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University of Southampton

Faculty of Social and Human Sciences

School of Psychology

**The Association between Self-Esteem and Mental Health Problems in
Adolescents with a History of Victimisation**

by

Victoria Maria Rebecca Mullan

Thesis for the degree of Doctorate in Educational Psychology

June 2020

University of Southampton

Abstract

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A Systematic Review and Meta-Analysis

Adolescence marks a sensitive developmental period in a young person's life and negative life-events may have a stronger impact during this period. One risk factor commonly experienced by adolescents is bullying and has been linked to ill mental health. Low self-esteem is a likely mediator of that effect as it has been linked to both; ill mental health and bullying.

The aim of this systematic review and meta-analysis was to determine how self-esteem is related to the mental health of adolescents who have experienced victimisation. Nineteen papers with a total of 47,524 participants met the inclusion criteria. Study quality was assessed with an adapted version of the Newcastle – Ottawa Quality Assessment Scale for Cohort studies. There were high levels of heterogeneity in the meta-analysis, suggesting that there were differences between the studies. Heterogeneity reduced markedly when the studies were separated by gender. The study provided initial evidence for the hypothesis that low self-esteem mediates the effect of bullying on internalising symptoms.

Empirical Paper

For the first time, the current study aims to determine whether self-esteem is a mediating factor between victimisation and emotional symptoms. Then whether gender or having a Special Educational Need are moderators of the mediating effect. This is a quantitative longitudinal study, spanning 7 years. Data was acquired from the Millennium Cohort Study, and the current study consists of 9957 young people, who were born in the United Kingdom in the year 2000. Of the 5021 girls 667 had SEN, of 4936 boys 1124 had SEN. Self-esteem was found to have a small but significant mediating effect between victimisation at age 7 and emotional symptoms at age 14, however, gender and special educational needs were not found to have a moderating effect, even though children with SEN reported higher rates of victimisation. As the mediating effect was small other factors may play a larger role in the mediation effect between victimisation and self-esteem.

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Research Thesis: Declaration of Authorship

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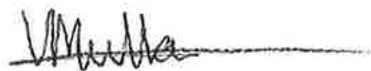
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I declare that this thesis and the work presented in it are my own and has been generated by me as the result of my own original research.

I confirm that:

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2. Where any part of this thesis has previously been submitted for a degree or any other qualification at this University or any other institution, this has been clearly stated;
3. Where I have consulted the published work of others, this is always clearly attributed;
4. Where I have quoted from the work of others, the source is always given. With the exception of such quotations, this thesis is entirely my own work;
5. I have acknowledged all main sources of help;
6. Where the thesis is based on work done by myself jointly with others, I have made clear exactly what was done by others and what I have contributed myself;
7. None of this work has been published before submission

Signature:



Date: 07.06.2020

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Definitions and Abbreviations

ASD Autism Spectrum Disorder

CDI Children's Depression Inventory

DfE Department for Education

EP(s) Educational Psychologist(s)

MCS Millennium Cohort Study

ONS Office of National Statistics

PVS Peer Victimization Scale

SDQ Strengths and Difficulties Questionnaire

SEN Special Educational Need

Chapter 1 Systematic Literature Review and Meta-analysis

Title: The Association Between Low Self-Esteem and Internalising Symptoms in Adolescents with a History of Victimisation: A Systematic Review and Meta-Analysis

Introduction

There is a growing body of literature that recognises the impact of mental ill health on the emotional (Wartberg, Kriston, & Thomasius, 2018), physical (Jamnik & DiLalla, 2019) and academic development (Elmelid et al., 2015) of children and young people. The most common mental health problems seen in the United Kingdom are anxiety and depression (ONS, 2018). Mental ill-health, defined in psychological terms, describes conditions that involve changes in emotion, thinking or behaviour. It is associated with distress and problems with functioning in relation to social interaction, work and family activities (Parekh, 2018). If left unsupported this can lead children and young people to develop challenges such as emotionally based school avoidance (Maynard et al., 2015) and overall withdrawal from social interactions (Boulton & Smith, 1994) in the short term. In the long term childhood and adolescent anxiety and depression have been linked to higher levels of physical health problems (such as increased probability of infectious disease or respiratory infections), engagement in risky behaviour (e.g. taking drugs; (Jamnik & DiLalla, 2019), reduced levels of academic motivation (Elmelid et al., 2015) and challenges related to interacting with peers.

With the release of the Green Paper concerning mental health in 2017 (Department for Education, 2017) it has become apparent that the British Government has a keen focus on supporting the development of positive mental health in young people. Research has found symptoms of depression and anxiety increase throughout adolescence (Hankin & Abramson, 2001). This is thought to be due to numerous developmental, cognitive and emotional changes (Lester, Waters, & Cross, 2013), coupled with the transition from an often nurturing

primary school environment to a more autonomous secondary school (Vaz, Parsons, Falkmer, Passmore, & Falkmer, 2014). This review will be exploring some of the factors effecting the onset of anxiety and depression in adolescents. The World Health Organisation defines adolescents as people aged between 10 and 19 years of age (WHO, 2014).

It is clear that not all adolescents develop anxiety and depression, therefore it is important to highlight risk and resilience factors in order to prevent the onset of internalising symptoms. There is an extensive body of research showing that experiencing bullying, defined as the repeated exposure over time, to negative actions from one or more other students (Olweus, 1993a), has a significant effect on the development of internalising symptoms (Takizawa, Maughan, & Arseneault, 2014).

Bullying can present as direct or indirect (Lagerspetz, Björkqvist, & Peltonen, 1988). Direct bullying commonly includes physical aggression such as hitting or kicking along with teasing (Crick & Grotpeter, 1995). Indirect aggression is often harder to spot and is sometimes referred to as relational aggression. This form of bullying is more subtle and involves gossiping, spreading rumours and ostracism in order to reduce the social standing of the target (Crick & Grotpeter, 1996). Bullying is often linked to power and the bully exerting some form of power over the victim. This is exerted through indirect aggression as a form of social power, where the victim is made to feel that they have no friends. Direct aggression is what is typically thought of when a person is discussing bullying, this is often physical and consists of the bully hitting or verbally abusing the victim. In both cases bullying can make a child or young person feel socially isolated and reduces their sense of belonging in relation to their peers. This can have a detrimental effect on their mental health.

For instance, Hysing et al. (2019) found that those who had experienced bullying reported significantly higher levels of depression ($d = 1.1$) and anxiety ($d = 0.78$). Self-report

surveys of adolescents in 40 different countries found that bullying was experienced by adolescents across all countries (Craig et al., 2009). The reported prevalence of bullying in England between April 2013 and March 2018 was 17% (D. f. E. DFE, 2018) for children aged between 10 and 15. That is an estimate of 1,499,360 children reporting experiences of bullying to the extent that they felt upset or frightened.

Data from several studies suggest that both genders experience anxiety as a consequence of being bullied (Siegel, La Greca, & Harrison, 2009; Stapinski, Araya, Heron, Montgomery, & Stallard, 21015). However, some of the current literature suggests that there are possible gender differences in the effects of bullying on the onset of internalising symptoms. This difference could be due to the way genders bully e.g. girls are more likely to engage in relational bullying and boys engage in physical bullying (Björkqvist & Kaukiainen, 1992). These different types of bullying could have differing effects on the internalising symptoms caused (Kim, Koh, & Levental, 2005; McGee et al., 2011).

A factor that could possibly affect the impact victimisation has on internalising symptoms is self-esteem. The concept of self-esteem in this paper stems from Maslow's hierarchy of needs (Maslow, 1943). The hierarchy of needs are a set of basic requirements that each human is compelled to meet in order to thrive. It is considered that before esteem needs can be met, the preceding levels of the hierarchy must first be attained; physiological needs (such as food and water), safety needs (protection from the elements), love and belonging (feeling appreciated by those around you). The esteem need is separated into two categories: a person's esteem about themselves, which is related to their achievements and independence; and their reputation and the respect that they receive from others, for example their social status or prestige.

Rosenberg (1965) defines self-esteem as the individual's set of thoughts and feelings about their own worth and importance. There is a significant debate in psychology into the amount of credence given to the construct, however, Baumeister (2005) suggests that there is evidence that having low self-esteem can mean that a child is more likely to experience internalising symptoms. This is supported by research carried out by Orth, Robins, and Widaman (2012) who found medium effect sizes relating to low self-esteem and the development of depressive symptoms over a twelve year period.

Reidunsdatter and Moksnes (2019) found that lower levels of self-esteem in girls and boys predicted depression, anxiety and lower levels of mental wellbeing, but girls with lower self-esteem reported significantly higher levels of depression and anxiety than boys. For example, girls have been found to be more likely to experience depression and boys anxiety (Guhn, Schonert-Reichl, Gadermann, Hymel, & Hertzman, 2013). This may mean that self-esteem does not affect internalising symptoms in the same way for both genders.

More recent research has focused on the causal relationship between bullying and self-esteem. A meta-analysis carried out by van Geel, Goemans, Zwaanswijk, Gini, and Vedder (2018) found that peer victimisation can have a lasting negative effect on self-esteem ($r = -.176$), but also that children could experience victimisation because they have lower levels of self-esteem ($r = -.159$). Although, separate systematic reviews have supported a link between both victimisation and low self-esteem and mental health problems; and between low self-esteem and victimisation, no systematic review has yet brought these three factors together. This is the first systematic review to explore the link between low self-esteem, victimisation and mental health.

The aim of this systematic review was to determine whether, and in what circumstances, self-esteem is related to the internalising symptoms of adolescents aged

between 10 and 18 who have experienced victimisation. The aim of meta-analysis was to gain an understanding of the relationship between victimisation and self-esteem and victimisation and internalising symptoms independently. Gender differences were also explored where possible. Publications were only included in analysis if they had measures of victimisation, self-esteem and internalising symptoms.

The objectives of the paper were to:

- Identify research evaluating how self-esteem is associated with the mental health of adolescents who have experienced victimisation.
- Assess the quality of that research.
- Determine the total number of participants included in such research to date and their characteristics.
- Determine whether victimisation and self-esteem had a positive or negative effect on mental health and to identify gaps in knowledge where new research would be beneficial.

Methods

Inclusion and exclusion criteria

To reduce the volume of extraneous variables such as transition from primary into secondary and from secondary school into college, this review only included studies focusing on participants between the ages of 11 to 18 years, which is the typical age range for adolescents in secondary school across countries. Studies further needed to include students with and without experiences of bullying and include measures of self-esteem and mental health. Qualitative studies were excluded from the analysis.

Search strategy

A systematic search of the literature was carried out across four electronic databases: Psychinfo, ERIC, Web of science and Pubmed on the 15th of March 2019. Psychinfo is a resource database for abstracts and citations of behavioural and social science research. ERIC is a database focused on education literature and resources. Web of science contains over 3,200 journals across 55 social science disciplines. Pubmed was chosen to ensure that any medical literature on the topic was included.

The search terms in Table 1 were generated in relation to the review question, to determine whether, and in what circumstances, self-esteem has an effect on the mental health of children or young people who have experienced victimisation. Synonyms for each word were connected by the boolean operator 'OR' and the four main collections of terms (adolescent, self-esteem, mental health and bullying) were connected using the operator 'AND'. At the end of words such as adolescent a truncation was added so as to retrieve terms with different endings (e.g. adolescence). An independent validity check was conducted by a voluntary research assistant. Seven hundred and eighteen abstracts were screened blind by the researcher and research assistant conflicts were dissolved via discussion and the reasons for inclusion/ exclusion were recorded.

Table 1.

Search Criteria

Adolescents	Self-Esteem	Mental health	Bullying
Teen-age	“Self esteem”	“Mental health”	Bully*
“Young person”	“Self concept”	“Mental illness”	Victimi*
Adolesc*	“Self worth”	“Mental disorder”	
“Young adult*”	“Self evaluation”	“Psychiatric illness”	
Child*	“Self perception”	“Mental wellbeing”	
		Depression	
		Anxiety	
		“Anxiety disorders”	
		“Psychological distress”	

Thirty-four papers were included for the full-text analysis. One of these papers could not be retrieved (Resett, 2014), so the researchers contacted the authors three times, it was not possible to purchase the article. A manual search of reference lists was conducted and five relevant additional papers were identified. PRISMA reporting guidelines were followed. The search and review process is depicted in Figure 1 (Moher, Liberati, Tetzlaff, Altman, & Group, 2009).

All studies identified using the systematic literature search were screened using pre-defined inclusion and exclusion criteria by the first author and a voluntary research assistant (see Table 2). Each researcher screened 100% of the papers. The studies that did not meet the criteria, or were duplicates of articles retrieved, were excluded, along with the paper that could not be accessed. Nineteen articles remained for inclusion (see Figure 1 for search flow chart).

