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Childhood victimisation as a risk for short term and later depression; the moderator effect of seeking support

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Abstract.

Seeking support was examined as a potentially positive moderator of the correlational relationship between victimisation and two stages of depression (short term and long term). Self-report data on the experience of victimisation, feelings of depression, and use of seeking support were collected from university students aged 18-42 (N = 218, 25 males, 176 females, 17 sex unknown). Findings revealed that there were significant correlations between victimisation and short term depression, and that seeking support acted as a moderator. A Standard multiple regression test confirmed that all types of victimisation measured in this study (physical, verbal, exclusion) significantly predicted short term depression. However, there were not corresponding correlations nor moderator effects for long term depression. The results confirmed previous research on the correlation between victimisation and short term depression and the use of coping strategies. Findings support a need to continue research on adult populations since it has been stated in recent literature that the effects of victimisation in school can be long lasting. This needs to be addressed in order to acknowledge the multitude of effects victimisation can have on a child's adjustment in to adulthood.

KEY WORDS:	VICTIMISATION	DEPRESSION	MODERATION	SEEKING SUPPORT	LONG TERM

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General Introduction

The effects of bullying have become increasingly relevant due to the significant impact on a child's wellbeing and development (Hawker & Boulton, 2000). Research on bullying has shown it has a detrimental effect on the victim, and so those directly involved in a child's life (parents and educators) may benefit from research in this area, in order to improve the well-being of a victimised child (Atik, Özmen, & Kemer, 2012). The outcomes of bullying are numerous, having an impact on physical and psychological well-being (Pouwelse, Bolman, & Lodewijkx, 2011). Baker and Bugay (2011) stated that bullying is a largely contributing factor to childhood depression which other research has suggested can increase the risk of major depression in adulthood (Due, Damsgaard, Lund, & Holstein, 2009). Bullying affects many individuals in school; 2.7 million students were bullied in 2010, which accounted for 15 percent of absenteeism due to fear it caused (http://www.bullyingstatistics.org/content/bullying-statistics-2010.html). It has therefore been increasingly relevant for researchers to carry out studies on the impact of bulling and how victims can be supported both at school and at home.

One field of research has focused on coping strategies used by victims. Being victimised appears to link with emotional distress such as depression and loneliness as well as negative effects on academic performance, self-confidence and self-esteem (Paul & Cillessen, 2003). However, as Baker and Bugay (2011) point out, not all victims suffer with psychological symptoms. It is suggested that individual characteristics and the quality of support networks are important in determining the outcome for a victimised individual (Baker & Bugay, 2011). Research suggests that the use of coping strategies can prevent or reduce the risk of depression. However, little research has investigated the coping strategies used to deal with long term depressive symptoms as a direct result of peer victimisation. Therefore, the current research aims to compare the outcomes of seeking support as a coping strategy in the short term and in the long term as moderators on the outcome of depression.

Issue 1: The relationship between victimisation and depression.

It has been well documented that victims of bullying possess certain characteristics including depression, which are not found as often in non-victimised individuals (Swearer, Song, Cary, Eagle, & Mickelson, 2001). Although a correlation has been found between victimisation and depression in numerous studies, it is unclear which factor causes the other.

One viewpoint is that victimisation leads to feelings of depression. Due et al. (2009) found that females from a low socioeconomic background report depressive feelings after experiencing victimisation in school. This has also been found in high school populations (Baker & Bugay, 2011). Despite these findings, there is an alternative opinion that there are certain characteristics, including depression, which may make an individual more likely to experience victimisation.

Egan and Perry (1998) discussed how symptoms of depression could increase the likelihood of victimisation for an individual. Furthermore, it is argued that depressive symptoms may lead to continuous victimisation, and so the suffering may continue over a long period of time (Swearer et. al., 2001). Kaltiala-Heino, Fro, and Marttunen (2010) highlight that although research suggests being involved in bullying at age eight and twelve has a negative effect on psychological wellbeing seven years later and as far as ten years later (Kumpulainen & Räsänen, 2000; Klomek et al., 2008), other research has found a stronger causal relationship for depressive symptoms increasing the likelihood of bullying (Sweeting, Young, West, & Der, 2006).

Craig (1998) explains the uncertainty of causation by stating that victims may show a vulnerability to others which makes them more susceptible to bullying. Furthermore, the research found support for the view that all types of bullying predict a form of maladjustment and so a cycle is created, no matter which factor 'causes' the other. Craig (1998) suggests that bullying will increase the likelihood of maladjustment which will lead the victim to feel more deserving of the peer victimisation, possibly leading to the development of depression. Longitudinal studies have attempted to answer whether victimisation leads to depression or vice versa (Sweeting et al., 2006). It is suggested that victimisation causes depression in early childhood, but this pattern reverses as the child becomes older (Sweeting et al., 2006). This suggests that the relationship between victimisation and depression cannot be investigated by simply testing for a correlation, but needs further testing to investigate where the causation lies.

Despite many studies suggesting there is a relationship between peer victimisation and childhood depression (Brendgen et al., 2011), there is a need to investigate the long term effects of peer victimisation at school since outcomes, such as depression, have been found to continue in to early adulthood (Pouwelse et al., 2011). Research on long term depression found that frequent bullying at age eight was associated with depression 10 years later (Klomek et al., 2008). Although this research shed light on the long term effects, there were many limitations with the study which could be improved upon. For example, the researchers were very specific in terms of when the bullying took place (aged eight) and when the effects were measured (only at the age of 18) and so there is a question over how 'long term' is defined and the effects it has at different points in life.

Social Rank Theory (Gilbert, 1989) helps to explain the correlational relationship between victimisation and depression. This evolutionary theory suggests that depressive feelings can be a result of shame or social anxiety caused by a loss of social status. From this perspective, defensive behaviour, centered on the desire to gain and fear of losing attractiveness in the minds of others, can lead to a perceived loss of social status (Gilbert, 2000). This may lead to feelings of not gaining approval from others and so an individual may therefore feel a lack of dominance and lower self-worth within a group. These feelings are found to be contributors to depression, supplying an explanation for the correlation.

In terms of explaining the relationship between victimisation and depression in humans, the theory suggest that the likelihood of depression depends of the individual and their fighting potential or perceived resource value (Gilbert, 2000). Depressive symptoms are more likely to occur if there is a lower motivation to achieve goals, and this motivation is argued to be dependent on psychosocial development (Cloninger et al. as cited in Tse, Wu, & Poon, 2011).

