehensive national mental health policies perhaps art least partly because of limited resources and development (Saxena and Sharan, 2008). In the case of Saudi Arabia, the development of a mental health policy emerged only relatively recently but particularly in 2006. Even at that time, the policy was integrated into the broader healthcare policy rather than being a separate entity. Although Saudi Arabia has taken steps to improve its mental health policy framework, there is still a long journey ahead.

4.2 Mental health policy in Saudi Arabia

Saudi Arabia’s national mental health policy was established in 2006 with the aim of improving mental health services and achieving a comprehensive mental health strategy. This policy addresses various aspects of concern – including prevention, promotion, treatment, and rehabilitation – to enhance mental health (Al-Subaie et al., 2020). In any exploration of Saudi Arabian mental health and related policy and reforms, Vision 2030 will likely be encountered. This social and economic strategic Saudi Arabian programme seeks to improve and diversify the nation's economy and promote multiple changes in the country’s social and healthcare sectors, including social programmes, education,

infrastructure and tourism (Rahman and Qattan, 2021). Recent improvements in Saudi Arabia's mental health policy include patient-centred care through the Model of Care (MoC), the integration of mental health into primary healthcare and alignment with Vision 2030 such as training general physician to direct mental health. The MoH has also established the National Committee for Mental Health Promotion and collaborated with stakeholders to enhance mental health services further (Qureshi et al., 2013).

Mobaraki and Söderfeldt (2010) say that health is influenced by various factors, including biological, environmental and social determinants such as gender. Zolezzi et al. (2018) explored the impact of gender inequality on health outcomes by investigating interactions between gender and mental health, finding that in Saudi Arabia gender inequality has limited women's access to healthcare, education and employment. Notable causal factors for this and other issues include how cultural perspectives on mental health contribute to stigmatising mental illness, thereby delaying access to appropriate care. A crucial step forward is to address these challenges by promoting inclusive mental healthcare, honest dialogues, stigma reduction, and mental health education and services (Zolezzi et al., 2018), though before considering specifics of these and other possible solutions to issues particular facets of Saudi Arabian mental healthcare need appraising, especially regarding policy matters.

This particular study (Research Project 3) within the overarching thesis thus appraises and analyses current mental health policies in Saudi Arabia. This is essential for ultimately improving future policies and providing evidence-based policy reviews that identify strengths and weaknesses and help develop tailored solutions to mental health issues within this particular context. The project inspects the gender policy on women's mental health (Tanenbaum, 2005).

4.3 Research questions

This sub-study explores the content, context, process and actors that influence the formulation of Saudi Arabia's mental health policy in general and the extent to which this policy addresses gender equality in mental health services in particular, mainly focusing on women's mental health.

The research questions were inspired by Mokitimi et al's (2018) study on child and adolescent mental health policy in South Africa. These questions guide the appraisal and highlight critical aspects of Saudi Arabia's mental health policy:

1. What is Saudi Arabia's national mental health content, and does it address gender equality in mental health services?
2. What were the contextual factors, such as cultural norms and behaviours, that influenced the development of Saudi Arabia's national mental health policy and were these factors addressed in terms of gender equality to improve mental health policy?
3. What processes are involved in developing and implementing national mental health policies in Saudi Arabia, and how does the policy address gender inequality?
4. Who is Saudi Arabia's key national mental health actors involved in developing and implementing mental health policies in Saudi Arabia, and how far do they influence the inclusion of gender and women in mental health services, such as programmes or initiatives?

4.4 Methods

4.4.1 The Walt and Gilson policy triangle method

This sub-study employs Walt and Gilson's health policy analysis framework, over other frameworks which are used for policy analysis such as the EVITA and MHPAF. The EVITA (EVIdence to Agenda) framework is designed to improve the relationship between research and policymaking in the field of mental health policy in low- and middle-income countries (LMICs) (Votruba et al., 2020). It focuses on agenda setting as well as identifying and prioritising problems to attain policy attention. Its proposed benefits include bridging the gap between research and policy, but it is limited within the complexity of agenda setting and it requires further observed validation in different contexts of mental health policy (Votruba et al., 2020). The Mental Health Preparedness And Action Framework (MHPAF), meanwhile, is a comprehensive approach to mental health preparedness during crises and emergencies (Molebatsi et al., 2021). Although this initially seems suitable for the current Saudi Arabian situation in women's mental health as it is used in crises, the framework is specifically tailored to the context of issue only and

may not fully capture the complexities of mental health policy in better and broader situations, both of which are relevant to Saudi Arabian women. A more nuanced problem with this is its emphasis on emergencies and more overt crises, while the one addressed herein is somewhat hidden and much more subtle than immediate (and usually rapidly onset rather than culturally entrenched) ‘in-plain-sight’ crises. Furthermore, the framework does not address policy processes, such as policy development, implementation and evaluation, which are important for a complete mental health policy analysis (Molebatsi et al., 2021). These issues with other frameworks do not apply to Walt and Gilson’s health policy triangle framework, which is thus highly appropriate for the current analysis, especially as it comprehensively reviews policy content, actors, processes and contextual factors. It thereby enables comprehensive analysis of policy dynamics and potentially leads to informed and effective policy recommendations and improvements in mental health services (O'Brien et al., 2020), so it can thereby open one possible avenue to ultimately alleviating and even preventing women’s suffering in Saudi Arabia (mental health provisions), though other factors besides provisions are relevant in this regard.

Walt and Gilson's triangle framework here operates as a practical methodology for exploring Saudi Arabia's mental health policy and inquiring about gender equality within the context of mental health. This framework contains actors, processes, content and context. However, these elements do not theorise how aspects of the framework interact, but they do offer to organise and structure data in a way that facilitates understanding of policy development (Meessen et al., 2017).

The Walt and Gilson framework was developed in 1994 as a comprehensive approach to analysing health sector policies (Walt and Gilson, 1994). The framework acknowledges that health policy research often mainly focuses only on policy content and overlooks important aspects of health policy. For example, Walt and Gilson consider sociocultural norms, historical background and political and economic factors as important, and this framework provides a holistic picture (O'Brien et al., 2020).

The Walt and Gilson framework has had various uses in research. Mokitimi et al.’s (2018) study, for instance, used it to identify policy documents relating to South Africa's mental health, such as stand-alone policies, child and adolescent mental health CAMH plans,

mental health legislation, general health policies, strategic plans, and annual performance. It analyses systematically identified policy documents and provides a complete analysis approach to collecting significant evidence for enhancing and evaluating the problems from the policy documents while providing a clear and structured method for improving mental health policies in the context of South Africa for the cited case regarding content, context, process and development (Mokitimi et al., 2018). The framework also provides a structured method for analysing policies and for recognising and addressing the gaps and limitations in pursuing health policy improvement. Srivastava et al. (2018) also used it to analyse Indian policies regarding family health, where it facilitated analysis of policies aimed at improving healthcare in India.

The two aforementioned studies further evidence how Walt and Gilson's framework is suitable for the current study as a methodology that can provide a deep understanding of the policy landscape in Saudi Arabia. In the current comprehensive method and analysis of policy documents, Walt and Gilson's policy triangle model is also employed as a framework for extracting and analysing relevant policy documents. This model, widely used in health policy research, further provides a structured approach to understanding the content of policies while considering a range of actors involved besides relevant context and processes and even exchanges among these elements in policy making and policy implementation (Walt and Gilson, 1994). The model thus offers a framework that enables one to understand the health policy reform process and the effective implementation of policies (Walt and Gilson, 1994), which is crucial for this work. shows the policy triangle model, as proposed by Walt and Gilson.

Figure 6: The Walt and Gilson (1994) policy triangle model

4.4.2 Search strategy

The search method was used to locate publicly accessible policy papers relevant to the analysis of health policy in Saudi Arabia. First, web-based searches were conducted on the websites of the national and all regional departments of health. Second, governmental papers or reports published between 2010 and 2022 regarding Saudi mental health policy, legislation and law that indicate changes in policy and improvements in mental health regulations in general or towards gender were reviewed. Searches were conducted between September 2022 and January 2023. Using the databases of PubMed, PsycINFO, Google Scholar and the WHO Library. All potentially relevant information was downloaded for evaluation. Search terms included ‘mental health’, ‘policy development’, ‘policy implementation’, ‘gender inequality’, ‘women's mental health’, ‘mental health services’,

‘health policy’ and ‘Saudi Arabia’. The goal was to find policy documents of mental health policy or gender-related policies to that cover mental health policy and gender equality in Saudi Arabia’s health policy, both within and beyond the given period of 2010 to 2022.

4.4.2.1 Additional information search strategy

Dr Abdulhameed Alhabeeb, a Psychiatrist at the National Center for Mental Health Promotion in Saudi Arabia, contributed significantly to this project by providing the latest policy and government report and offering his knowledge and ideas regarding recent policy progress in mental health within Saudi Arabia. My conversations and interactions with Dr Alhabeeb helped ensure the accuracy and applicability of this project’s research data.

