Peer-victimisation, perfectionism, and mental health in UK university students: An analysis of the Social Reaction and Social Disconnection Models

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The candidate confirms that the work submitted is her own and that appropriate credit has been given where reference has been made to the work of others.

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Abstract

Few research papers have analysed peer-victimisation in UK universities, which indicate a prevalence rate of between 10% and 25% (Lund & Ross, 2017). Additionally, few papers have explored the relationship between peer-victimisation and perfectionism, and how these may relate to mental health outcomes. The aim of this study was to examine the prevalence of peer-victimisation and whether peer-victimisation is a predictor of mental health issues. Additionally, the present study aims to assess the extent of importance of the social disconnection (Hewitt, Flett, Sherry & Caelian, 2006) and social reaction (Flett, Hewitt, Oliver & Macdonald, 2002) models. A cross-sectional design was utilised to analyse levels of peer-victimisation, other-oriented perfectionism, self-oriented perfectionism, social prescribed perfectionism, and symptoms of anxiety and depression in undergraduate students in the UK (N = 158). Findings showed a significant relationship between peer-victimisation and mental health issues. Furthermore, partial support was provided for the social disconnection model, as peer-victimisation was found to mediate the relationship between SPP and anxiety. Support was found for the original social reaction model, as peer-victimisation predicted SPP and OOP. However, no support was found for the extended version of the social reaction model, as perfectionism did not mediate the relationship between peer-victimisation and mental health. The findings of this study highlight a relationship between peer-victimisation and mental health in university students. The findings also illustrate a need for further research within this area, in addition to the implementation of anti-bullying policies in UK universities, and interventions to support poor mental health.

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Introduction

Peer-victimisation, has been widely researched and studied amongst samples of children and adolescents (Anti-Bullying Alliance, 2017; Sweeting, Young, West & Der, 2006; Xie, Cairns & Cairns, 2002). Whilst there is a wealth of research examining peer-victimisation in children, adolescents, and in the workplace, there is a limited research examining such behaviours in universities, particularly in the United Kingdom. The National Union of Students (2008) reported that 7% of students experienced peer-victimisation during university, with 79% indicating that the perpetrator was a fellow student. Student mental health is increasingly becoming recognised as a significant issue, with mental health conditions accounting for an increasing proportion of disclosed student disabilities (Thorley, 2017), and 78% of students reporting a mental health condition (All Party Parliamentary Group on Students, 2015). A wealth of evidence has highlighted the relationship between peer-victimisation and a range of mental health difficulties in children and young people, including anxiety and depression (Reijntjes, Kamphuis, Prinzie & Telch, 2010; Storch, Masia-Warner, Crisp & Klein, 2005). However, research on student populations is lacking. Similarly, there is a wealth of evidence supporting the relationship between perfectionism and anxiety and depression (Dunkley, Blankstein, Halsall, Williams & Winkworth, 2000) and emerging evidence on the relationship between peer-victimisation and perfectionism (Miller & Vaillancourt, 2007). Therefore, the aim of this study is to expand the research base on peer-victimisation in higher education, and its relationship with mental health outcomes.

Peer-victimisation has been defined by Hunter, Boyle and Warden (2007) as frequently experienced aggressive behaviour within a peer group. Furthermore, bullying has been defined by Olweus (1993) as aggressive behaviour that is intentional, repeated over a period of time and involves an imbalance of power. However, there is debate over these definitions, which will be discussed in the subsequent section of this thesis. Regarding, perfectionism this has been defined as a multi-dimensional personality trait, which can be broken down into further types of perfectionism (Hewitt & Flett, 1991a). This thesis studies

perfectionism as defined by Flett (1991a). Flett (1991a) refers to three types of perfectionism: self-oriented perfectionism (SOP), social prescribed perfectionism (SPP) and other-oriented perfectionism (OOP). SOP refers to the expectation of the self to be perfect, whereas SPP refers to the expectation that others expect the self to be perfect. In contrast, OOP focuses on the expectation of peers to be perfect.