As stated previously, there does appear to be a relationship between victimisation and depression. However, there are few studies which focus on the long terms effects of being victimised during childhood (Bond, Carlin, Thomas, Rubin, & Patton, 2001). To enhance existing research, this study will compare the levels of depression at the time of being victimised to current levels of depression, potentially years later.

Table 1: Hypotheses regarding the relationship between victimisation and depression

Issue 1	
Hypothesis 1a	There will be a correlation between victimisation and short term depression.
Hypothesis 1b	There will be a correlation between victimisation and long term depression.

Issue 2: Forms of victimisation as predictors of depression.

Since there is much research on the association between victimisation and short term depression, other work has focused on the effects of different forms of bullying (Baldry, 2004; Ólafsson & Jóhannsdóttir, 2004). Crick and Grotpeter (1996) highlight that although much of the literature importantly focuses on overt forms of victimisation (physical and verbal), its full scope is not addressed; relational bullying (gossiping or exclusion) can also have detrimental effects that have only recently been investigated.

Despite the research suggesting indirect forms of victimisation are equally important to consider as direct victimisation, research has found that indirect victimisation is not perceived as equally harmful in a practical setting (Naylor, Cowie, Cossin, de Bettencourt, & Lemme, 2006). Naylor et al. (2006) highlight that although children can define bullying, they have been found to struggle when asked to differentiate between types of bullying behaviour; this may be due to a lower understanding of social behaviour at a younger age, which only develops in time. This suggestion was supported in other research suggesting there are

developmental changes in perceptions of bullying from age eight to age 14 (Smith, Cowie, Olafsson, & Liefooghe, 2002).

Teachers also tend to have differing perceptions of different forms of victimisation, and view direct forms of victimisation in their definitions more so than indirect victimisation. Research by Boulton (1997) found that a significant proportion of teachers do not consider social exclusion as a form of bullying. This highlights that research needs to continue in order to understand the complexities of victimisation and how different forms of victimisation predict forms of maladjustment, such as depression.

Indirect forms of bullying may have more negative effects than direct victimisation despite the differing perceptions. It is suggested that social exclusion can be the strongest risk factor for physical and mental health problems related to victimisation (Baldry, 2004). Furthermore, indirect forms of bullying have been found to account for a high proportion of variance of withdrawn behaviour, including depression (Baldry, 2004). Therefore, indirect forms of victimisation need to be considered as seriously as direct forms of bullying. Relating to the results by Baldry (2004), it is hypothesised that each form of bullying will predict depression, but social exclusion is expected to be a stronger predictor (see table below).

Table 2: Hypotheses regarding types of victimisation as predictors of depression

Issue 2	
Hypothesis 2a	Physical victimisation, verbal victimisation and social exclusion will each uniquely predict short term depression, after controlling for their shared variance.
Hypothesis 2b	Social exclusion will be the best predictor of short term depression.
Hypothesis 2c	All types of bullying in combination will predict short term depression. If so how much variance can they account for.
Hypothesis 2d	Physical victimisation, verbal victimisation and social exclusion will each uniquely predict long term depression, after controlling for their shared variance
Hypothesis 2e	Social exclusion will be the best predictor of long term depression?
Hypothesis 2f	All types of bullying in combination will predict long term depression. If so how much variance can they account for.

Issue 3: Seeking support to cope with victimisation.

Research into the effects of victimisation has become increasingly important due to the awareness that many children are involved in bullying at some stage at school and negative outcomes appear to be associated with involvement in bullying (Connors-Burrow, Johnson, Whiteside-Mansell, McKelvey, & Gargus, 2009). Since effects can potentially be very negative for some children, researchers have investigated how children cope with bullying and what strategies are used to deal with being victimised. As discussed previously with Social Rank Theory, the outcome of depression may be dependent on the fighting potential and psychosocial development of the child, and so this may influence which coping strategy is used (Tse et al., 2011).

Seeking support from others is seen to be advantageous for victims, but it is frequently highlighted that not all victims of bullying have familial support which is regarded as a buffer against depression (Connors-Borrow et al., 2009). Others investigated the impact of positive familial relationships as a form of resilience to victimisation (Bowes, Maughan, Caspi, Moffitt, & Arseneault, 2010). Research highlights that not all victims of bullying experience adverse effects at the time or in the future and this is significantly due to familial bonds (Kochenderfer-Ladd & Skinner, 2002; Connors-Borrow et al., 2009). Research suggests that a positive bond between mother and child in particular can protect a child from the effects of victimisation; victims with a positive parental relationship can recover more successfully than sometimes imagined due to support and resilience factors as moderators (Connors-Burrow et al., 2009). Not only does this highlight the importance of support, but it also highlights why there appears to be many detrimental effects since a weak familial bond is proven to adversely affect the well-being and development of a child also.

Cohen and Wills (1985) founded two models to highlight the importance of social support; main-effect model and the stress buffering model. The main-effect model suggests that social networks provide regular positive experiences and give predictability and stability to the individual(s); integrating in to a social network may directly help a person to avoid or become more resilient to negative life events (Cohen & Wills, 1985). The model argues that the social network has a positive effect on individuals irrespective of negative life events. Alternatively, the stress buffering model suggests differential effects of social support, depending on the amount of stress an individual is under (Tanigawa, Furlong, Felix, & Sharkey, 2011). As an example, the more an individual is victimised, the more they will benefit from social support (Cohen & Wills, 1985). Connors-Burrow et al (2009) point out that the main-effect model would assume that all children, including those not involved in bullying, would benefit from social support, and alternatively, the stress buffering model assumes that victims of bullying would benefit the most from social support.

The main-effect and stress buffering models both suggest that social support is a beneficial coping strategy and can reduce the likelihood of negative effects, such as depression. Malecki and Demaray (2002) supported these models by measuring

children's social support using the Child and Adolescent Social Support Scale (CASSS), (Malecki, Demaray, Elliot, & Nolton, 1999). They found that more support decreases the chance of adjustment problems and creates more positive relationships with the support giver (Malecki et al., 1999).

A large proportion of existing research focuses on how seeking support from teachers, parents, friends, or organisations can alter, or moderate, negative effects such as depression. Baron and Kenny (1986) described moderators as quantitative or qualitative variables that affect the direction and/or strength of the relationship between two other variables. One example of this may be how seeking support alters the relationship between victimisation and depression, whilst showing the power of support seeking on this relationship.