4.5 Data analysis

To streamline the analysis process, formal interviews were carefully excluded, and the study focused exclusively on policy documents. This decision ensured that the analysis process maintained a detailed and targeted examination of the policy landscape. As demonstrated, using the policy triangle framework is supported by previous research, particularly the work of Mokitimi et al. in 2018, who applied this framework to comprehensively analyse Child and Adolescent Mental Health (CAMH) policies in South Africa. Mokitimi et al.'s (2018) study findings examine the history and current state of policy development and implementation using Walt and Gilson's policy triangle framework that aligns with our research interests.

4.6 Results

4.6.1 Policy documents identified.

Based on the search methodology described. Because no official policy documentation can be found. However, four policy-related documents relevant to mental health and gender equality in health policy in Saudi Arabia were identified. These documents provide recent insights and understanding into the content, actors, processes and contextual factors influencing mental health policy development and implementation in the country.

Table7: Summary of identified policy-related documents

Author Name (Year)	Title of the Paper	Health Policy Content	Gender Content
Hyder, S., and Al-Habeeb, A. A. (2021) WHO and Ministry of Health	WHO-AIMS Report: The Mental Health System in the Kingdom of Saudi Arabia. Riyadh: World Health Organization and Ministry of Health, Kingdom of Saudi Arabia	Yes, the policy details describe developing a mental health strategy to promote mental well-being	No, there is no gender information given
Solaim, L. S., and Okpaku, S. O. (2021)	Mental Health Care in Saudi Arabia. In Innovations in Global Mental Health	Yes, the paper discusses mental health care in Saudi Arabia	Yes, the paper has gender content from a social perspective, including topics such as family structure, gender segregation, and gender reforms
Carlisle, J. (2018)	Mental health law in Saudi Arabia	Yes, based on WHO guidelines and care standard and patient rights	Yes, but the study didn't address all the aspect of women the mental health law
Aldosari, H. (2017)	The effect of gender norms on women's health in Saudi Arabia	Yes, comprehensive mental health policies and services for women	Yes, but the report shows the lack of women's mental health recognition

4.6.2 The policy documents

Four relevant articles were reviewed to gain insights into Saudi Arabia's mental health system, health law and gender (namely Aldosari, 2017; Carlisle, 2018; Hyder and Al-Habeeb, 2021; and Solaim and Okpaku, 2021). Within the specified scope of research, this project examined these four articles, which cover the mental health system and health law in Saudi Arabia via different focuses and perspectives – as presented in Table above. These articles provided valuable information on various aspects of the context's mental health policy, including policy and policy development, legislation, law-making, human rights, financing, organisational integration, and challenges specific to women's mental health). Relevant documentation on and in Saudi Arabia can be difficult to obtain though – a point to which this overall paper will return in Chapter 6.

Indeed, the limited availability and accessibility of explicit mental health policy documents in Saudi Arabia can be attributed to the nature of official documentation in the country, where a complex legalisation process means they are to be used only for the country and not for international use (AlMindeel and Martins, 2021). Requesting official policy documents requires a legalisation request from the Ministry of Health, which adds considerable bureaucratic limitations to protect sensitive, confidential country information (AlMindeel and Martins, 2021). Moreover, information security considerations are vital to Saudi Arabia's government operations. Even though the government is implementing an e-government system, it still does not display official documents and it emphasises information security as a safeguard against a cyber invasion of sensitive government data (Thakur et al., 2016).

Hyder and Al-Habeeb's (2021) extensive overview report of mental health policy, legislation, human rights, financing and organizational integration in Saudi Arabia particularly highlights the roles of the Health Sector Transformation Program and Saudi Vision 2030 in driving mental health policy development. Solaim and Okpaku (2021) examined various aspects of Saudi Arabia's mental health care, services, gender reforms and segregation, including the transformational plan for fulfilling the goals of Vision 2030. Less directly, Carlisle (2018) discusses the underdiagnosis of mental health problems in Saudi Arabia and explores the 2014 Mental Health Law, which adopts many recommendations promoted by the WHO and the Saudi Vision 2030. Also, Aldosari

(2017) focuses on women's unique challenges in accessing mental health services because of gender norms and discrimination.

Although there is limited policy documentation, the four papers noted above (Aldosari, 2017; Carlisle, 2018; Hyder and Al-Habeeb, 2021; and Solaim and Okpaku, 2021) provide useful information. This research project explores relevant issues within the Mental Health Sector in Saudi Arabia and the transformational plane outlined in the Saudi Vision 2030 programme. These contain important aspects of mental health policy development, recent advancements in mental health care, and the multifaceted challenges related to gender in mental health policy and services. This independent analysis of mental health policies using the Walt and Gilson framework appraises mental health policy in Saudi Arabia but is also intended to help identify areas for improvement and means of promoting gender equality in Saudi Arabia's mental health care.

4.6.3 Policy analysis using the Walt and Gilson policy triangle.

4.6.3.1 The content

The national mental health content of policy and law in Saudi Arabia allows access to care, quality of services and family support by integrating these services in different settings such as mental hospitals, community mental health clinics and primary health care centres, with all the intended resultant improvement in health services aligning with Vision 2030 (Hyder and Al-Habeeb, 2021; Solaim and Okpaku, 2021). Saudi Arabia's mental health policy content notes that 4% of the total health budget is committed to mental health services. The 2023 Healthcare and Social Development budget in Saudi Arabia equals SAR 189 billion, which is equivalent to GBP 37.8 billion – and 4% of GBP 37.8 billion is GBP 1.512 billion (KPMG Professional Services, 2022). As noted, given the global average expenditure on mental health is about 2% of national health budgets (World Health Organization, 2018), this 4% is a comparatively high proportion. With the specific mental health needs and challenges of Saudi Arabia's new Vision 2030, though, an even higher percentage could be needed to provide adequate provisions, implement preventive mental health community programmes and deliver the required extent and effectiveness of the programme (Carlisle, 2018).

Saudi Arabia's 2014 Mental Health Law content is an important part of this endeavour. This law clarifies definitions of mental illness, outlines the responsibility and authority of professionals in psychiatric care, and creates the legislation form of patient applications for registration and treatment (Carlisle, 2018). On gender equality, men and women aged 18 are notably equal under this law in terms of consent to treatment for and decision-making power about their own mental health treatment – as long as they are deemed to have the capacity to do so (Hyder and Al-Habeeb., 2021), which can involve variables that detract from such apparent equality. Despite a certain level of gender equality seemingly existing in terms of content (i.e., consent and decision-making power), then, this content does not explicitly ensure comprehensive gender equality as women's specific needs and experiences may not be adequately recognised (Hyder and Al-Habeeb, 2021).

Aldosari (2017) says that women in Saudi Arabia face a higher risk of mental illnesses. Despite the recent reforms aimed at reducing gender segregation and empowering women, mental health services still fail to cater to women's mental health needs and women's unique challenges. This is due to different social disadvantage factors and the impact of gender-based violence on women's mental health, especially women over 60, as women suffer from the burden of caregiving roles (Aldosari, 2017). Therefore, there is a need for comprehensive research and policy enhancement to ensure gender equality in the mental health of Saudi Arabia, including clear measures to address women's mental health needs and improve mental health initiatives for better mental health outcomes.

4.6.3.2 The context

Studies note several contextual factors that shape Saudi Arabia’s mental health landscape, including religious beliefs, the stigma of mental health, gender norms and socioeconomic disadvantages (Aldosari, 2017; Carlisle, 2018; Hyder and Al-Habeeb, 2021; Solaim and Okpaku, 2021). The religion of Islam, for instance, plays a significant role in Saudi Arabian society and thus shapes the country's mental health policies and practices (Solaim and Okpaku, 2021). As mentioned earlier, the religion of Islam in Saudi Arabia forms resistance to modern psychiatry practice and considers modern psychology an iniquity. Extremist Islamic leaders in Saudi Arabia propagate a misconceived narrative that psychology conflicts with Islamic principles and say that psychology challenges God's power, for self-questioning and confession should, for them, occur only in a religious

context. As noted, people previously preferred religious healing practices to deal with mental illness (Aldosari, 2017; Solaim and Okpaku, 2021). Over time, using secular and scientific language in mental health discussions has become more acceptable (Aldosari, 2017). The impact of religion on mental health in Saudi Arabia is still nevertheless powerful and has shaped the discourse of psychotherapy training in the country. Up to the late 20th century, literature on psychoanalysis and psychoanalytic theory by Sigmund Freud was, through the influence of religious scholars, prohibited in Saudi Arabia (Hyder and Al-Habeeb, 2021). Based on a superficial interpretation, they labelled his theories as heretical. Over time, however, exposure to Western training helped to integrate aspects of Western psychotherapy and methods different from local traditions (Hyder and Al-Habeeb, 2021). This modification has invited modern mental health practices while preserving Islamic beliefs (Solaim and Okpaku, 2021).

The stigmatisation of mental health is another significant contextual factor in Saudi Arabia. Cultural norms and behaviours about mental illness contribute to this stigma, given the fear of being ‘labelled’ as mentally ill or the worrying about reputation and social status (Aldosari, 2017; Solaim and Okpaku, 2021). This stigma often prevents individuals from seeking help, accessing proper mental health care and openly discussing their mental health problems (Carlisle, 2018; Solaim and Okpaku, 2021).