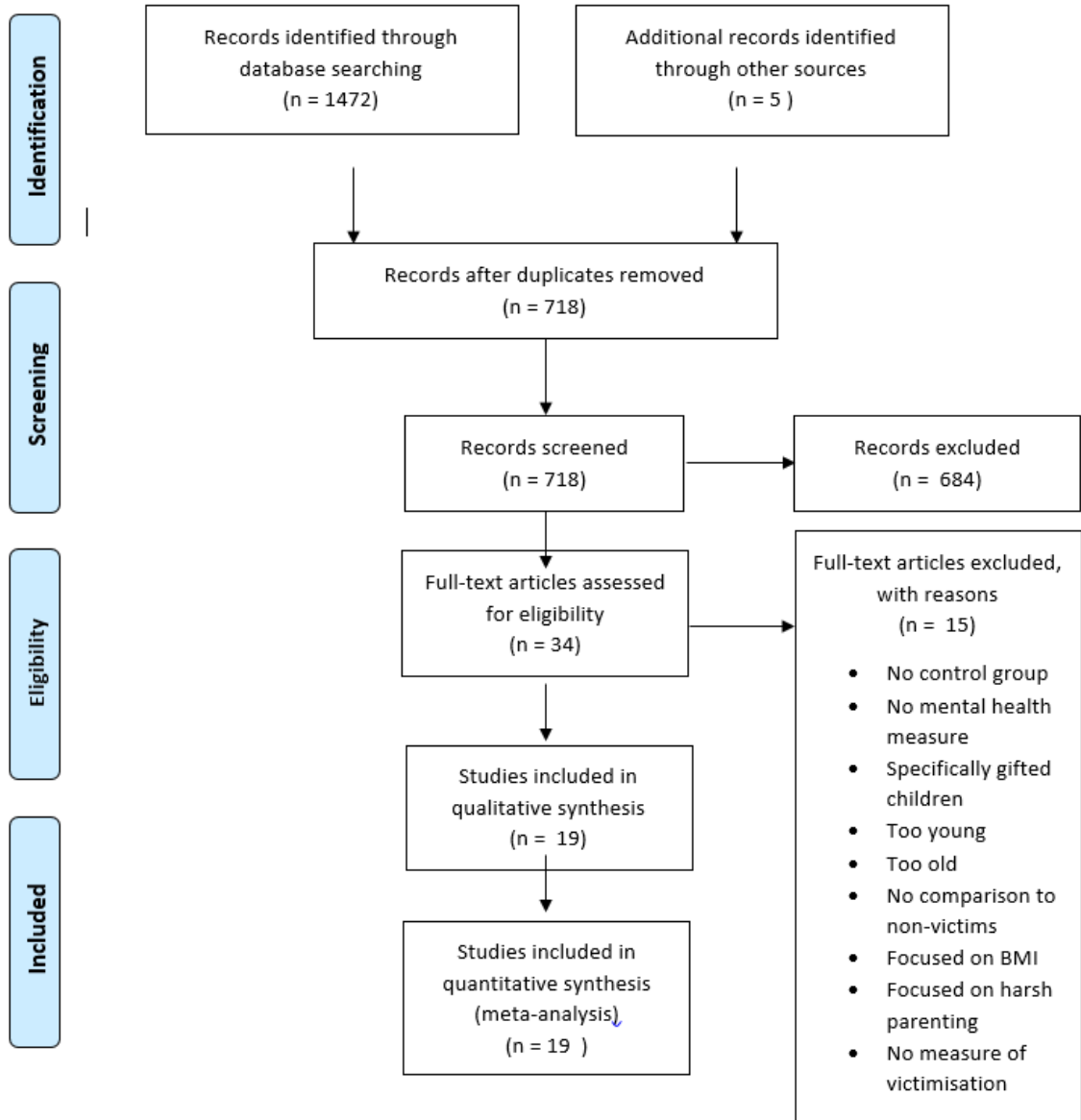


Figure 1. Summary of articles

Inclusion and Exclusion Criteria

Table 2

Inclusion and Exclusion Criteria

Category	Include	Exclude
Age	Aged between 11 - 18	Ages 0-10 and 19+ (unless the study was longitudinal and began when the adolescents were under 11 and continued past the age of 11).
Method	A measure of mental ill-health A measure of self-esteem Indication of peer victimisation and or bullying	No measure of mental ill-health No measure of self-esteem No indication of peer victimisation or bullying Cyberbullying if the only form of bullying mentioned as this review focuses on relational bullying occurring in school.
Design	Longitudinal design Cross-sectional design with a comparison group	Qualitative research

Quality Assessment

Studies eligible for inclusion in the review were quality assessed using an adapted version of the Newcastle – Ottawa Quality Assessment Scale for Cohort studies (Wells et al., 2019). This assessment was developed to measure the quality of non-randomised studies. It consists of a ‘star system’ through which a study is evaluated in relation to three broad areas; the selection of the participants; the comparability of the groups; and the measurements used to gain an understanding of the exposure to the variables the researchers are interested in. For the purpose of this systematic review, the scale was adapted as the studies were not interventions. One question was removed as it referred to the “outcome of interest not being present at the start of the study”. The outcome of interest in this review was mental health and as some of the papers included were cross-sectional designs it would not be possible to gain a measure of mental health prior to victimisation. Question 3 in the selection section was adapted as it only gave stars for ‘structured interview’ and ‘secure records (e.g. surgical records)’.

Structured interviews are conducted in more clinical settings. As the focus of this review was on an educational setting, validated rating scales (such as standardised self-report and teacher records) were included. Validated rating scales are a good standard for assessing the continuum of (sub-clinical and clinical) mental health problems in a non-clinical setting. For example since it was developed the Beck Depression Inventory has been translated into numerous languages and high levels of validity and reliability have been reported cross culturally (Aalto, Elovainio, Kivimaki, Uutela, & Pirkola, 2012). Other scales used to assess mental health include the Hospital Anxiety and Depression Scale (Bjelland, Dahl, Haug, & Neckelmann, 2002) and the Social Anxiety Scale for Adolescents (Inderbitzen & Walters, 2000). With the aforementioned adaptations the checklist was used as a framework to support a qualitative summary of strengths and weaknesses and overall quality of the studies included

in the review. No cut-off was created for quality as all papers had at least four stars on the quality checklist and could therefore be considered as good quality papers (see Table 3).

Table 3.

Quality Checklist

First Author	Representativeness of cohort	Selection of non-exposed cohort	Ascertainment of Exposure	Comparability	Assessment of outcome	Follow up	Adequacy of follow up	Total
Bogart	✱	✱	✱	✱	✱	X	X	5
Cammack – Barry	X	✱	✱	✱	✱	X	X	4
Estévez	✱	✱	✱	✱	✱	X	X	5
Evans	✱	✱	✱	✱	✱	✱	X	6
Ghoul	X	✱	✱	✱	✱	X	X	4
Graham	X	✱	✱	✱	✱	X	X	4

Victimisation, Self-Esteem and Mental Health

Grills	X	*	*	*	*	X	X	4
Grills (2007)	X	*	*	*	*	*	X	4
Hesapçioğlu	*	*	*	*	*	X	X	5
Juvonen	X	*	*	*	*	*	X	6
Låftman	*	*	X	*	X	X	X	3
Marini	*	*	*	*	*	X	X	5
McVie	*	*	*	*	*	*	*	7
O'Moore	*	*	*	*	*	X	X	5
Sapouna	*	*	*	*	*	*	*	7

Victimisation, Self-Esteem and Mental Health

Seals	*	*	*	*	*	X	X	5
Soler	X	*	*	*	*	X	X	5
Undheim	*	*	X	*	*	X	X	4
Wang	*	*	*	*	*	X	X	5
Ybrandt	X	*	*	*	*	X	X	5

Note. * -indicates a study met the criteria and x indicates that it did not. The first Grills study is Grills & Ollendick (2002).

Data Extraction

Data extraction was independently performed by the first author. Data extracted included characteristics of the sample e.g. country, sample size, age of sample and gender ratio. The measure used to ascertain exposure to victimisation were also extracted along with the measures used to assess the outcomes of self-esteem and internalising symptoms. The explained variance (r) of the correlations between victimisation and self-esteem, and victimisation and internalising symptoms were recorded in the results section and served as a measure of effect size (see Table 4). For studies not reporting (r) the effect size was calculated by the researcher. Finally there were two studies carried out that included the same sample (Grills, 2003; Grills & Ollendick, 2002), as this was a longitudinal study, only the final results were included in the meta-analysis, so that the same sample was not represented disproportionately.

Table 4.

Data Extraction

		Sample				Ascertainment of Exposure to Victimisation	Assessment of Outcome			Results		
First Author	Country	Year	Sample size	Age of sample	Gender Ratio	Victimisation measure	Self-esteem measure	Internalising factors measure	Self- esteem	Internalising factors	Anxiety	Depression
1	Bogart	United States	2014	4297	10 – 16 M= 11.1 (0.6)	M = 49 % F = 51 % Peer experience questionnaire (Felix, Sharkey, Green, Furlong, & Tanigawa, 2011)	Self- perception questionnaire (Mussen & Hetheringto n, 1983)	Depression subscale of the Diagnostic Interview Schedule for Children Predictive Scales	r = -.60	N/A	r = .79	

(Lucas, Zhang,
& Fisher,
2001)

2	Cammack -Barry	United States	2004	179	14 – 19 N/A	M= 45.3% F= 54.7%	Victim scale (Rigby, 1999)	Self-esteem Rosenberg (1965)	Social Anxiety Scale for Adolescents (La Greca & Lopez, 1998)	(M) r = - .37 (F) r = - .00	(M) r = .24 (F) r = .10	(M) r = .2 (F) r = .00
									Children's Depression Inventory (Kovacs, 1985)			
3	Estévez	Spain	2009	1319	11 – 16 M= 13.7 (1.6)	M= 47 % F= 53%	Peer Victimisation Scale	Self-esteem Rosenberg (1965)	Centre of Epidemiologic al Studies Depression	r = -.18	N/A	r = .26

							(Maynard & Joseph, 2000)		Scale (Radloff, 1977)			
4	Evans	United States	2018	8000	11- 18 M= 12.5	M=49% F=51%	School Success Profile + (Bowen & Richman, 2008)	Self-esteem Rosenberg (1965)	Youth Self-report (YSr) (Achenbach, 1991)	r = -.18		r = .22
5	Ghoul	United States	2013	716	14 – 18 M= 15.81 (1.28)	M= 37% F= 63%	Exposure to school Aggression scale (Boxer et al. 2003)	Self-worth Contingency Questionnaire (Birwell & Shirk, 2003)	Revised Child Anxiety and Depression Scale (Chorpita, Yim, Mofitt, Umemoto & Francis, 2000)	r = .47	r = .61	r = .59

6	Graham	United States	2003	775	11-12	M= 44.9% F= 56.1%	Peer Victimization Scale (Neary & Joseph, 1994)	Global self-worth subscale (Harter Self-Perception Profile for Children)	Social Anxiety Scale for Adolescents (La Greca & Lopez, 1998)		r = -.63	r = .64	r = .84	
7	Grills	United States	2002	279	11-12	M= 47% F= 53%	Peer Victimization Scale (Maynard & Joseph, 2000)	Self-perception Profile for Children (Harter, 1985)	Multidimensional Anxiety Scale (March, 1997)	(M) r = -.55	(M) r = -.26	(F) r = -.33	(F) r = -.19	N/A

8	Grills	United States	2003	77	11-15	M= 48.1% F= 51.9% 13.61 (.60)	Peer Victimization Scale (Maynard & Joseph, 2000)	Self-perception Profile for Children (Harter, 1985)	Multidimensional Anxiety Scale (March, 1997)	Reynold's Adolescent Depression Scale	(M) r = -.34 (F) r = -.47	(M) r = -.11 (F) r = -.26	(M) r = -.36 (F) r = .21
9	Hesapçioğ lu	Turkey	2018	1173	15-18	N/A	Not reported	Peer Bullying Questionnaire (Piskin, 2002)	Coopersmith Self-Esteem Scale (Coopersmith, 1981)	Beck Depression Inventory (Beck, Ward, Mendelson, Mock, & Erbaugh, 1961)	r = -.20	n/a	r = .20

9	Juvonen	United States	2000	243	12 – 15 N/A	F= 55.14%	Peer Victimsation Scale (Neary & Joseph, 1994)	Self- perception Profile for Children (Harter, 1985)	Children's Depression Inventory (Kovacs, 1985)	r = -.35	n/a	r = .31
10	Låftman	Sweden	2017	4319	14 -15 M= 14.78 (.50)	M= 48.3% F= 51.7%	Researcher developed questions	Researcher developed questions	Researcher developed questions	r = -.45		r = .72
11	Marini	Canada	2006	7290	13 – 18 M= 15.7 (1.4)	M= 48.5% F= 51.5%	Bullying behavioural checklist (Marini, 1998)	Self-esteem Rosenberg (1965)	Social anxiety measure – adaptation of Ginsburg et al (1998)	r = -.15	r = .19	r = .16

Centre for
Epidemiologic

al Studies
 Depression
 Scale
 (National
 Institute of
 Mental Health,
 USA, 1972)

12	McVie	Scotland	2014	4300	13 – 17	M= 49% F= 51 %	Adapted Olweus Bully/Victim Questionnaire (Olweus, 1993)	Self-esteem Rosenberg (1965)	Hospital Anxiety and Depression Scale (HADS)	r = -.65	r = .114
13	O'Moore	Ireland	2001	5797	12 - 18	M = 37 % F= 63%	Olweus Self- Report Questionnaire (Olweus, 1993)	Piers-Harris Self- Concept Scale (Piers 1984)	Piers-Harris Self-Concept Scale (Piers 1984) - Anxiety	r = .24	r = .24

14	Sapouna	United Kingdom	2013	3136	12-14 N/A	M= 48.5% F= 51.5 %	Olweus Self- Report Questionnaire (Olweus, 1993)	Self-esteem Rosenberg (1965)	West Scotland 11 – 16 study of Teenage Health and Depression	r = -.11	N/A	r = .36
15	Seals	United States	2003	1126	12-14 N/A	M= 41% F= 59%	Peer Relations Questionnaire (Rigby & Slee, 1995)	Self-esteem Rosenberg (1965)	Children's Depressive Inventory (Kovacs, 1985)	r = -.12	N/A	r = .07
16	Soler	Spain	2013	736	14-18 M= 15.67 (1.23)	M = 37 % F= 63%	Juvenile Victimisation Questionnaire (Hamby, Finkelhor, Ormorod, & Turner, 2004)	Self-esteem Rosenberg (1965)	Youth Self Report (Achenbach & Rescorla , 2001)	(M) r = -.25 (F) r = -.18		(M) r = .43 (F) r = .31

17	Undheim	Norway	2010	2464	12 -15	M= M = 13.7 (0.58)	49.2% F=50.8%	Researcher developed questions	Harter's Self- Perception Profile for adolescents (Harter, 1985)	Moods and Feelings Questionnaire (MFQ) (Angold, 1989)	r = -.29	r = .40	
18	Wang	United States	2012	1171	10 – 17	M= M = 12.20 (1.29)	46.8% F= 53.2 %	Social Experiences Questionnaire (Crick & Grotpeter, 1996)	Self- Descriptive Questionnai re (Marsh, 1989)	Children's Depression Inventory (Kovacs, 1985)	r = .29	r = .40	r = .33
										Multidimensio nal Anxiety Scale for Children (March, 1997)			

19	Ybrandt	Sweden	2010	204	12 -16	M= 52%	Social	Self-esteem	Youth Self-	r = -.56	r = .43
					N/A	F= 48%	problems	= I think I	report (YSr)		
							subscale	am' (ItIA)	(Achenbach,		
							(YSr)(Achenb	(Ouvinen-	1991)		
							ach, 1991)	birgerstam,			
								1999)			

*Mean age and standard deviation where reported where available.