Several studies have researched how social support moderates the effects of victimisation on individuals. For example, Flouri and Buchanan (2002) found that fathers have an influential role when supporting their son(s), which results in higher levels of life satisfaction for the child. Other research has found that children not involved in bullying receive more familial and social support than those involved in bullying (Holt & Espelage, 2007). However, there appears to be a lack of research which identifies the effect of negative outcomes in adulthood. Research tends to focus on children due to the importance of policy and of anti-bullying schemes, but this ignores the mental health problems experienced by adults. This seems particularly important to acknowledge since much research suggests that depression can continue years after experiencing victimisation (Pouwelse et al., 2011). Since seeking support appears to moderate the relationship between victimisation and short term depression, further research could suggest whether this applies when an individual is experiencing long term depression (Rigby, 2000).

Some scales have been developed in order to investigate how individuals cope with negative events. Causey and Dubow (1992) developed the Self Report Coping Measure (SRCM) which found relations between each subscale were consistent with the concepts of approach and avoidance coping; that those who use approach coping benefit more so than those that use an avoidant strategy. The SRCM also highlights the importance of self-report since it may give more or different amounts of information than other methods (Causey & Dubow, 1992). However, this measure was designed for children and since the participants for the current study would be adults, this was not the most appropriate scale. Alternatively, the Revised Ways of Coping Scale (WOCS-R), (Folkman, Lazarus, Dunkel-Schetter, DeLongis, & Gruen, 1986) has been used on adult populations and is often administered at a specific time, which would be more in-keeping with this study (Carver, Scheier, & Weintraub, 1989). Therefore, using the scale would allow the researchers to gain a larger set of data whilst being able to differentiate between different forms of coping (Carver et al., 1989).

Researching how seeking support acts as a moderator between peer victimisation and depression is a relatively new area of interest (Davidson & Demaray, 2007). It seems important to use moderation tests in this study due to the

limitations of bivariate correlations; researchers highlight that there is much research on the bivariate correlation between peer victimisation (Hawker, & Boulton, 2000). Therefore, testing for a moderator effect will further the current research and help to understand the complexities of the relationship in a realistic setting (Tabachnick & Fidell, 1996).

However, there are weaknesses in the methodologies used to test for moderation in existing research. Connors-Burrow et al. (2009) highlight that much research collects self-report data on target populations such as victims. This may create difficulties since many individuals may not want to discuss their experience(s) through fear or embarrassment (Young & Sweeting, 2004). Despite the problems surrounding self-report, research has shed light on how coping strategies are used, which in turn has led to the development of many anti-bullying programmes.

To gain knowledge on the moderator effects of seeking support, this study will address some of these weaknesses by not targeting victim populations. It is hypothesised that seeking support will have a positive moderator effect on short term and long term depression.

Table 3: Hypotheses regarding how seeking support moderates the relationship between victimisation and two stages of depression.

Issue 3

3a   seeking support will positively moderate the relationship between victimisation and short term depression.

3b

         seeking support will positively moderate the relationship between victimisation and long term depression.

Issue 4: Psychometric properties

The hypotheses discussed previously will be tested using a questionnaire. Due to the nature of this self-report method, it is important to determine the validity of the scales so that aspects of each construct (depression and coping) are not missing in each scale (Reise, Waller, & Comrey, 2000). Validity is measured to ensure that each scale can be generalised across differing populations and to test whether modifications to the scale have altered the validity (Reise et al., 2000).

Factor analysis is an analytical technique which reduces a potentially large number of interrelated variables to a smaller number of factors, with the goal of explaining the maximum amount of common variance with the smallest amount of explanatory concepts (Tinsley, & Tinsley, 1987). Referring directly to this study, it would be preferable that each scale has one factor, by using different statements to measure one single factor such as 'depression' or 'seeking support'. Although factor

analysis has weaknesses, a large sample size is encouraged since this can obtain stable estimates of standard errors and can assure that factor loadings are more precise (Reise et al., 2000; Shafer, 2006). However, there appears to be controversy over determining what a large sample size is (MacCallum, Widaman, Zhang, & Hong, 1999). Despite this, factor analysis is used widely to ensure scales are being used in the correct circumstances and so that the items in a scale are focused on the correct factor (Shafer, 2006).

Cronbach's alphas (Cronbach, 1951) are also appropriate for this study in order to measure the internal consistency, referring to the relation and similarity between a set of items (Schmitt, 1996). As Schmitt (1996) highlights, alpha levels are used frequently in psychological and social science research in order to show the internal strength of a scale. Cortina (1993) suggests that although there are occasions when Cronbach's alphas are useful to run, it should be used with caution and can be used more successfully among other reliability or validity tests. Therefore, this study intends to run factor analyses and Cronbach's alpha tests on the relevant scales in order to find strengths and possible weaknesses which may affect the data.

Method:

Participants:

An opportunity sample of 218 (male, 25: female, 176. Sex unknown: 17) participants were used for data collection. Participants were students from the University of Chester of which all were aged between 18 and 42. Participation was voluntary through Sona, an online data collection forum, or through face-to-face sampling on the University of Chester campus. Ethical guidelines by the BPS were adhered to at all stages of the investigation.

Measures:

Data was gathered using a questionnaire (see Appendix 1, 2 and 3 for information sheets and the questionnaire) of which there are five scales (1. experiences of bulling; 2. self-esteem scale; 3. depression scale, Cole, Rabin, Smith, & Kaufman, 2004; 4. ways of coping scale, Folkman, Lazarus, Dunkel-Schetter, DeLongis, & Gruen, 1986; 5. growth from adversity scale, Bride, Dunwoody, Lowe-strong, & Kennedy, 2008). For the purpose of this study, scales one, three and four were used for analysis on SPSS (a computer programme used for statistical analysis). The experience of bullying scale had 12 items, which were split in to four sections. The items asked the participant to score how often they were bullied (physical, verbal, social exclusion) at four different stages of schooling. The depression scales had 10 items of which there was a four point response option ranging from 'rarely or none of the time' (1) to 'most or all of the time' (4). There was also a 'prefer not to answer' option. The coping scales both had 13 items of which only items one to seven were used in analysis. The four point response scale ranged from 'never' (1) to 'used a great deal' (4). The scores for each scale were averaged for each participant and reverse scoring was used in the depression scale (see 'Design and Analysis' section for more details).