In the context of traditional gender norms and roles in Saudi culture, men have more authority than women. There is also gender segregation and restricted independence among women, which limit access to jobs or education (Aldosari, 2017). These factors can bring low social status, a gender gap and limitations on women, such as restricting women's roles to being responsible for family needs and domestic duties (Aldosari, 2017). Gender roles and socioeconomic disadvantages have also affected the social position of women and again limited their access to mental health care. Gender norms restrict women’s freedom given male guardianship and religion roles (Carlisle, 2018; Solaim and Okpaku, 2021), but the goals of Saudi Arabia’s Vision 2030 suggest this programme will positively influence mental health policy (Hyder and Al-Habeeb, 2021; Solaim and Okpaku, 2021) by empowering women and ensuring their access to equal opportunities across social care and healthcare (Hyder and Al-Habeeb, 2021; Solaim and Okpaku, 2021). This should promote

gender equality and enable societal progress, and encouraging women to participate and even lead community programmes will reflect positively on their families and society.

Notably, gender equality is not explicitly addressed in Saudi Arabia's mental health policy (Carlisle, 2018). In fact, its existing policies do not consider Saudi women's unique mental health needs or recognise the impact of gender-based violence, for example, on women's mental health in Saudi Arabia (Aldosari, 2017). Although Carlisle (2018) points out that mental health law in Saudi Arabia recognises the rights of consent to individuals who have with mental health, regardless of their gender, to receive mental health treatment, the same author adds that this does not address all women's needs for gender-related factors in the law.

Insufficient human resource are considered a challenge in Saudi Arabia's mental health context, with the shortage of qualified professionals in mental health services being an obstacle that Saudi Arabia currently faces despite recent improvements in this area. This shortage directly affects the progress and quality of mental health services for all country residents, without exception, including women (Hyder and Al-Habeeb, 2021). Data indicates that the total number of human resources working in mental health facilities or private practices per 100,000 population is only 23, projected to increase to 33 by 2020.

A breakdown of Saudi Arabian professionals shows a distinctive lack of specialists (Table 7 at the end of Section 4.6.3.4 summarises this). Saudi Arabia has also witnessed patients being unsatisfied with mental health services because of overcrowding in outpatient clinics, long waiting lists and waiting times, a shortage of beds in mental hospitals and delays in providing medical care (El-Gilany et al., 2010; Alosaimi et al., 2016). These challenges significantly restrict the country's ability to provide comprehensive mental health services to everyone, but especially women (Alosaimi et al., 2016; El-Gilany et al., 2010) The lack of female professionals exacerbates Saudi women's predicament and challenges in this regard, limiting women's access to mental health services (Alqufly et al., 2019; Karout et al., 2013). Furthermore, the cultural and religious context of Saudi Arabia underlines the preference among Saudi women to select female physicians over their male counterparts. Women experience embarrassment and anxiety during male physician examinations, and they have to follow religious roles by maintaining their distance and

Islamic dress code. These concerns reflect various social aspects of gender inequality in Saudi Arabia, such as strict gender segregation. Saudi women are restricted in interactions with unrelated males or seen by males without male relative company (Alqufly et al., 2019; Karout et al., 2013).

Comprehensive reform is needed to improve the context of mental health policy and promote gender equality, but for this to happen further understanding must take place about diverse macro and micro facets (addressed throughout). The mental health policy context reform may include awareness programmes to reduce the stigma surrounding mental health and incorporate gender-equality practices into mental health service provision and policymaking. It is important to design policies that acknowledge women's unique needs and challenges in Saudi Arabian society, ensuring gender equality in access to mental health care and providing appropriate support (Aldosari, 2017; Carlisle, 2018).

4.6.3.3 The process

Developing and implementing national mental health policies in Saudi Arabia is a vital process that begins with evaluating the current mental health system (Solaim and Okpaku, 2021; Hyder and Al-Habeeb, 2021) and thus understanding it more. As Aldosari (2017) stated, implementing national mental health policies starts with comprehensive research to understand the current mental health status. During the development of this process, the Ministry of Health and various stakeholders, including healthcare providers, mental health professionals, researchers and possibly NGOs, collaborate to incorporate a policy using best practice for Saudi Arabia (Aldosari, 2017), doing so using international WHO guidelines as Saudi Arabia has relied on the WHO-AIMS 2.2 to track the progress of its mental health system over the past decade (Al-Habeeb and Qureshi, 2010; Carlisle, 2018). Despite all this, Saudi Arabia’s current mental health policies have limitations in addressing gender inequality in mental health and lack clear social guidelines in social policy to protect women and to improve women social position (Aldosari, 2017; Carlisle, 2018).

4.6.3.4 Actors

The following lists key national actors involved in developing mental health policies in Saudi Arabia, according to the four relevant studies:

1. **Ministry of Health (MoH)**: The leading actor in forming and implementing mental health policies (Carlisle, 2018; Hyder and Al-Habeeb, 2021; Solaim and Okpaku, 2021).
2. **Mental Health Professionals**: Psychiatrists and psychologists help shape mental health policies and play a critical role in leading mental health discourse and policymaking (Carlisle, 2018; Solaim and Okpaku, 2021).
3. **Saudi National Mental Health Survey (SNMHS)**: Contributes to policy and service planning by providing large-scale epidemiological mental health data (Hyder and Al-Habeeb, 2021; Solaim and Okpaku, 2021).
4. **Private Health Insurance Companies**: Influence mental health services and policies by shifting to a mandatory insurance system (Solaim and Okpaku, 2021).
5. **Traditional and Alternative Healers**: Ministry of Health (Hyder and Al-Habeeb, 2021; Solaim and Okpaku, 2021).
6. **Saudi Commission for Health Specialties (SCFHS)**: Regulates the licensing of mental health professionals (Hyder and Al-Habeeb, 2021).
7. **Ministry of Human Resources and Social Development (MHRSD)**: Offers non-medical support and societal integration for those with mental health needs (Hyder and Al-Habeeb, 2021).
8. **Ministry of Justice and Ministry of Interior (MoI)**: Responsible for the legal aspects of mental health (Hyder and Al-Habeeb, 2021).
9. **Ministry of Education (MoE)**: Handles mental health school programmes and services (Hyder and Al-Habeeb, 2021).
10. **National Centre for Mental Health Promotion (NCMHP)**: Develops programmes for promoting mental health (Hyder and Al-Habeeb, 2021).
11. **Non-Governmental Organisations (NGOs)**: Potential key players in policy development and service (Aldosari, 2017).
12. **International Organisations**: Provide guidance, resources, and policy recommendations for mental health.
13. **Universities and Research Institutions**: Impact policy through workforce development, research, and training (Solaim and Okpaku, 2021).

The above is another aspect of reviewing Saudi Arabia's mental health policy and gender equality through the lens of the Walt and Gilson policy triangle by exploring content, context, and actors. This review reveals an ongoing effort to improve mental health policy and services. However, there is a notable absence of gender-focused mental health policy. Gender-specific mental health needs remain insufficiently addressed among religious, societal and economic influences. Collaborative efforts among governmental bodies, professionals and researchers can shape policy development. A gender-inclusive mental health policy is a vital aspect of this, yet it has not been addressed.

Table 7: Human resources in mental health (rate per 100,000 population)

Year	**Total HR per 100,000 Population**	**Psychiatrists**	**Other Doctors (Non-Psychiatry)**	**Nurses**	**Psychologists**	**Social Workers**
2010	22	3	1	13	2	3
2020	33	4	0	13	6	10

4.6.3.5 The Saudi National Mental Health Transformational Plan

In 2016, Ministry of Health was required to propose a transformational plan for fulfilling Vision 2030's goals. In 2017, a mental health task force was assembled for this endeavour with the help of local and international experts (Hyder and Al-Habeeb, 2021; Solaim and Okpaku, 2021). The task force led brainstorming sessions, workshops and surveys such as the SNMHS to gather insights from professionals, service providers and service users, which was all compiled accordingly in a 100-page document called the Ministry of Health Mental Health and Developmental Disorders Model of Care (Hyder and Al-Habeeb, 2021; Solaim and Okpaku, 2021). The document addressed key aspects such as access to care, service quality, awareness, prevention and family support. Recommendations included a 'stepped care' model for enhancing primary health care and prioritising child mental health services. The strategy outlined four phases: (i) immediate bridging of service gaps, enhancing clinical psychotherapy, and building child services; (ii) enhancing the mental

health workforce; (iii) coordinating care across the continuum, and (iv) bridging access to care, especially in rural areas. These phases were about addressing service gaps and strengthening the future of mental health, though financing details were not included at the time of publication (Hyder and Al-Habeeb, 2021; Solaim and Okpaku, 2021).

