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The relationship between defeat and entrapment and adolescent mental health and well-being.

& Clinical Research Portfolio

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Submitted in partial fulfilment of the requirements for the degree of

Doctorate in Clinical Psychology

Institute of Health and Wellbeing

College of Medical, Veterinary and Life Sciences

University of Glasgow

September 2018

Acknowledgements

Firstly, I would like to express gratitude to Andy Siddaway and Rory O'Connor for supervising this project; both of your guidance, advice, containment and problem solving has been instrumental in completing this project. Thank you also to Camilla Dyer, for providing guidance and support during a difficult period towards the end of the project. I would like to sincerely express gratitude to all who participated in this study. Thanks to North Lanarkshire Councils, for allowing access to your secondary schools. Special thanks to Julie Ainslie and Mark Anderson for supporting recruitment within their respective secondary schools.

I would like to thank all my supervisors over the course of the Doctorate in Clinical Psychology. To Jennifer Robertson and Yvonne Vance, I would like to say thanks for consolidating my desire to work within CAMHS. To Emily McIntosh, I would like to thank you for your kindness in dealing with early course anxieties. To Andrew Wood, I would like to thank you for supporting me during the final stages of this project and for being flexible with my placement time. To Emma Sharp, thanks for your on-going support throughout the course.

I have always valued peer support and this course has highlighted the importance of this even further. To my Greek brother Nikos, thanks for continuing to inspire me with your work ethic and for keeping my motivated. Special thanks to Eimear, Calum, Ayesha who put the 'life' back in 'work-life balance'. Thanks to all other member of the class for this shared experience and journey.

Finally, thanks to my family. To my parents, thanks for your on-going support and love. This has been a long journey and none of this would have been achievable without you both. Special thanks to my sister and grandmother also.

Contents

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Chapter 1

Systematic Review

Self-esteem as a longitudinal risk factor for suicide ideation and suicide behaviour: A systematic review

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Prepared in accordance with the guidelines for the following peer reviewed journal:

Psychological Bulletin (APA affiliated) and Siddaway, A. P., Wood, A. M., & Hedges, L. V. (2019). How to do a systematic review: A best practice guide to conducting and reporting narrative reviews, meta-analyses, and meta-syntheses. *Annual Review of Psychology*, *70*.

Scientific Abstract

Self-esteem as a longitudinal risk factor for suicide ideation and suicide behaviour in adolescents: A systematic review

Objective: Previous research has highlighted the cross-sectional relationship between self-esteem and suicidal thoughts and behaviours. The primary objective of this narrative systematic review is to explore self-esteem as a longitudinal risk factor for suicidal thoughts and behaviours in an adolescent population.

Methods: Searches were carried out using electronic databases ('PsycINFO', 'Web of Science-Core Collection'). Inclusion and exclusion criteria were applied to the search. Risk of Bias and Quality Assessment tool was adapted for the purposes of this review.

Results: Six studies were included exploring self-esteem as a longitudinal risk factor for suicide ideation and behavior. The research suggested that high self-esteem is associated with reduced risk of ideation and low self-esteem is associated with increased longitudinal risk of ideation. Self-esteem as a longitudinal risk factor for suicide attempts produced inconsistent results.

Conclusion: The research evidence suggested that self-esteem is a longitudinal risk factor for suicide ideation. Limitations and implications for clinical practice are discussed.

Keywords: Self-esteem, suicide ideation, suicide attempts, suicide behaviour, adolescent

Introduction

According to Heron (2016) suicide is currently the second leading cause of death in adolescents and thus represents a significant public health concern. Rates of suicide increase markedly from childhood into adolescence (Kessler et al., 1999) and suicide ideation and attempts are more prevalent in adolescence than at any other time of life. According to Nock et al. (2013), suicide ideation refers to thoughts about engaging in behaviors that are intended to end one's life. A suicide attempt is defined as deliberately causing harm to oneself with at least some intent to die (Silverman et al., 2007). Nock et al., (2013) reported that lifetime prevalence of suicide ideation and attempts are approximately 12.1% and 4.1% during adolescence, respectively, with rates of attempts three times higher among girls than boys. Miranda, Ortin, Scott & Shaffer (2014) have noted that previous suicide ideation and attempts are strong predictors of completed suicide.

Conceptualising Self-Esteem as a Risk Factor for Suicide Behaviour

Research on suicidal behaviour has focused on exploring risk and protective factors of such behaviours within adolescence. Such risk factors include a history of a family member who has been suicidal, mental illness, alcohol and drug use, and other self-destructive behaviours (Kirkcaldy, Siefen, Urkin & Merrick, 2006). Risk factors are conditions or variables associated with a higher likelihood of negative or socially undesirable outcomes and protective factors have the reverse effect: they enhance the likelihood of positive outcomes and lessen the likelihood of negative consequences from exposure to risk. Kirkcaldy et al. (2006) noted that further consideration should be given to negative self-esteem as a risk factor in suicide research and Mulligan (2011) highlighted that prospective studies have demonstrated low-esteem as a risk factor for developing mental health problems and positive self-esteem is a protective factor. Blascovich and Tomaka (1991) refer to self-esteem as an individual's sense of his or her value or worth, or the extent to which a person values, approves of, appreciates, prizes, or likes him or herself. More broadly, Rosenberg (1965) described it as a favourable or unfavourable attitude toward the self. A vast number of psychological perspectives of self-esteem indicated that high self-esteem is related to the promotion of goals and coping mechanisms and impede physical and mental problems (Trzesniewski et al., 2006).

Wilburn and Smith (2005) explored the relationship between self-esteem and suicide ideation in an adolescent sample. Correlation and regression analyses revealed that adolescent low self-esteem was significantly related to and predicted suicide ideation. Similarly, Overholser, Adams, Lehnert & Brinkman (1995) concluded that low self-esteem in adolescents was related to higher levels of suicide ideation, and an increased likelihood of having previously attempted suicide. Longitudinal research has also identified low self-esteem during childhood and adolescence as being a strong predictor of depression in later life (Reinherz et al., 1993). In the reverse high self-esteem, positive and life-affirming beliefs and values, in addition to holding attitudes and moral values against suicide have

been suggested as protective factors against suicidal behaviour (Rutter, 1994). Beautrais (2002) however reported that the role of self-esteem as a protective factor and the extent to which it may be promoted and enhanced, in adolescence requires further evaluation.

Self-esteem has been incorporated into a limited number of theoretical models exploring suicide ideation and risk. For example, Metha, Chen, Mulvenon, & Dode (1998) produced a theoretical model whereby level of self-esteem scores were associated with feelings of hopelessness, which in turn predicted ideation. Joiner (2005) produced an Interpersonal Model of Suicide and he conceptualised self-esteem as a dimension of perceived burdensomeness falling under the domain of 'self-hate' which also incorporates self-blame and shame and mental agitation. Perceived burdensomeness is one of three constructs that he argues predict suicidal behaviour alongside thwarted belongingness and acquired capability. Within an adolescent sample, Barzilay, Feldman, Snir, Apter and Carli (2015) found that perceived burdensomeness interacted with thwarted belongingness, predicting suicidal ideation.

However, there is limited amount of literature exploring self-esteem as a longitudinal risk factor for suicidal ideation and behaviour in adolescents. A risk factor is a special type of correlate that precedes the outcome of interest and can be used to divide the population into high- and low-risk groups (Franklin et al., 2017). Most of the research published on self-esteem and suicide behaviour have utilised a cross-sectional design whereby correlations can be established which have highlighted a significant relationship between low self-esteem and suicide behaviour. (Overholser et al., 1995; Lewinsohn, Rohde, & Seeley, 1994). Longitudinal research is required to determine whether self-esteem should be considered a risk factor for suicide ideation and behaviour and whether it should be further integrated into theory and practice as such, the present systematic review included only longitudinal/prospective studies. This review will be the first to explore self-esteem as a risk factor for suicide ideation and behaviour in adolescence.

Primary Objectives

The primary aim of this project is to systematically review, collate and synthesize the available empirical research exploring the longitudinal relationship between self-esteem and suicide behaviour in adolescence.

Method

Search Strategy

This systematic review included a search of two electronic databases 'Web of Science Core-Collection' and 'PsycINFO'. The Web of Science Core Collection provides access to all of the Web of Science citation indexes - Science Citation Index Expanded, Social Sciences Citation Index, and Arts & Humanities Citation Index. A grey literature search was also conducted across three databases

(Grey Net, Open Grey, Google Scholar). The initial search took place in March 2018 and an updated search was carried out in May 2018. The following search terminology was applied for the purposes of this review (Suicid* OR Attempted Suicide* OR Suicide Ideation*) AND ("Adolesce*" OR "Teenage*" OR "Youth*") AND (self-esteem* OR self-worth* OR self-image* OR self-regard* OR self-concept* OR self-evaluation* OR self-perception* OR self-appraisal*). The primary search methodology was kept broad to safeguard against relevant studies being excluded. There were no restrictions on publication period.

Inclusion criteria for this review required that research be (i) longitudinal/prospective in design employing a (ii) validated measure of self-esteem and a (iii) measure of suicide behaviour at a follow-up assessment period. Unpublished/Published, peer-reviewed English language studies were included that had used quantitative data. Adolescence was defined as between the ages of 10-19 which is consistent with the World Health Organization's definition of adolescence. For the purposes of this review, suicidal ideation was defined 'as thoughts about engaging in behaviors that are intended to end one's life' (Nock et al., 2009). Suicide attempt was defined as 'deliberately causing harm to oneself with at least some intent to die' (Silverman et al., 2007) and 'suicide' was defined as 'a lethal suicide attempt resulting in death of the individual'. As outlined in Forrester et al.'s (2017) systematic review, self-esteem can often be difficult to define due to different interpretations within the literature. The present systematic review draws upon Rosenberg's (1965) broad definition of the concept as 'favourable or unfavourable attitude toward self'. The search strategy was inclusive of papers exploring self-image, self-worth, self-regard, self-concept, self-evaluation, self-perception and self-appraisal. Qualitative studies, book chapters, reviews and commentaries were excluded from the current review. Treatment studies were excluded as they could potentially influence risk factor effect sizes. Studies were excluded if over half the sample had a co-morbid diagnosis of an intellectual disability and if body image was used as a measure of self-esteem.

The results of the search procedure and process are outlined below in Figure 1. A search of 'Web of Science-Core Collection' and 'PsychInfo' was conducted and search results were then transferred to Endnote software, duplicates were removed, and the titles and abstracts of the remaining studies were screened. This was completed initially by a single author (DM), however, if eligibility at this stage was deemed unclear, then full text articles were examined. The full-text of the remaining papers were reviewed independently by DM resulting in 8 papers meeting the inclusion criteria for the review. It should be noted that 2 articles were excluded due to full text articles being unavailable. In all cases whereby a full-text was unavailable the authors were contacted to request a copy of the research and/or the paper was requested from Glasgow University Library.

Quality and Risk of Bias Appraisal

The methodological rigour of each study was evaluated using a modified 'Risk of Bias' assessment tool (Adapted from Forrester et al., 2017; Tooth, Ware et al., 2005). This assessment tool was specifically modified for this systematic review which incorporated design methodology, description or aims/hypotheses, cohort, justification of sample size, unbiased cohort selection, validated measure of self-esteem, description of measure of suicide risk variable, number of participants at each assessment time, reasons for loss at follow-up, appropriate analytical methodology, evidence of controlling for confounding variables and evidence of effect sizes reported. This modified tool was also used to assess whether studies met the inclusion criteria for this review. Two reviewers rated all included studies to assess inter-rater reliability. Agreement between the reviewers was high (95.4%) and any discrepancies were resolved through discussion. For example, the independent rater queried whether Fergusson, Beautrais and Horwood (2003) met the inclusion criteria due to data in the published article focusing on the participant at age 21, however the author of this paper provided additional statistics not outlined in the publication to confirm this study met the inclusion criteria for this review. The independent rater also queried whether Thompson, Ho and Kingree (2007) utilised a valid measure of self-esteem. Reviews of other relevant papers that used data from 'The National Longitudinal Study of Adolescent (Harris et al., 2009; Warren, Harvey & Henderson, 2010) noted that they used six item abridged form of the Rosenberg Self-Esteem Scale (Rosenberg, 1965), an extensively known validated measure therefore this paper was deemed acceptable for use in the review. Total quality scores were calculated by averaging the total score between the two raters with a minimum score equating to 0 and a maximum score equating to 11 (M=8.29, SD=1.2).

Results

Each article is summarised in terms of study type, the design of the study, brief description of population, measurement of self-esteem and suicide behaviour, effect sizes reported, any variables controlled for the analysis and study quality (see Table 1). It should be noted that in studies whereby suicide ideation and suicide attempts were measured across multiple assessment times, we chose to report the effect size/assessment time closest to the maximum age of the inclusion criteria (19 years old), except in cases whereby they measure ideation and attempts by asking if participant had experienced this variable in the last 12 months as opposed to life-time ideation or attempts.

Data Synthesis

Due to the limited number of studies and the heterogeneity of included studies in relation to statistical methodology, confounding variables and unadjusted effect sizes, a meta-analysis of the results was considered inappropriate. Narrative synthesis of the included studies was therefore completed following a review of Siddaway, Wood & Hedges' (2019) guide to conducting systematic review.

Is Self-Esteem a Longitudinal Risk Factor for Suicide Ideation?

Four of the identified articles focused on the longitudinal relationship between self-esteem and suicide ideation. Two of these studies had a one-year follow-up (Fergusson et al, 2003, Thompson et al., 2007) and two studies had a two-year follow-up (Martin et al., 2005, McGee & Williams, 2000). Three studies used a version of the Rosenberg Self-Esteem Scale (see Table 1) and one study utilised the Coopersmith Self-Esteem Inventory (Coopersmith, 1981). Most of the studies reported adjusted odds ratios. Fergusson et al. (2003) reported correlations which were converted into estimated odds ratios using Decoster's (2012) online calculator.

The most recent study published by Thompson et al., (2007) applied multivariate logistic regression models to produce adjusted odds ratio for self-esteem at Wave 1 and ideation at Wave 2 at a 1-year follow-up whilst controlling for nine covariates (See Table 1). Unadjusted effect sizes were not available. The results indicated that adolescents with lower self-esteem at Wave 1 were significantly more likely to have had thoughts about suicide at Wave 2 (*AOR*=0.74 95% *CI*=0.62–0.87, $p<.05$) with 8.3% of the sample experiencing lifetime suicide ideation at Wave 2. This study had the largest sample size of all the included studies within this analysis. This result indicates a negative longitudinal relationship between total self-esteem score and suicide ideation, indicating that high self-esteem scores are associated with a decreased likelihood of future suicidal thoughts.

The second study that explored the longitudinal relationship between self-esteem and suicide ideation was conducted by Martin et al., (2005). The primary aim of this research was to explore factors associated with suicide behaviour from the age of 13. The research involved surveying high school students annually for three successive years. School students completed a questionnaire at mean age 13, 14 and 15 years. Longitudinal logistic regression analyses controlling for other predictor variables revealed that self-esteem at 13 is a significant risk factor for suicide thought at 15 (*OR*=1.57, 95% *CI* 1.19-2.07, $p<.01$) with 19% of the sample experiencing lifetime suicidal thoughts at age 15. It should be noted that they inverted self-esteem scores in their analysis. Therefore, the results indicated that individual with lower self-esteem scores at age 13 were associated with increased odds of experiencing suicide ideation at the age of 15.