Procedure:

Access to the questionnaire was through Sona (an online system enabling the recruitment and collection of data). Experimenter access was confirmed with ethical approval and only students from the University of Chester could use the system as a participant. Information about the aims and procedure of the study, and any concerns about taking part were covered in the information sheet which was either shown on the screen on Sona before the questionnaire could begin or was the first page of the hard copy questionnaire given to face-to-face participants. Face-to-face participants were given an envelope to enclose their completed questionnaire to give added anonymity. Right to withdraw, issues surrounding confidentiality and anonymity were all discussed in the information sheet. Consent was assumed when participants sent the completed questionnaire through Sona or when the questionnaire was given back to the experimenter in a sealed envelope.

Design and Analysis:

The data was collected with the use of a questionnaire, as discussed above and some preparations were needed in order to run the tests on the data file. Questions three and six on the depression scale were reverse scored, and so the scoring was reversed on the SPSS file also. Some of the scores were grouped together, such as the traditional bullying scores (see Appendix 1) and the scores for both depression scales and both coping scales were grouped together as average scores for each scale. Furthermore, some of the answers needed recoding due to a printing error in the answer options on the traditional bullying scale; the scoring ran from two to six. Any blank or unanswered sets of data were deleted for analysis.

Issue 1 was tested using a Pearson correlation test. The correlation test may reveal a significant relationship between victimisation and depression. Therefore, the predictor was victimisation and the outcomes were either short term or long term depression. A standard multiple regression was used to test the hypotheses for Issue 2. The scores for each type of bullying were averaged in order to test each hypothesis. The predictors were the types of bullying (physical, verbal, social exclusion) and the significance of each type would be revealed in the data analysis.

Issue 3 was tested using a moderation test. In order to find a significant difference, the scores from the questionnaire were split in to high and low groups using a median split. Correlations were carried out on the two groups and then compared using a Pearson correlation test, as with Issue 1. Correlations were found for hypotheses 3a and 3b and these were entered in to an online Z test which determined whether the correlations were significantly different. A significant difference in correlations would suggest that there was a moderator effect of seeking support, or in other terms, seeking support may buffer an individual from a negative correlation between peer victimisation and depression. Two moderation tests were carried out, of which both tested for seeking support acting as a positive moderator. The difference was the time frame in which the individual may have felt depressive symptoms (short term and long term).

Issue 4 involved running a Cronbach's alpha and factor analysis on each scale in the questionnaire. After the initial preparations were completed, all questions were measured for their reliability (average scores were not used). Scores above .7 were accepted as reliable for the Cronbach's alpha and it was hoped that each scale was measuring one factor. Scree plots were used to see how many factors were being measured. The amount being measured was the number of factors before the point of inflection.

Results

Reliability:

Statistical analyses were performed to test all hypotheses as stated previously. Referring to Issue 4 firstly, the internal reliability of the scales used in the questionnaire was measured. Scores above .7 were accepted as reliable (Langdridge, 2004). As can be seen in Table 4, the scores indicated that all scales were reliable measures of each variable. Factor analyses were also performed to measure the variability among the scales; the ideal number of factors being one for the scales used in the current study. Table 4 and Figures 1-4 shows that the majority of scales measured one factor when accepting the result from the scree plots, which show the point of inflection in each scale (Cattell, 1966).

Table 4: Internal reliability of questionnaire scales

Measure	Cronbach's alpha	Kaisers criterion	Scree plot
Traditional bullying	.812	n/a	n/a
Short term depression	.908	2	1
Long term depression	.773	3	2
Seeking support (short term)	.869	2	1
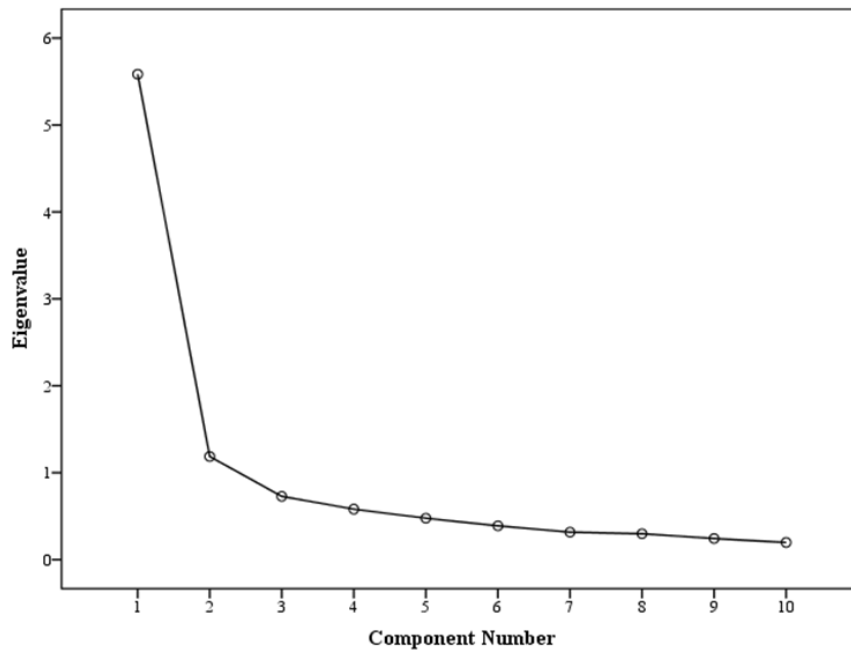
Seeking support (long term)	.905	2	1