Statistical Procedure

Publication bias was assessed using the Egger's test for asymmetry. The Egger's test was not significant for these studies ($p = 0.34$), which means that the funnel plot is symmetrical and publication bias is unlikely to account for the results. However, the funnel appears inverted, this could be due to the high level of heterogeneity between studies (see figure 2).

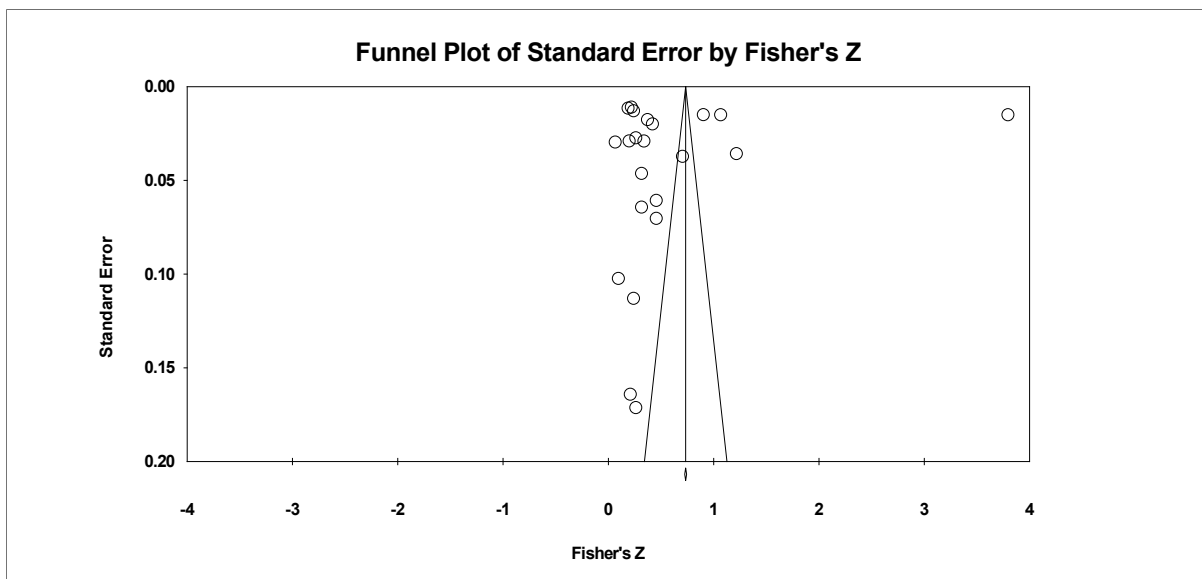


Figure 2. Funnel plot of standard error for studies.

The following aspects were assessed in order to check that homogeneity could be satisfied in order to run a meta-analysis; similar participants, measuring the same input variables, measuring the same output variables. These were met to an extent as all participants were of a similar age and from Western countries, they all measured victimisation as an input variable and self-esteem and internalising symptoms as output variables, but with differing measures.

Weighted summary measures were computed for the effects of victimisation on self-esteem and internalising symptoms using Comprehensive Meta-Analysis software (Borstein, Hedges, Higgins, & Rothstein, 2103), a tool for conducting meta-analyses. A random-effects model was used as researchers were collecting data from a variety of studies that were conducted by researchers working independently (Borstein, Hedges, Higgins, & Rothstein, 2009). In a random effects analysis each study will have to be weighted by the inverse of its variance. In a fixed-effect model the studies with the larger sample sizes have a significantly higher weighting e.g. Marini was 17.96%. This is because the aim of a fixed effects model is to find the one true effect. In contrast, a random-effects model aims to find an overall effect. This means that study weightings were not reduced as much for having a smaller sample size. e.g. Marini was weighted at 4.56% using the random effects model. All of the studies were weighted between 4.46 % and 4.57%.

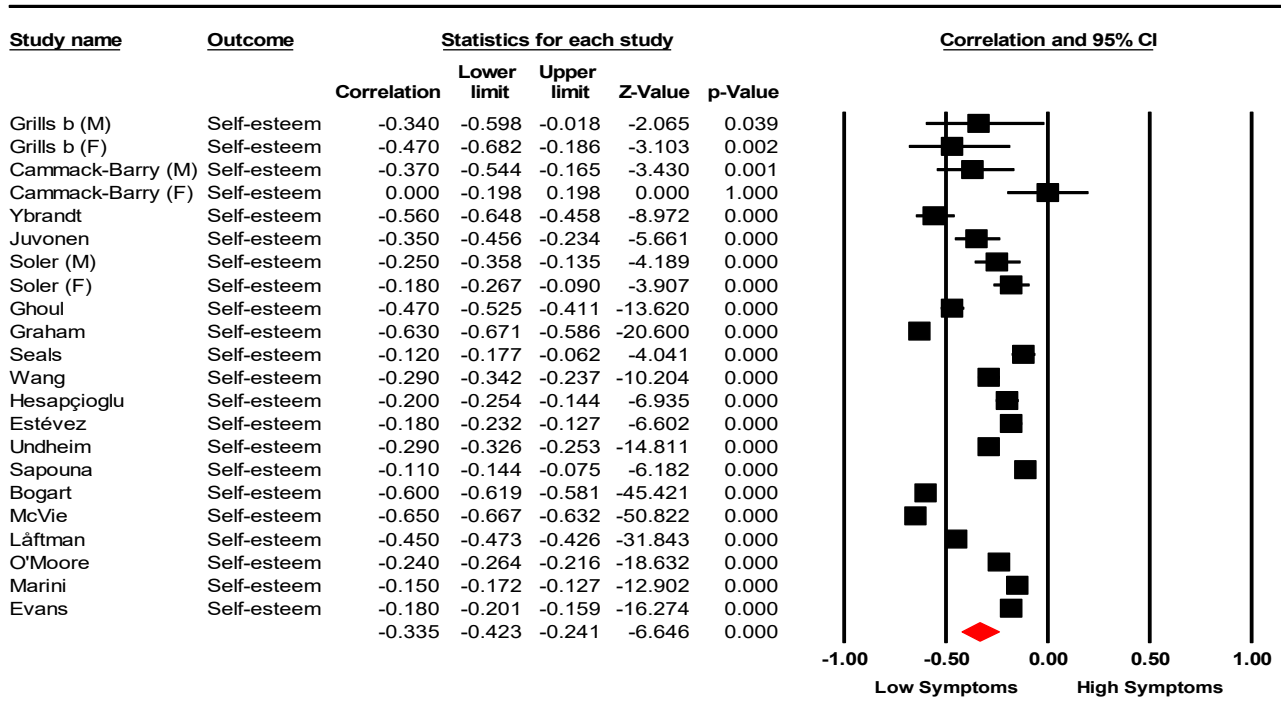
Although, all studies measured victimisation, self-esteem and internalising factors the measures used varied between studies thus it was unlikely that the results would be consolidated in the same way, therefore a common effect size could not be expected. Through using a random-effects model the study weights are more balanced and the null hypothesis, that there is mean effect of zero in every study, was being tested (Borstein et al., 2009). Heterogeneity between the studies was assessed using the I^2 statistic. The values generated represent the amount of variance between studies Higgins and Thompson (2004) suggested the following; 25% (low), 50 % (moderate) and 75% (high).

Results

Out of 19 studies the number of participants ranged from 179 to 8000 (total 47,524). All studies that met the criteria had been conducted in Western cultures. The ages of participants ranged from 10 – 18. Eighteen papers examined the differences between victims and non-victims, one paper examined the effects of being victimised at different levels. The measures used to measure self-esteem, internalising symptoms anxiety or depression varied with the studies. Eleven of the 19 studies measured depression as an outcome measure, seven measured anxiety and six measured internalising symptoms. Fifteen of the studies measured self-esteem as an outcome and four looked at it as a mediator or moderator, but also reported correlations between victimisation and self-esteem. The median quality score for the 19 studies was five out of seven stars. The criteria for quality was set at four stars or above, this meant the studies will have met over half of the criteria mentioned above. All of the studies achieved four stars or above in the quality checklist and so none were removed for poor quality. The main data extraction table, forest plots and meta-analyses are all based on the correlation coefficient r . These correlations were inputted into the CMA software to create the forest plots.

Self-esteem

Self-Esteem



Meta Analysis

Figure 3. Forest plot of the correlation between victimisation and self-esteem

Using the random-effects weights, meta-analytic results showed an intermediate mean effect size of -0.33 (CI 95% : -0.42 ; -0.24 , p (one-sided) = <0.0001). Therefore the hypothesis that experiencing victimisation has a negative effect on self-esteem can be accepted (see Figure 3). However, the values of I^2 for self-esteem show a high level of heterogeneity between the 19 studies ($I^2 = 99.13\%$). It was hypothesised that the differences may be caused by three key differences a) the 11 different measures used to assess self-esteem (see Table 4), b) the inclusion of both longitudinal and cross-sectional studies, or c) the differences between genders not being accounted for.

To gain a better understanding of the effect of assessment measures on variance a sub-group analysis was conducted assessing the studies that used only the Rosenberg Self-esteem Scale (Rosenberg, 1965) or the Peer Victimization Scale (Maynard & Joseph, 2000) as this were the most frequently consistent measures used across studies (see in Table 4). The sub-group analysis still showed a high level of heterogeneity for both the Rosenberg Self-esteem Scale (Rosenberg, 1965); $I^2 = 99.40\%$) and the Peer Victimization Scale (Maynard & Joseph, 2000; $I^2 = 97.38\%$) suggesting that the variance cannot be accounted for by the differing assessments alone (See appendix A 1. And A 6. for forest plots) and therefore the study design may account for some of the variance.

In order to assess this hypothesis two sub-group analyses were completed for the cross-sectional and longitudinal studies. Out of the 11 cross-sectional studies 10 reported a negative association between victimisation and self-esteem. The data from Ghoul, Niwa, and Boxer (2013) was collected using the self-worth questionnaire which creates a positive score if the child has low self-esteem, therefore the data from this was inverted to make it negative. Out of these studies, six studies reported intermediate to large effects ($r = -.29$ to $r = -.63$) and the remaining five reported small effect sizes ($r = -.12$ to $r = -.20$). The cross-sectional studies, still had high levels of heterogeneity ($I^2 = 99.05\%$), as did the longitudinal studies ($I^2 = 99.26\%$). However, both still showed significant intermediated mean effect sizes (see appendix A.2 and A.3 for forest plots).

As the variance could not be accounted for by the study design, two additional sub-group analyses were completed for females and males. The analysis for females showed a moderate level of heterogeneity ($I^2 = 71.76\%$) suggesting that there is less variation between these studies. Interestingly, with these studies the mean effect size was no longer significant,

$r = -.19$ (CI 95%: $-.38; .014$, p (one-sided) = 0.06) (see appendix A 4. for forest plot). For boys there was a very low level of heterogeneity ($I^2 = 0.00\%$) and an intermediate mean effect size of $-.28$ (CI 95%: $-.37, -.19$, p (one-sided) = <0.0001) (see appendix A5. for forest plot).

Higgins and Thompson (2004) suggested that a variance of below 25% is low, meaning that there is less difference between the studies and the mean effect can be accepted. However, when there was a reduction in variance there was no longer a significant effect. Ergo, the studies that were more similar found that there was not a significant link between victimisation and lower levels of self-esteem for girls.

inclusion of both longitudinal and cross-sectional studies c) the differences between genders not being accounted for.

To gain a better understanding of the effect of assessment measures on variance a sub-group analysis was conducted assessing the studies that used only the Children's Depression Inventory (CDI) (Kovacs, 1985) or the Peer Victimization Scale (PVS) (Maynard & Joseph, 2000) as these were the scales used most frequently to measure depression and peer victimisation. The sub-analysis still showed a high level of heterogeneity for both the CDI ($I^2 = 99.23\%$) and the PVS ($I^2 = 99.15\%$) (see appendix A 7. and A 8. for forest plots). However, the studies that measured victimisation using the PVS did not have a significant mean effect .43 (CI 95% : -.05; .75., p (one-sided) = 0.07). Suggesting that the measure used to assess victimisation does have an effect on the outcome of internalising symptoms. This suggests that the differing measures do not account for much of the variance between studies.

In order to assess the impact of study design, two sub-group analyses were completed for the cross-sectional and longitudinal studies. The cross-sectional studies, still had high levels of heterogeneity ($I^2 = 99.69\%$), as did the longitudinal studies ($I^2 = 99.97\%$). Cross-sectional studies still had a significant mean effect size .48 (CI 95%: .28; .64. p (one-sided) = <0.0001), whereas longitudinal studies no longer showed a significant mean effect size .54 (CI 95% : -.35; .92., p (one-sided) = 0.22) (see appendix A 7. and A 9. for forest plots), suggesting that internalising symptoms could be a short term outcome of victimisation.

As study design did not account for a high amount of the variance two sub-group analyses were carried out with girls and boys. The studies that reported just girls had a low level of heterogeneity ($I^2 = 49.8\%$) as did those with boys ($I^2 = 42.08\%$) (see appendix A. 10

and A. 11 for forest plots), and still reported significant mean effect sizes. This suggests that gender differences account for the majority of the variance between studies.