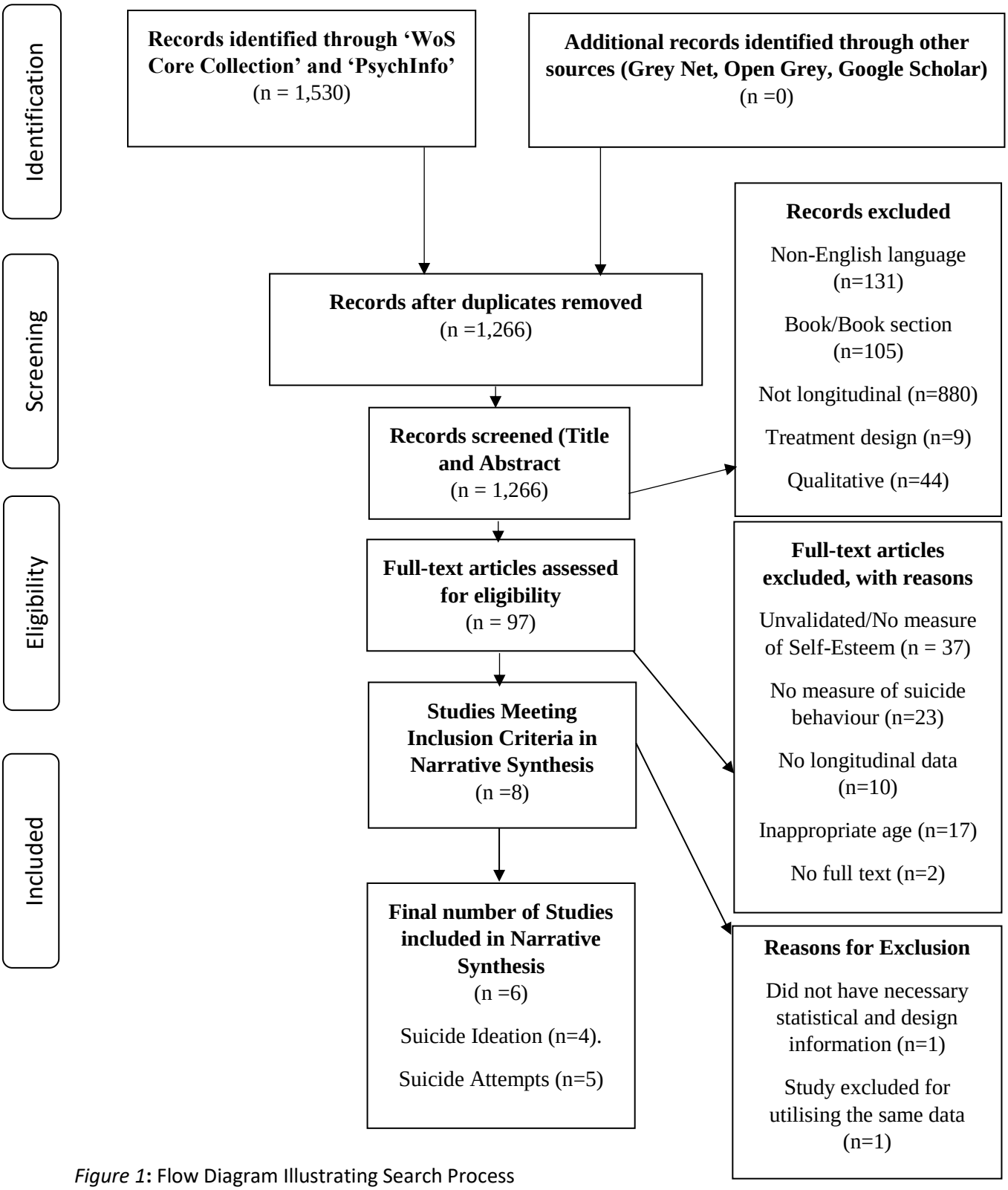

Figure 1: Flow Diagram Illustrating Search Process

The third study conducted by Fergusson et al., (2003) aimed to explore factors that might contribute to vulnerability/resiliency to suicidal behaviours in adolescents and young adults including self-esteem. This study had the smallest sample size of all the included studies (n=941). This study was initially going to be excluded from the systematic review due to it exceeding the age range in the inclusion criteria, however the authors of the paper were contacted, and they provided additional data on the sample at a one-year follow-up aged 15. Self-Esteem at age 15 (M=41.1; SD=6.12) was associated with experiencing suicide ideation in the past 12 months at age 16 (r=-0.26, p<.001, n=941). We converted this to an estimated odds ratio using Decoster (2012) online calculator developed (Borenstein et al., 2009). The estimated odds ratio was calculated as OR=0.37 indicating high self-esteem is associated with reduced likelihood of suicide ideation at age 15 by 63%. This estimated odds ratio is close to the adjusted odds ratio in study 1.

The final study by McGee and Williams (2000) examined whether self-esteem predicted later health compromising behaviour among adolescent including suicide ideation. This study measured self-esteem at ages 11 and 13 and utilised a combined global self-esteem score at age 11 and 13 to reduce 'regression to the mean effect'. Everett (2002) reports that regression to the mean is the phenomenon that if a variable is extreme on its first measurement, it will tend to be closer to the average on its second measurement and visa-versa. A logistic regression model examined the possible existence of linear trends in the increasing prevalence of suicide ideation across differing levels of the Rosenberg Self Esteem Scale. The models suggested that after controlling for gender, socio-economic disadvantage, conflictual family climate and harsh parent–child interaction and academic self-esteem, there remained significant linear trends for suicidal ideation (AOR=2.84, 95% CI=1.44–5.59, p<.05) with 4.6% of reporting ideation at age 15. The results indicate that suicide ideation became more likely as global self-esteem decreased. This study provided the biggest odds ratio of all identified studies however, it also had the lowest quality rating with no attrition analysis and no justification of sample size.

Within the limited literature there appears to be a consensus that high self-esteem is linked to reducing the odds of suicide ideation and low self-esteem appears to increase the likelihood of experiencing suicide ideation. To objectively gain an understanding of the overall size of the odds ratio within the four studies, the reciprocal odds ratio was calculated as outlined in Bland and Altman (2000) for two studies (Fergusson et al., 2003; Thompson et al., 2007) which was calculated as AOR=2.70 and AOR 1.35 respectively. Thus, based on the findings of these papers and calculations, low self-esteem appears to increase the likelihood of future suicide ideation with odds ratios ranging from 1.35 - 2.84.

Table 1.
Characteristics of studies included in the Narrative Review

Author	**Country**	**Population**	**Design**	**Sample Characteristic Time 1**	**Sample Characteristics at Follow-up**	**Length of Follow Up**	**Measure of Self Esteem**	**Measure of Suicide Thoughts or Behaviours**	**Effect Sizes**	**Controlled for**	**Conclusion**	**Quality Rating (See Appendix) Max Score 11 Min Score 0**
Rodríguez-Cano, et al. (2005)	Spain	Community School Sample	Longitudinal	N=1,766 (887 female and 878 male) Age 13	N=1076 (500 males and 576 females) Age 15	2 years-follow-up	Rosenberg Self Esteem Scale (Banos, 2000)-Spanish Version Mean: Not Reported	Single Item Questions. *Attempts: Have you ever actually attempted suicide? Ideation: Have you ever had suicidal thoughts?*)	RSES (T1) and **Attempt** WALD 1.30 p=.718	previous suicide attempts and ideation, key demographic variables, academic results, family and social variables	Self-esteem was not a significant longitudinal risk factor	10
Huang, et al. (2017)	Taiwan	The Taiwanese Adolescent Self-Harm Project-(14 High Schools)	Longitudinal	T1 (N = 5,879) Male 2,544 (43.3%) Mean Age: 16.02	T2 (N = 4,331) Male 1,908 (44.1%)	1 Year follow-up	Rosenberg Self Esteem Scale Chinese Version. (Lin, 1990) Mean=24.7, SD=5.9	Single Item Question Attempt: Have you ever really tried to kill yourself?	Adjusted Odds Ratio: A. RSES (T1) and **Attempt** (T2) AOR 0.87 CI (5%) (.83e.91) p<.001*** B. Not significant	A Odds Ratio Adjusted for gender, socioeconomic status, and school ranking B Alcohol Use Disorders Identification Test-Consumption, Barratt	Low self-esteem was a significant risk factor for Attempts Not Significant once controlled for the variable	9.5

										Impulsiveness Scale, Multi-Dimensional Support Scale, Patient Health Questionnaire-9 item; Life-time suicide ideation, Current Smoking behaviour and Family Discord	outlined in B	
Martin et al., (2005)	Australian	The Early Detection of Emotional Disorder (EDED) Program-Australian Schools	Longitudinal	T1=2603 Age 13	T3=2,246 Age 15	2 years follow-up	Rosenberg's self-esteem Scale (Rosenberg, 1979). Mean Scores Boys 40.54 (6.86) Girls 38.97 (7.44)	Single Item Question Ideation: 'Have you ever y thought about killing yourself?''; Attempts ''Have you tried to kill yourself?''	Odds Ratio RSES (T1) and **Ideation** Time 3 AOR1.57, 95% CI (1.19–2.07), p<.01 RSES (T1) and **Attempts** T3 AOR 2.02, 95% CI (1.07–3.82), p<.05	Perceived Academic Status, Locus of Control	Lower self-esteem Increases the likelihood of Ideation. Lower Self-Esteem increased the likelihood o Attempts	10

McGee et al. (2000)	New Zealand	Dunedin Multidisciplinary Health and Development Study (DMHDS Study)	Longitudinal	T1 (Global Self Esteem Measured at age 11 and age 13 then combined)	T2 Measure at Mean age 15 N=808	2 years follow-up	Rosenberg Self-Esteem Scale (1965) Mean: Not Reported	3-item Question (DISC-C)	Global Self-Esteem at 11-13yrs and **Suicide Ideation** at 15yrs OR 2.84 CI 95% (1.44–5.59) p<.05	Gender, family background variables and academic self-esteem	Lower self-esteem increases the likelihood of Suicide Ideation	7.5
Fergusson, et al., (2003) *Additional data obtained from Author	New Zealand	Christchurch Health and Development Study (CHDS)	Longitudinal	T1((Self Esteem) Age 15 N=965	Assessment Time (Age 19) N=941	1 year follow-up	Coopersmith Self-Esteem Inventory (Coopersmith, 1981) Mean Score 41.12 (6.12)	Suicide Ideation: Have you thought about taking their life by suicide in the interval since the previous assessment? Suicide Attempt: Have you made a suicide Attempt in the interval since the previous assessment.	Correlation Analyses **Ideation** T2 r=-0.26, p<.001, N=941) Estimated OR=0.37 **Attempt** T2 r r=-0.18, p<.001, N=941) Estimated OR=0.51	No controlling factors	Higher self-esteem decreased likelihood of Ideation. Self-Esteem Decreased the likelihood of attempts.	10
Thompson et al., (2007)	United States of America	The National Longitudinal Study of Adolescent Health (Add Health)	Longitudinal	N=15,034 51% Male Age (Mean not reported)	T2 N=15,034	1 year follow-up	6-item (Abridged) Rosenberg Self Esteem Scale (Add Health)	Single Item Questions Ideation 'Have you seriously considered committing suicide during	RSES (T1) and **Ideation** (T2) AOR=0.74, 95% CI=0.62-	Age, Race, gender, metropolitan status, problem drinking, impulsivity,	Higher self-esteem deceased likelihood of suicide Ideation	8.25

		12-14=40% 15-17=60%	Mean Likert Score: M = 4.13, SD 0.58	the past 12 months' (yes/no) Attempts 'Have you attempted suicide in the past 12 month'	0.87, p<0.05 RSES (T1) and Outcome **Attempts** (T2) AOR=0.75 95% CI=0.55–1.02 n/s	delinquency, religiosity and depression

Note: OR=Odds ratio, AOR=adjusted odds ratio, CI=Confidence Interval, T1=Time 1, T2=Time 2, n/s=not significant, p=significance level

Is Self-Esteem a Longitudinal Risk Factor for Suicide Attempts?

Five of the identified articles focused on the longitudinal relationship between self-esteem and suicide attempts. Two of these studies had a two-year follow-up and three studies had a one-year follow-up (see Table 1). All studies measured self-esteem at Wave 1 and suicide attempts at subsequent Waves. Four studies used a version of the Rosenberg Self-Esteem Scale (Rosenberg, 1965) and one study utilised the Coopersmith Self-Esteem Inventory (Coopersmith, 1981). The studies were conducted across different countries. Most of the studies reported odds ratios and adjusted odds ratios. Two studies produced significant results indicating a longitudinal relationship between self-esteem and suicide attempts.

Martin et al. (2005) utilised longitudinal logistic regression analyses controlling for other predictor variables (perceived academic achievement; locus of control) revealed that self-esteem at 13 was a significant risk factor for suicide attempts at age 15 (*AOR* 2.02, *CI*=1.07–3.82, *p*<.05) with 3.5% of the participants (*n*=2246) experiencing lifetime suicide attempt at 15. The results indicate that low self-esteem is associated with increased likelihood of a suicide attempt at a 2-year follow-up. As previously described Fergusson et al. (2003) explored the longitudinal relationship between self-esteem at age 15 and suicide attempts experienced in the past 12 months at age 16. Self-Esteem at age 15 was significantly associated with experiencing suicide attempts in the past 12 months at age 16 (*r*=-0.18, *p*<.001, *n*=941). The estimated odds ratio was calculated as *OR*=0.51 indicating high self-esteem is associated with reduced odds of suicide ideation at age 15 (Decoster, 2012). Both studies, which reported self-esteem as a longitudinal risk factor, had the highest quality ratings of the studies included.

Huang et al. (2017) reported evidence against self-esteem as a longitudinal risk factor following logistic regression analyses whilst controlling for co-variates. The one-year incidence rate of attempts was 1.53% at T2. They utilised univariate analysis methodology and reported that self-esteem at T1 (*M*=24.7; *SD*=5.9, p<.001) was a significant predictor of a suicide attempt at T2. Self-esteem was also a significant predictor for males (*M*=25.4; *SD*=5.7, p<.001) and female attempters (*M*=24.4; *SD*=6.0, p<.001) at T2. A hierarchical multiple regression analysis of all the significant variables in the univariate analyses were adjusted for gender, variables of socio-economic status and school ranking was also conducted. Self-esteem remained a significant risk factor for suicide attempts at T2 (*OR*=0.87, *CI* 95% 0.83-0.91, *p*<.001) indicating that a higher level of self-esteem at T1 is associated with reduced odds of a suicide attempt at T2. However, self-esteem was not a significant risk factor in final logistical regression analyses whereby self-esteem was entered the analysis adjusted for gender, socio-economic status and school ranking with a variety of other variables (See Table 1). Thompson et al., (2007) also explored self-esteem as a longitudinal risk factor for suicide attempts at a one-year

follow-up. Results revealed that 2.2% of the sample experienced a suicide attempt at the follow-up assessment. Using multi-variate regression models whilst controlling for 9 covariates (See Table 1), results were not significant for self-esteem as a longitudinal risk factor for suicide attempts (*AOR*=0.75 95% *CI*=0.55–1.02, *p*>0.05). Rodríguez-Cano et al. (2005) also found that whilst controlling for previous suicide attempts and ideation, key demographic variables, academic results, family and social variables, revealed that self-esteem at age 13 was not a significant predictor of suicide attempts at age 15 (*Wald*=1.30, *p*=0.718).

Discussion

Suicide ideation and suicide attempts have been found to be increasingly prevalent among adolescents; however, there has been a lack of research examining longitudinal risk and protective factors of suicide behaviour. Previous cross-sectional studies have noted a negative relationship between self-esteem and suicidal thoughts and behaviours (Overholser et al., 1995). This review aimed to explore self-esteem as a longitudinal risk factor for suicide ideation and attempts. Within the small number of studies that met the inclusion criteria for this review, there appears to be a consensus that self-esteem is a significant risk factor for suicide ideation.

Self-esteem as a risk factor for attempted suicide produced more variable results with two studies identifying self-esteem as a significant longitudinal risk factor and three studies producing a non-significant result. We can take into consideration several theoretical models to try to conceptualise the inconsistencies in the results. For example, O'Connor and Kirtley's (2018) IMV model of suicide behaviour proposes that there are eight volitional factors which can impact upon the transition from suicidal ideation to suicidal behaviour. These factors include access to means, planning, exposure to suicide or suicide behaviour, impulsivity, fearlessness about death, mental imagery, endurance and past suicidal behaviour. Although self-esteem is not explicitly included in the model, it can be hypothesised that volitional factors may mediate the relationship between self-esteem and suicide attempts, however, further research is required in this area. Indeed, it should be noted that some research has found that adolescent suicide attempters and ideators have similar levels of self-esteem (Fergusson & Lynskey, 1995).

It is , however, important to interpret these results with caution due to the limited number of studies and methodological differences in how the data were analysed and reported. For example, there are methodological differences in the measurement of self-esteem with studies utilising different measures and different methodologies for scoring (e.g. Thompson et al., 2007). This limits our ability to compare mean self-esteem scores across different countries and cultures and to determine if this may have played a role in self-esteem as a risk factor. For example, Brown, Chi, Oakes and Den

(2007) reported that Chinese undergraduates reported lower levels of global self-esteem than our European American participants. The studies identified in this review are also limited to non-clinical adolescent populations. Most of the included studies also reported limitations due to high attrition rates, for example Martin et al. (2005) noted that 13 percent of the initial sample at time 1 was lost to the study by age 15 and their attrition analysis revealed that those who dropped out are at greater risk of suicidal behaviours than those who completed the study. Huang et al. (2017) highlighted a 26% attrition rate and noted that drop-outs had a significantly higher degree of psychological difficulties at baseline and noted that this could have impact upon the incident rates reported in the research. Further, a limitation in the research exploring self-esteem as a risk factor is related to the inconsistency analysing confounding variables. For example, none of the studies exploring self-esteem as a longitudinal risk factor for attempts incorporated data on family history of suicidal behaviour or parental wellbeing which are known to be associated with suicide attempts in adolescents.

This narrative review also reported the effect size/assessment time closest to the maximum age of the inclusion criteria, 19 years in studies whereby there were multiple longitudinal assessments times. However, future reviews should consider that Martin et al. (2005) used univariate chi-squared longitudinal analysis and found that self-esteem had stronger and more consistent associations with measures of suicide behaviour over shorter time intervals rather than longer time intervals. Future reviews on self-esteem as a longitudinal risk factor should also consider the stability of self-esteem from adolescence to early adulthood. Trzesniewski et al. (2006) reported a significant aspect of the age trajectory of self-esteem is that stability is lower during early adolescent than late adolescence. Alasker and Olweus (1992) note that lower stability of self-esteem is more likely when an individual is faced with transitional phases and adolescence is associated with a variety of biological, cognitive and social changes. Therefore, longitudinal studies whereby self-esteem is measured in early adolescence and whereby measures of ideation and attempts are recorded over shorter intervals, may produce greater effect sizes. However, future research is required.