Figure 1. Scree plot showing the number of factors in the short term depression scale.
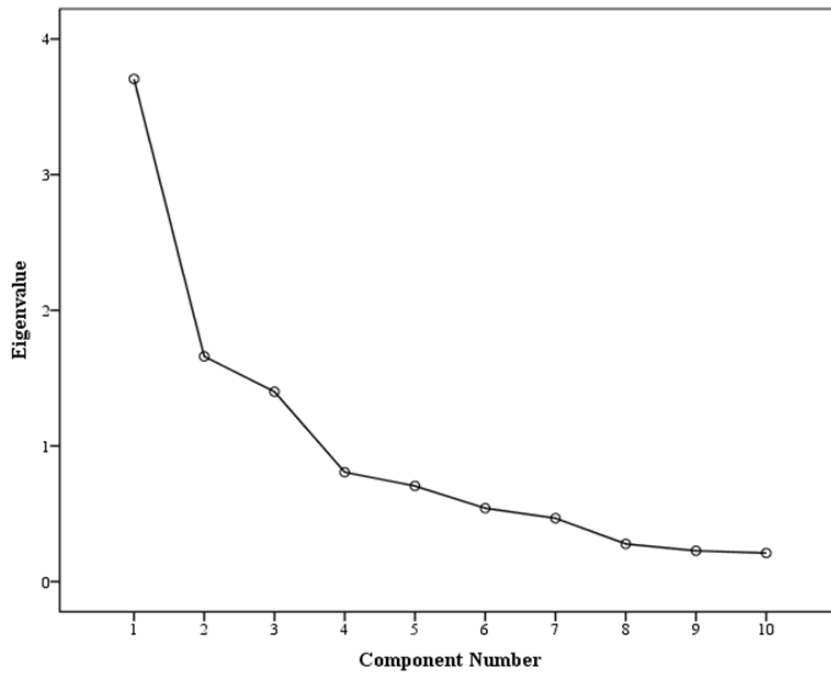
Figure 2. Scree plot showing the number of factors in the long term depression scale.
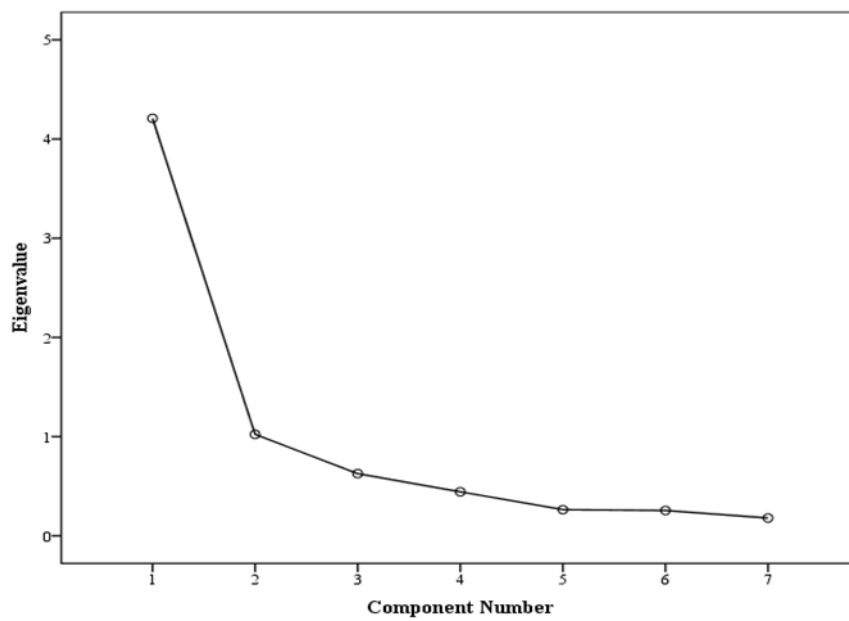

Figure 3. Scree plot showing the number of factors in the short term coping scale.
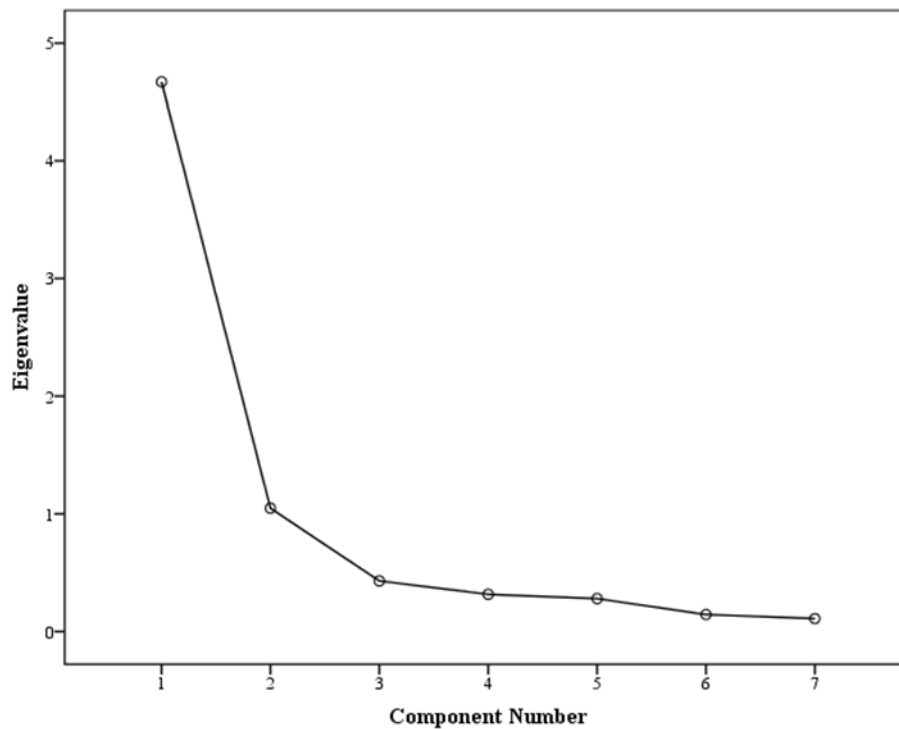
Figure 4. Scree plot showing the number of factors in the long term coping scale.

Testing Issue 1:

Correlational analysis tested the hypotheses that there would be a relationship between bullying and short term depression. Bivariate correlation tests found that there was a significant positive relationship between peer victimisation and short term depression, as can be seen in Table 5. However, there was only a low, non-significant positive relationship between peer victimisation and long term depression.

Table 5.: Bivariate correlations of the relationships between peer victimisation and depression.

Relationship	Correlation
peer victimisation and short term depression	.709**
peer victimisation and long term depression	.203

** significant at .01 level

Testing Issue 2:

      A standard multiple regression was ran to test all hypotheses, as shown in Tables 6 and 7. The regression test suggests that all forms of bullying predict short term depression ($p<.001$) and in combination, can account for 50% of the variance when predicting short term depression. However, social exclusion was not a better predictor of short term or long term depression. Furthermore, the types of bullying could not significantly predict long term depression individually or in combination (see Table 7).

Table 6.: Summary of standard multiple regressions: physical victimisation, verbal victimisation, and social exclusion as predictors of short term depression.