Mediating effects

The mean effect from the following studies was used in the meta-analysis, however, they also assessed the mediating effects of self-esteem. Out of the 15 cross-sectional studies three reported the mediating or moderating effects of self-esteem on the mental health of participants who had experienced victimisation. One assessed the mediating effects when gender and age were controlled for, a significant mediating effect of self-esteem on reported internalising symptoms ($r = .52$). Two studies investigated the gender differences of the mediating effects and one study found that self-esteem was a mediator for both boys and girls ($d = \geq 1.0$) and girls ($d = .75$) (Grills, 2003). Another found a mediating effect for girls ($d = -\geq 1.0$) and a moderating effect for boys (Wang, 2012).

Discussion

Summary of Findings

The objectives of the meta-analysis were to identify research evaluating the association between both self-esteem and victimisation with internalising symptoms. The 19 included papers (consisting of 47,524 adolescents) used varying measures but all assessed victimisation, self-esteem and internalising symptoms in adolescents aged 10 -18. The research was all conducted in schools that were part of Western cultures. The earliest paper was published in 2001 and the latest in 2018. Cyberbullying was not included into the analysis as a focus was put on bullying that occurred in schools.

The meta-analysis results suggest that children who experience victimisation report lower levels of self-esteem. This was the case for both cross-sectional and longitudinal studies indicating a possible causal effect for victimisation lowering self-esteem. In cross-sectional studies there was also a significant link to high internalising symptoms. Interestingly, this was not the case for longitudinal studies. Indicating a causal effect between victimisation lowering self-esteem and increasing internalising symptoms in the short-term, but not in the long-term. However, even when using the same measure these results were high in heterogeneity, suggesting that there was a lot of variance between studies.

This variance was found to be related to the differences between genders. When studies consisting of only females were analysed there was no link between victimisation and low levels of self-esteem, however, there was for males. A link was found between victimisation and internalising symptoms (with lower variance) for both genders. This indicates that there is a causal effect for males between victimisation lowering self-esteem and increasing internalising symptoms, but not for females. In terms of mediation effects, one study found self-esteem to be a mediator for both genders and another found it to be a mediator for females and a moderator for males. The second study links with the literature from Reidunsdatter and Moksnes (2019) and suggests that self-esteem may have a higher effect on girls than boys. This could be due to the way that girls are bullied, it is often indirect aggression and therefore focused on reducing a positive view of self from a distance rather than physically fighting. It will be important for future research to gain more of an understanding as to whether there are gender differences in self-esteem especially in relation to victimisation.

Strengths of the Literature Reviewed

The overall studies make up a large representative sample of participants from the Western culture. Methodological strengths of the studies include; all participants who had not experienced victimisation came from the same cohort as those who had experienced it. The majority of studies were representative of the sample being studied in terms of sample size and the number of schools that the participants were selected from. Standardised self-report was used by 17 out of the 19 studies to assess ascertainment of exposure to victimisation and the assessment of outcome was standardised for 18 of the studies.

Limitations

This review does not contain many studies that are from non-western society, therefore results cannot be generalised to other cultures. When interpreting the findings of this review the methodological limitations of the representative studies should be taken into account. There was significant heterogeneity between genders, which is an area that needs to be explored. It could be that the type of victimisation different genders typically experience have different effects on self-esteem. For example girls typically experience indirect aggression (Björkqvist & Kaukiainen, 1992) which in its nature is derogatory of sense of self, there for may have a higher effect on self-esteem. It will be important to explore this further as grouping studies by gender reduced the heterogeneity significantly.

The measures used to assess self-esteem and internalising symptoms varied throughout the papers making comparison difficult. This was explored using the meta-analysis however, and did not account for the majority of the differences. It can therefore be assumed that there are moderating factors effecting the development of internalising symptoms in adolescents who have experienced victimisation. These could include parental support (Elmelid et al., 2015), nurturing school environment and sense of belonging (Maynard et al., 2015). All of the above could increase a young person's self-esteem, which

could act as a mediating factor in the prevention of internalising symptoms, as was found in the studies completed by Wang (2012) and Grills (2003).

The study completed by Wang (2012) analysed both the mediating and moderating effects of self-esteem. To look at self-esteem as a mediating effect is to view it as being affected by the amount of victimisation experienced and therefore have an effect on the development of the internalising symptoms. In terms of self-esteem having a moderating effect, this would mean that a child or young person's initial levels of self-esteem will have an effect on whether or not they both experience victimisation and develop internalising symptoms. The differences between these models are that for the mediation model self-esteem is deemed dependent on victimisation experienced, whereas with the moderation model it is the child or young person's levels of self-esteem prior to victimisation that are seen to have an effect on the development of internalising symptoms. Wang (2012) found mediating and moderating effects of self-esteem for older children (11 and older). This means that; children with higher self-esteem after being victimised were less likely to develop internalising symptoms, children with higher levels of self-esteem were less likely to be victimised, and if they were victimised then they were less likely to develop internalising symptoms. In relation to schools, a strong mediation effect would indicate that intervention to support self-esteem after victimisation would be beneficial. A strong moderating effect would suggest that the development of overall self-esteem would be beneficial to all children.

These studies, were only carried out in Western cultures. Therefore, it is westernised view of how victimisation is experienced and cannot be generalised to wider populations. It is important for future research to explore different cultures. In the Western culture, there is also a lack of exploration into pupil sub-groups, for example children with a Special Educational Need, those who receive free school meals and children of armed forces, it will be important

to explore these subgroups in order to gain a better understanding of challenges and therefore develop the correct form of support.

The majority of the studies used standardised self-report assessments. It could be argued that the information should have been triangulated with other reports of self-esteem, internalising symptoms or victimisation from other sources such as parents or teachers. This is due to the likelihood that adolescents may not accurately report experiences of victimisation whilst completing an assessment in school.

Eight of the studies were longitudinal, which could be seen as a strength however, these studies no longer showed a significant mean effect. This could have been due to the heterogeneity between studies, or it could be that there are moderating factors affecting the long term development of internalising symptoms.

Conclusions and future research

Regardless of the methodological challenges of the current research, this review extends the literature by analysing the data that is currently available surrounding the effects of victimisation on self-esteem and the development of internalising symptoms and gender differences.

It is important for future research to acknowledge and explore the gender differences in relation to victimisation, self-esteem and internalising symptoms, rather than simply controlling for it. This paper has shown that gender accounts for a significant proportion of the variance between studies and it is vital for researchers to fully explore the differences between genders and how they experience victimisation.

Schools and people who work with adolescents should have an awareness that victimisation can impact on the mental well-being of young people. There is a strong link

between reduced self-esteem and victimisation, however, it is not currently clear on the directionality in which this occurs, e.g. are children who have lower self-esteem more likely to be victimised or does victimisation influence the reduction of self-esteem. This is an important issue for future research.

The papers exploring the mediating effects of self-esteem in terms of developing internalising symptoms were limited. However, the evidence from this systematic review suggests that there are mediating and moderating factors affecting the onset of internalising symptoms. It is important for research to continue to explore these areas in order to better support children and young people.

With the release of the Green Paper relating to mental health in 2017 (Department for Education, 2017) the importance of helping adolescents in developing positive mental health has been highlighted. Educational Psychologists (EPs) and other school professionals are well placed to provide support for these young people who are experiencing victimisation. This could be in the development of strategies to foster more of a sense of belonging in school or implementing systemic work to develop a more nurturing secondary school environment. Further work is required in establishing what the mediating effects are between victimisation and mental health. Particularly for those adolescents who are more likely to be bullied e.g. children with a special educational need.

Chapter 2 Empirical Paper

Abstract

The number of children and young people experiencing mental health problems in the United Kingdom is increasing. Emotional problems such as anxiety and depression are two of the most prevalent forms of mental health challenges. One risk factor for emotional problems particularly relevant for school children is bullying. Indeed, 17 % of children aged between 10 and 15 have reported experiencing victimisation. Children with special educational needs (SEN) are particularly vulnerable to fall victim to bullying (if true). It is vital however to understand how bullying increases the risk for emotional problems. One factor that has been linked to both victimisation and emotional problems independently is low self-esteem. For the first time, the current study aims to determine whether self-esteem is a mediating factor between victimisation and emotional symptoms. Then whether gender or having a Special Educational Need are moderators of the mediating effect. This is a quantitative longitudinal study, spanning 7 years. Data was acquired from the Millennium Cohort Study, and the current study consists of 9957 young people, who were born in the United Kingdom in the year 2000. Of the 5021 girls 667 had SEN, of 4936 boys 1124 had SEN. Self-esteem was found to have a small but significant mediating effect between victimisation at age 7 and emotional symptoms at age 14, however, gender and special educational needs were not found to have a moderating effect, even though children with SEN reported higher rates of victimisation. As the mediating effect was small other factors may play a larger role in the mediation effect between victimisation and self-esteem.

Introduction

In a study carried out in 2017, 12.8 % of children and young people aged 5 to 19 were estimated to have at least one mental health problem, that is a 3.1% increase since 1999 (ONS, 2018). The most common of those mental health problems are anxiety and depression. The factors affecting the onset and prevention of anxiety and depression have become a continuing concern in the field of psychology. The more knowledge professionals have surrounding supportive factors the more can be put in place to prevent children and young people experiencing anxiety and depression.

Anxiety is defined as feelings of restlessness, powerlessness accompanied by physical symptoms such as muscle tension, sweating or heart palpitations (American Psychiatric Association, 2013). Symptoms of depression include but are not limited to; low mood, loss of interest in pleasurable activities, low confidence and sleeping difficulties (American Psychiatric Association, 2013). The research in the current study was carried out using the Strengths and Difficulties Questionnaire (Goodman, Meltzer, & Bailey, 1998), which gives a score of emotional symptoms for children and young people, therefore, in the interest of continuity, anxiety and depression will be referred to as emotional symptoms.

Some of the challenges that have been found to affect the onset of emotional symptoms are: a family history, (and) psychosocial stress (such as bullying or poor peer relationships) (Reijntjes, Kamphuis, Prinzie, & Telch, 2010; Thapar, Collishaw, & Pine, 2012), gender, age, poorer school performance and lower family functioning (Wartberg et al., 2018) and having a Special Educational Need (SEN) (Hudson, Hall, & Harkness, 2019). A number of studies have found gender differences in reported emotional symptoms (Grills, 2003; Grills & Ollendick, 2002; Wang, 2012). A meta-analysis carried out by Patton et al. (2014) found that girls reported higher levels of emotional symptoms than boys, particularly

in adolescents. Cohen, Andrews, Davis, and Rudolph (2018) found a sharper increase in female reported anxiety in adolescence than in males.

The negative implications of emotional symptoms are vast and previous research has established significant links with; increase risk of physical health problems (infectious disease and respiratory infections), engagement in risky behaviour (such as drugs and alcohol) (Jamnik & DiLalla, 2019) and poor interactions with peers (Elmelid et al., 2015). A meta-analysis by Riglin, Petrides, Frederickson, and Rice (2014) linked emotional symptoms to lower academic attainment. This can lead to school refusal behaviours (Maynard et al., 2015) withdrawing from social interactions (Boulton & Smith, 1994). Emotional symptoms have also been found to be significantly related to suicide in a meta-analysis carried out by Tooa et al. (2019).

Victimisation

The existing body of research on emotional symptoms suggest that one of the key factors associated with their onset is victimisation. Victimisation is defined as repeated exposure over time, to interpersonal aggression and abuse of power (Olweus, 1993). Victimisation is reported as early as pre-school, however, it has been found to peak between the ages of 11 and 14 years, which in the United Kingdom, links to the transition from primary to secondary school (Hymel & Swearer, 2015). The reported prevalence of victimisation in England between April 2013 and March 2018 was 17% for children aged between 10 and 15 years. That is an estimate of 1,499,360 children reporting experiencing victimisation to the extent that they felt upset or frightened, and those are just the young people who felt comfortable to report the experience. In a meta-analysis of 46 studies consisting of 35,468 adolescents no gender differences in reported victimisation were found (Casper, Card, & Barlow, 2020).

As of January 2019 14.9 % of school age children had a Special Educational Need (SEN) these were most commonly for speech and communication needs and autism spectrum disorder (DFE, 2019). Children with a diagnosis of a SEN experience higher levels of emotional problems, for example Hudson et al. (2019) found that children with Autistic Spectrum Disorder (ASD) are four times more likely to develop depression in their lifetime. A meta-analysis carried out by Nelson and Harwood (2011) found a significant link between children with learning difficulties and emotional symptoms. Children with a SEN have also reported higher levels of victimisation than those who do not in the US (Rose, Espelage, Aragon, & Elliott, 2011; Rose, Monda-Amaya, & Espelage, 2010) and of the children with a diagnosis of Autism in the United Kingdom 40 % of children reported having experienced feelings of exclusion or rejection (Rowley et al., 2012). As these children are experiencing higher levels of victimisation and emotional symptoms than the non-SEN community, it is important to include this population in analyses, to gain an understanding of what interventions could be useful in supporting them.

Self-esteem

In order to be able to support these children and young people in reducing the development of emotional symptoms it is important to have an awareness of potential supportive factors. These are modifiable factors, we could target with interventions to reduce the onset of emotional problems. One of those factors is self-esteem, Rosenberg (1989) suggested that high self-esteem “expresses the feeling that one is ‘good enough’. The individual simply feels that he is a person of worth.” (p. 31). If a person feels that they are not enough, then they are constantly striving to be better, and this has been significantly linked to both depression and anxiety in a meta-analysis by Sowislo and Orth (2013). Therefore, victimisation in adolescence coupled with low self-esteem could make young people more

likely to experience emotional symptoms. If this is the case then it will inform evidence for developing interventions supporting the development of self-esteem, in order to reduce the likelihood of the onset of emotional symptoms in adolescents who have been victimised.