4.7 Discussion

In Saudi Arabia, mental health policy and gender equality are extremely important concerns. This research project examines the current country's mental health policy documents with a particular slant on gender equality in mental health provisions. To understand the mental health policy of a unique country such as Saudi Arabia and the gender equality position within this policy, it has been essential to explore Saudi Arabia's historical progression of mental health, advancements in mental health services and initiatives targeting women's mental health as well as how these policies align with the ambitious Vision 2030. To achieve this, the project applied Walt and Gilson's policy triangle framework – an approach that considers various aspects involved in policy development – but did so also to review mental health policies and services in promoting gender-equal approaches in Saudi Arabia. It evaluates the implementation of inclusive policies for gender and mental health and intends to contribute to recommendations that improve equality integration and break barriers of gender inequality in mental health policy.

Applying Walt and Gilson's framework highlighted significant deficiencies in the content and context of Saudi Arabia's mental health policy but also the processes and actors involved in shaping the policy. Cultural norms, religious beliefs, stigma and gender norms are significant factors that have been shaping this mental health policy for years (Hyder and Al-Habeeb, 2021; Solaim and Okpaku, 2021) and been perpetuating gender inequality.

Nevertheless, Saudi Arabia's Vision 2030 proposes positive impacts for this mental health policy and to improve mental health services. It specifically promotes physical, psychological and social well-being by presenting a transformational plan for Saudi Arabia's mental health (Grand and Wolff, 2020; NCMHP, 2019). This transformational plan, initiated in 2016, seeks to achieve the goals of Vision 2030 and improve mental health services. It involves extensive research, task forces and the development of a

comprehensive model of care (Grand and Wolff, 2020), but gender equality services that focus on helping women are not explicitly addressed within the new plan's policies. With this ambitious Vision 2030, then, the future of mental health in Saudi Arabia is promising, as it proposes advancements in this regard. However, it does so without addressing or even seemingly properly understanding not only entrenched contextual issues themselves (e.g., gender discrimination, stigma) but also the interactional issues and the effects of these on women. If this is not rectified, then the programme's actual benefits may be surface deep rather than profound.

Indeed, this appraisal of mental health and gender equality and analysis of current and future mental health policies suggests many possibilities, but we need to see how these unfold in reality. Despite all the progress in mental health policy and services in Saudi Arabia, various omissions and gaps persist. These concern addressing women's unique mental health needs, particularly against social challenges such as violence and gender roles, and biological factors such as postpartum depression, but there are numerous others. A greater understanding of these is required, to enable changes that will ultimately help prevent or at least alleviate women's mental health adversity.

This analysis and appraisal of the current mental health landscape in Saudi Arabia shows that significant progress has been made since the country established its first mental health hospital in the 1950s (Koenig et al., 2014), but more still needs to be done. The country in the last ten years has made a big improvement in easing access to and providing more psychological and emotional support for various problems, including anxiety, depression, self-harm and stress. According to official sources, the counsellors in Saudi Arabia's support services are experienced and committed to helping people in issue (Ministry of Health Saudi Arabia, 2022; NCMHP, 2019). The NCMHP has resulted from national developments in mental health. It was founded in 2019 to promote mental health and improve community members' lives, with key services including a psychological counselling call centres and a counselling app named Qareboon (NCMHP, 2019). The centre also runs programmes such as Educational Initiatives and Support Services and is developing a strategic plan up to 2024 to further its objectives (NCMHP, 2019). Furthermore, it offers free and confidential support to anyone struggling with mental health issues over the free helpline phone number of 9200-333-60 (Ministry of Health Saudi

Arabia, 2022.; NCMHP, 2019). This free helpline service can positively impact on women who are experiencing mental health problems, as they can benefit from a confidential, non-judgemental, supportive space to discuss their concerns and receive helpful advice and guidance. However, these services are temporary and do not help over the long term, though they can still provide relief and reduce the severity of symptoms. These platforms have thus helped during challenging times such as the pandemic, proving the importance of such services to the Saudi Arabian mental health landscape (Ministry of Health Saudi Arabia, 2022.; NCMHP, 2019). Nevertheless, these and many others can still be improved, and this research contributes much in this regard.

This research project has used Walt and Gilson's framework to analyse gender equality in mental health policy in Saudi Arabia, revealing significant intersectional effects between mental health policy factors and sociocultural elements, including gender equality, religion, culture and governmental policies. These factors have a definite impact on mental health outcomes, as is particularly evident in the struggles faced by Saudi women. The intersection of gender inequality, cultural norms and religious expectations creates distinct challenges for the mental well-being of Saudi women.

While the NCMHP and its affiliated services exemplify advancements in mental health policy and care, a noticeable absence of strategic planning and initiatives restricts the comprehensive addressing of these interrelated facets while neglecting the inclusion of women in resource policy development.

This review underscores the absence of collaborative endeavours between the government and stakeholders. Conspicuously, the absence of any references to cooperative efforts or engagement initiatives, such as focus groups, aimed at discussing women's mental health needs or involving women in formulating policies or ingrained gender inequality and the lack of directives about women's mental health intimates at serious oversights. This study emphasises the pressing need for Saudi Arabia to bridge the gap in its mental health policy concerning gender issues to enhance gender equality and help long-suffering women.

4.8 Conclusion

This project has appraised the mental health policy landscape in Saudi Arabia and how it addresses (and does not address) gender equality and Saudi Arabian women’s unique needs for their mental health. It reveals the importance of addressing these needs and gender equality within the context of mental health services. Despite the progress made, there is still work to be done to ensure that women's unique mental health needs are adequately addressed. Vison 2030 emphasises enhancing health care with initiatives such as the NCMHP, the Qareboon app and the transformational plan, providing valuable support and resources to improve mental health policy in Saudi Arabia and help the vulnerable in society. However, many contexts have impacted gender roles and mental health in Saudi Arabia, so the country must develop a gender equality policy and implement mental health programmes and centres specifically for women to suit the country's unique culture and beliefs. An improved mental health policy can be achieved by advocating inclusive mental health and social care plans that address these intertwined aspects. Central to this effort is the involvement of women in shaping Saudi Arabia's mental and social health policy.

Chapter 5

General Discussion

5.1 Introduction

The three research projects' findings provide valuable insights into the effects of intersectionality on mental health outcomes in women. In addition, they suggest new ways to address the particular mental health issue Saudi Arabian women are enduring. Previous research (e.g., Green et al.'s 2014) has shown links between mental disorders and social disadvantage in women, but the current work's systematic review underlines how the cause of mental disorders is not attributed to independent social disadvantages alone. Rather, it results from multiplicative interactions, and this highlights the urgent requirement for a more quantitative intersectionality approach to understand and address gender and the various other social disadvantages that contribute to mental health disorders (as sections 2.3 and 2.4 show). Nevertheless, intersectionality has been largely explored through qualitative research methods in feminism research (Hancock, 2007). Using a quantitative approach to study intersectionality, however, considers the cumulative effects of multiple variables of social disadvantage on mental health disorders, leading to more accurate examinations and interventions for marginalised groups (Evans et al., 2018). The systematic review herein demonstrates that independent social disadvantages such as social class, education, gender, age and socioeconomic status significantly influence mental health diagnosis, treatment and experiences (Section 2.3.1). Independent social disadvantages cannot be neglected, but all too often overlooked interactional effects must also be taken into account to help resolve both serious research inadequacies and profound practical problems.

In this regard, the second research project explored the intersectional relationships among depression risk and several demographic variables relevant to the PROGRESS-Plus inequalities framework including sex, level of education, family income, and employment status (Chapter 3). This multivariate analysis found that only sex and education level had a significant additive effect on the risk of depression among Saudi females (Section 3.5). The analysis suggested a potential multiplicative effect, indicating that supporting females to access higher education may contribute to reducing the risk of depression. The gender

inequality findings align with previous studies conducted in Saudi Arabia that have reported a higher prevalence of mental health issues in females and identified lower education levels, unemployment and lower monthly family income as contributing factors to women's depression (Alosaimi et al., 2014; Altwaijri et al., 2020). The association between education levels and the risk of depression showed variations among females, highlighting the potential protective effect of higher education in reducing the risk of depression (Section 3.6).

The third research project emphasised the importance of gender equality to mental health policy in Saudi Arabia. Progress has been made in mental health services and the implementation of initiatives such as the NCMHP (Qureshi et al., 2013) and the Transformational Plan of Saudi Vision 2030 as well as the latter's influence on mental health policy to improve the country economically and socially (Solaim and Okpaku, 2021) have all helped this. However, gender equality actions are not explicitly addressed in Saudi Arabia's current policies. Hence, the research shows the need to address this explicitly for comprehensive policy improvements that prioritise gender equality in mental health care and develop appropriate support to address the unique cultural and religious characteristics of Saudi women's mental health needs.

Overall, the thesis projects' findings are highly interconnected, and they intricately intertwine to form the desired 'comprehensive and integrated understanding of this complex area that has many severe implications for so many women around the world', as this thesis stated in its opening paragraph, with especial focus on the context of and women in Saudi Arabia. The research highlights the significance and relevance of intersectionality in understanding mental health outcomes in women. Using an intersectionality framework, mental health professionals and researchers can gain a broader perspective on the factors and social disadvantages that impact mental health and, in particular, their interrelated and cumulative effects. This approach enables the required further understanding concerning the gender perspective on mental health and facilitates work towards reducing the gap between gender inequality and mental health. Addressing specific gender needs, whether in services, legislation, or policy, is important for promoting gender equality and improving mental health outcomes.