Variable	Beta	t	Significant t
Physical bullying	-.301	-4.605	.000
Verbal bullying	.575	6.612	.000
Social exclusion	2.49	3.248	.001

Anova: R^2 change = .509 (adjusted R^2 change = .501). $F(3, 192) = 65.286$, $p < .001$

Table 7.: Summary of standard multiple regressions: physical victimisation, verbal victimisation, and social exclusion as predictors of long term depression.

Variable	Beta	t	Significant t
Physical bullying	-.253	-.986	.329
Verbal bullying	.227	.825	.413
Social exclusion	.013	.068	.946

Anova: R^2 change = .034 (adjusted R^2 change = .023). $F(3, 54) = .600$, $p < .619$

Testing Issue 3:

Moderation tests were used to test the effect of seeking support as a moderator of the relationship between peer victimisation and short and long term depression. In order to carry out the tests, the scores were split in to high and low scoring groups using a median split. A bivariate correlation between victimisation and short term/long term depression was ran for the low scoring group and high scoring group separately. As can be seen in Table 8, there was a significant difference between the high and low group relating to short term depressive feelings. However, seeking support was not found to positively moderate the relationship between victimisation and long term depression, with a non-significant difference between the high and low scoring groups.

Table 8.: Online test scores for moderation effects.

Moderation	High group	Low group	Online test scores
peer victimisation and short term depression	.436**	.760**	z= 2.97
			p= .0015
peer victimisation and long term depression	.155	.227	z= .24
			p= .4052

General Discussion.

The study focused on the relationship between peer victimisation and two stages of depression, and whether this relationship was positively moderated by seeking support. Previous literature has found convincing evidence that depression is a common outcome after being victimised at school (Swearer, et al., 2001; Klomek, et al., 2008). However, the majority of literature discusses the short term impact of peer victimisation, and studies tend to use correlational analysis, not answering the question of cause-and-effect (Sweeting, et al., 2006; Kaltiala-Heino, et al., 2010). This research attempted to give more convincing evidence by running standard multiple regressions on types of victimisation.

As discussed previously, seeking support can act as buffers to negative life events for an individual; lacking support can lead to the development of psychological problems, particularly concerning depressive symptoms (Baker, & Bugay, 2011; Seals, & Young, 2003). Although there is much research on the positive effects of seeking support, a justification for this study was that more research needs to be carried out on the effects of seeking support on long term outcomes, such as depression. Further research has found that children with poor relationships are more likely to be depressed in adulthood, showing the importance of addressing issues such as victimisation, which may cause long term depressive symptoms (Huurre, Eerola, Rahkonen, & Aro, 2007).

This study found much support for existing research and extended the dearth of research on long term coping strategies as moderators to the relationship between victimisation and depression. Therefore, the study is informative and furthers current research and knowledge in the field.

Issue 1: Correlation between peer victimisation and depression.

Hypothesis 1a which predicted that peer victimisation would be correlated with short term depression was accepted, in line with results from much existing research (Baker, & Bugay, 2011; Bond et al., 2001; Brendgen et al., 2011; Hawker, & Boulton, 2000). A meta-analysis found that depression was the most associated form of maladjustment with peer victimisation, which is supported in this study (Hawker, & Boulton, 2000). Using university students as participants enables researchers to apply the correlation to adult populations, unlike other research which has focused on children. However, it should also be considered that data from university students cannot always be applied to the general adult population.

The results appear to support the ideas behind Social Rank Theory (Gilbert, 1989), that depression can be spurred on by peer victimisation due to a loss (partial or complete) of social status. In a practical setting, this may involve a child feeling rejected by their peers, which is supported by this study. However, due to the cross

sectional design it cannot be verified that the peer victimisation directly led to the depressive feelings (see Issue 2 for predictors of depression).

Despite the advantages of other methodological strategies, it appears difficult to answer the question of causation due to ethical drawbacks. Due to the sensitivity of collecting data on peer victimisation and the effects it may have on the individual, it may be difficult to collect data to answer the question over causation without being unethical since 'variables' cannot be manipulated in order to see the effects without extreme harm being caused to the individual. Future research may benefit from carrying out longitudinal studies in order to record any developmental trends over time. It is clear that there is a relationship between peer victimisation and depression; it may be of benefit to change the focus to answering questions of causation and possible patterns in longitudinal studies (Hawker, & Boulton, 2000).

In relation to hypothesis 1b which predicted there would be a correlation between peer victimisation and long term depression, this was not accepted due to a non-significant, low correlation. This does not support the 'need to belong theory' (Baumeister, & Leary, 1995) which suggests there is a strong urge to belong to a group in society. Without this feeling of belonging, it can lead to maladjustment. Since there is a strong association between peer victimisation and short term depression (Hawker, & Boulton, 2000), it was anticipated that victimisation and lack of belonging would result in depressive feelings. However, this is not supported through the non-significant correlation. Other longitudinal studies have found effects such as depression 10 years after the experience of peer victimisation (Klomek et al., 2008) and so there is a suggestion that there are long term effects of peer victimisation, despite the conflicting result in this study.

There may be many explanations for the non-significant correlation due to the cross sectional design of the study and methodological flaws including the use of self-report, the reliability of long term memories, and shared method variance (see the 'general limitations' section for a critical evaluation of these issues).

Issue 2: Predictors of Victimisation.

The analysis found that all types of victimisation uniquely predicted short term depression and they accounted for 50% of the variance. However, hypotheses 2b, 2d, 2e and 2f were rejected since social exclusion was not a stronger predictor of depression and there were no long term predictors of depression. The acceptance of hypotheses 2a and 2c supports the argument that relational bullying needs considering as a form of bullying, which is equally, if not more so, detrimental to an individual (Crick & Grotpeter, 1996).

The rejection of the other hypotheses supports the opposing argument that indirect victimisation is less harmful (Naylor et al., 2006). However, it is important to consider that studies with the opposing argument have used children as their participants who may have a weaker understanding of social behaviour unlike this study which used an adult population (Naylor et al., 2006).

The rejection of many hypotheses may be due to the inaccurate measure of long term depression. Since there was not a significant correlation between victimisation and long term depression, it was unlikely that there would be any unique or combined predictors. A further explanation may be that memories of victimisation may become distorted over time, and so participants may be unable to differentiate between the severity of different types of victimisation (see 'general methodological limitations' for more discussion).