Implications for Clinical Practice

The findings of this review suggest that self-esteem is a longitudinal risk factor for suicide ideation. Within clinical practice and through early intervention services, it is highly important to develop effective adolescent suicide prevention and intervention strategies. However, given the evidence the role of self-esteem as a risk factor and protective factor in overall physical and mental health, it is recommended a ‘broad spectrum approach’ should be adopted. According to Mann et al. (2004) highlight that implementing a preventative intervention can reduce the risk of developing suicidal risk behaviours prior to the onset. This research also highlights that programmes that involve skills

development such as self-esteem enhancement and social support promotion may benefit at-risk adolescents. Subsequently, Mann et al. (2004) described the importance of promotion of personal assets and positive self-evaluations in managing suicidal thoughts. Harter (1999) suggests that self-esteem interventions should focus on several principles including; reducing the discrepancy between the real self and the ideal self, promotion of realistic self-evaluations and promoting social support. Research is limited into interventions that solely focus on self-esteem development and promotion. As the relationship between self-esteem and suicide attempts produced mixed results, clinician should consider volitional variables in the transition from ideation to attempts. This review also provides some evidence supporting theoretical models like the Interpersonal Model (Joiner, 2005), which highlights the role of low self-esteem within the perceived burdensomeness domain, which in turn predicts adolescent ideation (Barzilay et al., 2015).

Conclusion

The research evidence suggested that self-esteem is a longitudinal risk factor to suicide ideation. The longitudinal relationship between self-esteem and suicide attempts produced more varied results and will require further research and exploration.

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Chapter 2

Major Research Project

The relationship between perceptions of defeat and entrapment and adolescent mental health and well-being.

University of Glasgow

Prepared in accordance with the guidelines for the following peer reviewed journal: Journal of Clinical Child & Adolescent Psychology

Plain English Summary

Title: The relationship between perceptions of defeat and entrapment and adolescent mental health and well-being.

Background:

Perceptions of defeat and entrapment have been associated with several mental health conditions (including anxiety, depression, self-harm, suicidal thoughts and attempts) and psychological wellbeing more generally in adults. However, there has been very little research exploring the relationship between perceptions of defeat and entrapment, and adolescent mental health and well-being. Defeat has been described as a belief related to failing in a social context and feelings of powerlessness that results from the inability to achieve individual goals and Entrapment has been defined as a decreased motivation to escape from a stressful/threatening situation, due to a lack of escape opportunities or likelihood of rescue from others (Gilbert and Allen, 1998) The primary aim of this study is to explore the relationship between defeat and entrapment and a range of mental health well-being measures in an adolescent population. As there is a debate in the literature regarding whether defeat and entrapment are separate constructs, a secondary aim of this study was to explore how these constructs are best conceptualized in adolescents.

Aims:

1. To test whether defeat and entrapment should be viewed as a single concept or separate concepts in adolescents.
2. To explore how defeat and entrapment are related to a range of adolescent mental health and well-being measures and to investigate individual difference in defeat and entrapment scores.

Methods:

Participants were 280 teenage school pupils (aged between 14-17 years old), from two secondary schools in North Lanarkshire, Scotland. If the student was under 16 and their guardian didn't wish for their child to partake in the study, they were asked to sign an opt-out form and return to the school. This is a method known as Opt-out or passive consent. Participants completed a questionnaire booklet assessing a range of mental health and well-being measures including anxiety, depression, suicide and self-harm thoughts and behaviors, alcohol and drug use. Statistical tests were applied to answer the aims of the project. Ethical approval was obtained from Glasgow University and North Lanarkshire Council.

Results:

Statistical tests indicated that although defeat and entrapment are separate factors they are strongly related to each other. Female pupils and those who previously attended mental health services had higher defeat and entrapment scores. Statistical tests highlighted that defeat and entrapment were associated with a range of mental health and well-being measures. Feelings of defeat were associated with symptoms of anxiety, depression, stress and inversely related to optimism. Feelings of entrapment was related to measures of anxiety, depression, stress thoughts of self-harm and inversely related to overall life satisfaction.

Practical Applications:

This study contributed to our understanding of feeling defeated and feeling trapped within a Scottish adolescent population. We discovered that females and those who previously attended mental health services had higher defeat and entrapment scores. This research provided evidence in support of theories that view defeat and entrapment as separate but highly related constructs, for example, the Integrated Motivational Volitional Model of Suicidal Behaviour (O'Connor and Kirtley, 2018). Future research should focus on the predictive power of defeat and entrapment and whether to develop interventions to reduce defeat and entrapment.

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Scientific Abstract

Objective: Perceptions of defeat and entrapment are becoming increasingly important psychological constructs within research and clinical work that is focused on understanding the aetiology of mental health and promotion of well-being. Defeat and entrapment have been shown to be associated with depression, anxiety and suicidal behaviour within adult populations. Within the research literature, there is an ongoing debate as to whether defeat and entrapment should be considered as separate or single constructs. This study sought to bridge two gaps in the literature, by investigating the extent to which defeat and entrapment are associated with mental health and well-being measures within an adolescent non-clinical population and to which extent they are best conceptualised as separate or single constructs.

Method

In total, 280 secondary school pupils aged 14 to 17 years old (M=14.83, SD=0.7) took part in this cross-sectional questionnaire-based study. Participants completed the study at their respective schools within North Lanarkshire Council, Scotland and participation remained anonymous. Participants completed the defeat and entrapment scale along with a variety of mental health and well-being measures including depression, anxiety, suicidal and self-harm thoughts and behaviour, frequency of alcohol and drug use, stress, self-esteem, optimism and overall life satisfaction.

Results Confirmatory factor analyses indicated that defeat and entrapment show a better fit with a two-factor model indicating that they are separate but highly related constructs. Female participants and those who previously attended mental health services had significantly higher defeat and entrapment scores. Multivariate hierarchical regression analyses reveal that perceptions of defeat were associated with anxiety, depression and stress symptomology and inversely associated with optimism, however these relationships were not significant after controlling for entrapment suggesting mediation. Entrapment was associated with depression, anxiety, deliberate self-harm ideation, stress and inversely associated with life satisfaction.

Conclusion: This research has been novel in exploring the conceptual relationship of defeat and entrapment and adolescent mental health and well-being. Strengths, limitations and clinical implications are discussed.

Keywords: Defeat, Entrapment, Adolescent, Well-being, Mental Health.

Introduction

Perceptions of defeat and entrapment are becoming increasingly important concepts within psychological research, literature and clinical practice and have been associated with a variety of mental health problems. Previous literature has conceptualised defeat as a type of submissive defence behaviour linked to perceptions of failed social struggle and powerlessness associated with an inability to achieve individualised goals (Gilbert & Allan, 1998). Entrapment has been defined as a blocked psychobiological motivation to escape from a stressful or threatening state, due to a lack of escape possibilities or likelihood of rescue from others (Gilbert & Allan, 1998).

Within adult populations, defeat and entrapment have been related to a range of mental health problems. In a systematic review exploring defeat and entrapment across a range of psychopathologies, Taylor et al. (2009) demonstrated evidence of association between defeat and entrapment and depression, suicidality and anxiety with moderate to large effect sizes. Siddaway, Taylor, Wood and Shulz (2015) conducted a meta-analysis of perceptions of defeat and entrapment and depression, anxiety, post-traumatic stress and suicidality which found strong relationships and similar sized effect sizes across psychopathologies. They further theorised that defeat and entrapment may be transdiagnostic constructs, which refer to common underlying psychological processes/predispositions that play a significant role in influencing and maintaining a variety of mental health problems (Harvey, Watkins, Mansell, & Shafran, 2004), however this is yet to be directly tested. There have been several studies evidencing that defeat and entrapment are important longitudinal predictors of mental health. Griffiths et al. (2014) demonstrated that higher levels of defeat and entrapment at baseline assessment were associated with increased depression and anxiety 12 months later and also noted that altering individuals' perceptions of defeat and entrapment is likely to influence their behaviours and thoughts and should lead to improved well-being alongside reduced distress for individuals. Siddaway et al. (2015) discussed that there is a gap in the literature exploring defeat and entrapment within children and adolescent populations.

Defeat and Entrapment in Adolescent Populations

Thus far, there has only been three studies exploring defeat and entrapment within adolescent samples. Kidd (2006) explored factors precipitating suicide behaviour amongst homeless youth and reported that perceptions of feeling trapped was found to be the most central aspect of suicidality. In a cross-sectional study, Park et al. (2010) noted that participants reported that entrapment was strongly correlated with depression (r=.71, p<.01) and suicide ideation (r=.59, p<.01). Russell, Rasmussen and Hunter (2016) found that individuals who had self-harmed once or repeatedly had significantly higher scores of defeat and entrapment in comparison to a control group. Additional post hoc analyses revealed higher reported defeat and entrapment scores for those individuals who repeatedly self-harmed in comparison to those who engaged in self-harm once. To date, there has been no research

investigating the relationship between defeat and entrapment across a range of adolescent mental health and well-being measures.

Conceptualising Defeat and Entrapment as a Single or Separate Construct

There has been ongoing debate as to whether defeat and entrapment should be conceptualised as a single factor or separate distinct constructs (Johnson, Gooding, & Tarrier, 2008). From a historical perspective, animal and human literature have viewed defeat and entrapment as two distinct constructs (Gilbert & Allen, 1998). Taylor, Gooding, Wood, Johnson and Tarrier (2009) summarise that perceptions of defeat and entrapment are activated in different ways dependent on whether the person can escape from the situation or not. The concepts of defeat and entrapment have often been viewed as separate but interacting concepts within a variety of established and recognised theories of suicidal behaviour including the Integrated Motivational-Volitional Model (IMV; O'Connor and Kirtley, 2018). Taylor et al. (2011) also proposed theoretical model exploring the relationship between defeat, entrapment and psychopathology (depression, anxiety, PTSD and suicide) which support the view of defeat and entrapment as separate constructs. Most recently, Forkmann et al. (2018) conducted exploratory graph analyses with an online adult community sample of 480 participants. The results suggested that the defeat and entrapment items belonged to different dimensions. They concluded that defeat and entrapment can be conceptualised as distinct, yet, highly associated constructs. Exploratory graph analysis is a new approach for estimating the number of dimensions in psychological research (Golino & Epshamp, 2017).

The conceptualisation of defeat and entrapment as separate constructs has recently been challenged. Taylor et al. (2009) conducted a principal-axis exploratory factor analysis and parallel analyses to empirically test the underlying structure of the Defeat and Entrapment Scales and found that a single latent variable was the most appropriate factor structure. Following this, Sturman (2011) reported that defeat and entrapment, in addition to other evolutionary constructs, including negative social comparison and submissive behaviour, appear to load onto a single latent variable described as 'Involuntary Subordination'. Rasmussen et al., (2010) also reported high intercorrelations ranging from r=.72 to r=.81 between defeat and entrapment. However, it should be noted that there has been no consensus in the research as to how defeat and entrapment should be conceptualised, and the research has been limited to adult populations.

The Current Research

To our knowledge, this is the first study to test whether defeat and entrapment are best conceptualised as separate factors or a single distinct factor through confirmatory factor analysis in an adolescent population. This study aimed to advance our understanding of defeat and entrapment within a school-based population the findings of which should be generalisable to other Scottish secondary schools. Given that there are sociodemographic differences in adolescent mental health (National Children

Bureau, 2016), group differences analyses were conducted to explore perceptions of defeat and entrapment across age, gender social deprivation, religious background and previous input with Child and Adolescent Mental Health Services (CAMHS).

This study is also the first to directly test whether defeat and entrapment are associated with a broad range of mental health and well-being variables using a multivariate design in adolescents. From a cognitive perspective, negative thoughts have been linked the development and maintenance of mental health. Piqueraz et al., (2017) recommend that researchers exploring adolescent mental health should consider a bi-dimensional model of mental health, which conceptualises psychological distress and well-being as related yet continuously distinct concepts, that, when considered together, offers a more complete and richer understanding of the human condition. Based on adult research on defeat and entrapment, it would be hypothesised that defeat and entrapment would be positively associated with mental health difficulties and negative associated with well-being. Therefore, this study measured a wide range of mental health issues including anxiety, depression, stress, and risk-related behaviours (e.g. suicide and self-harm thoughts and behaviours and alcohol/drug use), in addition to measures of subjective well-being measures including life satisfaction, self-esteem, and optimism. This research aims to contribute to research on defeat and entrapment by extending the research to a non-clinical adolescent population with a wide focus on mental health and well-belling variables.

Aims

1. To empirically investigate whether the concepts of defeat and entrapment should be conceptualised as separate or single constructs within an adolescent population using confirmatory factor analysis.
2. To explore any group differences in perceptions of defeat and entrapment within an adolescent population.
3. To robustly and directly test the extent to which perceptions of defeat, and entrapment are associated with a range of mental health and well-being measures within an adolescent population.

Method

Design

This study utilised a cross-sectional multivariate survey design to investigate the conceptual relationship between defeat and entrapment and to directly test whether perceptions of defeat and entrapment are associated with a range of adolescent mental health and wellbeing measures within an school-based sample.

Participants

A total of 280 adolescent secondary school pupils (55% Female, 41.5% Male & 3.5% Transgender/Other) were recruited from 2 secondary schools within North Lanarkshire Council, Scotland. All pupils were in secondary school (S3-S6) and aged 14 to 17 years old (M=14.83, SD=0.7); demographic information is detailed in Appendix 17. 89% of participants reported their ethnicity as Scottish and 49.5% identified as Atheist. The Scottish Index of Multiple Deprivation (SIMD, 2016) quintiles categorise deprivation ranks for the 6505 data zones in Scotland into five groups (1 = most deprived, 5 = least deprived) using postcode data; each quintile contains 20% of the data zones. The percentage of participants reporting postcodes within the respective quintiles of deprivation (1-5) was 14.3%, 38.6%, 32.5%, 10.7% and 3.9%, respectively.

Procedure

Ethical approval was obtained from College of Medical Veterinary and Life Sciences Ethics Committee at the University of Glasgow (Project Number 200170013) and North Lanarkshire Council (Appendix 3 &Appendix 4). A week before data collection, the nature of participation was explained in detail to the respective school and potential participants. For participants under 16, parents were provided with an information sheet and were asked to notify the school if they did not want their child to participate. All participants were required to sign a consent form on the day of participation and were informed that participation was voluntary, and their responses would remain anonymous. This was an anonymous self-report questionnaire that took approximately 30 min to complete. The questionnaire booklet was piloted to a small group (n=10) prior to commencing data collection (see Appendix 15). Data collection took place in the school assembly halls whereby participants were requested to complete a questionnaire booklet in groups. To manage risks associated with confidentiality, participants were given the option of completing the questionnaire away from their peers. In addition to this, two versions of the response booklet were created to ensure that neighbouring children will not know which questions were being answered. This procedure has been utilised successfully in the past (O'Connor et al., 2014). The primary researcher was present during the data collection to manage any distress. Upon completion of the questionnaire, all participants were given with a 'Keeping myself Safe' document which provided helpful links and contact details for those experiencing thoughts of self-harm and suicide ideation.

Measures

Demographic characteristics.

Demographic and background data were obtained. These were; (a) gender, (b) age at assessment, (c) ethnicity and (d) religion. Participants were also asked whether they had previously received professional support for mental health difficulties. The questionnaire also included a measure of the

frequency of alcohol and drug use whereby participants were asked 'how often they engaged in alcohol/drug use which was measured on a 4-point Likert-type scale from 'Never' to 'Frequently'.

The Defeat Scale (Gilbert & Allan, 1998). The Defeat Scale includes 16 items reflecting perceptions of failed struggle, powerlessness, and loss of rank or status (e.g., "I feel powerless"). This scale had very high internal consistency with Cronbach's alpha coefficients of 0.91. **The Entrapment Scale (Gilbert and Allan, 1998).** The Entrapment Scale includes 16 items reflecting perceptions of feeling trapped and wishing to escape (e.g., "I want to get away from myself"). Cronbach's alpha co-efficient was 0.96. Both scales required each participant to indicate on a 5-point scale ('not at all like me', 'a little bit like me', 'moderately like me', 'quite a bit like me' and 'extremely like me'). The Defeat and Entrapment Scales developed and validated by Gilbert and Allan (1998) are the most widely used assessments of the defeat and entrapment constructs in the literature appear to demonstrate reasonable reliability and validity as outlined in Taylor, Gooding, Wood and Tarrier (2014).

The Revised Child Anxiety and Depression Scale (RCADS; Chorpita et al., 2000). The Revised Child Anxiety and Depression Scale (RCADS) is a 47-item questionnaire with subscales including: separation anxiety disorder (SA), social phobia (SP), generalized anxiety disorder (GAD), panic disorder (PD), obsessive compulsive disorder (OC), and major depressive disorder (MDD). Cronbach's alpha value for each subscale was 0.79, 0.89, 0.87, 0.94, 0.83 and 0.91 respectively, indicating good internal consistency. RCADS has good concurrent validity and reliability (Chorpita et al., 2000).

Rosenberg Self Esteem Scale (RSES; Rosenberg, 1965). A 10-item scale that measures global self-worth by measuring both positive and negative feelings about the self on a 4-point likert scale. The scale had good internal consistency with a Cronbach Alpha co-efficient value of 0.74. Evidence of the scale's reliability and validity is outlined in Simmons et al., (1973).

Life Orientation Test-Revised (LOT-R; Scheier, Carver, & Bridges, 1994) Optimism was measured with the LOT-R by assessing generalized outcome expectancies of participant. LOT-R had good internal consistency with a Cronbach Alpha value of 0.66. The LOT-R is one of the most widely used measures of optimism, with good reliability (e.g., internal and test– retest) and validity (Scheier, Carver, & Bridges, 1994).