5.2 Intersectionality, gender inequality and women's mental health

Gender inequality can profoundly influence mental health, so understanding it and acting on this understanding is vital. Within this, though, it is imperative to understand the complexity of interactions gender has with other social disadvantages that impact mental health, besides their cumulative effects. This thesis has shown that studying the complex influence of multiple social disadvantages using an intersectionality framework helps identify potential strategies for addressing gender inequalities and other social disadvantages. The first research project's systematic review examines the under-explored domain of quantitative intersectionality, focusing on its application to understanding mental health disparities among women. While prior studies have recorded associations between mental disorders and social disadvantage in women, this review reveals that such disorders result from complex and multiplicative interactions rather than isolated factors. Employing statistical techniques like mediation analysis, multilevel modelling and statistical interactions offers evidence-based to the research. Also, it enhances the understanding of the complex multiplicative effects of women's mental health and social variables (e.g., gender, socioeconomic status, and race) as well as their interactions. Presenting statistical data on multifaceted interactions provides precise numerical results and adds accuracy to the research. From the first research project, socioeconomic status, which includes a combination of social and economic factors that affect access to education, employment and other resources, is a crucial factor in women's mental health. Through this quantitative approach, policymakers gain valuable insights to address the root causes of mental health inequalities, offering solutions for marginalised women's improved mental well-being. The review highlights the importance of a quantitative intersectional lens for interpreting complex health dynamics and contributes to more effective gender-based policies and inclusive mental health promotion (Chapter 2).

The second research project used data from the NSSFDA to investigate the relationship between depression risk and demographic factors among the Saudi population. The findings revealed that while sex and education level were the significant variables impacting depression risk, a deeper analysis suggested a potential multiplicative effect. Notably, Saudi females face a higher risk of depression, and this is partly attributed to societal inequalities and restricted freedoms (Chapter 3).

The overall study has shown that multiple social categories are interconnected and that these intimately acquainted social categories contain elements of inequality and create power dynamics. By understanding these interconnected and dynamic aspects, we can better analyse, understand, and ultimately address the social inequality and power disparities of social categories and identities.

From the first research project's systematic review, a significant finding was that statistical interaction appeared as a common method used by researchers in intersectionality research. In the search herein, a paper explicitly claiming to identify the 'best' quantitative or analytical methods for intersectionality could not be found. Instead, the search presented a vast collection of techniques that researchers can adapt to suit their specific research questions and available resources.

5.2.3 Social factors contributing to gender inequality

One of the main factors contributing to gender inequality is insufficient socioeconomic status. Women facing low income and poverty often encounter multiple disadvantages, including limited financial resources, inadequate education, lack of social support and restricted healthcare access (Say and Raine, 2007). These challenges perpetuate a cycle of inequality, hindering women's empowerment and mental well-being. Addressing gender disparities in education and economic opportunities is crucial for reducing poverty and promoting women's mental health (Kiriti and Tisdell, 2003). From the first research yield in this thesis (Chapter 2), the findings of the study evidenced that socioeconomic status, including in employment, resource accessibility and education, plays a pivotal role in the mental health of women, as this work has demonstrated that the multiplicative interaction of these factors affects women's mental health (Chapter 2).

Education plays a pivotal role in addressing gender inequality. By providing women with education, they gain assertiveness, empowerment, and a better understanding of their rights. Education is essential for personal growth, seeking improved lives, breaking free from traditional gender roles, and addressing issues such as domestic violence and poverty (Stewart et al., 2006). Educational initiatives, like that of the covered herein in the United Kingdom, showcase how comprehensive education policies can significantly reduce

gender inequality and promote a more equitable society (Finding, 2013). Saudi Arabia has made considerable progress in promoting education for women, but challenges persist. Although women enrol in universities, gender gaps in specific fields of study, like engineering and law, still exist (Alhujaylan, 2014). Findings from Research Project 2 revealed that sex and education were significant variables that impact on depression risk. Saudi females face a higher risk of depression, and this is partly attributed to societal inequalities and restricted freedoms (Chapter 3).

Cultural norms and interpretations of religious beliefs have perpetuated gender inequality. Specifically, traditional gender roles and wrong interpretations of religious values have led to unequal power dynamics, where men hold greater authority and control over women (Rwafa, 2016). These norms also impact women's mental health by limiting their freedom and increasing mental health challenges (Ratner and El-Badwi, 2011). Initiatives to challenge these cultural norms and wrong interpretations of religious beliefs are necessary to promote gender equality and improve women's mental well-being (Alzahrani, 2019).

The cultural acceptance of domestic violence in certain societies, including Saudi Arabia, exacerbates gender inequality and negatively impacts women's mental health (Afifi, 2007). Legal reforms, social initiatives and inclusive policies are needed to combat this issue to protect women from violence and support their mental well-being (Solaim and Okpaku, 2021). Also, mental health stigma prevents many women from seeking the support they need. In Saudi Arabia, cultural and family pressures hinder women from openly discussing their mental health problems (Alzahrani, 2019). Raising awareness about mental health, integrating mental health education into the curriculum and providing accessible mental health services are crucial steps to address this issue (Khalil, 2017).

Social inequalities and restrictions often hinder girls from pursuing higher education, with factors such as early marriage upon high school or secondary school completion and familial obligations as significant barriers (Human Rights Watch, 202). In Saudi Arabia, the rooted gender power dynamics further play an intersectional effect, compounding multiple social factors to extend gender inequality and women's suffering. The enduring patriarchal structure supports male authority, enabling gender gap escalation in educational objectives, especially for Saudi females like daughters or sisters who live in rural areas,

and the necessity to access higher education requires female students to make a geographical shift and relocate to a different city. However, this considerable transition drives families to reject the education conditions because of concerns for women's safety and about societal reputation (Alwedinani, 2016). These restrictions highlight the ingrained gender norms that position men as the ultimate authority over women's lives and futures. These prevailing social factors collectively contribute to the exacerbation of mental health inequality.

5.3 Implications of the thesis findings: Specific recommendations

While the implications from this work's findings permeate diverse areas that are relevant to the Saudi mental health landscape, several main overarching aspects have emerged during this research, and this section lists and provides corresponding specific recommendations for these.

1. The current context's oversight regarding intersectionality on social disadvantages and their impact on mental health.

During my research on intersectionality and mental health, the absence of studies in Saudi Arabia that use an intersectionality framework to explore social disadvantages in mental health was clear. My recommendation for this point is as follows:

The Mental Health Directorate in Saudi Arabia should carry out a comprehensive review that examines the intersectional effects of social disadvantage on women's mental health.

To identify and address the effects of social disadvantages on mental health, Saudi Arabia must adopt a quantitative intersectionality framework on an extensive database in future research. By exploring the interaction of multiple variables such as gender, socioeconomic status, education level, and other demographic identities, researchers can uncover the interconnected experiences of individuals facing mental health challenges and consequently help the country set out to rectify them.

2. Incorporating contextual oversights into Vision 2030.

While Saudi Arabia's Vision 2030 transformational plan for mental health is progressing mental health policies, it is crucial for the plan to comprehensively explore the interaction of Saudi contextual factors such as cultural, religious and gender norms, as these factors can potentially hinder the fulfilment of this plan and its goals in the future. My recommendation for this point is as follows:

Pursue holistic cultural improvement that addresses unseen barriers in mental health policy and incorporates diverse contextual factors into cultural policies, programmes and initiatives.

Incorporating cultural barriers and diverse related contextual factors into the transformational plan of mental health policy will acknowledge cultural limitations such as gender inequality, the education gap, the lack of Saudi professionals in mental health services and pertinent contextual factors that intricately intertwine with culture (e.g. religion). From this, the country can transform potential barriers into solutions and inspire much motivation for further progress to improve the local mental health landscape and serve the agenda of Saudi Arabia’s Vision 2030 more fully.

3. Advancing women’s education and gender inclusive and gender appropriate education in Saudi Arabia

Education has emerged as a key means of improving women’s mental health and will be integral to many intersectional endeavours to address the current issue . Before practical initiatives, this area needs more research.

The Saudi Arabian government should commission a report that examines gender equity of access and opportunity to quality education across all ages besides gender inappropriate bias and content within current education.

Of course, from this practical change needs to come:

The Saudi Arabian government should consider the findings in the above report and implement practical policies, programmes and initiatives within education that address the issues and bring about required change.

4. Including Saudi Arabian women's voices in health policy formation leadership.

While the Vision 2030 mental health plan was launched to revolutionise Saudi Arabia's social and mental health landscapes, the absence of Saudi women's perspectives and contributions in shaping and implementing these critical policies is stark. Indeed, there is a lack of Saudi women's voice in mental health policy and there is much need for women's empowerment in mental health policy formation leadership. My recommendation for this point is as follows:

'Have Saudi women's voices and empowering women leadership in mental health policy formation by inclusive recruitment and opportunity drives within policy bodies'

Acknowledging the potential of women's insights and incorporating their voices, ideas and perspective into mental health policy formation is not just a fair gesture but a strategic and intelligent action. Who knows the Saudi women's barriers in mental health service more than the women who are themselves suffering?