Research has found that self-esteem may play a role in the impact victimisation has on the development of emotional symptoms. To date, a limited number of studies have analysed the path from victimisation, via self-esteem to emotional symptoms. Grills (2003) found a mediating effect for self-esteem for boys but not girls in a longitudinal study consisting of 77 participants aged 11 – 15. Wang (2012) found it to mediate and moderate the effects of victimisation in a longitudinal sample of 1171 adolescents aged 10 - 17. Both of these studies were completed in the United States have smaller sample sizes than the current study and neither explored the effect of self-esteem for adolescents with SEN.

The current study aims to determine whether self-esteem is a mediating factor in a large cohort of adolescents from the United Kingdom. It explores, for the first time, the moderating effects of gender and SEN self-esteem being a mediator between victimisation and emotional symptoms. As there are possible gender differences and differences between SEN and non-SEN communities. It is important to know if a self-esteem based intervention would support one group but not another.

Analytical Overview

The main hypothesis of this study was: that self-esteem will have a mediating effect on the onset of emotional symptoms for young people who have experienced victimisation. As previous research in this area has been carried out in relatively small samples in the United States (Wang, 2012), I sought a large dataset in the United Kingdom that assessed the necessary constructs and spanned the appropriate age range. The study that was most appropriate was the Millennium Cohort Study (MCS), which is a longitudinal study being

carried out by University College London. The data relating to this study spanned a population of 9957 young people. I had access to data from three key time points; age 7, 11 and 14. At age 7 the children were asked about their experiences of victimisation and the parents completed a questionnaire around emotional symptoms. At ages 11 and 14 they completed the aforementioned and an adapted Rosenberg Self-Esteem (Rosenberg, 1965).

In order to ensure that the results reflected the longitudinal time frame of the study I used the information from the victimisation scale at age 7, self-esteem at age 11 and emotional symptoms at age 14. The reasoning for this being that the study would now span 7 years and provide an understanding of the long-term impact of victimisation on both self-esteem and the development of emotional symptoms.

Prior to investigating the mediation effect it was important to gain an understanding of the role of gender and SEN. If there were significant differences between the groups then it would be important to control for them when running the overall mediation analysis. In terms of reported victimisation, no gender differences were found in previous research with adolescents (Casper et al., 2020). Therefore, it was predicted that there would be no gender differences in reported victimisation. Contrary to this, previous research suggested that children with a SEN are more likely to experience victimisation than those without (Rose et al., 2011; Rose et al., 2010; Rowley et al., 2012). So it was predicted that children with a SEN would report more victimisation.

As previous research has found that girls report higher levels of emotional symptoms in adolescence (Patton et al., 2014), it is expected that there will be a significant gender difference at age 14. Nelson and Harwood (2011) found that children with SEN reported significantly more emotional symptoms than those without. Therefore, it is expected that children with SEN will have higher reported emotional symptoms.

Previous research has found self-esteem to be an overall mediator (Grills, 2003; Wang, 2012). Therefore, it was expected that self-esteem will act as a mediator between victimisation and emotional symptoms. As there are gender differences in reported emotional symptoms, and differences in victimisation and emotional symptoms for children with SEN, I decided to explore if the indirect effect of self-esteem was higher for any of the groups. This study aims to contribute to the existing literature on victimisation, self-esteem and emotional symptoms by exploring the following hypotheses and research questions:

Hypothesis 1: There will be no gender difference in terms of victimisation.

Hypothesis 2: Young people with SEN will report a higher level of victimisation.

Hypothesis 3: Girls will report a higher level of emotional symptoms

Hypothesis 4: Young people with SEN will report a higher level of emotional symptoms.

Hypothesis 5: Self-esteem will have a mediating effect on the onset of emotional symptoms for young people who experienced victimisation when emotional symptoms are controlled for at ages 7 and 11.

As there may be possible gender effects and differences for young people with SEN. I decided to explore if gender and SEN moderated the indirect effect of the mediation.

Method

The Millennium Cohort Study

To test these hypotheses data from the Millennium Cohort Study (Fitzsimons et al., 2017) was analysed. This is a longitudinal study that began in 2000, it follows a population of children who were born 12 months from the 1st of September 2000 (England and Wales) and

1st of December 2000 (Scotland and Northern Ireland). This was a random sample of electoral wards that was stratified to make sure that all four countries, economic status and ethnic minorities were appropriately represented. Data has been collected from the children, parents, teachers, siblings and caregivers at ages 9 months, 3 years, 7 years, 11 years and 14 years. The current study makes use of the data from age 7, 11 and 14 as this is when the children began completing the self-report questionnaires surrounding victimisation. Weights were calculated for those who did not respond at particular ages.

Participants

The overall sample consisted of 9957 young people, who were born in the United Kingdom in the year 2000. Of the 5021 girls 667 had SEN, of 4936 boys 1124 had SEN.

Measures

Victimisation

Victimisation was assessed using a single item in a self-report questionnaire. The question was phrased and scaled differently at age 7 to age 11 and 14, see table 5 for details. At age 7 this question was delivered in the context of 19 questions about school. Therefore, it can be assumed children would have related it to experiencing bullying in the context of school. At age 11 the question came under a section titled Secondary School and other children. However, at age 14 it was located in a section called ‘Things you may have experienced’, which had a focus on bullying and being a victim of crime. At the same age group there were specific questions relating to sibling bullying, therefore it can be assumed that the young person would be aware that this question was not relating to victimisation occurring in the family home.

Table 5.

Victimisation question at each age point.

Age Point	Question	Scale
Age 7	How often do other children bully you?	1= All of the time 2 = Some of the Time 3 =Never
Age 11	How often do other children hurt or pick on you on purpose?	1 = Most days, 2 = About once a week, 3 = About once a month, 4 = Every few months, 5 = Less often, 6 = Never
Age 14	How often do other children hurt or pick on you on purpose?	1 = Most days, 2 = About once a week, 3 = About once a month, 4 = Every few months, 5 = Less often, 6 = Never

As the range of answers varied between age 7, 11 and 14, victimisation was reduced to a dichotomous variable through collapsing the responses 1-5 into yes (coded as 2) and the response 6 into no (coded as 0) so as to compare the experiences of victimisation across the time points. At age 7, which is the predictor variable in the mediation analysis, the results for 1 and 2 were collapsed into yes. This meant that we were able to compare victimisation for SEN and gender at different time points, even though it was not possible to use all the data in the mediation analysis. Therefore, in the results, higher scores are related to children who have experienced any form of victimisation.

Emotional Symptoms

Emotional symptoms were reported by parents using the emotional symptoms section of the Strengths and Difficulties questionnaire (Goodman et al., 1998). The SDQ is a 25 item questionnaire which is divided into five scales. The scales consist of 5 questions measuring each construct; emotional symptoms, conduct problems, hyperactivity/ inattention, peer relationship problems and prosocial behaviour. This study used the results from the emotional symptoms scale which consisted of the following five questions with completed responses of; Not true, Somewhat true or Certainly true (Goodman et al., 1998).

1. Complains of headaches/ stomach aches/ sickness
2. Often seems worried
3. Often unhappy
4. Nervous or clingy in new situations
5. Many fears and is easily scared

Scores were computed by averaging the results across the five items, high scores meant that the child presented with higher levels of emotional symptoms. The emotional symptoms subscales of the Strengths and Difficulties Questionnaire had adequate reliability at all three age points, at 7 the Cronbach's $\alpha = .65$, 11 $\alpha = .71$ and 14 $\alpha = .72$.

Self-esteem

An adapted version of the Rosenberg Self-Esteem Questionnaire (RSE) (Rosenberg, 1965) was used to measure self-esteem. This is a five-item self-report measure using a 4-point scale of (1 = *strongly agree*, 2 = *agree*, 3 = *disagree* and 4 = *strongly disagree*). The items were:

1. On the whole, I am satisfied with myself
2. I feel that I have a number of good qualities
3. I am able to do things as well as most other people
4. I am a person of value
5. I feel good about myself

This scale was only administered at ages 11 and 14. A higher total score indicates low self-esteem. The adapted version of the RSE (Rosenberg, 1965) had high reliability at the two age points, at 11 the Cronbach's $\alpha = .74$ and 14 $\alpha = .90$.

Special Educational Need

Special Educational Need was measured at each age by a parental response to a single question in the parent questionnaire or interview ("Has [Cohort child's name]'s school or the [local education authority/ education board] ever told you [he/she] has special educational needs or additional support needs?") the response being either "yes" or "no". As this data was collected over the three age points I decided to group those who at a reported SEN at any

time point into the SEN category. This data was also useful to gain an understanding of the differences between victimisation experienced by children with and without SEN.

Ethical Considerations

Ethical approval for analysing this data (secondary analysis) was gained from the University of Southampton Ethics Committee. The data that was analysed was in the public domain but had been anonymised. I did not try and identify individuals who have participated in the study.

Statistical Overview

Hypothesis 1:

As victimisation was a dichotomous variable I carried out a Chi Squared analysis to identify any gender differences in reported victimisation. This was completed for each assessment point, age; 7, 11 and 14.

Hypothesis 2:

I carried out a Chi Squared analysis to identify any differences in reported victimisation for those with or without a SEN. This was completed for each assessment point, age; 7, 11 and 14.

Hypotheses 3 & 4:

I carried out a non-parametric assessment, due to skewed data, to identify any differences in reported emotional symptoms between genders. This was completed for each assessment point, age; 7, 11 and 14. As it was an independent sample a Mann-Whitney test was completed. This was repeated comparing groups of SEN and non-SEN.

Hypothesis 5:

To analyse the mediating effects of self-esteem a mediation analysis was completed in PROCESS (Hayes, 2014) using conceptual model 4 (see Figure 5). This simple mediation model was chosen because there are two pathways in which victimisation (predictor variable) can effect emotional symptoms (outcome variable). These pathways are the direct effect, from victimisation to emotional symptoms and the indirect effect which originates at victimisation to self-esteem and then from self-esteem (mediating variable) to emotional symptoms (Hayes, 2017). Emotional symptoms affect the development of self-esteem (Zhou, Li, Tian, & Huebner, 2020). Therefore, emotional symptoms at age 7 and 11 were controlled for. Any differences between genders and children with and without SEN were also controlled for. The data from the MCS was weighted to take into account non-response weights for each of the three sweeps. They were constructed as the inverse of predicted probabilities and the weights were constructed by multiplying the sampling weights in sweep 1 by the attrition weights in each sweep of the MCS. This weight variable generated by the MCS was used in the data analysis so as to reduce data being biased towards participants that responded at all three sweeps. The data was also bootstrapped and 95% confidence intervals were reported.

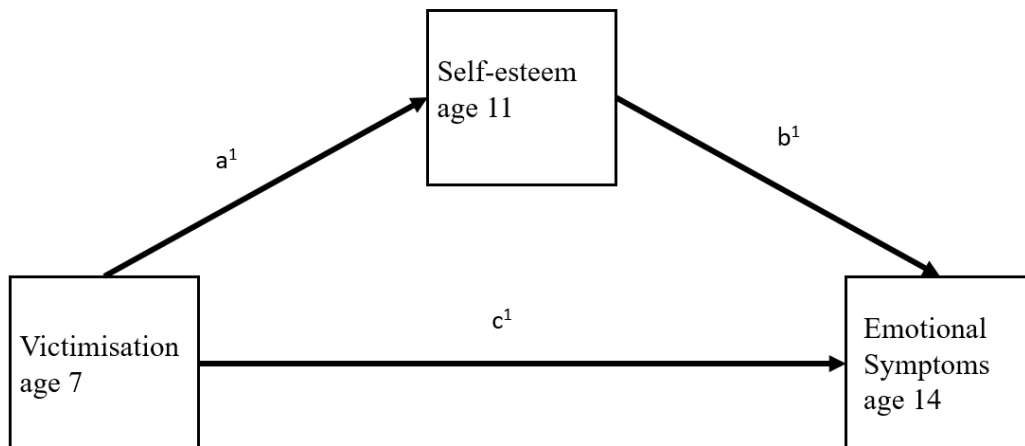


Figure 5. Simple mediation model ab = indirect effect c^1 = direct effect

Exploratory Analysis

To investigate the moderating effects of gender on the mediating effect of self-esteem I completed four exploratory moderated mediations (see table 6 for details). In each model the predictor variable was victimisation (age 7), outcome variable emotional symptoms (age 14), and mediator variable; self-esteem (age 11) and the moderator was gender. These models were also carried out to see if there were any differences for children with or without SEN, where the moderator variable was SEN.

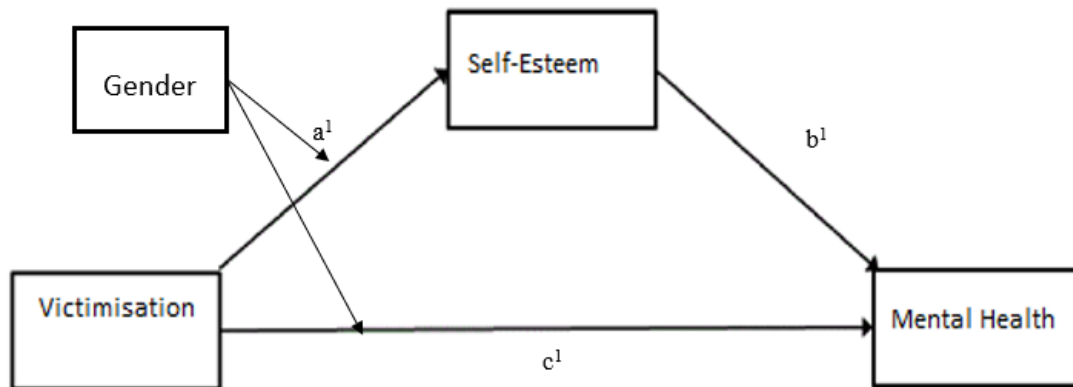
Models

Figure 6. *Diagram of Mediated Moderation Model 8*

In model 8 the indirect effect is moderated at a^1 and direct effect at c^1 . This means that the pathways between victimisation and self-esteem and victimisation and mental health will be moderated by gender, but not the pathway between self-esteem and mental health.