Perceived Stress Scale 4-Item (PSS-4 Cohen, Kamarck & Mermelstein, 1983) Stress was assessed with the short form of the perceived stress scale (PSS-4). This measure has four items that focus on the appraisal of stress and coping over the preceding month (e.g., "How often have you felt that you could not control the important things in your life?" Responses are made on a 5-point likert scale. Although the 4-item scale has been shown to have lower reliability and validity than the 10-item scale, the PSS has been shown to have good concurrent and predictive validity (Cohen, Kamarck & Mermelstein, 1983).

Life Satisfaction BMSLSS-PTPB: Youth (Athay et al., 2012). Youth satisfaction with life was assessed with the Brief Multidimensional Students' Life Satisfaction Scale – PTPB version (BMSLSS-PTPB). Response choices for the BMSLSS-PTPB are on a five-point Likert-type scale (ranging from 'Very Dissatisfied' to 'Very Satisfied'). The BMSLSS-PTPB measures life satisfaction using six youth appropriate items, one of which measures overall life satisfaction. The other five items measure satisfaction in specific life domains: family life, friendships, school experience, self, and where one lives. The BMSLSS-PTPB has previously demonstrated sound psychometric qualities (Bickman et al., 2007)

Suicide and Self-Harm Behaviour Assessment. Suicide attempts and Deliberate Self-harm were assessed via the following questions, taken from Adult Psychiatric Morbidity Survey (McManus et al., 2015): 'Have you ever made an attempt to take your life, by taking an overdose of tablets or in some other way?' and 'Have you ever deliberately harmed yourself in any way but not with the intention of killing yourself?'. The questions about self-injurious and suicidal thoughts were adapted from the APMS and the Child and Adolescent Self-harm in Europe study (Madge et al., 2008). Presence of suicidal thoughts was determined as follows: 'Have you ever seriously thought of taking your life, but not actually attempted to do so?' and respondents completed the following deliberate self-harm ideation item question: 'Have you ever seriously thought about trying to deliberately harm yourself but not with the intention of killing yourself but not actually done so?'.

Statistical Analysis

This project sought to investigate whether the concepts of defeat and entrapment should be conceptualised as single or separate constructs within an adolescent population using confirmatory factory analysis. Confirmatory Factor Analyses were conducted using SPSS version 22.0 (IBM Corp, 2016) and R (R Development Core Team, 2009). Confirmatory Factor Analysis (CFA) was performed using the R lavaan package, version 0.5–18 (Rosseel, 2012). Two CFA models were tested using mean- and variance-adjusted weighted least squares (WLSMV) estimation to account for the ordinal nature of the defeat and entrapment scales and missing data. Flora and Curran (2004) highlighted some of the advantages of WLSMV estimation for skewed ordinal data including unbiased modelling and standard error estimate and acceptable type-1 error rate. Competing models were compared using change in model fit according to CFI and RMSEA (Chen et al., 2008). Acceptable fit was operationalized as Root Mean Squared Error of Approximation (RMSEA) <.08, Comparative Fit Index (CFI) >.90, Tucker Lewis Index (TLI) >.90. Good fit was operationalized as RMSEA <.06, CFI >.95, and TLI >.95 (Hu & Bentler, 1999). Model 1 tested whether defeat and entrapment should be conceptualised as a single factor model and Model 2 test whether defeat and entrapment should be conceptualised separate constructs as with all items loading on a single latent variable. SPSS version 22.0 (IBM Corp, 2016) was used to explore group differences (e.g. gender, age) in perceptions of

defeat and entrapment within an adolescent population. Univariate regression analyses were conducted to test the association between defeat, entrapment and adolescent mental health and well-being measures and to determine which measures would be entered in the multivariate analyses. Multivariate hierarchical regression analyses were conducted to separately determine the relationships between (a) defeat (b) entrapment and a range of mental health and well-being measures. The standardized beta coefficients are reported **to** compare the strength of the effect of each individual independent variable to the dependent variable and to compare the relative importance of each variable in the regression model. Robustness checks were completed to control for the shared variance between defeat and entrapment. Missing data was minimal with suicide and self-harm related items being the highest at (4-5%) per item.

Results

Confirmatory Factor Analysis: Separate or A Single Construct

To address the first aim, confirmatory factor analyses were used to investigate whether the concepts of defeat and entrapment should be conceptualised as single or separate constructs. Scores on defeat and entrapment demonstrated positive skew (M = 1.01, SE=0.15) and kurtosis (M = 0.48, SE=0.29). Bartlett's test suggested the data were suitable for a factor analysis, $\chi 2$ (496) =8426.28 , p < .000. The Kaiser–Meyer–Olkin (KMO) measure also indicated that the sample size was adequate KMO=0.97. The sample size met a priori recommendations for Confirmatory Factor Analysis. Table 1 shows that across defeat and entrapment items, the two-factor model (Model 2) demonstrated an improvement in fit over the single factor model (Model 1). On robust estimations (WLSMV) the change in model fit according to CFI, RMSEA (Chen et al., 2008) all indicated superiority and acceptable fit for the two-factor model. The results of the confirmatory factor analysis provided evidence that defeat, and entrapment are two separate but highly correlated variables (r=0.87, p<.001).

Table 1
Comparison of two mean- and variance- and variance-adjusted weighted least squares (WLSMV) estimation CFA Models

	Model Fit					
Model	CFI	TLI	RMSEA	SRMR	X2	df
One Factor Model WLSMV	0.969	0.967	0.082	0.056	1331.182*	464
Two Factor Model WLSMV	0.977	0.975	0.072	0.052	1126.198*	463

Note: CFI=Comparative Fit Index; TLI=Tucker Lewis Index, RMSEA=Root Mean Squared Error of Approximation, SRMR= Standardized Root Mean Square Residual. *p<.001

Exploring Group Differences in Perceptions Defeat and Entrapment

The second aim of the study explored group difference in the constructs of defeat and entrapment (see Table 2). There was a significant effect for gender on defeat scores $t(268) = -4.73$, $p=.003$, with women ($M=21.29$; $SD=13.17$) reporting higher scores than men ($M=14.17$; $SD=10.9$). There were no significant effects for age group, SIMD or religious background. There was a significant main effect for previous Child and Adolescent Mental Health (CAMHS) input, $F(1, 277) = 26.63$, $p<.01$ with individuals who previously attended CAMHS services ($M=26.04$; $SD=15.13$) reporting a higher level of defeat than those who didn't ($M=16.34$, $SD=11.76$).

Table 2
Analysis of Variance for Defeat and Entrapment Scores

Analysis of Variance for Defeat Scores				
	df	*t/F*	*Sig. (p)*	*Cohen d*
Gender	268	-4.73 (t)	.003	0.07
Age Group	3, 273	1.32	2.71	
SIMD	5, 274	1.69	0.15	
Previous CAMHS Input	1, 277	26.63	.000	0.09
Religious Background	2, 277	1.49	.23	
Analysis of Variance for Entrapment Scores				
	df	*t/F*	*Sig. (p)*	
Gender	268	-4.81 (t)	<.001	0.08
Age Group	3, 273	2.34	.74	
SIMD	5, 274	1.43	.22	
Previous CAMHS Input	1, 277	23.32	<.001	0.08
Religious Background	2,277	1.18	.31	

Note: SIMD=Scottish Multiple Deprivation Index, CAMHS=Child and Adolescent Mental Health Service

There was a significant effect for gender on entrapment scores $t(268) = -481$, $p<.001$, with women ($M=17.68$; $SD=16.79$) reporting higher scores than men ($M=8.72$; $SD=12.65$). There were no significant effects for age group, SIMD or religious background. There was a significant main effect for previous CAMHS input, $F(1, 277) = 23.32$, $p<.01$ with individuals who previously attended CAMHS services ($M=22.98$; $SD=19.12$) reporting a higher level of entrapment than those who didn't ($M=11.81$, $SD=14.31$).

Exploring the Relationship between Defeat and Entrapment and Adolescent Mental Health and Well-Being

To explore the primary aim of this study, a series of multivariate hierarchical regression analyses were conducted to explore the relationship between (a) defeat (b) entrapment and a range of adolescent mental health and well-being measures. A summary of mean scores for each psychometric measure can be found in Appendix 18. In advance of conducting the multivariate regression analyses univariate regression analyses were conducted to explore the relationship between (a) defeat (b) entrapment and the research measures (see Table 3). All significant measures were entered into the

multivariate hierarchical regression analyses with only age and religious background being excluded from the analyses.

A hierarchical multivariate regression analysis explored the relationship between defeat and mental health and well-being measures (see Table 4). The first block accounted for 6% of the variance in defeat scores with gender (β=0.25, p<.001) being significant. In the second block, previous CAMHS input was added to the regression which contributed an additional 7% of the variance in defeat scores with gender (β =0.23, p<.001) and CAMHS input (β=-.28, p<.001) contributing to the predictive value of defeat. In block three all the mental health and well-being measures were entered into the regression analysis, which contributed to explaining an additional 51% (ΔR^2=.64, p<.001) of the variance in defeat scores F(18,236)=26.46, p<.001. Only RCADS-Major Depression (β=0.35, p<.001), RCADS Generalised Anxiety (β=0.27, p<.05), Perceived Stress (PSS-4; β=0.19, p<.001) and Life Orientation Test (LOT-R; β=-.09, p<.001) significantly contributed to explaining the variance in defeat score. Major Depression and Generalised Anxiety produced the highest standardised beta coefficients indicating a stronger relationship with defeat. A robustness check controlling for entrapment was also conducted. The first regression methodology was repeated with entrapment being entered at block 2. At block 2, the total variance explained by the model was 78%, F(2,251)=405.58, p<.001. Block 3 did not significantly add to the model F(16,235)=1.29, p=2.03, indicating that whilst controlling for entrapment, defeat does not have a relationship with mental health and well-being variables.

The third hierarchical regression analysis explored the relationship between entrapment and mental health and well-being variable (See Table 5). This regression was conducted in three blocks as described in the first analysis. The first block accounted for 6% of the variance in entrapment scores with gender (β=0.25, p<.001) being a significant contributor. In the second block previous CAMHS input was added to the regression which contributed an additional 7% of the variance in entrapment scores. In Block three, the mental health and well-being measures were entered in the regression model which contributed to explaining an additional 60% (ΔR^2=0.73, p<.001) of the variance in entrapment scores F(16,236)=37.18, p<.001. Only RCADS-Major Depression (β=0.42, p<.001) RCADS-Generalised Anxiety (β=0.17, p<.05), previous deliberate self-harm ideation (β=-.13, p<.05), perceived stress (β=.18, p<.001) and overall life satisfaction (β=-.16, p<.01) all significantly contributed to explaining the variance in defeat scores. RCADS-Major Depression had the largest standardised beta co-efficient value indicating a stronger relationship with entrapment when compared to other significant variables. A robustness check controlling for perceptions of defeat at block 2 was conducted which resulted in RCADS-Generalised Anxiety becoming insignificant.

Table 3

Univariate Regression Analyses for Perceptions of Defeat and Entrapment and Adolescent Mental Health and Well-being

	Perceptions of Defeat				Perceptions of Entrapment			
	B	SE B	β	ΔR^2	B	SE B	β	ΔR^2
Gender	4.54	1.20	.22	.05***	6.72	1.45	.27	.07***
Age	1.50	1.10	.08	.00 n/s	2.03	1.36	.09	.00 n/s
Religious Background	1.84	1.09	.10	.00 n/s	.27	.28	.06	.00 n/s
Previous CAMHS Input	-9.76	1.88	-.29	.08***	-11.16	2.31	-.28	.07***
RCADS-SP	.98	.07	.61	.37***	1.23	.09	.63	.39***
RCADS-PD	1.17	.08	.68	.47***	1.53	.08	.75	.53***
RCADS-SA	1.82	.14	.61	.36***	2.42	.17	.66	.43***
RCADS-OC	1.86	.13	.65	.42***	2.38	.16	.68	.46***
RCADS-GA	1.85	.71	.70	.49***	2.33	.14	.72	.53***
RCADS-MD	1.29	1.3	.75	.56***	1.72	.07	.82	.66***
Suicide Ideation	-13.22	1.59	-.45	.20***	-17.88	1.9	.50	.25***
Suicide Attempts	-13.11	2.69	-.28	.08***	-18.76	3.26	-.33	.11***
Deliberate Self Harm Ideation	-14.79	1.77	-.46	.21***	-20.09	2.12	-.5	.25***
Deliberate Self-Harm Behaviour	-13.92	1.84	-.42	.18***	-19.06	2.23	-.47	.22***
Freq. of Alcohol Use	2.79	.76	.22	.04***	4.58	.91	.29	.08***
Freq. of Drug Use	3.38	1.22	.16	.02**	6.07	1.47	.24	.05***
Perceived Stress Scale (PSS-4)	2.31	.24	.50	.25***	2.83	.29	.51	.25***
Rosenberg's Self Esteem Scale (RSES)	-.61	.30	-.12	.01*	-.86	.37	-.14	.02*
Life of Test-Revised (LOT-R)	-.76	.20	-.22	.05***	1.14	.25	-.27	.07***
Overall Life Satisfaction	-5.1	.56	-.48	.23***	-7.21	.65	-.55	.30***
Entrapment	.71	.02	.87	.76***	-	-	-	-
Defeat	-	-	-	-	1.07	.04	.87	.76***

Note: CAMHS=Child and Adolescent Mental Health Service, RCADS-SP=Revised Child Anxiety and Depression Scale-Social Phobia, RCADS-PD=Panic Disorder, RCADS-SA=Separation Anxiety, RCADS-OC=Obsessive Compulsive, RCADS-GA=Generalized Anxiety, RCADS-MD=Major Depression ***=P<.001, **=P<.01, *=P<.05, n/s=not significant

Table 4

Hierarchical Multivariate Linear Regressions Exploring the Relationship between Defeat and Adolescent Mental Health and Well-being

	Block 1				Block 2				Block 3			
Variables	*B*	*SE B*	*β*	*ΔR²*	*B*	*SE B*	*β*	*ΔR²*	*B*	*SE B*	*β*	*ΔR²*
					Perceptions of defeat							
				.06***				.13***				.64***
Constant	9.99	2.45										
Gender	5.12***	1.27	.25									
Constant					27.68	2.45						
Gender					47***	1.23	.23					
CAMHS Input					-9.35***	1.96	-.28					
Constant									22.57	7.4		
Gender									.03	.87	.00	
CAMHS Input									-2.15	1.38	-.06	
RCADS-SP									-.07	.11	-.05	
RCADS-PD									-.00	.15	.00	
RCADS-SA									.11	.18	.04	
RCADS-OC									.08	.21	.03	
RCADS-GA									.73***	.23	.27	
RCADS-MD									.59***	.14	.35	
Suicide Ideation									-.80	1.67	-.03	
Suicide Attempt									-.96	2.14	-.02	
DSH-Ideation									-2.85	1.96	-.09	
DSH-Behaviour									1.74	2.09	.05	
Freq. Alcohol									-.26	.55	-.02	
Freq. Drugs									1.46	.88	.07	
PSS-4									.90***	.23	.19	
RSES									-.21	.2	-.04	
LOT-R									-.29***	.15	-.09	
Overall Life Satis									-1.04	.56	-.09	

Note: CAMHS=Child and Adolescent Mental Health Service, RCADS-SP=Revised Child Anxiety and Depression Scale-Social Phobia, RCADS-PD=Panic Disorder, RCADS-SA=Separation Anxiety, RCADS-OC=Obsessive Compulsive, RCADS-GA=Generalized Anxiety, RCADS-MD=Major Depression, DSH=Deliberate Self Harm, PSS-4=Perceived Stress Scale, RSES=Rosenberg Self-Esteem Scale, LOT-R=Life Orientation Test-Revised. ***=P<.001, **=P<.01, *=P<.05, n/s=not significant.

Table 5

Hierarchical Multivariate Regression Exploring the Relationship between Entrapment and Adolescent Mental Health and Well-Being

	Block 1				Block 2				Block 3			
Variables	*B*	*SE B*	*β*	ΔR^2	*B*	*SE B*	*β*	ΔR^2	*B*	*SE B*	*β*	ΔR^2
					Perceptions of Entrapment							
				.06***				.13***				.73***
Constant	3.4	2.78										
Gender	6.05***	1.58	.25									
Constant					24.95	5.31						
Gender					6.04***	1.52	.23					
CAMHS Input					-11.4***	2.43	-.28					
Constant									26.56	7.88		
Gender									-.44	.93	-.02	
CAMHS Input									-1.74	1.47	-.04	
RCADS-SP									-.09	.12	-.05	
RCADS-PD									.11	.16	.05	
RCADS-SA									.18	.19	.05	
RCADS-OC									-.00	.22	-.00	
RCADS-GA									.56***	.24	.17	
RCADS-MD									.87***	.15	.42	
Suicide Ideation									.42	1.78	.01	
Suicide Attempt									-.96	2.14	-.02	
DSH-Ideation									-5.3*	2.08	-.13	
DSH-Behaviour									1.74	.58	-.00	
Freq. Alcohol									1.34	.94	.05	
Freq. Drugs									-.05	.58	-.00	
PSS-4									1.02***	.24	.18	
RSES									-.38	.21	-.06	
LOT-R									-.18	.15	-.04	
Overall Life Sat									-2.22**	.59	-.16	

Note: CAMHS=Child and Adolescent Mental Health Service, RCADS-SP=Revised Child Anxiety and Depression Scale-Social Phobia, RCADS-PD=Panic Disorder, RCADS-SA=Separation Anxiety, RCADS-OC=Obsessive Compulsive, RCADS-GA=Generalized Anxiety, RCADS-MD=Major Depression, DSH=Deliberate Self Harm, PSS-4=Perceived Stress Scale, RSES=Rosenberg Self-Esteem Scale, LOT-R=Life Orientation Test-Revised. ***=P<.001, **=P<.01, *=P<.05, n/s=not significant.