There has been limited research examining the relationship between peer-victimisation and perfectionism, however several theories posit a relationship between both variables with the inclusion of mental health outcomes. The relationship between peer-victimisation, poor mental health and perfectionism can be explained by the social reaction model (Flett et al., 2002), and the social disconnection model (Hewitt, Flett, Sherry & Caelian, 2006). Both theories explore how peer-victimisation and perfectionism can lead to mental health issues such as anxiety and depression. However, each theory proposes the relationship in a different way. The social reaction model highlights that peer-victimisation leads to increased levels of perfectionism, which then leads to poor mental health. In contrast, the social disconnection model highlights that perfectionism leads to peer-victimisation, which then leads to poor mental health.

The definition of peer-victimisation and bullying

Peer-victimisation is defined as frequently experienced aggressive behaviour within the peer group (Hunter, Boyle & Warden, 2007). Such behaviours can be broken down further, most commonly into direct and indirect victimisation. Direct victimisation often involves more explicit forms of aggression such as physical and verbal victimisation, whereas indirect victimisation is often seen as more discrete, and includes exclusion and spreading rumours (Rivers & Smith, 1994). The latter is the most studied type of aggression in higher education (Kokkinos, Antoniadou & Markos, 2014; Sinkkonen, Puhakka, & Meriläinen, 2014). The most common definition of bullying is outlined by Olweus (1993), who suggests that three key features must be identified, in order to define a behaviour as bullying behaviour. Firstly, the aggression must be intentional, and therefore purposefully inflicted

upon a victim. Furthermore, there must also be an imbalance of power between the perpetrator and victim. Finally, this behaviour is generally repeated over a period of time.

The definitions of peer-victimisation and bullying can also be debated, as the definitions are not fully agreed upon within research, however the definition of bullying posited by Olweus (1993) appears to be the most commonly used definition, and perhaps the most agreed upon one (Volk, Veenstra & Espelage, 2017). As there is disagreement over the definitions, some researchers utilise more general definitions or use no definition at all within their methodology (Volk, Veenstra & Espelage, 2017). For example, Vivolo-Kantor, Martell, Holland and Westby (2014) conducted a systematic review on the definitions used within bullying research, and found only around 26% of papers included a definition of bullying. The use of a definition, in addition to its wording can impact how a participant responds to questions and thus may impact the reported prevalence rates of peer-victimisation in research.

The definition of cyberbullying is also debated amongst researchers due to varying definitions existing (Francisco, Simao, Ferreira & das Dores Martins, 2015). However, Willard (2004) proposes seven types of cyberbullying which are often used by researchers; such as online harassment and cyberstalking. Whilst not all cyberbullying measures segregate cyberbullying into these seven subtypes, they generally fall within the scope of Willard's (2004) categories. Some researchers prefer to minimise the number of subtypes, by categorising cyberbullying as direct cyberbullying e.g. calling someone mean names, or indirect cyberbullying e.g. identity theft (Kokkinos, Antoniadou & Markos, 2014).

Furthermore, the definitions presented by researchers do not always align with the measures that the research utilises. This can impact on the findings of a study, as for example, Vaillancourt et al. (2008) found lower levels of reported peer-victimisation when a definition was given, compared to when participants were asked to use their own definition. This suggests that participants may have varying perceptions of peer-victimisation when no prompt is offered.

As much of the research regarding peer-victimisation focuses on samples of children and adolescents, it is important to be cautious when applying these concepts, definitions, and findings to samples of university students. For example, in samples of children, prevalence rates of physical peer-victimisation are often higher than in samples of adults (Curwen, McNichol & Sharpe, 2011). This is perhaps due to increased level of maturity and awareness of consequences. Madsen (1996) explored how individuals aged 5 years old to 29 years old perceived peer-victimisation behaviour. Generally, the findings showed that younger samples have more extensive definitions of what defines peer-victimisation and require more prompts to identify peer-victimisation. However, older samples such as adults, demonstrated a less rigid and less complex definition of peer-victimisation. The discrepancies between age groups may be due to different experiences of peer-victimisation. However, Madsen (1996) also acknowledges that this discrepancy may be due to a general change in the definition of peer-victimisation as an individual reaches adulthood. It appears that as an individual ages, their definition of peer-victimisation is less specific and has less reliance on meeting a particular criteria. Instead, it appears that adults prefer to use their own instinct and knowledge to identify whether peer-victimisation is occurring, often without a prompt or reminder of what constitutes as peer-victimisation.