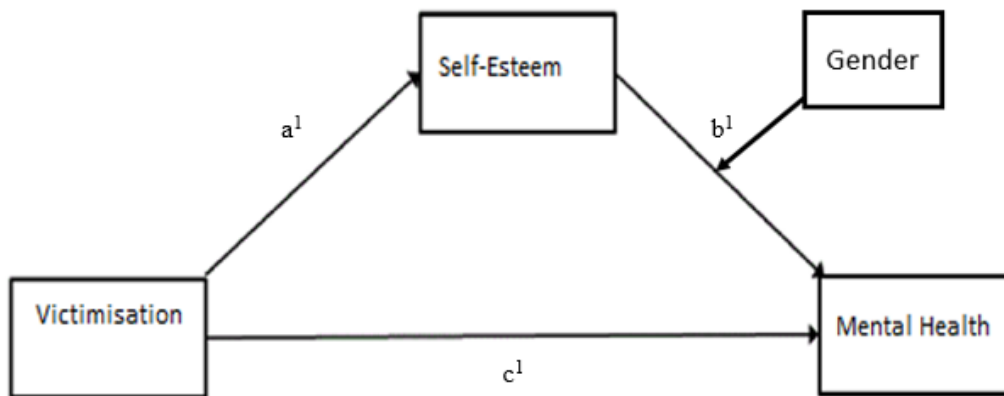


Figure 7. *Diagram of Moderated Mediation Model 14*

In model 14 the indirect effect is moderated at b^1 and the direct effect is not moderated. This means that the pathways between victimisation and self-esteem and victimisation and mental health are not moderated by gender, but the pathway between self-esteem and mental health is. This model was completed to check if there was a difference between the effects between self-esteem and mental health for the different genders.

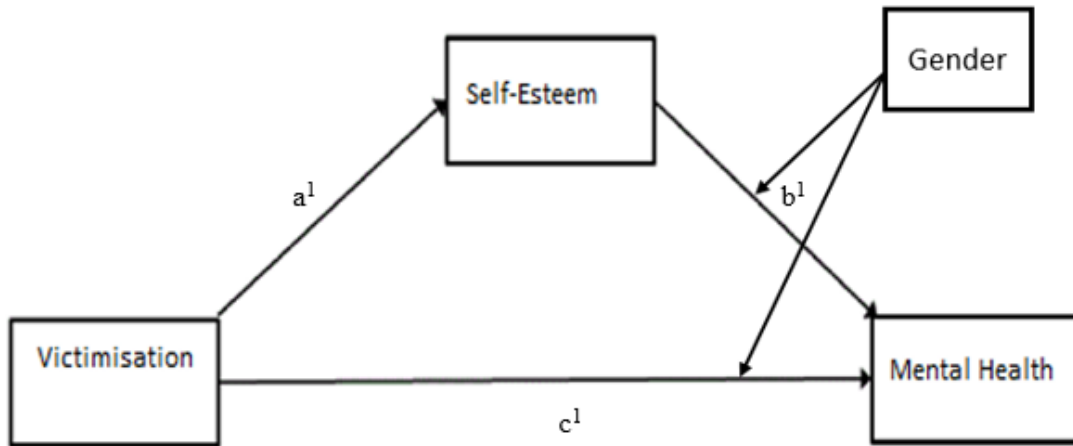


Figure 8. *Diagram of Moderated Mediation Model 15*

In model 15 the indirect effect is moderated at b^1 and direct effect is moderated at c^1 . This means that the pathway between victimisation and self-esteem is not moderated by gender, but both the direct effect (victimisation and mental health) and indirect effect (self-esteem to mental health) are moderated by gender.

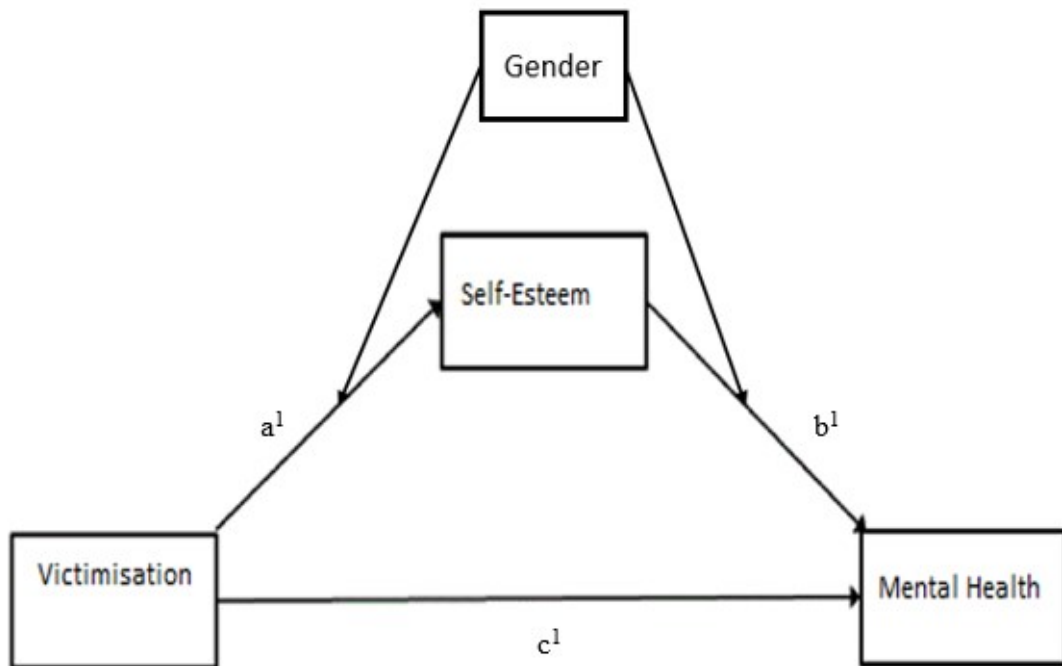


Figure 9. *Diagram of Moderated Mediation Model 58*

In model 58 the indirect effect is moderated at a^1 and b^1 and the direct effect is not moderated. This means that the direct effect (victimisation and mental health) is not moderated by gender but the indirect effect (victimisation – self-esteem – mental health) is.

Table 6.

Descriptions of the exploratory moderated mediation analyses.

Model	Explanation
8	The indirect effect is moderated at a^1 and direct effect at c^1 .
14	The indirect effect is moderated at b^1 and the direct effect is not moderated.
15	The indirect effect is moderated at b^1 and direct effect is moderated at c^1 .
58	The indirect effect is moderated at a^1 and b^1 and the direct effect is not moderated.

Results

Table 7.

Means and Standard Deviations for scores on the, Rosenberg Self-esteem scale and Strengths and Difficulties Questionnaire.

Variable	<i>n</i>	<i>M (SD)</i>
ROSE (age 11)	9372	1.61 (.43)
ROSE (age 14)	9957	1.88 (.58)
SDQEMO (age 7)	9729	1.50 (1.74)
SDQEMO (age 11)	9198	1.80 (1.95)
SDQEMO (age 14)	9957	1.97 (2.00)

Table 8.

Percentage of participants who reported victimisation at each time point.

Victimisation	<i>Percentage</i>
Age 7	44.7 %
Age 11	56 %
Age 14	50.9 %

Table 9.

Means and Standard Deviations for scores on the Victimisation, Rosenberg and Strengths and Difficulties Questionnaire by gender and reported SEN.

Variable	Girls		Boys		No SEN		SEN	
	<i>n</i>	<i>M (SD)</i>	<i>n</i>	<i>M (SD)</i>	<i>n</i>	<i>M(SD)</i>	<i>n</i>	<i>M(SD)</i>
Victimisation (age 7)	4815	.89 (.99)	4683	.99 (1.00)	7870	.91 (.99)	1627	1.07 (.99)
Victimisation (age 11)	4966	1.13 (.99)	4816	1.23 (.97)	8086	1.15 (.99)	1696	1.31 (.95)
Victimisation (age 14)	5056	1.02 (1.00)	4957	1.02 (1.00)	8221	1.01 (1.0)	1792	1.04 (.99)
ROSE (age 11)	4978	1.66 (.44)	4816	1.58 (.43)	8091	1.60 (.42)	1703	1.72 (.48)
ROSE (age 14)	5056	2.05 (.59)	4957	1.72 (.52)	8221	1.88 (.59)	1792	1.88 (.55)
SDQEMO (age 7)	4983	1.50 (1.66)	4903	1.36 (1.68)	8123	1.32 (1.56)	1763	1.92 (2.04)
SDQEMO (age 11)	4958	1.87 (1.98)	4839	1.64 (1.86)	8059	1.57 (1.78)	1738	2.59 (2.34)
SDQEMO (age 14)	5056	2.23 (2.17)	4957	1.55 (1.89)	8221	1.74 (1.94)	1792	2.61 (2.43)

Note. Victimisation score were calculated from 0 = no victimisation and 2 = victimisation. Therefore, higher scores are related to children who have experienced any form of victimisation.

Hypothesis 1: There will be no gender difference in terms of victimisation.

Females reported significantly higher levels of victimisation in middle childhood (age 7) $X^2(1, N = 9811) = 27.05, p < .001, (d = 0.1)$. Males experienced more victimisation at late childhood (age 11) $X^2(1, N = 9839) = 26.56, p < .001 (d = 0.1)$. No gender differences were found in adolescence (age 14), $X^2(1, N = 10355) = 0.45, p = .83 (d = 0.0)$. The data suggests that females are more likely to experience victimisation at age 7 than males, whilst males are more likely to experience victimisation at age 11 than females. At age 14, there were no gender differences in reported victimisation. However, the reported effect sizes were small. To ensure that extraneous variables were reduced, gender was controlled for at age 7 in the mediation analysis.

Hypothesis 2: Young people with SEN will report a higher level of victimisation.

Children with SEN reported higher levels of victimisation at age 7 ($X^2(2, N = 9810) = 34.08, p < .001) (d = 0.1)$ and 11 ($X^2(2, N = 9839) = 37.55, p = .00) (d = 0.1)$, but not at 14 ($X^2(2, N = 10355) = 2.97, p = .23) (d = 0.0)$. The effect sizes were very small indicating that the significance could have been due to the large sample size. However, in order reduce effects of extraneous variables SEN was controlled for when completing the mediation analysis.

Hypothesis 3: Girls will report a higher level of emotional symptoms

Girls reported higher levels of emotional symptoms than boys at all assessment points (age 7, Mean Rank = 4934) $U = 10447739, z = -6.69, p = .00$, age 11, Mean Rank = 4741) ($d = 0.0$), $U = 9771390, Z = -5.94 p = .00$ age 14, Mean Rank = 5282) ($d = 0.1$), $U = 9157723, Z$

= -17.74, $p = .00$) ($d = 0.3$). However, the effect sizes for age 7 and 11 are very small. There is a small effect size at age 14.

Hypothesis 4: Young people with SEN will report a higher level of emotional symptoms.

Young people with a SEN reported higher levels of emotional symptoms than those without, at all assessment points (age 7, Mean Rank = 5227) $U = 5247901$, $Z = -10.83$, $p = .00$, ($d = 0.3$). (age 11, Mean Rank = 5554) $U = 4508053$, $Z = -17.27$, $p = .00$, ($d = 0.5$). (14, Mean Rank = 5466) $U = 5019440$, $Z = -14.18$ $p = .00$) ($d = 0.4$). These are small to medium effect sizes, suggesting that the significance is not just due to the large sample size.

Hypothesis 5: Self-esteem will have a mediating effect on the onset of emotional symptoms for young people who have experienced victimisation, when emotional symptoms are controlled for at ages 7 and 11.

Prior to running the mediation, exploratory correlational analyses were carried out for overall for all variables (see Tables 10 - 11) to gain an understanding as to the correlations between variables.

- Victimization at age 7 was significantly correlated with self-esteem at age 11, $p < .001$ ($r = .07$)
- A statistically significant relationship was found between the victimisation and mental ill health. As can be observed in tables 10 and 11 there were significant correlations between victimisation at time point 1 and mental health at time point 3 ($r = .07$).
- Self-esteem at age 11 correlated significantly with mental ill health age 14 ($r = .14$).

Table 10.

Summary of Correlations between measures.

Measure	V T1	V T2	V T3	ROSE	ROSE	SDQ	SDQ	SDQ
				T2	T3	T1	T2	T3
V T1	x							
V T2	.15**	X						
V T3	.08**	.26**	X					
ROSE T2	.07**	.18**	.10**	X				
ROSE T3	.03**	.10**	.21**	.30**	X			
SDQ T1	.58**	.016	.02**	.09**	.08**	X		
SDQ T2	.08**	.10**	.05**	.18**	.13**	.50**	X	
SDQ T3	.07**	.07**	.10**	.14**	.24**	.40**	.54**	X

*Note. **Correlation is significant at the 0.01 level (two-tailed), * Correlation is significant at the 0.05 level (two-tailed. Females are reported below diagonal and males above.*

As can be seen in table 10 there is a high correlation between victimisation and emotional symptoms at age 7. Although there was a significant correlation at ages 11 and 14, the correlations were not as high as at age 7. There are strong correlations between emotional symptoms at all three time points. Self-esteem and victimisation were most strongly linked at age 14. The overall effects are small and this may be significant due to the large sample size.