Discussion

This study is the first, using an adolescent sample, to contribute to the continuing debate as to whether defeat and entrapment are a single construct or two separate constructs. Confirmatory factor analyses support the conceptualisation of defeat and entrapment as separate but highly related constructs. The results of this study are also consistent with Forkmann et al. (2018) and our findings provide evidence consistent with several theoretical models (O'Connor & Kirktley, 2018).

This study is unique in exploring the relationship between defeat, entrapment and a range of mental health and well-being measures within a non-clinical adolescent population. Univariate regression analyses highlighted that defeat and entrapment were associated with all mental health and well-being measures. In a multi-variate hierarchical regression model defeat was related to generalised anxiety and depression symptomology which would fit with the research into adult populations (Siddaway et al., 2015). Our finding also indicated that perceptions of defeat are related to stress and inversely related to optimism. The model exploring the relationship between entrapment and mental health and subjective wellbeing (bi-dimensional model) was significant with entrapment being associated with depression, anxiety, deliberate self-harm ideation, stress and inversely associated with overall life satisfaction. Entrapment did not have a significant relationship with generalised anxiety whilst controlling for defeat. Depression was found to have the strongest relationship with both defeat and entrapment with in consistent with adult studies Taylor et al. (2011) noted that defeat and entrapment may be closely related to depressive symptomology and that comorbidities between mental health psychopathologies may explain the relationship between defeat and entrapment and the other variables. Our results are consistent with Park et al. (2010) with regards to the relationship between entrapment and depression in an adolescent population. Russell, Rasmussen et al. (2016) previously reported that there were no significant differences in entrapment scores between deliberate self-harm ideation and enactment groups. Therefore, it is surprising that entrapment did not significantly predict self-harm behaviour. This may be due to the comorbidity between depression and other mental health issues as descripted above.

Future Directions and Limitations

The debate regarding the conceptualisation of defeat and entrapment has not been resolved by this research and replication using larger clinical and non-clinical samples within an adolescent is required. Taylor et al., (2009) proposed that the challenges associated with the conceptual relationship between defeat and entrapment may be related to problems within the scales and they note that further research should focus on developing more sensitive measures and understanding the clinical application of defeat and entrapment.

There were several limitations to this study. Firstly, longitudinal study designs may be more beneficial than cross-sectional designs in determining whether defeat and entrapment are associated with a bi-dimensional model of mental health and well-being. Perceptions of defeat and entrapment are also dynamic may be sensitive to change due to situational circumstances and therefore multiple assessment over a long period may provide insight into moderating factors. This study highlighted significantly higher defeat and entrapment scores for adolescents who had received previous input from Child and Adolescent Mental Health Services, indicating a need to explore these concepts further within adolescent clinical populations. It may be helpful to draw upon research in adult populations who have theorised that defeat and entrapment are transdiagnostic (Siddaway et al., 2015). Ehrenreich-May and Chu (2014) described that for a concept to be considered transdiagnostic it must provide explanatory power in understanding the onset, development, or maintenance of two target conditions, in addition to providing a type of unique explanatory power in two target conditions that could not be understood through the study of the two conditions alone. Taylor et al. (2011) also noted that it would be interesting to investigate how changes in perceptions of defeat and entrapment are associated with recovery from a psychopathological presentation especially in depression and low mood cases. This would provide insight into whether effective interventions play a role in reducing perceptions of defeat and entrapment. Alternatively, it may be beneficial to monitor defeat and entrapment score in association with interventions that target subjective well-being including sport participation (Ruseski, 2014).

Conclusion

The current study is the first to explore the concepts of defeat and entrapment within an adolescent non-clinical population across a range of mental health and well-being measures. This research also contributes to the literature on the conceptual relationship between defeat and entrapment and provides evidential support for theories that view defeat and entrapment as separate but highly related constructs.

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Williams, J. M. G. (1997). *Cry of pain*. Harmondsworth Penguin

Appendix 1: Sample Data Extraction Form

Data Extraction Form

Paper Title:

Author/s: **Year:**

Design

Study design *(e.g., Cross-sectional/ case-comparison/ case-control/ retrospective e.g., psychological autopsy/ prospective cohort)*

Groups matched: NA Details:

Participant Characteristics

Participants/population studied:

Size:

Demographic characteristics: *(e.g., Gender/ age/ ethnicity/ sexuality/ SES)*

Exclusion criteria:

Psychopathology

Yes/No

Details (e.g., assessment/ diagnosis/ Medication)

Suicidality Outcome

(e.g., completed suicide/ attempted suicide/suicidal ideation/ suicide plans)

Assessment:

Method:

Was intent established?

Time since behaviour *(if applicable)*:

Self-Esteem Role

Assessment:

Confounding variables:

What has been controlled/adjusted for? *(either in statistical analysis, matched groups or excluded for)*

Longitudinal designs ONLY

Longitudinal component: Yes/ No

Length of Follow-up:

Follow-up procedure:

Drop-off rate:

Main findings

Additional notes

Appendix 2: *Risk of Bias Assessment Tool (Adapted from Forrester et al., 2017 and Tooth, Ware et al., 2005) *Quality rating of: ('yes'=1), ('partially'=0.5), ('No=0') and ('cannot tell'=0) to several elements within each paper.*

Name of the Study	Are the objectives or hypotheses of the study stated?	Is there Evidence of an Adequate description of the cohort?	Is the number of participants justified? (Sample Size Calculation and Power)?	Evidence of Unbiased selection of the cohort	Validated method for ascertaining self-esteem status.	Description of method for ascertaining measure of Suicidality	Was the number of participants at each stage/wave specified?	Were reasons for loss to follow-up quantified ?	Were Analytic methods appropriate ?	Evidence of Analysis controls for confounding variable ?	Were effect sizes reported ?	Mean Quality Score Min=0, Max=11	Did the study meet the proposed inclusion criteria
Thompson et al., (2007)	Y	Y	N	Y	P	Y	N	N	Y	Y	Y	8.25	P
	Y	Y	N	Y	Y*	Y	Y*	N	Y	Y	Y		Y*
McGee, R. et al. (2000)	Y	Y	N	P	Y	Y	N	N	Y	Y	Y	7.5	Y
	Y	Y	N	P	Y	Y	N	N	Y	Y	Y		Y
Huang, Y.H. et al. (2017)	Y	Y	N	P	Y	Y	Y	Y	Y	Y	Y	9.5	Y
	Y	Y	N	P	Y	Y	Y	Y	Y	Y	Y		Y
Fergusson et al., (2003)	Y	Y	P	P	Y	P	Y	Y	Y	Y	Y	9.5	P*
	Y	Y	P	P	Y	P	Y	Y	Y	Y	Y		Y
Martin et al., (2005)	Y	Y	N	Y	Y	Y	Y	Y	Y	Y	Y	10	Y
	Y	Y	N	Y	Y	Y	Y	Y	Y	Y	Y		Y
Rodrígue-Cano, et al. (2005)	Y	Y	N	Y	Y	Y	Y	Y	Y	Y	N	10	Y
	Y	Y	N	Y	Y	Y	Y	Y	Y	Y	N		Y

*denotes resolved disagreement between raters

Appendix 3: Ethical Approval Letter-College of Medical and Vetinary Sciences

University of Glasgow | College of Medical, Veterinary & Life Sciences

10th October 2017
Dear Professor O'Connor
MVLS College Ethics Committee

Project Title: The relationship between defeat and entrapment and emotional well-being in an adolescent population
Project No: 200170013
The College Ethics Committee has reviewed your application and has agreed that there is no objection on ethical grounds to the proposed study. It is happy therefore to approve the project, subject to the following conditions:

- Project end date: 31 August 2018
- The data should be held securely for a period of ten years after the completion of the research project, or for longer if specified by the research funder or sponsor, in accordance with the University's Code of Good Practice in Research:

(http://www.gla.ac.uk/media/media_227599_en.pdf)

- The research should be carried out only on the sites, and/or with the groups defined in the application.
- Any proposed changes in the protocol should be submitted for reassessment, except when it is necessary to change the protocol to eliminate hazard to the subjects or where the change involves only the administrative aspects of the project. The Ethics Committee should be informed of any such changes.
- You should submit a short end of study report to the Ethics Committee within 3 months of completion.

Yours sincerely

Dorothy McKeegan

Dr Dorothy McKeegan
College Ethics Officer

Dr Dorothy McKeegan

Senior Lecturer

R303 Level 3
Institute of Biodiversity Animal Health and Comparative Medicine
Jarrett Building
Glasgow G61 1QH Tel: 0141 330 5712
E-mail: Dorothy.McKeegan@glasgow.ac.uk

Appendix 4: Ethical Approval North Lanarkshire Council

Tel: 01236 812235
E Mail: mcgheep@northlan.gov.uk
Date: 23rd October 2017

David Maher

Trainee Clinical Psychologist,

Mental Health & Wellbeing,

Academic Centre,

Gartnavel Royal Hospital Glasgow,

G12 0XH.

Education, Youth and Communities

North Lanarkshire Council
Municipal Buildings
Kildonan Street
Coatbridge ML5 3BT
www.northlanarkshire.gov.uk.

Dear David
Research Project: The relationship between defeat and entrapment and emotional well-being in an adolescent population.

Thank you for returning the completed application form and additional information regarding your research. I am pleased to inform you that approval has been granted at Authority level for you to approach the head of secondary schools , to ask if their school is willing to participate in your project.

When you consult with the head teacher you should provide a copy of this letter as confirmation of North Lanarkshire Council's authorisation but I would remind you that it is the head of establishment who has the final veto over whether his school will participate in the research project. If requested, you should also provide the head teacher with a copy of a current PVG.

When you have completed your research you should provide the school, if requested, with a copy of your findings.

May I take this opportunity to wish you every success with your project. If I can be of any further assistance please do not hesitate to contact me.

Yours sincerely

Philip McGhee
Continuous Improvement Officer *mcgheep@northlan.gov.uk*
Isabelle Boyd, Assistant Chief Executive, Education, Youth and Communities, PO Box 14, Civic Centre, Motherwell ML1 1TW

Appendix 5: MRP Proposal 01/05/2018

DOCTORATE IN CLINICAL PSYCHOLOGY-COVER PAGE

Title: 'The relationship between defeat and entrapment and emotional well-being in an adolescent population'.

Student's Matriculation number: 2230379M

Doctorate in Clinical Psychology (2015-2018)

3000 words assignment

Word count: 3,398

University of Glasgow

1st of May 2017

Abstract

Background:

Perceptions of defeat and entrapment have been theoretically associated with development and maintenance of various psychiatric disorders via malfunction of the "Involuntary Defeat Strategy" (IDS). Gilbert and Allen (1998) conceptualised Defeat as a type submissive defence behaviour linked to beliefs and perceptions of failed social struggle and powerlessness that results from a lack of ability to achieve individualised goals and entrapment has been defined as a blocked psychobiological motivation to escape from a stressful or threatening situation, due to a lack of escape possibilities or likelihood of rescue from others (Gilbert & Allan, 1998). Defeat and Entrapment have been associated with a range of psychopathologies and in adult populations but there has been very little research exploring defeat/entrapment and emotional well-being in an adolescent sample. Additionally, there has been debate as to whether defeat and entrapment are separate or single constructs. This single factor argument challenges theoretical accounts that perceive defeat and entrapment as two separate but interacting constructs.

Aims:

1. To investigate whether the concepts of defeat and entrapment should be conceptualised as separate or single constructs in an adolescent population.
2. To robustly and directly test whether perceptions of defeat and entrapment are common factors across a range of emotional well-being measures in an adolescent population.
3. To empirically explore constructs of defeat/entrapment in an adolescent population through sub-group analyses i.e. does gender moderate the relationship between defeat and entrapment and emotional wellbeing.

Methods:

This study will use a cross-sectional multivariate design whereby a questionnaire booklet measuring perceptions of defeat and entrapment, in addition to a range psychological and emotional well-being

measures will be distributed to an adolescent sample. EFA will be used to determine whether D/E are single or separate constructs and hierarchical regression will be used to explore whether they are common factors.

Applications:

The unique selling point of this research project is that it will contribute to our understanding of the concepts of defeat and entrapment research in an adolescent sample. This would be the first direct test of whether defeat and entrapment should be considered as a single construct in adolescents. The results of this may impact and challenge the view of recognised theories involving the concepts of defeat and entrapment in within this population. Additionally, this would be the first direct test of whether Defeat/Entrapment are common factors across emotional wellbeing measures using a multivariate design whilst controlling for the influence of other emotional well-being factors.

Background

In the present study, we seek to investigate the extent to which perceptions of defeat and entrapment are associated with emotional well-being in an adolescent school-based population. Anxiety and mood symptoms in adolescents have been known to be prevalent and can impact relationships and school achievement. Costello et al. (2003) also highlighted increased risk of suicide and other psychopathology associated with these symptoms.

Concepts of Defeat and Entrapment

Previous empirical research and literature has conceptualised defeat as a type submissive defence behaviour linked to beliefs and perceptions of failed social struggle and powerlessness that results from a lack of ability to achieve individualised goals. Defeat is also thought to be associated with a loss of social status or hierarchy position (Gilbert, 2000a; Gilbert & Allan, 1998). Entrapment has been defined as a blocked psychobiological motivation to escape from a stressful or threatening situation, due to a lack of escape possibilities or likelihood of rescue from others (Gilbert & Allan, 1998).

Defeat and entrapment have been theoretically associated with development and maintenance of various psychopathologies via malfunction of the "Involuntary Defeat Strategy" (IDS). IDS is thought to be an evolutionarily adaptive response to perceptions of defeat, which is activated automatically as a short-term damage limitation strategy in the context of social competition or conflict for evolutionarily meaningful resources (Gilbert, 1992). The IDS is hypothesised to contribute to perceptions of entrapment, contingent on an individual's judgment about their ability to escape a defeating experience. Defeat and Entrapment are thought to be evolutionary and phylogenetically encoded reactions with the general population that can become exaggerated with states of psychopathology.

Theoretical debates have recently challenged the conceptualization of defeat and entrapment as separate constructs (Johnson, Gooding and Tarrier, 2008). The concept of defeat and entrapment have been viewed as separate concepts within a variety of established and recognised theories of

suicide behaviour within adult populations including the Cry Main Model of Suicide (Williams, 1997) and the Integration Motivational Volition Model (O'Connor, 2011).Taylor et al., (2009) conducted an exploratory factor analysis to empirically test the underlying structure of the Defeat and Entrapment Scales using an adult population. The result of this study supported the view that defeat and entrapment are better conceptualised as a single factor due to high intercorrelation between the Defeat Scale and the Entrapment Scale. The outcome of this research has challenged a variety of established theories within adult populations including the Cry Pain model of suicide (Williams, 1997) and the Integrated Motivational Volition Model (O'Connor, 2011). Research into adult studies have noted high intercorrelations between Defeat and Entrapment Scales (Rasmussen et al., 2010), however there has been no consensus thus far in this debate within an adolescent population.

Previous research has highlighted that defeat and entrapment have been identified as clinically important concepts across a range of psychopathologies within adult populations. Siddaway and Taylor (2015) conducted a meta-analysis of perceptions of defeat and entrapment and found strong relationships between defeat and entrapment and depression, anxiety, PTSD and suicidality. Siddaway (2016) highlights that defeat and entrapment have been linked to chronic pain, psychosis and hopelessness in adult populations. Other research reported relationships with self-criticism, neuroticism, perfectionism and low self-esteem (Sturman, 2011). Based on this research, there appears to be a growing consensus that defeat and entrapment can be hypothesised as transdiagnostic factors across psychopathologies. Transdiagnostic factors refer to common underlying psychological processes/predispositions that play a significant role in influencing and maintaining a variety of mental health problems (Harvey, Watkins, Mansell, & Shafran, 2004). These predispositions are thought to increase vulnerability to the development of mental disorders and have been implicated in the development and maintenance of psychological and emotional well-being problems among clinical and nonclinical populations (Taylor, Gooding, Wood, & Tarrier, 2011). Ehrenreich-May and Chu (2014) described that for a concept to be considered transdiagnostic it must provide explanatory power in understanding the onset, development, or maintenance of two target conditions, in addition

to providing a type of unique explanatory power in two target conditions that could not be understood through the study of the two conditions alone.