It is important to establish the difference between peer-victimisation and bullying and clarify which term will be utilised. The key difference between peer-victimisation and bullying is the frequency of experiences, in addition to the lack of reference to a power imbalance and intention to harm. As outlined by Olewus (1993), bullying is repeated experiences of peer-victimisation, whereas peer-victimisation can be used to refer to one isolated incident of aggression. There would be several constraints in measuring bullying due to the difficulty of measuring the three elements of bullying posited by Olweus (1993). For example, it would be difficult to measure intention or a power imbalance (Volk, Dane & Marini, 2014). This is in part due to the subjective nature of a power imbalance, thus resulting in a difficulty for it to

be measured accurately. To conclude, the present study will focus on experiences of peer-victimisation as opposed to bullying.

Furthermore, the present study will allow respondents to utilise their own understanding of peer-victimisation experienced. Therefore, no definition of peer-victimisation will be presented to participants, and a behaviour-based approach will be utilised, as opposed to a definition-based approach. Additionally, both indirect and direct forms of peer-victimisation will be examined in the present study to provide a holistic insight into experiences of peer-victimisation in universities.

The prevalence of peer victimisation in universities

Several studies have explored the prevalence of peer-victimisation in universities and suggest that there is an issue within higher education, however the knowledge on this is limited. Lund and Ross (2017) conducted a meta-analysis of 14 papers, with each study consisting of up to 2,085 students within their sample. The meta-analysis concluded that 20% to 25% of students reported being bullied and 10 to 15% reported being cyberbullied. Such findings suggest similar prevalence rates to research examining peer-victimisation in secondary school students. These prevalence rates are further supported by research by Wensley and Campbell (2012) and Pontzer (2010) who researched peer-victimisation in university students. To further detail these prevalence rates, it is typically found that indirect forms of peer-victimsation are the most prevalent, such as social exclusion and discrimination (Sinkkonen, Puhakka & Merilainen, 2014). This supports the aforementioned idea that students are more likely to recognise the consequences of peer-victimisation, particularly physical peer-victimisation, and therefore resort to more discrete forms of peer-victimisation.

There is research deviating from these findings, suggesting that the prevalence of peer-victimisation is higher than reported than the above papers (e.g. Lund & Ross, 2017). Rospenda, Richman, Wolff and Burke (2013) found that 70% of first year students reported at least one incident of peer-victimisation, which was found to be higher than their reported

peer-victimisation rates in their workplaces. It is important to consider how peer-victimisation was categorised. This study considers a student to be a victim of peer-victimisation, after just one incident of peer-victimisation. This conflicts with the standard definition, which requires behaviour to be repeated, in order to be considered peer-victimisation. In addition, the comparison between peer-victimisation at university and in the students' workplaces has to be approached with caution. It is likely that the students held part-time jobs, and therefore the time spent at university and in their workplace is not necessarily 50:50; thus introducing bias, as one setting e.g. the workplace, will have more or less emphasis and experiences than the other (Muluk, 2017). These limitations highlight some of the issues within research examining peer-victimisation in university students.