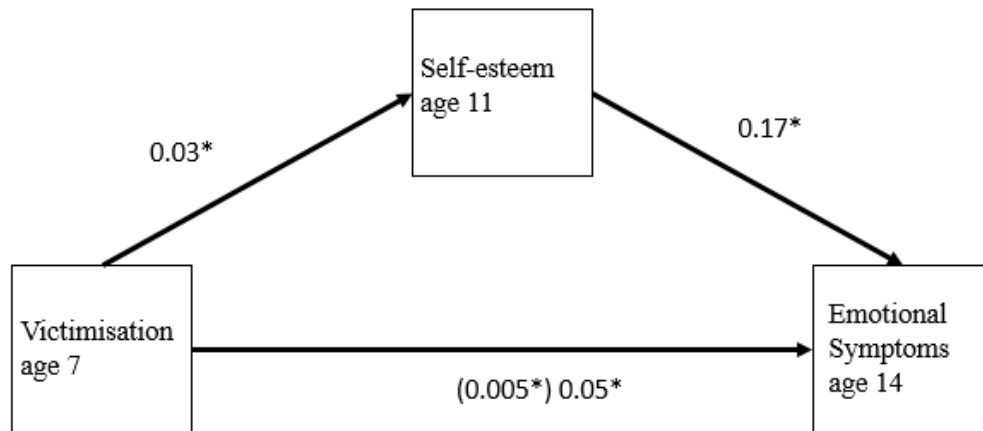


Figure 10. Mediation of the effect of victimization on mental health via self-esteem. The coefficient in parentheses is the direct effect. * $p < .05$.

There was a very small but significant indirect effect (denoted ab) of victimisation on mental health through self-esteem, $ab = 0.005$ SE = 0.001 BCa CI [0.002, 0.008]. This means that victimization only accounts for a very small amount of the link between victimization and emotional symptoms. The mediating effect of self-esteem on emotional symptoms was small but significant.

Due to the gender differences in victimisation and emotional symptoms I explored whether gender had a moderating effect on the mediation of self-esteem. Firstly the correlation effects for the two genders were explored to examine the differences between genders in terms of the correlations between variables. As can be seen in Table 10 significant correlations were found between victimisation (age 7), self-esteem (age 11) and emotional symptoms. As was seen in hypothesis 1 differences were shown between genders in reported victimisation, which suggested that gender may play a moderating role on the mediation effect of self-esteem. To investigate the moderating effects of gender on the mediating effect of self-esteem I completed four of exploratory moderated mediations, the index of which was

not significant for any model (see results in table 12). The analysis showed that self-esteem mediated the effect for both genders.

Table 11.

Summary of Correlations between measures for gender.

Measure	V T1	V T2	V T3	ROSE T2	ROSE T3	SDQ T1	SDQ T2	SDQ T3
V T1	x	.14*	.10**	.07**	.05**	.04**	.06**	.05**
V T2	.15**	X	.28**	.17**	.11**	.04**	.11**	.07**
V T3	.06**	.24**	X	.10**	.21**	.02	.05**	.07*
ROSE T2	.07**	.19**	.09**	X	.30**	.10**	.17**	.14**
ROSE T3	.04**	.12**	.23**	.29**	X	.08**	.12**	.17**
SDQ T1	.08**	-.00	.02	.08**	.64**	X	.52**	.42**
SDQ T2	.11**	.10**	.05**	.17**	.11**	.49**	X	.56**
SDQ T3	.10**	.08**	.11**	.12**	.23**	.38**	.53**	X

*Note. **Correlation is significant at the 0.01 level (two-tailed), * Correlation is significant at the 0.05 level (two-tailed). Females are reported below diagonal and males above.*

Table 12.

Results of moderated mediation for gender.

Model	Results
8	$b = .002$ SE = .002 CI [-.002, .005]
14	$b = .001$ SE = .002 CI [-.004, .005]
15	$b = .001$ SE = .002 CI [-.004, .006]
58	$b = .002$ SE = .003 CI = [-.004, .008]

The index of moderated mediation was not significant in any of the models see table 12. The analysis showed that self-esteem mediated the effect for both genders. I also explored whether SEN had a moderating effect on the mediation of self-esteem. The correlation effects for the two SEN groups were explored to examine the differences between those with SEN and without were explored in terms of the correlations between variables. As can be seen in Table 13 significant correlations were found between victimisation (age 7), self-esteem (age 11) and emotional symptoms (age 14). As was seen in hypothesis 2 differences were shown between SEN and non-SEN in reported victimisation, which suggested that gender may play a moderating role on the mediation effect of self-esteem.

Table 13.

Summary of Correlations between measures for SEN.

Measure	V T1	V T2	V T3	ROSE T2	ROSE T3	SDQ T1	SDQ T2	SDQ T3
V T1	x	.14**	.07**	.06**	.03**	.05**	.08**	.05**
V T2	.17**	X	.26**	.19**	.10**	.00	.09**	.05**
V T3	.12**	.27**	X	.10**	.22**	.02*	.05**	.08**
ROSE T2	.077**	.09**	.07**	X	.31**	.09**	.17**	.13**
ROSE T3	.05	.08**	.17**	.27**	X	.08**	.14**	.26**
SDQ T1	.07**	.02	.02	.06**	.07**	X	.47**	.37**
SDQ T2	.06**	.11**	.06**	.13**	.12**	.54**	X	.51**
SDQ T3	.11**	.10**	.15**	.12**	.20**	.44**	.58**	X

*Note. **Correlation is significant at the 0.01 level (two-tailed), * Correlation is significant at the 0.05 level (two-tailed). SEN are reported below diagonal and non-SEN above.*

Table 14.

Results of moderated mediation for SEN and non-SEN.

Model	Results
8	$b = .000$ SE = .002 CI [-.005, .005]
14	$b = .004$ SE = .003 CI [-.002, .012]
15	$b = .004$ SE = .003 CI [-.004, .011]
58	$b = .005$ SE = .006 CI = [-.005, .017]

The index of moderated mediation for SEN was not significant in any of the models, see table 14. The analysis showed that self-esteem mediated the effect for both SEN and non-SEN.

Discussion

Summary of Findings

The first question of the current study sought to understand the gender differences in reported victimisation at the three assessment points (aged 7, 11 and 14). Girls reported higher victimisation at age 7, boys at age 11 and there were no gender differences at age 14. One important finding is that children with SEN reported higher levels of victimisation at age 7 and 11 but not 14, interestingly the Government reported figure relating to victimisation was 17 % and yet in this study at least 44 % at assessment stage reported experiencing some form of victimisation. Overall self-esteem was found to mediate the relationship between early victimisation and reported emotional symptoms in adolescence. However, there were no differences between genders or children who had SEN and those who did not.

This study was able to analyse the gender differences in victimisation over a 7 year period. Previously gender differences in reported victimisation (Grills, 2003) found that boys reported higher levels of victimisation than girls, but that was at age 12 and 13. As the current study showed that girls reported more victimisation at age 7 and boys at 11 this would fit with the results from the study completed by (Grills, 2003). This gender difference could be to the type of victimisation that children experience at these ages, as Björkqvist and Kaukiainen (1992) found that girls aged 11 and older are more likely to make use of indirect aggression as a form of bullying. Boys are more likely to use overt and physical aggression (Crick & Grotpeter, 1995). It could be that the phrasing of the questions in this study that meant that victimisation was not picked up in girls at age 14, as it is phrased “how often do other children hurt or pick on you?” some young people may not have associated indirect aggression with this.

This study found that children in the UK with SEN have reported higher levels of victimisation at ages 7 and 11, but not at 14. This was in line with research from (Rose et al., 2011; Rose et al., 2010). It is interesting that there is no significant difference in reported victimisation at age 14. The results that children with SEN are experiencing less victimisation in Secondary School can be interpreted as positive; in that Secondary Schools are being inclusive and reducing the victimisation that their children with SEN are experiencing. It is also possible that this could be explained by the number of children with SEN in the study who had moved to a specialist provision for Secondary School, in 2019 43.8% of children with an Educational Health and Care Plan were being educated in a specialist provision (DFE, 2019). This may mean that children with SEN experience less victimisation in a specialist provision. However, the measure used in this study asked parents if their child had a special educational need, which does not necessarily mean that the child had an Educational

Health and Care Plan. This could suggest that there should be investigations into the differences in support in mainstream and specialist schools, so that this can be provided in mainstream. It could be that there is a more inclusive nature in a specialist provisions and professionals should be introducing programmes to increase the inclusive nature of our mainstream secondary schools.

Girls reported higher levels of emotional symptoms than boys at all-time points. This is in line with the research carried out by Patton et al. (2014). An implication of this is the possibility that more girls will need interventions to support them in the reduction of emotional symptoms, especially during adolescence. Future research should be undertaken to investigate the factors that could be affecting the onset of emotional symptoms in girls and what can be done to prevent this. Children with SEN also reported significantly more emotional symptoms to those without. This finding is consistent with that of Nelson and Harwood (2011). This could be due to the susceptibility of victimisation at an early age affecting the development of emotional symptoms.

Consistent with previous literature self-esteem was found to mediate the effects of victimisation on emotional symptoms. Although significant this effect was very small suggesting that there are other factors that may have a larger mediating effect between victimisation and emotional symptoms. These could be; a sense of belonging in school, friendship, positive family environment, and academic achievement (Elmelid et al., 2015).

The moderation effects assessed in this study were that the influence of victimisation on the development of emotional symptoms were affected by gender or SEN. If path *a* had been moderated by gender then that would mean that there were gender differences in the strength of the relationship between victimisation and self-esteem. For example, it could have been that girls who had been victimised were more likely to have lower self-esteem than

boys. If SEN had moderated path a then it could have been that children with SEN would have been more likely to have lower self-esteem. Both of which could have in turn led to higher levels of emotional symptoms.

If path b had been moderated by gender then there would be a gender difference between the strength of the relationship from self-esteem to emotional symptoms. For example, girls may have been more likely to experience emotional symptoms if they had low self-esteem. The same could have been the case for children with SEN - they could have been more likely to experience emotional symptoms if they had low self-esteem. Neither gender nor SEN moderated either pathway. This suggests that there are no significant gender differences in the experiences of victimisation, the resulting low self-esteem and development of emotional symptoms. Contrary to the research carried out by Grills (2003), gender was not found to be a moderator. These results may have arisen from the fact that the SDQ was used. The SDQ simply reports emotional symptoms, rather than anxiety and depression. The study carried out by Grills (2003) found gender differences between anxiety and depression, therefore it may be necessary for future research to further explore the relationships between victimisation, self-esteem and mental health in relation to anxiety and depression rather than just emotional symptoms.

There was no previous research available at the time of writing, analysing the moderating effect of SEN on the mediating effect of self-esteem, therefore it was not possible to compare. However, as previous research had suggested that there were differences in terms of victimisation it was assumed that SEN would have an effect on the mediation of self-esteem. This was not the case, suggesting that interventions surrounding self-esteem could be just as supportive for those with SEN as those without. However, these should be interpreted with caution as the mediating effect was so small it may be that interventions surrounding

development of academic achievement, sense of belonging or supportive parenting may better suited for some children.

Limitations

A possible limitation of this study is the lack of triangulation of information. The Millennium Cohort Study has information from parents, partners, teachers and children. Unfortunately, it was not possible to triangulate the required data, due to reduced teacher response in filling in the SDQ, this would have significantly reduced the sample size. However, future research could use the data to triangulate the information on a smaller sample size. There is also the challenge that the resulting effect sizes were very small indicating that the significance could have been due to the large sample size.

Another limitation is that, in order to compare victimisation across time points I reduced it to a dichotomous variable. This may have reduced the effect of victimisation as it put children who had experienced victimisation continuously in the same category as those who had experienced it once. It would also be useful for future research to ensure that there is a measure of relational aggression such; such as ostracism, in order to have a more accurate measure of gender differences.

The lack of self-esteem measure at age 7 made it challenging to assess if there was a longitudinal change. The SDQ questionnaire was straightforward way to gain an understanding as to the emotional symptoms being experienced by children and young people, however, there is no way to discern whether those symptoms are related to anxiety or depression. Due to the gender differences reported with anxiety and depression, it would be interesting to see if there was a mediating effect for self-esteem between victimisation and anxiety or depression and what the gender differences may be.

Having a measure of SEN in such a big study was incredibly useful. However, it would have increased reliability to have had this triangulated by someone from school and more specificity in the reporting of the SEN. For example, children with a diagnosis of ASD may be experiencing higher levels of victimisation than those with a diagnosis of dyslexia and this would be useful for school professionals to be aware of.

There is also the challenge that the resulting effect sizes were very small indicating that the significance could have been due to the large sample size.

Implications for Practice and Future Research

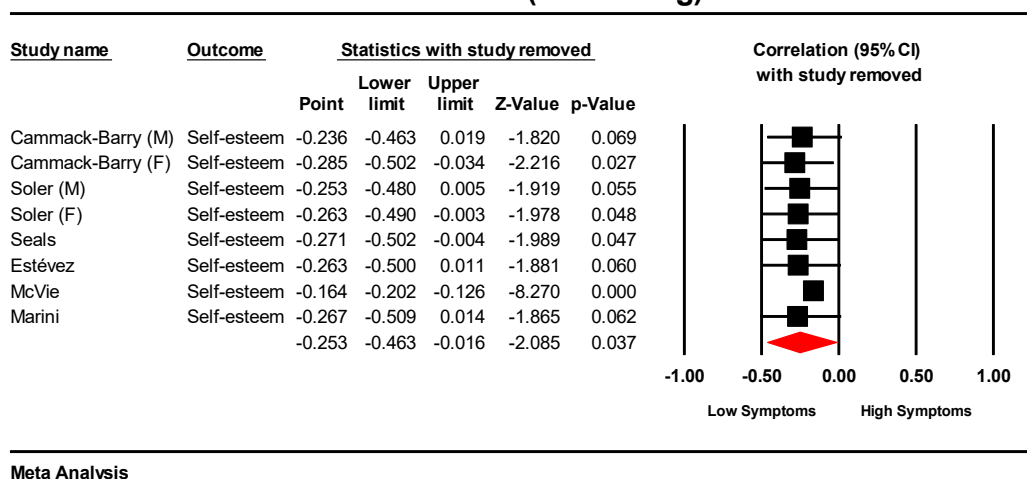
Despite the above limitations, the current research has a series of strengths. It consisted of data from a longitudinal study spanning over seven years. It also has a large sample size of 9957 participants. The research has progressed the literature surrounding the supportive factors that can be drawn upon to prevent the onset of mental ill health for children and young people who have experienced victimisation through including the experiences of children and young people with SEN in a longitudinal study. It has highlighted that although self-esteem has an effect on onset of victimisation, there may be other, more important factors that affect it. It is important therefore, for future research to investigate the other factors that may act as protective factors, for example; belonging, academic motivation, positive peer relationships and good quality relationships with staff members in schools (Elmelid et al., 2015; Thapar et al., 2012). It would be interesting to look at the mediating and moderating effects of belonging in particular on the development of emotional symptoms.