To date there has been very little research exploring the relationships between perceptions of defeat and entrapment and emotional well-being in an adolescence. Most research has focused on suicide behaviour. For example, in a quantitative study, Kidd (2006) explored factors precipitating suicidality amongst homeless youth and reported that perceptions of feeling trapped or being trapped was found to be the most central aspect of suicidality. Park (2010) found entrapment to be the main proximal predictor of suicide ideation in Korean School children and found entrapment to be associated with depression. Additionally, in a longitudinal study of suicide ideation in an adolescent sample, it was found that perceived defeat assessed at baseline predicted the change in frequency of suicidal ideation over the following 12 months, adjusting for depressive symptoms (Taylor, Gooding et al., 2011). To date, there has been no research investigating defeat and entrapment across a variety of emotional well-being measures using a UK adolescent school based population.

The Current Research

This current study aims to investigate whether defeat and entrapment are common underlying factors across a range of psychological and emotional well-being measure within an adolescent school-based sample. A unique selling point of this study is that it will contribute to our understanding of the concepts of defeat and entrapment within a school based population allowing for generalisability within Scottish secondary schools. With increasing evidence of the clinical importance of defeat and entrapment within adult populations, it is hoped that this research will contribute to the understanding of these concepts within an adolescent school based sample. If defeat and entrapment are seen underlying factor across a variety of psychological and emotional well-being, it is hoped that dissemination of this work will make clinician, teachers and researcher more aware of these constructs.

The research will also contribute to the psychometric understanding of the Defeat and Entrapment Scale with this specific population and will address the suitability of Defeat and

Entrapment Scale with an adolescent population. The research may also allow for sub-group analyses to determine whether there is moderating effect for gender across D/E analyses. Additionally, this study, will empirically investigate the conceptualisation of Defeat and Entrapment as separate factors or a single distinct factor in an adolescent population. The present study will focus on testing whether defeat and entrapment are common underlying factors across emotional well-being in an adolescent population and will include measures of mood, anxiety, self-esteem, stress, suicide ideation, optimism. This study will be the first of its kind which involves directly testing whether Defeat/Entrapment are associated with emotional well-being using a multivariate design in an adolescent sample. This will allow us to investigate the unique relationship between Defeat/Entrapment and each identified measure of psychological and emotional well-being, whilst controlling for the shared relationships between Defeat/Entrapment and other measures. This study will not explore perceptions of defeat and entrapment within a clinical population but participants will be asked to disclose previous history of mental health problems and previous input with CAMHS therapeutic services which may allow for additional analyses.

Aims and Hypotheses

Aims:

4. To empirically investigate whether the concepts of defeat and entrapment should be conceptualised as separate or single constructs in an adolescent population.
5. To empirically explore constructs of defeat/entrapment in an adolescent population through sub-group analyses.
6. To robustly and directly test whether perceptions of Defeat and Entrapment are common factor across a range of emotional well-being measures in an adolescent population.

Hypotheses:

(a) A single factor underlies both perceptions of defeat and entrapment in an adolescent sample.

(b) Defeat/Entrapment will be a common factor/factors across a range of emotional well-being measures.

Plan of Investigation

Participants

A sample of adolescents (aged 14-18) attending secondary education institutions within North and South Lanarkshire Councils.

Recruitment Procedures

It is proposed that a pilot of the questionnaire will be administrated to a small group of approximately 10 adolescents in one of the school. The pilot will explore timing and will address any issues arising from the procedure or participant concerns.

On receipt of ethical approval from Glasgow University and Educational Departments the researcher will contact School Principals/Head Teacher. This contact will include an information sheet providing details of the project, the specific role and expectations of student involvement alongside a copy of the letter of ethical authorisation. If the school expresses an interest in taking part, a meeting will be organised and further arrangements will be negotiated.

A meeting with potential participants to discuss the research will be arranged. It will be highlighted that participation is entirely voluntary and that participants can withdraw at any time without having to give a reason. All participants will be provided with an information sheet and a consent forms. Participants will be requested to sign consent forms prior to taking part in the study. For children under 16 they will be provided with an additional information sheet and an opt-out form for their guardian. If the guardian does not wish for their child to partake in the study they are asked to sign the form which the child returns to the school (Opt-Out/Passive Consent). This is in keeping with BPS guidelines (2010) which highlight that "parent/ guardians of children under 16 years must be informed of research and given the opportunity to opt out". Opt-Out/Passive consent is the preferred and requested option as it is associated with higher participation rates (David, Edwards & Alldred, 2001). This consent procedure will require approval by University Ethics and Education Resources.

All information sheets and consent forms will be pre-approved by University supervisors. To encourage participation, participants will have the chance to win a small monetary voucher/gift card through a raffle.

Measures

Basic Demographic information regarding the participants used in this study will be obtained via the questionnaire booklet and will including gender, age, ethnicity, SIMD, school, sexual orientation etc. Additionally, this study will also ask participants for disclosure of previously mental health difficulties and whether they attended CAMHS psychological services in the past.

Several key measures were identified for this study after considering key issues including prevalence of psychological and emotional problems amongst adolescents including mood, anxiety, self-esteem, stress, suicide ideation and attempts, self-harm, optimism and alcohol consumption. See Appendix 5 for description of measures. It is proposed that the questionnaire will take 20-30 minutes to complete.

Design

It is proposed that this study will use a cross-sectional multivariate design whereby a questionnaire booklet measuring perceptions of defeat and entrapment, in addition to a range of robust emotional wellbeing measures will be distributed to an adolescent school-based population. This design will provide an opportunity to explore the unique relationship between Defeat/Entrapment and measures of emotional wellbeing, whilst controlling for the shared relationships between Defeat/Entrapment and well-being factors

Research Procedures

After ethical approval is obtained from the relevant sources, schools within North and South Lanarkshire Councils will be contacted to determine interest in taking part in the research project. It is proposed that prior to data collection, the researcher will arrange a time to speak to potential participants about the study including providing information sheets and consent forms. A further date

will be arranged for data collection whereby the questionnaire booklet containing the self-report measure will be distributed to consenting participants. On completion, each participant will be given a debrief sheet and thanked for their participation.

Data Analysis/Justification of Sample Size

The first aim of this study is to empirically investigate whether the concepts of defeat and entrapment should be conceptualised as separate or single constructs in an adolescent population. Comrey and Lee (1992) give a guide to sample sizes and note that '200 is fair, 300 as good, 500 as very good and 1,000 as excellent'. As outlined in Taylor, Wood et al., (2009) using an adult population, they utilised an exploratory factor analysis data analysis procedure. The assumption made with EFA is that sampling error is non-existent. Costello and Osborne (2008) note that EFA is a "large-sample" procedure and issues with generalisability or reliability are likely if the sample is too small. This means that in EFA, smaller samples can result in to estimates that are biased, so recruiting a large sample is critical. To conduct their exploratory factor analysis on the defeat and entrapment scales they utilised a sample of 305 participants and upon analysis achieved a Kaiser–Meyer–Olkin (KMO) measure of KMO = .96. KMO values between 0.8 and 1 indicate the sampling is adequate.

In regards to sample size for the regression analyses as outlined in aim 2, a hierarchical multiple regression will be conducted. Arbitrarily, Green (1991) recommends that the minimum sample size for regression models should be should be $50 + 8k$ to adequately test the overall model, and $104 + k$ to adequately test each predictor of a model. To determine the sample size a G-Power analysis was conducted whereby we assume a medium effect size. Setting alpha at .05, power at .80 and number of predictors at 16, this calculation yielded a sample size of 204 participants.

Based on the above two calculations, a large sample size between 300-500 participants will be sought for this study to ensure consistency with the methodology applied in the Taylor, Wood et., (2009) study. This will adequately ensure appropriate power and sample size.

Settings and Equipment

Research project will take place across several schools with North Lanarkshire and South Lanarkshire Councils. No equipment is required excluding the questionnaire booklet and other relevant forms.

Health and Safety Issues

(a) Researcher Safety Issues:

None currently identified however any arising researcher safety issues will be discussed through supervision.

(b) Participant Safety Issues:

Although there is a low predicted risk of participant distress, it should be noted that some of the psychological issues identified within the questionnaire booklet may cause distress amongst an adolescent sample including items exploring suicidality. Please see Health and Safety form (Appendix 3) for full details.

Ethical Issues

Ethical approval will be sought from the Research Ethics Committee at University of Glasgow and from North and South Lanarkshire Councils where recruitment is due to take place. All information and collected data will be anonymous and stored on university/NHS encrypted devices.

Financial Issues

A University of Glasgow, Research Equipment Form will be completed and will include stationary costings and the costings of potentially using incentives to encourage participation. (See Appendix 1)

Proposed Timetable

A proposed timetable can be view in the appendix.

Practical Applications

The unique selling point of this research project is that it will contribute to our understanding of defeat and entrapment research in an adolescent population. This would be the first direct test of whether defeat and entrapment should be considered as a single construct in adolescents which would contradict several theoretical models including the Cry Pain Model (Williams, 1998) Additionally, this would be the first direct test of whether Defeat/Entrapment are common underlying factor using a multivariate design whilst controlling for the influence of other problems. If D/E is found to be a common factors across emotional wellbeing difficulties. It would be interesting to explore whether the role of D/E in clinical adolescent populations.

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Appendix 6: Research Timetable

Month									
	May 2017	**June 2017**	**July 2017**	**August 2017**	**Sept 2017**	**Oct 2017**	**Nov 2017**	**Dec 2017**	**Jan 2018**
Research Proposal									
Deadline									
Ethics Application									
Research Application									
North Lanarkshire Ethics									
	Feb 2018	**March 2018**	**April 2018**	**May 2018**	**June 2018**	**July 2018**	**August 2018**	**Sept 2018**	**Oct 2018**
School Recruitment									
Participant Recruitment									
Collect Data									
Data Entry									
Statistical Analysis									
Results Write-up									
Finalise Write Up									
Submit Final Report									

Appendix 7: Health and Safety Form Major Research Project

WEST OF SCOTLAND/ UNIVERSITY OF GLASGOW

DOCTORATE IN CLINICAL PSYCHOLOGY

HEALTH AND SAFETY FOR RESEARCHERS

1. Title of Project	'The relationship between feeling defeated and entrapped and emotional well-being in an adolescent population'.
2. Trainee	David Maher, Trainee Clinical Psychologist
3. University Supervisor	Rd. Andy Siddaway University of Stirling
4. Other Supervisor(s)	Professor Rory O'Connor, University of Glasgow
5. Local Lead Clinician	N/A
6. Participants: (age, group or sub-group, pre- or post-treatment, etc.)	A population of adolescents (aged 14-18) attending secondary education institutions within North and South Lanarkshire Councils. Upon Ethical approval head teachers, will be sent a letter detailing the project and will be asked if their school would like to participate.
7. Procedures to be applied **(e.g., questionnaire, interview, etc.)**	Questionnaire Booklet-to be administrated to adolescents in a classroom environment in North and South Lanarkshire Councils. Questionnaire to include demographic information including gender, age, SIMD, history of mental health issues etc. • Defeat and Entrapment Scale (Gilbert Allen, 1998) • Revised Child Anxiety and Depression Scale. (Chorpita et al., 2000) • Perceived Stress Scale (Cohen, 1983) • Rosenberg Self Esteem Scale (Rosenberg, 1989) • Revised Life Orientation Test (Scheier, Carver et., al, 1994) • Rutgers Alcohol Problem Index (RAPI)-White and Labouvie, (2000) • Self-Harm/Suicidality Questions-Extracted from Scottish Wellbeing Study • Suicide Probability Scale (Cull et al., 1998) *

	*May be Subject to Change
8. Setting (where will procedures be carried out?) **i) Details of all settings**	The study will be conducted in educational institutions within North and South Lanarkshire Councils. The questionnaire will be completed in the classroom in the presence of a teacher/member of staff. Data Analysis will be completed at Glasgow University.
ii) Are home visits involved	N/A

9. Potential Risk Factors Considered (for researcher and participant safety): **i) Participants** **ii) Procedures** **iii) Settings**	i) Participants The participants for the research project are 14-18 yr. olds attending secondary school institutions within North and South Lanarkshire Councils. There is low predicated risk of working with that sample. However, there may be vulnerable children in the classroom environment who struggle to understand key concepts such as consent and capacity and who may be experiencing distress. Also, individuals under the age of 16 will require parental consent. ii) Procedure Although there is a low predicted risk of procedure distress, it should be noted that some of the psychological issues identified within the questionnaire booklet may cause distress amongst an adolescent sample including items exploring mental health related issues and items related to suicide ideation etc. Several actions will be taken to ensure that this risk is managed appropriately. Participant could become distressed / agitated / irritated regarding the request to complete a 20-30-minute questionnaire. Detection of previously undeclared mental health problems is one possible outcome of the research. Risk Data Protection iii) Settings All Secondary School institutions will have Health and Safety policies and procedures within North and South Lanarkshire. Specific schools have not yet been identified since ethical approval is required in the first instance from university and North and South

	Lanarkshire Councils prior to contacting schools to determine willingness to participate. There is no predicted risk to participants or the researcher within this setting. Local School health and safety procedure will be followed.
10. . 10. Actions to minimise risk (refer to 9) **i) Participants** **ii) Procedures** **iii) Settings**	i) Participants/ ii) Procedures Actions to Minimise Risk Include: 1. Information sheets will be provided prior to consent, allowing individuals sufficient time to consider their participation and ask questions. Participant will be reminded of their right to withdraw at any time (without giving a reason) and it will be made clear that they do not have to answer questions that they do not wish to. 2. Contact information of the Primary Researcher and relevant contacts e.g. supervisors, complaints procedures will be included in the information sheet. Any issues arising from the study that impacts on participant wellbeing will be discussed with supervisors. 3. All participants will remain anonymous and be provided with a support sheet links to self-help and supports for those experiencing thoughts of self-harm and suicide ideation. (Generic Safety Plan and contact will appropriate services Child Line and Samaritans). 4. It is proposed that a pilot of the questionnaire will be administrated to a small group of approximately 10 adolescents in one of the schools. The questionnaire booklet will be piloted to explore the time it takes to complete and to address any issues arising from the procedure or participant concerns. However, the piloting method will follow the same procedure as outlined below for the main recruitment. Information sheets and appropriate consent forms to be used. 5. In accordance with the British Psychological Society's Code of Conduct all adolescents will be encouraged to discuss any concerns with their parent, teacher, another trusted adult, or to visit their GP.

	6. 'Best practice guidance for studies where there is a possibility of identifying psychological distress or disorder in a non-clinical participants' (CUREC Guidelines) will be adhered to. For example, in all circumstances in which a participant appears to be acutely distressed while completing the questionnaire the research should inform the participant that they do not need to complete the questionnaire (Right to Withdraw). They should then sensitively ask questions to ascertain whether the participant is receiving any support for their distress, and if not whether they feel they would benefit from support. It may also be helpful to ask whether anyone (e.g. friends, family) is aware of how the participant is feeling and whether they have already considered contacting their GP or another professional to discuss their problem(s). In cases where the individual states that they are currently receiving support or treatment for the problem(s) discussed, it would usually be sufficient to encourage the participant to re-contact their healthcare provider. If an individual indicates that they are not currently receiving support then the researcher would usually encourage them to contact their GP in the first instance. If the young person is judged to be at an immediate risk of harm, confidentiality will be breached in line with Child Protection Guidelines. 7. Data Protection Guidelines (1998) will be adhered to regarding data protection, storage and duration that the data is kept. All data will be store of an encrypted university device. ii) Settings To meet with the head teacher initially prior to data collection and to discuss any risks associated. To limit risks the data collection should be completed in the presence of a regular member of the education staff. Supervisor will be informed of scheduled days for data collection.

Trainee signature: **Date:**

University supervisor signature: **Date:**

Appendix 8: Recruitment Procedure

Recruitment and Research Procedures

Initially, this study utilised a stratified random sampling of schools within North Lanarkshire Council, whereby each school was categorised using the Scottish Index of Multiple Deprivation (SIMD, 2012). However, due to a poor response rate all school within North Lanarkshire were contacted. Head Teachers were contacted by letter, phone and email and were provided with an information sheets providing details of the project, an outline of the specific role and expectations of participants and a copy of the letter of ethical authorisation. A whole school year sampling frame was used to recruit participants in their third to sixth years of schooling from four government funded secondary schools with North Lanarkshire Council. Two schools agreed to take part in the study.

Participation in the study was entirely voluntary, and responses were anonymous. All participants were provided with an information sheet and relevant consent forms. Participants were requested to sign consent forms prior to taking part in the study. For children under 16, were provided with an additional parental information sheets and an opt-out form for their guardian. If the guardian did not wish for their child to partake in the study, they are asked to sign the form which the child returns to the school (Opt-Out/Passive Consent) which is in keeping with BPS guidelines (2010). Participants were recruited across a five-month period (February-May 2018).

Data collection took place in the schools' assembly hall whereby participants were requested to complete a questionnaire booklet. The booklet was questionnaire booklet piloted to a group of 10 participants (see Appendix 15 for piloting procedure). Participants were given approximately 40 minutes to complete the questionnaire booklet. To manage risks associated with confidentiality, participants were given the option of completing the questionnaire away from their peers. In addition to this, two versions of the response booklet were created to ensure that neighbouring children will not know which questions is being answered. This procedure has been utilised successfully in the past (O'Connor et al., 2014). The primary researcher was present during the data collection to manage any distress. Upon completion of the questionnaire, all participants were given with a 'Keeping myself

Safe' document which provided helpful links and contact details for those experiencing thoughts of self-harm and suicide ideation.