Research that suggests indirect bullying is less harmful tends to focus on children; despite the lack of support for social exclusion being a strong predictor of long term depression in this study, there is still a need for further research on adult populations. Future studies may benefit from testing other adult populations on the strength of bullying types as predictors of long term depression. Furthermore, the measure of long term depression could be improved upon by clearly stating the time frame to the participant.

Issue 3: Moderating the relationship between victimisation and depression by seeking support.

Hypothesis 3a predicted that seeking support would positively moderate the relationship between peer victimisation and short term depression. This was accepted due to the significant difference in depressive feelings between the participants seeking support and those who were using it less or not at all as a coping strategy. This supported other research (Bijttebier, & Vertommen, 1998; Cohen, & Wills, 1985; Holt, & Espelage, 2007; Hunter, & Boyle, 2004; Kochenderfer-Ladd, & Skinner, 2002) and so has added to the existing support that seeking support will buffer an individual from the negative effects of a life event (Machmutow, Perren, Sticca, & Alsaker, 2012).

Although the moderation effect was positive for short term coping, the prediction (3b) that there would also be a positive moderator effect on the relationship between peer victimisation and long term depression was not accepted. Due to a non-significant difference between those who sought support and those who did not in the long term, this contradicts the small amount of research on the moderator effect of seeking support.

Research on long term effects tends to focus more so on possible outcomes rather than the use of coping strategies over time (Hunter, Mora-Merchan, & Ortega, 2004). One piece of research focused on this and the results suggested that there was no correlation between the use of coping strategy and feelings of distress (Hunter et al., 2004). This study supports the suggestion that long term use of coping strategies does not protect an individual from adverse effects (Hunter et al., 2004).

However, one specific limitation of the results for hypotheses 3a and 3b is that measuring 'seeking support' through a self-report questionnaire can highlight the problem of perception. Although it may be available to an individual, researchers argue that the support may only need to be perceived as advantageous in order for

the effects to be less detrimental to the individual (Davidson, & Demaray, 2007). Relating to social rank theory, the support from a group may be perceived as strong or weak, irrespective of the actual support given (Gilbert, 1989; Tse et al., 2011).

In relation to this study, the participants may have had support networks around them, but the individual may have not perceived the support as an available resource. Furthermore, the type of support available to each individual is likely to have been different since familial support is argued to be a stronger buffer against negative outcomes. (Connors-Burrow et al., 2009). Further research on the use of coping strategies in the short term and long term may benefit from controlling for perception or focusing solely on the importance of perception in recovering from a negative life event.

Issue 4: Psychometric properties.

The psychometric properties were tested to ensure the scales in the questionnaire were reliable in order to support the results for the other issues discussed. The Cronbach's alphas were all above .7 (shown in Table 1) which suggests that there was good internal reliability using the suggestion made by Langdridge (2004). However, as discussed by numerous researchers, only accepting alphas above .7 implies that all scores lower than this are left uninterpreted (Cortina, 1993; Sijtsma, 2009; Schmitt, 1996). Therefore, the alphas in this study should be viewed alongside the factor analyses results since it may give a conclusion that item sets with one factor are unidimensional (Cortina, 1993).

Factor analysis was also conducted in which eigenvalues and scree plots were presented. It is argued that eigenvalues alone are not satisfactory when determining how many factors are being measured, particularly when hypotheses are rejected as with this study (Costello, & Osborne, 2005). Therefore, scree plots gave an additional view point on the number of factors to accept. The scree plots suggested that most scales were measuring one factor which ensured there was little variability between the questions in each scale.

Future research could reduce the variability in long term depression scales and establish test-retest reliability to give reassurance that each scale is measuring one factor and to ensure modifications to scales were more appropriate.

Understanding and Using Moderation Tests (Issue 3).

As discussed in the literature review, a moderator is a third variable which has an effect on the relationship between two other variables (Baron, & Kenny, 1986), and a more recent definition suggests a moderator affects the strength and direction of the relationship (Frazier, Tix, & Barron, 2004). This study tested for moderation effects of seeking support on the correlational relationship between peer victimisation and depression (short term and long term).

It seemed important to test for moderation due to a large volume of literature on the relationship between two variables already existent, and recent research has suggested that many factors, including coping strategies affect this relationship (Tabachnick, & Fidell, 1996). Furthermore, analysing the impact of seeking support on peer victimisation and depression may bring researchers closer to answering the question of causation and may help to explain the complexities involved between the two variables in a natural context (Hawker, & Boulton, 2000).

The moderation was carried out using a median split which involved finding a half-way point between the data sets to create high and low groups. Although this was a relatively simple method, it holds its own limitations. As discussed by Frazier et al. (2004) the high and low groups are artificial since they are only high or low relative to the single data set. This can lead to a possible increase in type 1 and type 2 errors due to the variables being measured on a continuous scale leading to a loss in information and power (Frazier et al., 2004). Cohen (1983) suggests that dichotomizing data leads to losing up to 2/3 of the results in a data set. Therefore, the non-significant result for the moderator effect on the relationship between peer victimisation and depression may have only accounted for as few as 20 participants (participant sample of 60).

The moderator effect for long term use of seeking support highlighted some of the weaknesses of the study. However, there are further issues to be discussed such as shared method variance and retrospective memory which may suggest the association is even weaker. However, it is important to bear in mind that seeking support did moderate the short term relationship between peer victimisation and depression, and so third variables appear to have some effect on the relationship.

General Methodological Limitations.

The following section will discuss the limitations of the study including the use of cross sectional survey design, self-report, and the reliability of retrospective memory and the sample.

As discussed throughout this report, cross sectional survey design does not help answer the question of causation since the data gained from the questionnaire could only be correlated, showing a relationship between two variables but there are other factors to consider, which means it cannot be stated that victimisation causes depression or vice versa. Other factors such as resilience, personality and other coping strategies may also act as moderators to the peer victimisation-depression relationship, which have not been considered in the current study (Bowes et al., 2010; Dundas, 2000). It may be that the use of different coping strategies may have enabled children to cope more successfully in the long term, accounting for the non-significant moderator effect. Alternatively, resilience factors could have protected the child from long term effects. However, the research is unable to respond to these possibilities since it only gained a snapshot of the participants thought process. This could be improved with the use of test-retest analysis which will show whether the

results are stable over time, or other factors could be investigated to see if they affect the relationship between peer victimisation and depression.