This research has shown that school professionals and Educational Psychologists should be doing more to support children and young people with SEN in schools, particularly in terms of preventing victimisation. It also suggests that, even though the significance was small and the sample size large, support in terms of developing self-esteem, such as

Emotional Literacy Support Assistants (ELSAs), could have a role in the reduction of emotional symptoms after victimisation. Whether self-esteem is a mediator (is affected by victimisation) or a moderator (comes prior to victimisation, and is either high or low), having an intervention to support a child in developing a positive view of themselves could be beneficial in reducing the onset of emotional symptoms. For Educational Psychologists it will also be key to look into whole class teaching and how teachers are praising children. Self-esteem has been found to be increased when process praise is given, e.g. “you really tried hard on that” as opposed to person praise e.g. “you are good at that” (Kamins & Dweck, 1999). Future research should focus on systemic interventions to help reduce the victimisation experienced by those with SEN. Whole school approaches should be researched they have the power to support each and every child in the school.

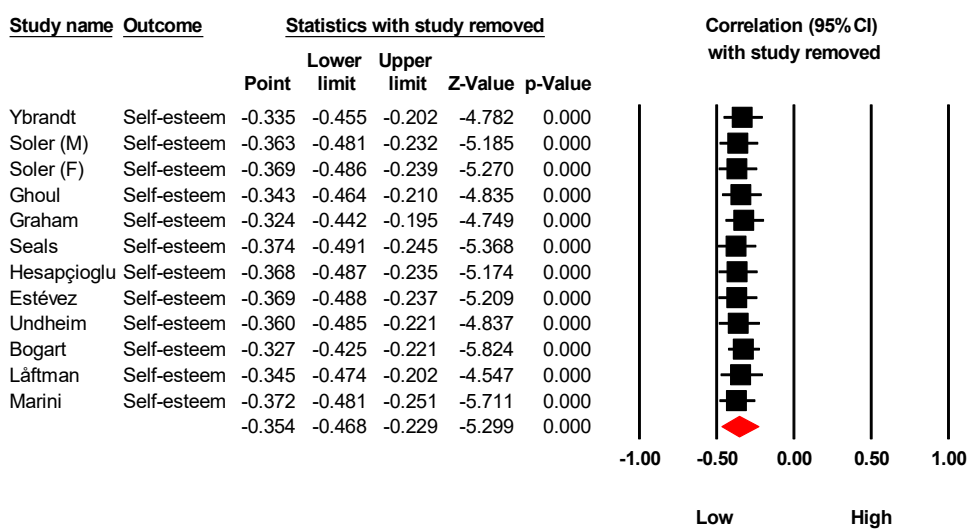
Appendix A

Self-Esteem (Rosenberg)



Appendix A 1. Forest plot for Rosenberg Self-Esteem

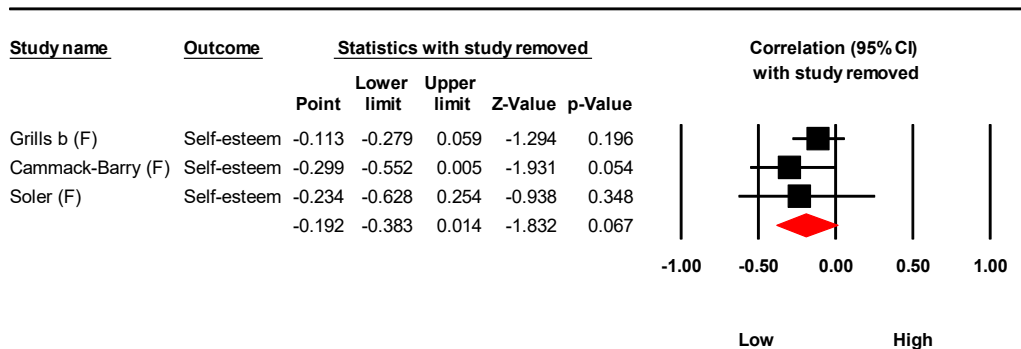
Self-Esteem (Cross-Sectional)



Meta Analysis

Appendix A 2. Forest plot for Cross-sectional Self-Esteem Studies

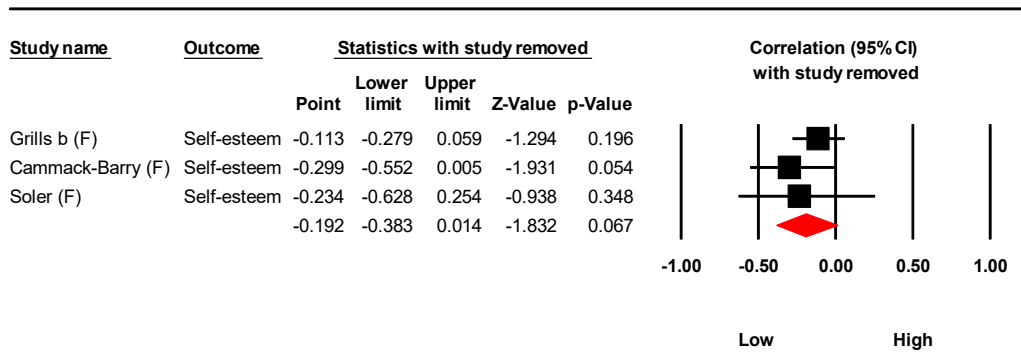
Self-Esteem Gender



Meta Analysis

Appendix A 4. Forest plot for Gender Self-Esteem Studies Female

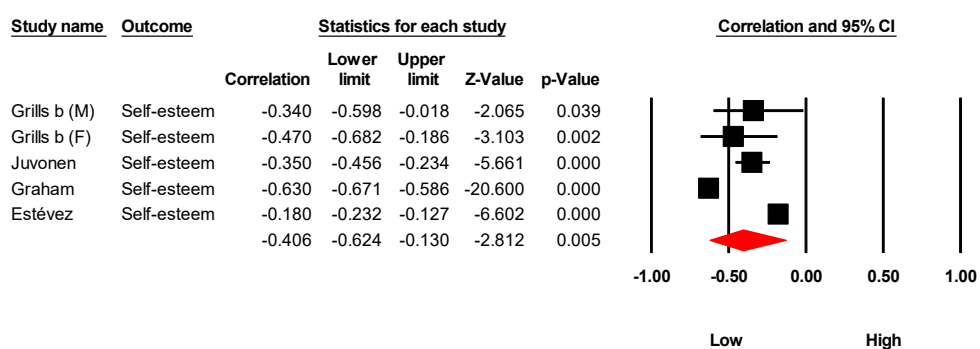
Self-Esteem Gender



Meta Analysis

Appendix A 5. Forest plot Gender and Self-esteem Male

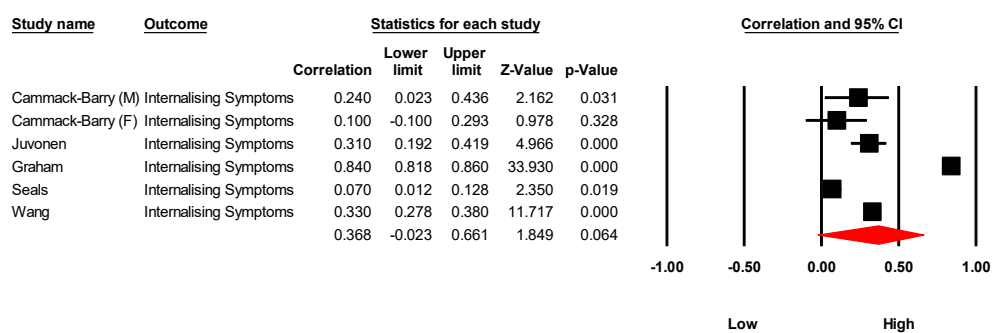
Self-Esteem (Victimisation Scale)



Meta Analysis

Appendix A 6. Forest Plot Self-esteem (Victimisation Scale)

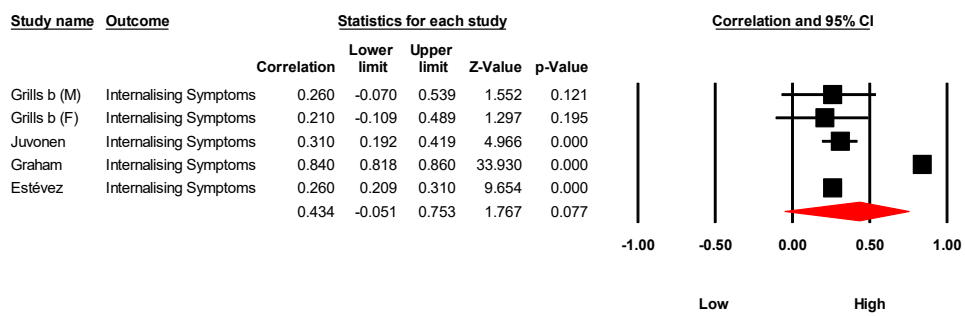
Internalising Symptoms (Child's Depression Inventory)



Meta Analysis

Appendix A 7. Forest Plot Internalising Symptoms (CDI)

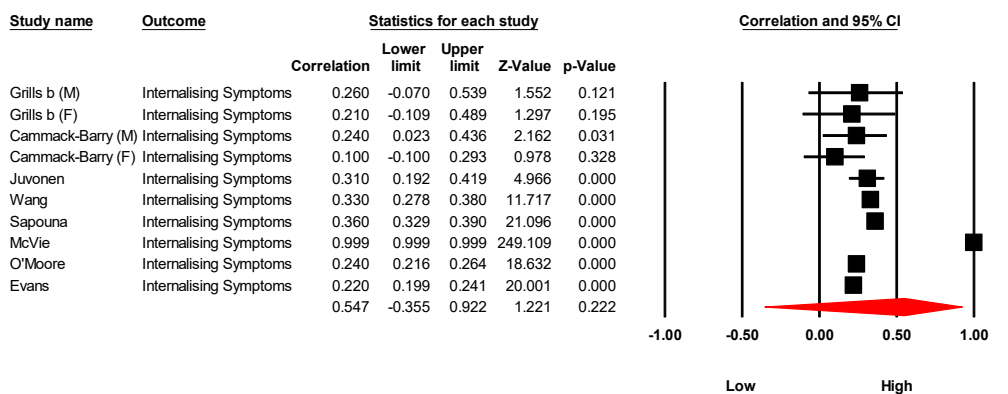
Internalising Symptoms (Victimisation Scale)



Meta Analysis

Appendix A 8. Forest Plot Internalising Symptoms (Victimisation Scale)

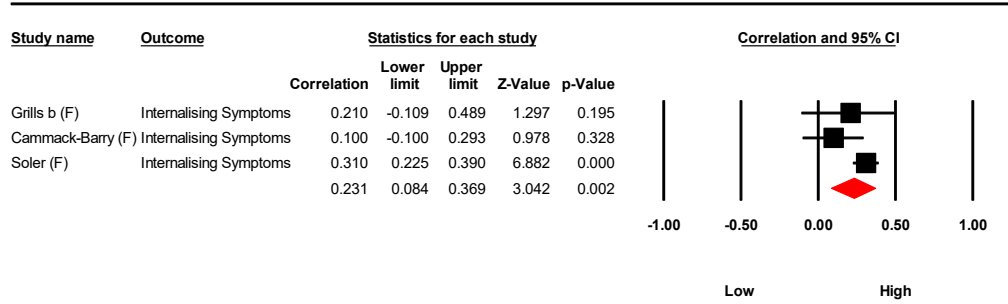
Internalising Symptoms (Longitudinal)



Meta Analysis

Appendix A 9. Forest Plot Internalising Symptoms (Longitudinal)

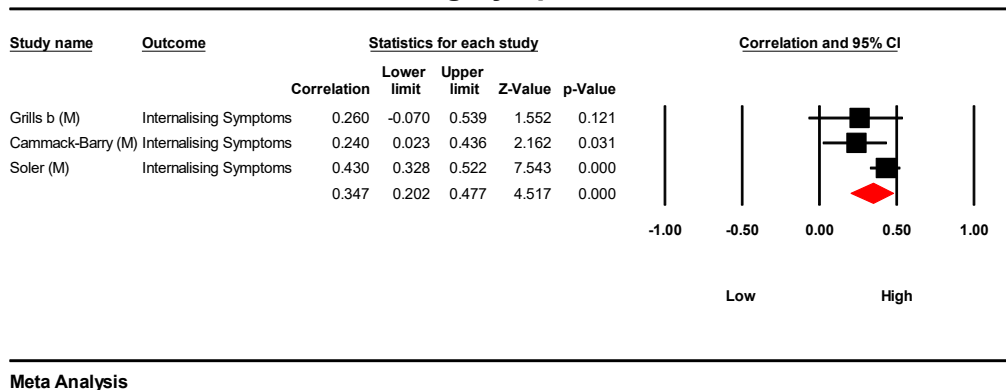
Internalising Symptoms Gender



Meta Analysis

Appendix A 10. Forest Plot Internalising Symptoms Gender Female

Internalising Symptoms Gender



Appendix A 11. Forest Plot Internalising Symptoms Gender Male

Appendix B

46513 - Moderating effects of self-esteem on mental health in children who have been victimised

[Submission Overview](#)

[Submission Questionnaire](#)

[Attachments](#)

[History](#)

Details

Status Approved

Category Category D

Submitter's Faculty Faculty of Environmental and Life Sciences (FELS)

The end date for this study is currently 01 July 2020

[Request extension](#)

If you are making any other changes to your study please create an amendment using the button below.

Appendix B 1. Ethical appro

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