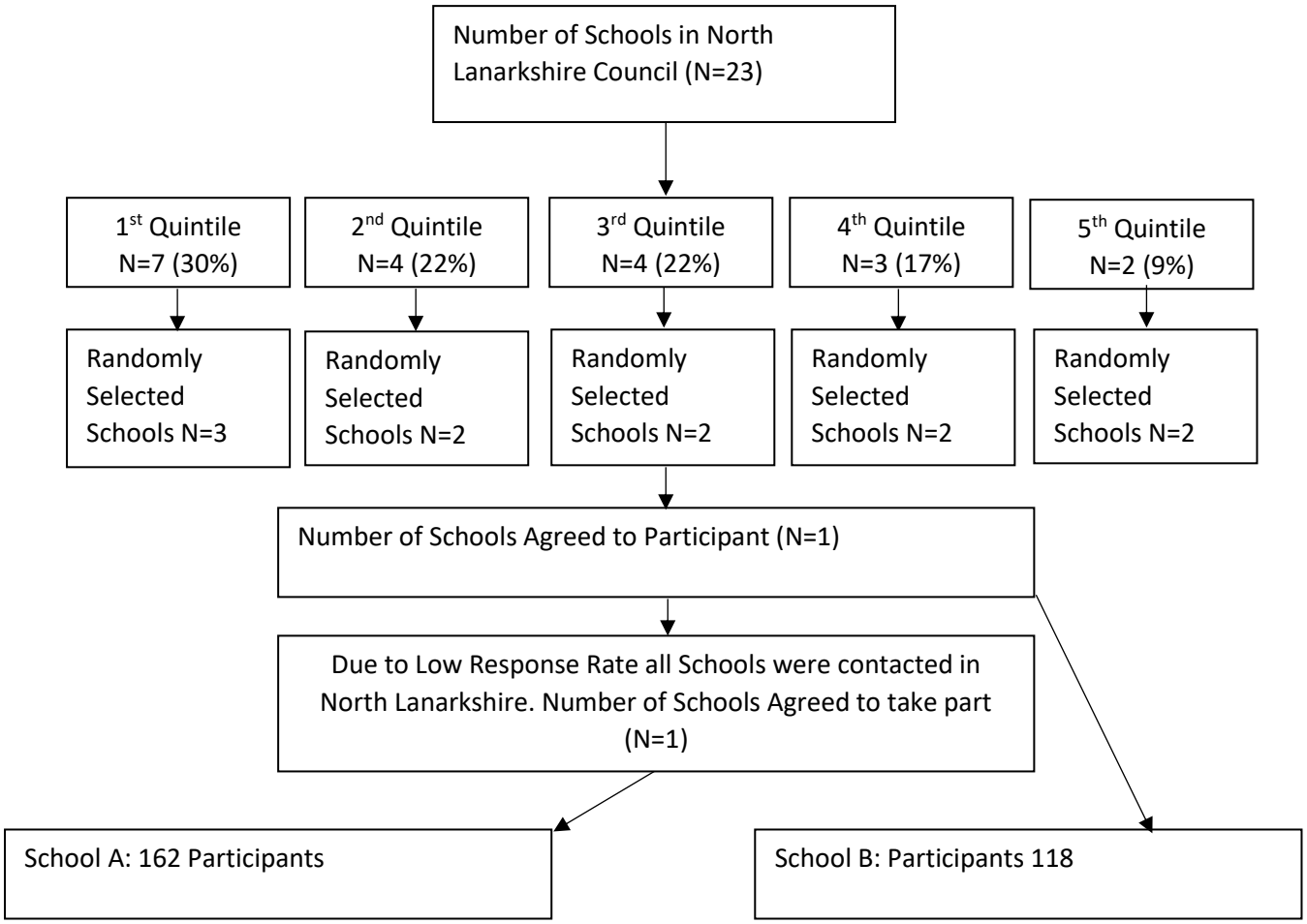

Figure 2: Recruitment Procedure Outline

Appendix 9: Recruitment Letter to Schools

University of Glasgow | College of Medical, Veterinary & Life Sciences

TEACHER/SCHOOL LETTER

Address of school

Dear Mr/ Mrs/ Ms,

I am a Trainee Clinical Psychologist at the University of Glasgow. I am writing to ask if you would be interested in supporting our new research project.

The research aims to look at how thoughts of being defeated or trapped in bad situations relate to well-being in teenagers (14 -18 years). In adult populations, defeat and entrapment have been associated to a variety of difficulties. However, very little is known about defeat and entrapment and well-being in adolescents.

We wondered whether your school would be able to assist us in conducting this research. This would involve me meeting with your students on two occasions:

1) A brief meeting to introduce the project to your students and provide them with information so that they can make an informed decision on whether they would like to take part.

2) A data collection session in which pupils would be asked to complete some questionnaires. This session will last about 20 - 30 minutes. This project has been approved by Educational Resources of North/ South Lanarkshire Council (see enclosed permission) and the Research Ethics Committee of the University of Glasgow. We believe that our study is consistent with the principles of the Curriculum of Excellence, in particular supporting students to expanding their capacities as 'Effective contributors' through enhancing their knowledge of "emotional and psychological well-being".

I would be happy to come and meet with you to explain the study in further detail, or to discuss the study by phone. I hope that this study will benefit your school and students by raising awareness of psychological concepts. If you would find it helpful, I would be happy to come and give an educational talk about psychology, going to University, or other topics that may be of interest to your students and staff. I have additionally enclosed an information sheet for class/year teachers.

If you have any questions about the research or would like to arrange a time to meet, please contact me by phone on **XXXXXXX** or by email

Yours sincerely,

David Maher

Contact Information:

Address: Mental Health & Wellbeing, Academic Centre, Gartnavel Royal Hospital Glasgow, G12 0XH

Email: d.maher.1@research.gla.ac.uk

Dr Andy Siddaway-Registered Clinical Psychologist, University of Glasgow, Mental Health & Wellbeing, Academic Centre, Gartnavel Royal Hospital, 1055 Great Western Road, Glasgow, G12 0XH.

Rory O'Connor-Professor of Health Psychology, Suicidal Behaviour Research Laboratory, Institute of Health & Wellbeing, University of Glasgow, Mental Health & Wellbeing, Academic Centre, Gartnavel Royal Hospital, 1055 Great Western Road, Glasgow, G12 0XH

Appendix 10: Participant Information Sheet

University of Glasgow | College of Medical, Veterinary & Life Sciences

Title: 'Exploring the impact of perceptions of defeat and entrapment on well-being in teenagers'

Main Researcher: David Maher, Trainee Clinical Psychologist

PARTICIPANT INFORMATION SHEET

Thank you for your interest in this study. Before deciding if you want to take part, it is important that you understand what this research involves. Please take time to read all the information below and remember that if you decide to take part all your answers will remain anonymous.

What is the purpose of the study?

The research aims to look at how thoughts of being defeated or trapped in bad situations relate to well-being in teenagers (14 -18 years). In adult populations, defeat and entrapment have been associated with a variety of difficulties. However, very little is known about defeat and entrapment and well-being in adolescents.

Who can take part?

You can take part if you are 14 to 18 years and attending schools within Lanarkshire. If you want to take part, you will be asked to complete a consent form. **If you are 16 years old or older**, we do not require parental consent. **If you are under 16,** we will provide you with information to give to your parents. If your parent/ guardian does not want you to take part in the research study they should complete the enclosed opt-out form which you should return to the school. If they are happy for you to take part they do not need to do anything.

What will I have to do if I take part?

The study involves answering some questionnaires about your well-being. We will arrange a time for you to do this at school. It will take about 20 minutes of your time.

Example Questions

	Never	Rarely	Sometimes	Mostly (a lot)	Always
I feel that I have sunk to the bottom of the ladder					
I have a strong desire to escape from things in my life					
I take a positive attitude toward myself.					

Will my answers be kept secret and confidential?

Yes. We will not ask you to put your name on any questionnaires. All questionnaires will be anonymised and stored separately from consent forms. The only people who will see the information are those involved in the research. Answers will be electronically stored for 10 years and then destroyed.

Do I have to take part?

No. It is up to you whether you wish to take part or not. You can change your mind at any time. You can stop taking part without giving a reason and your questionnaires will be destroyed.

What if this leaves me with any worries or wishing to seek support?

We do not anticipate that you will feel distressed after completing the questionnaires. All participants will be provided with a list of support organisations and helplines at the end of the study.

What are the possible benefits of taking part?

This study will help us to understand more about how feelings of defeat and entrapment play a role in influencing and maintaining psychological difficulties and emotion wellbeing. As a token of thanks, you will be entered in a lucky draw to win a £50 Amazon voucher.

What will happen to the results of the study?

The results will be included in a research project submitted to the University of Glasgow. A summary of the results will be sent to your school.

What if there is a problem?

This study has been approved by North & South Lanarkshire Council and the University of Glasgow. However, if you have any concerns, please do not hesitate to contact me or my supervisors (see contact information below). We will do our best to answer any questions. If you are still unhappy and would like to raise a formal complaint, please contact the Research Ethics Committee at Glasgow University mvls-ethics-admin@glasgow.ac.uk.

Please keep this sheet and think about whether you would like to take part. I will be back in school with the questionnaires within the next few weeks. If you choose to take part we will complete them then.

Thank you for your time,

David Maher

Trainee Clinical Psychologist

Contact Information:

Address: Mental Health & Wellbeing, Academic Centre, Gartnavel Royal Hospital Glasgow, G12 0XH

Email: d.maher.1@research.gla.ac.uk

Supervised by

Dr Andy Siddaway-Registered Clinical Psychologist, University of Glasgow, Mental Health & Wellbeing, Academic Centre, Gartnavel Royal Hospital, 1055 Great Western Road, Glasgow, G12 0XH.

Rory O'Connor-Professor of Health Psychology, Suicidal Behaviour Research Laboratory, Institute of Health & Wellbeing, University of Glasgow, Mental Health & Wellbeing, Academic Centre, Gartnavel Royal Hospital, 1055 Great Western Road, Glasgow, G12 0XH.

Appendix 11: Participant Consent Form

University of Glasgow | College of Medical, Veterinary & Life Sciences

Centre Number:
Project Number:
Subject Identification Number for this trial:

CONSENT FORM

Title of Project:

Title: 'Exploring the impact of perceptions of defeat and entrapment on well-being in teenagers'

Name of Researcher(s):
David Maher, Trainee Clinical Psychologist

Please initial box

I confirm that I have read and understand the information sheet for the above study and have had the opportunity to ask questions.	☐
I understand that my participation is voluntary and that I am free to withdraw at any time, without giving any reason.	☐
I agree to take part in the above study.	☐

_____	_____	_____
Participant's name	Date	Signature
_____	_____	_____
Name of Person taking consent (if different from researcher)	Date	Signature

(1 copy for subject; 1 copy for researcher)

Appendix 12: Parental Consent Form

University of Glasgow | College of Medical, Veterinary & Life Sciences

PARENTAL CONSENT FORM

Title of Project: 'Exploring the impact of perceptions of defeat and entrapment on well-being in teenagers'

Name of Researcher(s):
David Maher, Trainee Clinical Psychologist

PERMISSION FOR A SCHOOL AGE CHILD TO PARTICIPATE IN A RESEARCH STUDY

ONLY COMPLETE AND RETURN THIS FORM IF YOU DO NOT WISH YOUR CHILD TO PARTICIPATE IN THE RESEARCH STUDY.

To be completed by the child's parent or guardian. Please read the following notes carefully before completing the form

PLEASE USE BLOCK CAPITALS

I, (insert your name)

_____

BEING THE (insert your relationship to the child, e.g. mother/father/guardian

_____ OF (insert class or form)

_____

OF (Insert name of school)

_____

DO NOT GIVE PERMISSION FOR MY CHILD TO PARTICIPATE IN THE RESEARCH STUDY DESCRIBED IN THE LETTER ATTACHED.

SIGNATURE:

DATE:

Appendix 13: MRP Questionnaire Booklet-Version A

Research Project: 'Exploring the impact of perceptions of defeat and entrapment on well-being in teenagers'.

Main Research: David Maher, Trainee Clinical Psychologist

Thank you for agreeing to take part in this research project.

Please ensure you have read the information sheet and have signed the consent form prior to completing this questionnaire.

It is important to remember that your participation is completely voluntary and you may withdraw at any stage of the study. The questionnaire should be completed on your own without any input from others and all responses are entirely anonymous. All the data collected will be kept confidential.

Please answer all questions and be honest and as accurate as possible

Demographic Information:

Q1. Gender (please place an 'X' in the Appropriate Box	
Male	
Female	
Transgender	
Prefer not to say	

Q2. What is Your Age

Age	

Q3. Postcode

Q4. Please indicate your ethnicity by placing an 'X' in the Box	
White	
1.Scottish	
2.Other British	
3.Irish	
4.Gypsy/Traveller	
5. Polish	
6. White Other Please describe…	
Mixed or Multiple ethnic groups	
7. Any Mixed or Multiple ethnic groups, please describe…	
Asian, Asian Scottish or Asian British	
8. Pakistani, Pakistani Scottish or Pakistani British	
9. Indian, Indian Scottish or Indian British	
10. Bangladeshi, Bangladeshi Scottish or Bangladeshi British	
11. Chinese, Chinese Scottish or Chinese British	
12. Any other Asian, *please describe*	
African	
13. African, African Scottish or African British	
14. Any other African, please specify	
Caribbean or Black	
15. Caribbean, Caribbean Scottish or Caribbean British	
16. Black, Black Scottish or Black British	
17. Any other Caribbean or Black, *please describe*	
Other ethnic group	
18. Arab, Arab Scottish or Arab British	
19. Any other ethnic group, *please describe*	
Other (please write here)	

Q5. Indicate how satisfied you are with each item. (Please place an 'X' in the appropriate box)					
	Very Dissatisfied	***Somewhat Dissatisfied***	***Neither Satisfied or Dissatisfied***	***Somewhat Satisfied***	***Very Satisfied***
Your Family Life					
Your Friendships					
Your School Experience					
Yourself					
Where you live					
Your Life Overall					

Q6. Have you ever received professional support to help with your emotions? (e.g. attended counselling, taken medication to help with your emotions/feelings, visited a clinical psychologist/ CAMHS). (Please place an 'X' in the appropriate box)			
Yes		No	
If yes can you state the reason for attending here:			

Q7. What is your religion (Please place an 'X' in the appropriate box)			
Christianity or Christian denominations		**Hinduism**	
Buddhism		**Islam**	
Jainism		**Judaism**	
Sikhism		**Atheism/no religion**	
Prefer not to say		**Other ……..**	

Q8. Please Identify how often you engage in alcohol/illegal drug Use				
	Never	**Rarely**	**Occasionally**	**Frequently**
Alcohol				
Illegal Drugs				

Q9. Read each item carefully and circle the number to the right of the statement that best describes how you have felt in the last 7 days. Use the scale below.

		Never	Rarely	Sometimes	Mostly (a lot)	Always
1.	**I feel that I have not made it in life**	0	1	2	3	4
2.	**I feel that I am a successful person**	0	1	2	3	4
3.	**I feel defeated by life**	0	1	2	3	4
4.	**I feel that I am basically a winner**	0	1	2	3	4
5.	**I feel that I have lost my standing in the world**	0	1	2	3	4
6.	**I feel that life has treated me like a punch bag**	0	1	2	3	4
7.	**I feel powerless**	0	1	2	3	4
8.	**I feel that my confidence has been knocked out of me**	0	1	2	3	4
9.	**I feel able to deal with whatever life throws at me**	0	1	2	3	4
10.	**I feel that I have sunk to the bottom of the ladder**	0	1	2	3	4
11.	**I feel completely knocked out of action**	0	1	2	3	4
12.	**I feel that I am one of life's losers**	0	1	2	3	4
13.	**I feel that I have given up**	0	1	2	3	4
14.	**I feel down and out**	0	1	2	3	4
15.	**I feel that I have lost important battles in life**	0	1	2	3	4
16.	**I feel that there is no fight left in me**	0	1	2	3	4

Q.10 Read each item carefully and circle the number to the right of the statement that best describes the degree to which each statement is Like You.

		Not at all	A little bit	Moderately	Quite a bit	Extremely
1.	**I am in a situation I feel trapped in**	0	1	2	3	4
2.	**I have a strong desire to escape from things in my life**	0	1	2	3	4
3.	**I am in a relationship I can't get out of**	0	1	2	3	4
4.	**I often have the feeling that I would just like to run away**	0	1	2	3	4
5.	**I feel powerless to change things**	0	1	2	3	4
6.	**I feel trapped by my obligations**	0	1	2	3	4
7.	**I can see no way out of my current situation**	0	1	2	3	4
8.	**I would like to get away from other more powerful people in my life**	0	1	2	3	4
9.	**I have a strong desire to get away and stay away from where I am now**	0	1	2	3	4
10.	**I feel trapped by other people**	0	1	2	3	4
11.	**I want to get away from myself**	0	1	2	3	4
12.	**I feel powerless to change myself**	0	1	2	3	4
13.	**I would like to escape from my thoughts and feelings**	0	1	2	3	4
14.	**I feel trapped inside myself**	0	1	2	3	4
15.	**I would like to get away from who I am and start again**	0	1	2	3	4

16	**I feel I'm in a deep hole I can't get out of**	0	1	2	3	4

Q11. Please put a place a 'X' in the appropriate box the word that shows how often each of these things happen to you. There are no right or wrong answers.