5.4 General strengths and limitations of the study

5.4.1 General strengths of the study

This study's comprehensive approach uses quantitative (research projects 1 and 2 – chapters 2 and 3, respectively) and qualitative (Research Project 3 – Chapter 4) methods. It uses quantitative methods in two research projects (1 and 2) and to analyse the intersectionality framework mainly to examine the position of marginalised women.

The systematic review of the first research project (Chapter 2) emphasises the multiplicative interactive effects social disadvantages have on mental health. It also

demonstrates the importance of adopting quantitative intersectionality approaches to present statistical results, and it can benefit epidemiology with accurate, precise numbers of complex interactions, adding value to mental health research for women.

The second empirical research project (Chapter 3) used data from 13 regions of Saudi Arabia. This population-based approach increases the external validity and inclusivity of the findings. The study employs a quantitative intersectionality approach to considering interactions among multiple social disadvantages, which offers a better understanding of how various demographic factors interact to affect depression risk. The findings revealed that sex and education were significant variables impacting depression risk in Saudi Arabian women. A quantitative intersectional approach enhances the depth of the study's analysis and contributes to a better view of mental health inequality among these women.

The third empirical research project (Chapter 4), quantitative literature review of policy analysis and gender equality in Saudi Arabia's mental health policy, stands out as the first and hitherto (as far as the researcher knows) only review to use the Walt and Gilson policy triangle method to analyse Saudi Arabia's mental health policy and the gender equality within this policy. This approach helped examine the content, context, process and actors involved in structuring the country and its society, thereby contributing to a holistic understanding of the policy landscape beyond only examining policy content.

The review of Saudi Arabia's mental health policy in relation to gender will benefit the country's progressive efforts to reform and raise awareness about mental health issues. The country's commitment to improving its vision, policies and support for research and gender equality also highlights the applicability of this study. The research projects herein have shown promising outcomes that enhance the intersectionality framework in a way that can lead to improved mental health in Saudi Arabia.

Conducting a policy review for gender equality also facilitated understanding of the unique challenges and opportunities for gender equality in the Saudi Arabian government's mental health services. In addition, the review timeline is crucial to the research gap as women's equality is needed to improve the country's new legislation reform to align with the Vision

2030 reform and provide recommendations and improvements for mental health services in Saudi Arabia.

5.4.2 General limitations of the study

Despite its many strengths, this thesis has been hindered by a lack of research on gender inequality concerning mental health in Saudi Arabia. Conducting an in-depth investigation into the intersection of gender and mental health was challenging given such limited relevant research papers and a marked dearth of studies specifically addressing women's mental health needs and experiences in Saudi Arabia. In many ways, it is hoped that this research helps address this issue. Additionally, when attempting to explore the intersectionality of gender and mental health through quantitative methods, it was likewise challenging to find an array of comprehensive quantitative research in this area. Nevertheless, the thesis has sought to make the most of the available data and existing literature to shed light on the relationship between gender inequality and mental health in Saudi Arabia. Each particular research project nevertheless had its own limitation(s).

The systematic review (the first research project) involved only a limited number of studies that may restrict its generalisation to quantitative intersectionality research concerning women's mental health and social disadvantages.

In the second research project (Chapter 3) on the risk of depression among Saudi women and examining the effect of multiple social variables, the small sample size limited the ability to identify significant interactional effects. However, the results still show the main effects and associations among variables (sex and education) and thus provide insights into the relationships studied. Also, the cross-sectional study design cannot identify the causality in mental health over time in response to social disadvantage factors, unlike longitudinal studies that collect data over a long period and allow analyses of causes and effects of variable relationships.

In the third research project (Chapter 4), the appraisal of Saudi Arabia’s mental health policy and gender equality was limited by difficulties in accessing mental health policy documents in Saudi Arabia because of bureaucratic and information security. Another limitation was the absence of the voices of stakeholders in Saudi Arabia's mental health policy. It would have been useful to interview key stakeholders such as government

leaders, healthcare professionals, policymakers, NGOs, women with lived experience, community leaders, educational institutions, media and social media platforms. These stakeholders can contribute significantly to a comprehensive policy that addresses various perspectives and the need to improve mental health and well-being in Saudi Arabian policy. However, these were not included due to resource limitations and scope of the project. A prominent finding in this project was the absence of an explicit policy for gender equality in mental health care, and while this was a limitation it is also a useful discovery in terms of identifying central issues and key means of addressing the current issue . Without this and/or similar, the intention of improving mental health services for women will be seriously impaired. Furthermore, any inclusion of such has to be useful and not just present. That is, it should not overlook women's distinct experiences and psychological requirements, for this would aggravate or at least perpetuate problems concerning policy (and indeed much else) that lacks women's prospectives.

5.5 Future research: How to build on the existing research.

1. **Mapping mental health trajectories: A longitudinal quantitative intersectional analysis of women's mental health in Saudi Arabia**.
   Conducting a longitudinal quantitative intersectional analysis with larger sample sizes would allow investigation into the intersection of multiple social disadvantage variables on many women's mental health in Saudi Arabia over time. By tracking women's experiences over time, this would increase our understanding of the impacts of different intersecting factors on mental well-being in the long term.
2. **Uncover success stories: Sociocultural factors fostering women's achievement in Saudi Arabia.**
   This qualitative/ quantitative mixed methods study, which would involve conducting a comprehensive interview and survey with successful Saudi women, could look at women's experiences and ask how they overcame barriers and achieved their goals over time. This could identify and examine what social and cultural factors contributed to their success, such as gender equality, quality education opportunities and financial support. The expected results of a longitudinal study will be a correlation between high gender equality measures and educational opportunities, and the results can be used to bring about change by helping to improve social policy

and gender equality in Saudi Arabia and thus, in turn, women's mental health and lives, perhaps even ultimately increasing the number of successful women in Saudi Arabia across various areas.

3. **Empowering gender understanding in education: A longitudinal study on gender equality integration in the Saudi curriculum.**
   This experimental trial research would investigate the effects of incorporating gender equality and feminism into the Saudi curriculum as education materials. Through longitudinal studies, the goal would be to assess whether exposure to gender equality and feminism concepts from a young age leads to a more progressive attitude towards gender roles, mental health and behaviours relating to seeking help among the younger generation of males and females in Saudi Arabia.
4. **The voices of change: Stakeholder perspectives on mental health policy and gender equality in Saudi Arabia.**
   This research would involve comprehensive interviews with key stakeholders in mental health policy and gender equality policy in Saudi Arabia. Gathering views from government workers, mental health professionals, NGOs, religious leaders, and education workers will help provide valuable insights into shaping impactful policies that address pertinent challenges and promote gender equality within this context.
5. **Saudi women's mental health: Voices and experiences.**
   This study would will use surveys and interviews to explore the mental health journeys of Saudi women, including those who experience mental health illness and professionals who work in female mental health. By combining the stories and insights, the research will explore the best research evidence that can be used to improve mental health policies for Saudi women.

5.6 Concluding remarks.

This ground-breaking thesis has navigated the complicated landscape of women's mental health through the lens of intersectionality, shedding light on the multifaceted social disadvantages that shape mental health outcomes. By exploring Saudi Arabia's gender equality initiatives and mental health policies, valuable insights have emerged, underscoring the need to address Saudi Arabian women's distinctive challenges. The quantitative intersectional approach employed in this research has unravelled the complexity of gender inequality in mental health and revealed that these inequalities arise not from isolated factors

but from the complex intertwined relations of social identities such as gender, socioeconomic status and race/ethnicity.

Through detailed quantitative analyses, including different methods of quantitative intersectionality, this study has provided a compelling narrative that underscores the urgency of adopting a quantitative intersectional lens in understanding and addressing mental health disparities among women. The evidence incorporated from statistical analyses emphasises the imperative for policymakers to dismantle layers of inequality. Noticeably, socioeconomic status has emerged as a pivotal factor, which suggests that interventions which empower women through education and economic opportunities are means of improving mental health for women.

In Saudi Arabia's mental health policy landscape, the intersection of gender inequality and mental health emerges as an imperative for policy progress. Vision 2030's ambitions can only be fulfilled by acknowledging the unique challenges Saudi women face and establishing strategies that not only target cultural and gender norms but also involve women in policymaking. In Saudi Arabia's evolving mental health landscape, Vision 2030's success depends on an inclusive approach that integrates gender equality into mental health policy. This demands strategies that embrace women's mental health and well-being needs and grant them a voice in policy formulation.

In conclusion, this research serves as a radar for informing and guiding Saudi Arabia towards a future where women's mental health is prioritised, inequalities are dismantled and progress echoes through health care, social care policy and much more.