One further issue to consider is the use of self-report, which relates to the limitations of requiring participants to record answers based on retrospective memory. A self-report method was used due to its ability to gain an insight in to how peer victimisation and depression interact, and because more data could be collected quickly and efficiently (Cozby, 2009). However, there are methodological issues with this method that need to be addressed.

Podsakoff, MacKenzie, Lee, and Podsakoff (2003) give an extensive review of common method biases within behavioural research, including the effects of using self-report. It is suggested that participants have a 'consistency motif' which suggests individuals want to respond in a way that appears consistent and rational to the researcher (Podsakoff et al., 2003). In relation to this study however, the results do not relate to this suggestion. If participants were answering consistently throughout the questionnaire, it would be likely that both Issue 1 and Issue 3 would either both be significant or non-significant.

Podsakoff et al. (2003) also highlight the use of reverse scoring questions, as was done in this study for the depression scale. The authors suggest that although this seems to be a way to maintain the concentration of participants by including 'cognitive speed bumps', the negative wording may be missed (Podsakoff et al., 2003). Furthermore, tests have found that when the same questions have been asked positively and negatively, the answers are significantly different (Idaszak, & Drasgow, 1987).

A further issue that may have affected the result was the Negative Affectivity construct (Watson, & Clark, 1984). The researchers suggest that individual differences in long term mood states and self-concept can affect how an individual answers questions about themselves. For example, a person who has a negative mood state or self-concept is more likely to view situations as more negative that a person with a positive self-concept; this will affect how depressed a person may feel or how victimised a person feels (Watson, & Clark, 1984). This may explain how individual differences such as personality and resilience lead to non-significant results. It may have been that in this study participants were affected by peer victimisation at the time or shortly after, but had more positive self-concepts and stronger resilience in order to recover from the event in the long term.

Retrospective memory is a major issue to discuss in relation to this study. Since the participants were asked to reflect on childhood experiences, the questionnaire may have been cognitively demanding and memories could have been inaccurate to the real event in the past. There is an ongoing debate relating to the reliability of adult memory since some research points toward the view that memory decays with age and so memories can become distorted, but alternatively, other research suggests memories are accurately remembered well in to adulthood (Kvavilashvili, Kornbrot, Mash, Cockburn, & Milne, 2009). However, Kvavilashvili et al's (2009) study tested participants with no underlying mental health problems.

Beck's (1967) cognitive theory of depression suggests that depressive individuals have a negative perception of the world, which can lead to inaccuracy of data due to either under-reporting or over reporting (Schraedley, Turner, & Gotlib, 2002). Schraedley et al's. (2002) study found that the reporting of traumatic events in depressed individual fluctuates over time, and so the results is this study may have been different at another 'snapshot' of time.

An opposing argument to the limitations of retrospective memory is suggested by Rubin (2002) that there is a 'bump' in the lifespan which is described as time in older adulthood where memories between 10 and 30 years of age are more memorable. Unfortunately, despite this opposing argument, the majority of the participants in this study were between 18 and 25 years of age.

One final issue to be discussed is the sample since all participants were university students. As Hartley (2011) discusses, university students appear to be resilient to stressors of university life. In turn it may be that the ability to deal with life stressors includes being victimised previously at school. Students may not need to seek support in order to be resilient, which may explain why long term coping was not significant as a moderator. This study is under-representative of the general population and so future research could expand the sample in terms of gender and socio-economic background to gain a more representative study.

Future Implications.

It is important to consider the implications of bullying due to the long term impact on well-being (Pouwelse, et al., 2011). In turn, the effects on well-being may affect the academic and occupational success due to ways of dealing with bullying such as playing truant and lower levels of concentration (Rothon, Head, Klineberg, & Stansfeld, 2011; Woods, & Wolke, 2004). Faith, Malcolm, & Newgent (2008) suggest that early intervention in elementary school is necessary in order to avoid long term mental health issues which may affect employment opportunities in the future for children.

The present study extends the results from previous literature that peer victimisation and short term depression are correlated, and this relationship is significantly moderated by seeking support. As Hawker and Boulton (2000) state, there are numerous cross sectional studies, and so there now needs to be a change in methodology in order to importantly answer questions of causation. Research is this area will help to guide teachers and parents in terms of how to protect children from the victimisation and the adverse effects that it may cause (Baker, & Bugay, 2011).

Two of the hypotheses focused on the long term effects of peer victimisation of which both resulted in non-significant correlations. This contradicts some of the research on long term effects (Klomek et al., 2008) but provides more support for other findings (Hunter et al., 2004). Therefore, further research needs to be done in

this area, preferably using longitudinal methods in order to gain insight in to coping patterns and changes over time.

This study has implied that as well as peer victimisation and depression being related, long term effects need to be further investigated. There is sufficient research to suggest that the effects of bullying are long lasting and so more research needs to be carried out in order to see how childhood bullying affects the victim in adulthood. Future research could focus on which age range experiences more frequent bullying and therefore experiences more depressive symptoms. This may guide researchers and those involved in a child's life as to where an intervention is needed most.

It may be advisable that victim support organisation may want to change the associated assumptions of bullying outcomes. Rather than seeing bullying as an experience that can leave an individual feeling depressed for a potentially long period of time, there could be a more positive outlook on the experience (seeing it as a challenge to overcome rather than a barrier).

Conclusion.

This study investigated whether there was a relationship between peer victimisation and short term depression, and whether seeking support moderated this relationship. There was also an investigation to see if long term use of seeking support moderated the outcome of long term depression. The analyses showed that there was a significant relationship between peer victimisation and short term depression, and seeking support significantly moderated this relationship. However, there were no significant relationships in the long term.

It has been suggested that methodological issues could explain the lack of significance since previous research has suggested there are long term effects of peer victimisation (Pouwelse, et al., 2011). Despite the methodological flaws, this study has furthered the understanding of the relationship between victimisation and depression, and has shown strong internal reliability by testing the alpha levels and carrying out factor analyses; future research would still benefit from using the same scales.

This study also implies what can be done in future studies in order to gain a fuller understanding of complex relationships. Improving methodologies and increasing the number of longitudinal studies may help to explain the multitude of effects from being victimised. Furthermore, the lacking evidence of long term effects suggest that more research needs to be done in order to protect and help victims in the best way possible.

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