		Never	Sometimes	Often	Always
1.	**I worry about things**				
2.	**I feel sad or empty**				
3.	**When I have a problem, I get a funny feeling in my stomach**				
4.	**I worry when I think I have done poorly at something**				
5.	**I would feel afraid of being on my own at home**				
6.	**Nothing is much fun anymore**				
7.	**I feel scared when I have to take a test**				
8.	**I feel worried when I think someone is angry with me**				
9.	**I worry about being away from my parents**				
10.	**I get bothered by bad or silly thoughts or pictures in my mind**				
11.	**I have trouble sleeping**				
12.	**I worry that I will do badly at my school work**				
13.	**I worry that something awful will happen to someone in my family**				
14.	**I suddenly feel as if I can't breathe when there is no reason for this**				
15.	**I have problems with my appetite**				
16.	**I have to keep checking that I have done things right (like the switch is off, or the door is locked).**				
17.	**I feel scared if I have to sleep on my own**				

18.	**I have trouble going to school in the mornings because I feel nervous or afraid**				
19.	**I have no energy for things**				
20.	**I worry I might look foolish**				
21	**I am tired a lot**				
		Never	**Sometimes**	**Often**	**Always**
22	**I worry that bad things will happen to me**				
23	**I can't seem to get bad or silly thoughts out of my head**				
24	**When I have a problem, my heart beats really fast**				
25	**I cannot think clearly**				
26	**I suddenly start to tremble or shake when there is no reason for this**				
27	**I worry that something bad will happen to me**				
28	**When I have a problem, I feel shaky**				
29	**I feel worthless**				
30	**I worry about making mistakes**				
31	**I have to think of special thoughts (like numbers or words) to stop bad things from happening**				
32	**I worry what other people think of me**				
33	**I am afraid of being in crowded places (like shopping centres, the movies, buses, busy playgrounds)**				
34	**All of a sudden, I feel really scared for no reason at all**				
35	**I worry about what is going to happen**				
36	**I suddenly become dizzy or faint when there is no reason for this**				
37	**I think about death**				
38	**I feel afraid if I have to talk in front of my class**				

39	**My heart suddenly starts to beat too quickly for no reason**				
40	**I feel like I don't want to move**				
41	**I worry that I will suddenly get a scared feeling when there is nothing to be afraid of**				
42	**I have to do some things over and over again (like washing my hands, cleaning or putting things in a certain order)**				
43	**I feel afraid that I will make a fool of myself in front of people**				
44	**I have to do some things in just the right way to stop bad thing from happening**				
45	**I worry when I go to bed at night**				
46	**I would feel scared if I had to stay away from home overnight**				

Q12. In each case, please indicate your response by placing an "X" over the square representing HOW OFTEN you felt or thought a certain way during THE LAST MONTH

		Never	**Almost Never**	**Sometimes**	**Fairly Often**	**Very Often**
1.	**In the last month, how often have you felt that you were unable to control the important things in your life?**					
2.	**In the last month, how often have you felt confident about your ability to handle your personal problems?**					
3.	**In the last month, how often have you felt that things were going your way?**					
4.	**In the last month, how often have you felt difficulties were piling up so high that you could not overcome them?**					

Q13. Instructions: Answer according to your own feelings, rather than how you think "most people" would answer. Please place a ‘X’ around the appropriate letter.

		I agree a lot	I agree a little	I neither agree nor disagree	I disagree a little	I disagree a lot
1.	**In uncertain times, I usually expect the best.**					
2.	**It's easy for me to relax.**					
3.	**If something can go wrong for me, it will. (R)**					
4.	**I'm always optimistic about my future.**					
5.	**I enjoy my friends a lot.**					
6.	**It's important for me to keep busy.**					
7.	**I hardly ever expect things to go my way. (R)**					
8.	**I don't get upset too easily.**					
9.	**I rarely count on good things happening to me. (R)**					
10	**Overall, I expect more good things to happen to me than bad.**					

Q14 Instructions: Please indicate how strongly you agree or disagree with each statement by placing a ‘X’ in the appropriate box.

		Strongly Agree	Agree	Disagree	Strongly Disagree
1.	**On the whole, I am satisfied with myself.**				
2.	**At times I think I am no good at all.**				
3.	**I feel that I have a number of good qualities**				
4.	**I am able to do things as well as most other people.**				
5.	**I feel I do not have much to be proud of.**				
6.	**I certainly feel useless at times.**				
7.	**I feel that I'm a person of worth, at least on an equal plane with others.**				
8.	**I wish I could have more respect for myself.**				
9.	**All in all, I am inclined to feel that I am a failure.**				
10.	**I take a positive attitude toward myself.**				

Q15: Please Answer the Following Questions

1A.	**Have you ever seriously thought of taking your life, but not actually attempted to do so?** (if no, Skip to Question 2A)	YES	
		NO	
1B.	**When did you last <u>think</u> about taking your life? (Place an 'X' in the appropriate box)**	1)The past week	
		2)The past year	
		3)Longer ago	
1C.	**And, how many times has this occurred? ___**		
2A.	**Have you ever made an attempt to take your life, by taking an overdose of tablets or in some other way?** (if no, Skip to Question 3A)	YES	
		NO	
2B.	**When did you last attempt to take your life?** **(Place an 'X' in the appropriate box)**	1)The past week	
		2)The past year	
		3)Longer ago	
2C	**And, how many times has this occurred? ___**		

3A	**Have you ever seriously thought about trying to deliberately harm yourself but not with the intention of killing yourself but not actually done so?** (if no, Skip to Question 4A)	YES	
		NO	
3B	**When did you last think about trying to harm yourself in this way?** (Place an 'X' in the appropriate box)	1)The past week	
		2)The past year	
		3)Longer ago	
3C	**And, how many times has this occurred? ___**		
4A	**Have you ever deliberately harmed yourself in any way but not with the intention of killing yourself? (i.e., self-harm)**	YES	
		NO	
4B.	**When did this last Occur?**	1)The past week	
		2)The past year	
		3)Longer ago	
4C.	**And, how many times has this occurred? ___**		

IMPORTANT

IF YOU ANSWERED YES TO ANY OF THE ABOVE QUESTION OR FEEL LIKE YOU ARE STRUGGLING WITH YOUR MENTAL HEALTH PLEASE REVIEW 'KEEPING MYSELF SAFE'

Appendix 14: Keeping Myself Safe Handout

‘Keeping Myself Safe’

Thank you for taking part in this piece of research. I am aware that some of the questions may have been very difficult to answer. If you are struggling with your mental health, self-harming, or experiencing thought of ending your life, I strongly recommend you talk to someone about how you are currently feeling. Please read the following recommendations.

SAMARITANS Need someone to talk to?	**Samaritans-This is a free, private and confidential 24 hour helpline for children, adolescents and adults.** **Helpline - 116 123** **Email: jo@samaritans.org**
	**Speak to a Pupil Support Teacher who can arrange a meeting with a school counsellor or you could call the CAMHS Youth Counselling Service direct on 01236 703010.** **Speak to a Family Member.**
	**Speak to your doctor - if you would like to see a Mental Health Profession someone who can help them with their problems, your GP can arrange this.**

CALL EMERGENCY SERVICES IF YOU ARE THINKING ABOUT KILLING YOURSELF: 999 OR 112

Appendix 15: Piloting Procedure and Questionnaire

The research procedure was piloted to a group of 10 students at School A. The participants were provided with information sheets and consent forms prior to participation in the pilot. The participant were then asked to complete the research booklet as outline in the Research and Procedures section of the main report and were subsequently asked to complete a follow-up questionnaire whereby they were asked seven questions and were asked to respond on a 5-point likert scale; 1=Strongly Disagree, 2=Disagree, 3=Undecided, 4=Agree, 5=Strongly Agree. The questions focused on receiving information, understanding of the project, understanding of the consent procedure, the questionnaire layout, the language in the questionnaire, time taken to complete the questionnaire and distress level.

Results:

Table 1: Response outcomes for pilot questionnaire in % (n)

	Mean Score	Strongly Disagree	Disagree	Undecided	Agree	Strongly Agree
Q1	4.4	0%	0%	10%	40%	50%
Q2	4.5	0%	0%	0%	50%	50%
Q3	4.5	0%	0%	10%	30%	60%
Q4	4.5	0%	0%	0%	50%	50%
Q5	4.5	0%	0%	0%	50%	50%
Q6	4.6	0%	0%	0%	40%	60%
Q7	4.5	0%	0%	10%	30%	60%

As can be seen in Table 1, the majority of participant agree or strongly agree that they had enough time within 20-30 minutes to complete the question and reported that the questionnaire did not cause distress. Respondents generally agreed that the layout and language of the questionnaire booklet was appropriate and that they had a good understanding of the consent procedure and purpose of the research.

Title: Exploring the impact of perceptions of defeat and entrapment on emotional well-being in teenagers

1. I received enough information on the research project prior to consenting to take part in the study?

Strongly Disagree	Disagree	Undecided	Agree	Strongly Agree

2. I have a good understanding of the purpose of the project

Strongly Disagree	Disagree	Undecided	Agree	Strongly Agree

3. I was provided with enough information to understanding the procedure to consent.

Strongly Disagree	Disagree	Undecided	Agree	Strongly Agree

4. The layout of the questionnaire booklet was clear and easy to understand.

Strongly Disagree	Disagree	Undecided	Agree	Strongly Agree

5. The language used in the questionnaire was appropriate for people my age.

Strongly Disagree	Disagree	Undecided	Agree	Strongly Agree

6. I was able to complete the questionnaire with 20-30 minutes

Strongly Disagree	Disagree	Undecided	Agree	Strongly Agree

7. Completing this questionnaire did not cause significant distress.

Strongly Disagree	Disagree	Undecided	Agree	Strongly Agree

Additional Feedback/Comments:

Appendix 16: R Lavaan Package Script

*Install the R programme
*Save your SPSS data file as a STATA file (.dta) and put that new file on your desktop
*Use R not RStudio
*To run a CFA, you will need to install lavaan and foreign. You do this by pasting the following into R:
install.packages("foreign")
install.packages("lavaan", dependencies=TRUE)

*Select one of the UK options (Cambridge, Bristol, etc, it doesn't matter).
* R is now ready to run
Latent variables are correlated by default in Lavaan

Syntax to run a basic 2 factor model using Mean- and variance-adjusted weighted least squares (WLSMV) estimation to account for the ordinal nature of the data (see Siddaway et al 2017 JPSP):

```
library(foreign)
DE<- read.dta("c:/Users/2230379m/Desktop/Final.dta ")

library(lavaan)
model1 <- '
  # measurement model
    F1 =~ D1 + D2 + D3 + D4 + D5 + D6 + D7 + D8 + D9 + D10 + D11 + D12 + D13 + D14 + D15 + D16
    F2 =~ E1 + E2 + E3 + E4 + E5 + E6 + E7 + E8 + E9 + E10 + E11 + E12 + E13 + E14 + E15 + E16
'

fit1 <- sem(model1, data=DE, ordered=c fit1("D1", "D2", "D3", "D4", "D5", "D6", "D7", "D8", "D9",
"D10", "D11", "D12", "D13", "D14", "D15", "D16", "E1", "E2", "E3", "E4", "E5", "E6", "E7", "E8", "E9",
"E10", "E11", "E12", "E13", "E14", "E15", "E16"))

summary(fit1, standardized = TRUE, fit.measures = TRUE, modindices = TRUE)
```

Syntax to run a basic 1 factor model using Mean- and variance-adjusted weighted least squares (WLSMV) estimation to account for the ordinal nature of the data (see Siddaway et al 2017 JPSP):

```
library(foreign)
DE <- read.dta("c:/Users/2230379m/Desktop/Final.dta ")

library(lavaan)
model2 <- '
  # measurement model
    F1 =~ D1 + D2 + D3 + D4 + D5 + D6 + D7 + D8 + D9 + D10 + D11 + D12 + D13 + D14 + D15 + D16 + E1
+ E2 + E3 + E4 + E5 + E6 + E7 + E8 + E9 + E10 + E11 + E12 + E13 + E14 + E15 + E16
'

fit2 <- sem(model2, data = DE, ordered=c("D1", "D2", "D3", "D4", "D5", "D6", "D7", "D8", "D9",
"D10", "D11", "D12", "D13", "D14", "D15", "D16", "E1", "E2", "E3", "E4", "E5", "E6", "E7", "E8", "E9",
"E10", "E11", "E12", "E13", "E14", "E15", "E16"))

summary(fit2, standardized = TRUE, fit.measures = TRUE, modindices = TRUE)
```

Appendix 17: Demographic breakdown in the participants

Characteristic		N	%
Gender	Male	116	41.4%
	Female	154	55.0%
	Transgender	10	3.6%
School	School A	162	57.9%
	School B	118	42.1%
Age	14	92	32.7%
	15	142	50.5%
	16	40	14.2%
	17	3	1.1%
SIM Quintile	1st	40	14.3%
	2nd	108	38.6%
	3rd	91	32.5%
	4th	30	10.7%
	5th	11	3.9%
Ethnicity	Scottish	250	89%
	Other British	8	2.8%
	Gypsy/Traveller	2	0.7%
	Polish	3	1.1%
	White Other	3	1.1%
	Pakistani, Pakistani Scottish or Pakistani British	11	3.9%
	Chinese, Chinese Scottish or Chinese British	1	0.4%
	Any other African	1	0.4%
	Arab, Arab Scottish or Arab British	1	0.4%
Religion	Christianity or Christian denominations	76	27%
	Buddhism	4	1.4%
	Jainism	1	0.4%
	Sikhism	1	0.4%
	Hinduism	2	0.7%
	Islam	5	1.8%
	Atheism/no religion	139	49.5%
	Prefer not to Say	38	13.5%
	Other	14	5.0%

Appendix 18: Mean Scores, Standard Deviation and Gender Comparison

	Mean Score (Standard Deviation)	**Males N=116**	**Female N=154**
Age			
SIMD			
Defeat Scale	18.26 (13.03)	14.17 (10.9)	21.29(10.9)
Entrapment Scale	14.06 (15.59)	8.72 (12.65)	17.69 (12.65)
RCADS-SP	11.69 (8.13)	7.23 (6.7)	15.29 (7.41)
RCADS-PD	7.33 (7.58)	3.51 (5.18)	10.10(7.18)
RCADS-SA	3.62 (4.33)	2.05 (4.15)	4.78 (4.6)
RCADS-OC	4.88 (5.23)	2.97 (3.4)	6.35 (4.76)
RCADS-GA	6.87 (4.91)	4.63 (4.15)	8.64 (4.71)
RCADS-MD	9.02 (7.55)	5.88 (3.4)	11.28 (7.6)
Rosenberg Self-Esteem Scale	25.49 (2.57)	26.14 (3.45)	25.08 (2.13)
Life Orientation Test Revised	10.87 (3.74)	10.46 (2.93)	11.15 (3.96)
Overall Life Satisfaction	3.76 (1.22)	4.61 (1.11)	3.58 (1.26)
Perceived Stress Scale-4	6.28(8.24)	5.86 (2.73)	7.03(2.80)
		Frequency N=116 (%)	**Frequency N=154 (%)**
Life Time Suicide Ideation	82(29.3%)	18 (15.5)	55 (35.7)
Life Time Suicide Attempts	25(8.9%)	4 (3.4)	20 (13.4)
DSH-Ideation	57 (20.4%)	8 (6.9)	43 (27.9)
DSH-Attempts	52(18.2%)	10 (8.6)	38 (24.7%)

Appendix 19: Debriefing Letter to Schools

University of Glasgow | College of Medical, Veterinary & Life Sciences

Debriefing Form for Participants and Schools

Title: 'The relationship between defeat and entrapment and adolescent mental health and well-being'.

Main Researcher: David Maher, Trainee Clinical Psychologist

Dear School/Participant,

As you might recall, I came to your school in between February and June 2018. I would like to thank you again for your participation and for supporting this piece of research. The research aimed to explore perceptions of defeat and entrapment in teenagers (14 -18 years). Our research had two primary aims

Aims:

1. To test whether defeat and entrapment should be viewed as single concept or two separate concepts in adolescents.
2. To explore how defeat and entrapment are related to a range of psychological problems and whether there are individual differences in Defeat and Entrapment Scores.

We found that although defeat and entrapment are separate factors they are strongly related to each other. Female pupils and those who previous attended mental health services had higher defeat and entrapment scores. Further statistical tests indicated that defeat was related to symptoms of anxiety, depression and stress. Entrapment was related scores on the measures of anxiety, depression, self-harm thoughts and overall life satisfaction.

By taking part in this study, it contributed to our understanding of defeat and entrapment. This research provided evidence in support of a variety of psychological theories that view defeat and entrapment as separate but highly related constructs, for example, the Integrated Motivational Volitional Model of Suicidal Behaviour (O'Connor and Kirtley, 2018). Future research may explore these feelings within clinical populations and may focus on determining whether interventions targeting reducing thoughts of defeat and entrapment are effective for teenagers. If you would like further information on the outcome of this study, please do not hesitate to contact me.

Your Sincerely

David Maher

Trainee Clinical Psychologist

Contact Information:

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Rory O'Connor-Professor of Health Psychology, Suicidal Behaviour Research Laboratory, Institute of Health & Wellbeing, University of Glasgow, Mental Health & Wellbeing, Academic Centre, Gartnavel Royal Hospital, 1055 Great Western Road, Glasgow, G12 0XH.