Chapter 6

Personal Reflections on the PhD Process and my PhD Journey

At the beginning of my PhD journey in October 2017, my background in public health (women's health) and social sciences research was general and limited. I needed to improve my learning, especially given my lack of experience conducting research at a professional academic level. At that point, I started my PhD learning actions and dedicated much time to expanding my knowledge through extensive reading and writing while developing a better understanding of research frameworks and research methodologies. This all occurred with a particular focus on my research interests: the feminist theory of intersectionality, gender inequality and the interconnected effects of social disadvantages on mental health disorders.

As I progressed, the initial months involved my focus and thoughts revolving around the fundamental details of the systematic review, mainly using intersectionality quantitative methods and conducting a critical appraisal of the effects of gender inequality and social disadvantages on mental health disorders among women. Through my deep investigation into this subject matter, I became aware that the concept of intersectionality plays a pivotal role in understanding these dynamics.

My research involved finding out about the quantitative methods used to apply intersectionality in mental health research and studies. Crenshaw's ground-breaking research titled ‘Demarginalizing the intersection of race and sex: A black feminist critique of antidiscrimination doctrine, feminist theory and antiracist politics’, published in 1989, was my serious introduction to the concept of intersectionality in a formal, academic sense.

From my reading, I gained insights into the complex nature of applying intersectionality in quantitative research. Rather than perceiving experience as singular and isolated,

intersectionality highlights how various factors interconnect and compound, shaping women's multifaceted experiences (Bauer, 2014). Guided by valuable recommendations, I explored existing literature, such as Bauer's (2014) studies on intersectionality in quantitative research and Else-Quest and Hyde's (2016) work, which evaluated the implementation of intersectionality in quantitative psychological research, and these later became my guideline for exploring the quantitative methods used to apply intersectionality in mental health studies.

Women's struggles across societies reveal gender inequality and other interconnected social disadvantages, collectively contributing to women's complex and challenging experiences that significantly impact their mental well-being. A strategic decision was taken to shape my first study based on the insights, limitations and gaps I had identified in my early research. And thus, my first study was born: 'The Systematic Review (Research Project 1): Utilising Quantitative Methods to Study the Intersectionality of Multiple Social Disadvantages in Women with Common Mental Disorders' (Chapter 2).

It had become evident that gender inequality and social disadvantages were linked to mental health disorders. However, certain Middle Eastern countries such as Saudi Arabia seem to overlook gender inequality, though my systematic review generalised findings to all women with mental health disorders. A question then surfaced: Could gender inequality and intersectionality contribute to the risk of depression in Saudi Arabia, especially given the state of women's rights and cultural norms regarding gender inequality roles? These norms often impose harsh and discriminatory expectations on women, resulting in unequal opportunities that further broaden the gender gap and create disparities. This marked a critical point where I had a clear vision about how my second study should involve identifying a critical gap in gender inequality within Saudi Arabia, with a continued focus on exploring the intersectionality effect between gender and social disadvantage on mental health.

I searched for quantitative papers and national data on mental health within Saudi Arabia but found nothing. However, I did find data from the NSSFDA, specifically a survey authorised by The Saudi Food and Drug Authority Ethics Committee (SFDA18-0004) – a nationwide, cross-sectional survey among Saudi residents. This national data, however,

was not a specialised survey about mental health. For the current work, a comprehensive questionnaire survey was conducted that encompassed various social demographic variables aligned with the PROGRESS-plus inequalities framework. These variables included sex, education level, family income, and employment status. Also, PHQ-2 was one of the screening instruments for detecting mental health disorders and the outcome variable risk of depression. I therefore decided to conduct my second study as a secondary data analysis using the NSSFDA to explore the interactions among various social disadvantages and risks of depression: 'The Secondary Data Analysis (Research Project 2): The Impacts of Multiple Social Disadvantages on the Risk of Depression In Saudi Arabia' (Chapter 3).

At this stage, my understanding of intersectionality had developed, as had a critical view of literature and further research skills. I nevertheless faced another learning journey, which involved using secondary data. Analysing data statistically on an academic level was new territory for me, but I was determined to conduct this research, so I learned how to code the row data and conduct statistical analyses using the SPSS statistical software (IBM Corp, 2021) at a professional level to conduct logistic regression. I used sex as the predominant variable and the focal point involved comparing this with other sociodemographic characteristics that affect depression risk.

As the sample size was small, no interaction or multiplicative effects were observed. Rather than an additive effect, a particularly significant findings was that education and sex variables were associated with risk of depression (Chapter 3). Indeed, gender inequality was a striking finding in Saudi Arabia regarding mental health given a 32.5% risk of depression in males but this being 67.5% for females. Also, regarding my second research project (Chapter 3), education has a potential effect on improving the mental health status of Saudi women and this made me curious about actual or just possible solutions, so a question was raised about what government policy and actions are being implemented to reduce the gap in mental health between men and women in Saudi Arabia. My last study therefore emerged: 'The Policy Analysis Appraisal (Research Project 3): Gender Equality in Saudi Arabia's Mental Health Policy' (Chapter 4).

For this, I used Walt and Gilson’s policy triangle method to analyse Saudi Arabia's mental health policy and gender equality. However, it is difficult to access policy resources and documents of Saudi Arabian because of the ongoing required changes in the country, mainly since the beginning of Vision 2030 in 2016, though the government is now perhaps consequently formulating policies and legislation relating to mental health. Despite these limitations, I utilised the available documents for the study. Additionally, I tried to contact key decision makers in the mental health policy field in Saudi Arabia. This effort led me to a productive meeting with Dr Abdulhameed Alhabeeb, whose research paper on Saudi mental health I cited in my work many times. Dr Alhabeeb's valuable contributions played an important role in this research project in the form of providing access to the latest policy documents and governmental report as well as sharing his insights and perspectives on recent advancements in the mental health policy landscape within Saudi Arabia and beyond.

My understanding of mental health policy has significantly grown throughout my research, but there has also been real-life input to this study. In particular, my identity as a Saudi woman who has encountered inequalities while living in Saudi Arabia has shaped my perception of reality. Despite being fortunate enough to have a supportive and open-minded family and to pursue higher education in public health and social science, my understanding of Saudi Arabia was, despite this being my own country, limited. My recent research taught me more about the Saudi context and how it significantly impacted and shaped society and government policy, and this has worked well with and helped clarify my own experience as well as given insights into the experience of others I know. My findings have greatly motivated me to enhance women’s mental health and gain an even better understanding of their experiences. While my empathy for women was already substantial, this research has further reinforced my already profound belief in gender equality and in providing women with equal opportunities to improve their mental health and the advancement of their families and communities.

During my PhD journey, a significant challenge occurred. In November 2019, I endured a month-long hospitalisation due to the rare Addison's disease following a personal health ordeal. I faced the physical complexities and the profound vulnerability women experience during such circumstances. This experience provoked a contemplative exploration of my

commitment to advocating for women's mental and emotional well-being. Witnessing the dedicated support of my family, including sister, daughters, and relatives, underscored the vital necessity of empathy for women navigating life's challenges. The encounter emphasised the significance of promoting a supportive environment for women's mental and physical health and further inspired my dedication to this cause.
Not long after my own health crisis , in March 2020 the COVID-19 stopped everything, and the pandemic was officially declared. As a woman and an international student, I encountered many adversities, which strengthened my belief in the pressing necessity to support women's mental health. Moreover, my belief deepened as I explored the pivotal societal role women embody as a true cornerstone for their families.

From personal vulnerability to global issue , this journey has clarified my understanding of women's indispensable societal role. My hospitalisation and the pandemic both amplified the significance of developing a nurturing environment for women's mental and physical well-being. I am now a new person with a growing understanding and different perspective on the world. My journey through the PhD process has been challenging yet profoundly rewarding.

Despite the numerous obstacles I encountered head-on, I refused to give up. Throughout my PhD, I developed new skills but also strengthened some old ones, such as sharpening problem-solving skills, formulating research techniques, engaging in critical thinking, analysing scientific literature, improving time management and organisation, and advancing my English academic writing and communication abilities. The PhD experience expanded beyond academic growth, offering opportunities to participate in presentations, attend conferences and network globally with experts and fellow PhD scholars.

My research is intimately acquainted with feminist philosophy, which offers insights into how gender inequality influences mental health. This philosophical theory includes various theories such as liberal, radical and intersectional feminism. I selected intersectional feminism for my thesis as it deepened my understanding of how societal norms and social systems contribute to mental health disparities. Throughout my PhD journey, my experiences and learning have often supported this perspective, echoing the words of my favourite feminist French philosopher, Simone de Beauvoir:

> One is not born, but rather becomes, a woman. No biological, psychological, or economic fate determines the figure that the human female presents in society; it is civilisation as a whole that produces this creature, intermediate between male and eunuch, which is described as feminine.
>
> de Beauvoir, S.
>
> *The Second Sex* (H. M. Parshley, Trans.), Knopf. (1949, p. 41)

In this thesis, I also emphasise the value of adopting a mixed-methods approach. This methodology aims to establish a foundation of evidence that can contribute to our understanding of gender intersectionality, quantitative analysis and the formulation of policies that address gender inequality and mental health.

This PhD has sparked my passion for understanding gender and intersectionality in relation to mental health, focusing on women in international studies and Saudi Arabia. With this degree, I intend to work towards raising awareness of and reforming Saudi government policies to reduce the gender and mental health inequalities experienced by women but also alleviate or even end and ideally help prevent Saudi Arabian women's suffering.

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Appendix

Table for MEDLINE search strategy

The following MEDLINE search strategy was used and was adapted as appropriate for other databases.

Search ID	Search Term	Action
1.	sex based.mp.	1037
2.	sex factors.tw.	213
3.	sex distribution.tw.	3615
4.	sex characteristics.tw.	601
5.	sex dimorphism.tw.	363
6.	gender difference$.tw.	24697
7.	female.tw.	532777
8.	gender.tw.	237153
9.	sex.tw.	400957
10.	wom?n.tw.	931378
11.	1 or 2 or 3 or 4 or 5 or 6 or 7 or 8 or 9 or 10	1799667
12.	Intersection$.tw.	10027
13.	Intersectional$.tw.	571
14.	Inequal$.tw.	19908
15.	Social inequal$.tw.	2474
16.	Social disadvantag$.tw.	862
17.	Marginaliz$.tw.	3784
18.	Multiple inequalit$.tw.	7
19.	Inequit$.tw.	6398
20.	12 or 13 or 14 or 15 or 16 or 17 or 18 or 19	39486
21.	mental disease/ or mental patient/	5921
22.	chronic mental illness/ or exp mental disorders/	1141939
23.	((mental$ or psychologic$) adj2 (deficien$ or disease$ or disorder$ or disturbance$ or dysfunction$ or health or illness$ or problem$)). ti, ab, id.	158545
24.	anxiety/ or exp anxiety disorder/	139230
25.	(anxiet$ or anxious$ or ((chronic$ or excessiv$ or intens$ or (long$ adj2 last$) or neuros$ or neurotic$ or ongoing or	147672

	persist$ or serious$ or sever$ or uncontrol$ or un control$ or unrelent$ or un relent$) adj2 worry)). ti, ab.	
26.	(body dysmorphic disorder or compulsions or compulsive behavior or obsessive behavior).sh. or (body dysmorphi$ or clean$ response$ or compulsion$ or dysmorphophobi$ or imagine$ ugl$ or obsession or obsessional or obsessions or obsessive compulsive or obsess$ ruminat$ or ocd or osteochondr$ or recurr$ thought$ or scrupulosity or ((arrang$ or check$ or clean$ or count$ or hoard$ or order$ or repeat$ or symmetr$ or wash$) adj compulsi$)).ti,ab.	31745
27.	Panic.mp. or panic$. ti, ab. [mp=title, abstract, original title, name of substance word, subject heading word, floating sub-heading word, keyword heading word, protocol supplementary concept word, rare disease supplementary concept word, unique identifier, synonyms]	17310
28.	$phobi$. ti, ab.	9777
29.	(critical incident stress or emotional trauma or psychological stress or stress, psychological or traumatic neurosis).sh. or (acute stress or asd or combat neuros$ or combat syndrome or concentration camp syndrome or desnos or ((extreme or psycho$) adj (stress$ or trauma$)) or flash back$ or flashback$ or hypervigilan$ or hypervigilen$ or posttrauma$ or post trauma$ or ptsd or railway spine or (rape adj2 trauma$) or re experienc$ or reexperienc$ or stress disorder$ or torture syndrome or (traumatic adj (neuros$ or stress)) or (trauma$ and (avoidance or birth$ or death$ or emotion$ or grief or horror or nightmare$ or night mare$))).ti,ab.	208646
30.	exp eating disorder/ or exp eating disorders/	28257
31.	(anorexi$ or bing$ or bulimi$ or (compulsive adj2 (eat$ or vomit$)) or (eating adj2 disorder$) or ednos or ((forced or self induc$ or selfinduc$) adj2 (purg$ or vomit$)) or hyperorexia or overeat$ or overeat$ or (restrict$ adj2 eat$)). ti, ab.	51236
32.	exp mood disorder/	112885
33.	depression/ or exp mood disorders/	206810
34.	exp affective disorders/	112885
35.	((affective or mood) adj (disorder$ or disturbance$ or dysfunction$)). ti, ab.	28704
36.	(((bipolar or bipolar) adj5 (disorder$ or depress$)) or ((cyclothymi$ or rapid or ultradian) adj5 cycl$) or hypomani$ or mania$ or manic$ or mixed episode$). ti, ab.	40703
37.	"Explode schizophrenia"/ or (psychosis$ or psychotic$).mp. [mp=title, abstract, original title, name of substance word, subject heading word, floating sub-heading word, keyword heading word, protocol supplementary concept word, rare disease supplementary concept word, unique identifier, synonyms]	72067
38.	exp psychotic disorders/ or exp schizophrenia/ or "schizophrenia and disorders with psychotic features"/	135921

39.	exp psychosis/ or exp schizophrenia/	135921
40.	(a? athisi$ or hebephreni$ or (neuroleptic$ and ((malignant and syndrome) or (movement adj2 disorder))) or oligophreni$ or psychotic$ or psychos? s or schizo$ or (tardiv$ and dyskine$)). ti,ab,id. or ((parkinsoni$ or neuroleptic induc$). ti, ab, id. not (parkinson$ and disease).ti.) or (delusion$ or hallucinat$ or paranoi$ or psychiatric$ or thought disorder$). ti, ab.	313890
41.	exp personality disorder/	39400
42.	borderline states/ or exp personality disorders/	39400
43.	(((aggressiv$ or anxious$ or borderline$ or dependent$ or eccentric$ or emotional$ or immature or passiv$ or psychoneurotic or psycho neurotic or unstable) adj5 personalit$) or (anal$ adj (personalit$ or character$ or retentiv$)) or aspd or character disorder$ or (personalit$ adj5 disorder$)). ti, ab.	22668
44.	(anankastic$ or asocial$ or avoidant$ or antisocial$ or anti-social$ or compulsiv$ or dissocial$ or histrionic$ or narciss$ or neuropsychopath$ or obsessiv$ or paranoi$ or psychopath$ or sadist$ or schizoid$ or schizotyp$ or sociopath$ or (moral adj2 insanity)). ti, ab.	74423
45.	(Cluster a or cluster b or cluster or ((anxious$ or dramatic$ or eccentric$ or emotional$ or fearful$ or odd$) adj5 cluster$)). ti, ab.	124834
46.	exp alcohol abuse/ or exp drug dependence/ or exp drug abuse/ or substance abuse/	261592
47.	drug seeking behavior/ or exp substance-related disorders/	262116
48.	(alcoholi$ or (alcohol$ and (abstinence or detoxification or intoxicat$ or rehabilit$ or withdraw$))).id, hw.	112684
49.	(alcoholi$ or drinker$1 or (drink$ adj2 use$1) or ((alcohol$ or drink$) adj5 (abstinen$ or abstain$ or abus$ or addict$ or attenuat$ or binge$ or crav$ or dependen$ or detox$ or disease$ or disorder$ or excessiv$ or harm$ or hazard$ or heavy or high risk or intoxicat$ or misus$ or overdos$ or over dos$ or problem$ or rehab$ or reliance or reliant or relaps$ or withdraw$)) or (control$ adj2 drink$) or sobriet$).ti,ab.	138902
50.	(cannabis or cocaine or hashish or heroin or marihuana or marijua$ or ((acetomorphine or amphetamine$ or amphetamine$ or analeptic$ or crack or crank or dextroamphetamine$ or diacephine or diacetylmorphine or diacetylmorphine or diamorphin$ or diamorphine or diaphorin or drug or methadone$ or methamphetamine$ or morfin$ or morphacetin or morphin$ or naltrexone or narcotic$ or opioid$ or opium or polydrug$ or psychostimulant$ or speed or stimulant$ or stimulant$ or substance or uppers) adj3 (abstain$ or abstinen$ or abus$ or addict$ or (excessive adj use$) or dependen$ or (inject$ adj2 drug$) or intoxicat$ or misus$ or over dos$ or overdos$ or	227237

	(use$ adj (disorder$ or illicit)) or withdraw$)) or ((drug or substance) adj use$)).ti,ab,hw,id.	
51.	(Hysteria or somatoform disorder or somatization). ti, ab, hw. or (briquet or hysteria* or poly? symptom* or multi? somat* or (multiple and (mups or medically unexplained or unexplained symptoms or physical symptoms or symptom diagnos*)) or somatiz* or somatis*). ti,ab.	11100
52.	21 or 22 or 23 or 24 or 25 or 26 or 27 or 28 or 29 or 30 or 31 or 32 or 33 or 34 or 35 or 36 or 37 or 38 or 39 or 40 or 41 or 42 or 43 or 44 or 45 or 46 or 47 or 48 or 49 or 50 or 51	1875125
53.	11 and 20 and 52	2021
54.	limit 53 to (english language and humans and yr="1990 - Current")	1872