Similarly to research on traditional peer-victimisation, the prevalence rates of cyber victimisation also vary widely. Whilst Selkie, Kota, Chan and Moreno (2015) reported a prevalence rate of 17%, Bennett, Guran, Ramos and Margolin (2011) reported a prevalence rate of 92%. The variation is possibly due to the differing samples used, as much of the research focuses on a single higher education establishment, and therefore may reflect the environment of that particular establishment (Lund & Ross, 2017). In addition, there are a range of cyberbullying measures used, and thus findings may vary. However, neither of the above papers report any validity scores for the respective cyberbullying scales used, therefore it is difficult to compare the validity of the measures used. These reported prevalence rates of cyberbullying in universities can be compared to prevalence rates of cyberbullying in schools. For example, Sourander et al. (2010), reported a prevalence rate of 4.8% amongst 15 to 16 year old children. In addition, Aricak et al. (2008) reported a prevalence rate of 5.9% amongst 12 to 19 year old individuals. These rates are significantly lower than that of university students. This could be explained by proposing that technology is more likely to be utilised by older individuals such as young adults, as opposed to children and adolescents, due to maturity, knowledge and safety. In addition, many social media websites require users to be of a certain age e.g. Facebook requires users to be aged 13+.

This suggestion is supported by research by Vollink, Bollman, Eppingbroek and Dehue (2013) who reports that cyberbullying victimisation increases with age.

To conclude, research has shown that indirect peer-victimisation appears to be a prevalent experience in university students. However, prevalence rates vary widely across studies, possibly due to the differing measures and methods used to study peer-victimisation. Prevalence rates continue to vary when studying cyberbullying, however rates in universities are reported to be higher than cyberbullying rates in schools. The comparison of research utilising university samples may be complimented by research into peer-victimisation in children and adolescents, due to the wider research base this area holds with such a sample.

Peer-victimisation at university: comparing the prevalence with peer-victimisation in school and the workplace

Whilst there is a lack of research examining peer-victimisation in universities, there is a wealth of research based on primary and secondary aged children. A meta-analysis conducted by Modecki, Minchin, Harbaugh, Guerra and Runions (2014) found that the estimated prevalence rate of peer-victimisation in adolescents was 36% for traditional forms of victimisation, and 15.2% for cyberbullying, across 72 research studies. The prevalence rate for traditional forms of victimisation reported in this meta-analysis is higher than that reported by Lund and Ross (2017) in samples of university students, however the prevalence rate for cyberbullying is relatively similar in both meta-analyses.

The high prevalence rates found within peer-victimisation research in children and adolescents have prompted various studies into peer-victimisation, to create a breadth of research. For example, Vaillancourt et al. (2010) explored specific areas of schools in which peer-victimisation may take place. Findings showed that most of the peer-victimisation took place in communal areas such as the playground, cafeteria and hallways. This suggests that peer-victimisation heavily occurs in the absence of authority figures such as teachers, which minimises the chance of any consequences. This may also apply to universities. As

university students are typically more independent and have less contact time with authority figures such as lecturers, it is possible that peer-victimisation takes place in similar, unmonitored, situations. For example, peer-victimisation may occur in university cafeterias, common room areas and during extracurricular activities with peers.

Comparisons can also be made with research on workplace peer-victimisation research, which demonstrates the prevalence of peer-victimisation in workplaces (Hansen, Hogh & Persson, 2011). Workplace victimisation is generally defined as an individual being in a workplace situation, where they persistently perceive themselves to be subjected to negative actions by co-workers over a period of time (Einarsen & Skogstad, 1996). Additionally, the perpetrator can also come from a position of authority, for example a line manager, however the research heavily emphasises the focus of the victim, rather than the perpetrator. Whilst school peer-victimisation can be categorised in many ways, for example verbal peer-victimisation, the workplace peer-victimisation literature identifies peer-victimisation under two strands. Workplace peer-victimisation can be related to the job role or the individual (Verkuil, Atasayi & Molendijk, 2015). Behaviours relating to the job role can include being set unreasonable deadlines or being excessively monitored. Furthermore, individual factors can be viewed as similarly to relational peer-victimisation in schools and includes behaviours such as social exclusion and verbal hostility. Nielsen, Tangen, Idsoe, Matthiesen and Magerøy (2015) highlighted similarities between the research of peer-victimisation in schools and the workplace, particularly the outcome variables. Similarly, to the research reported in schools, peer-victimisation has been found to be a predictor of various health outcomes such as anxiety, depression, stress and PTSD (e.g. Nielsen & Einarsen, 2012) which can last for many years (Einarsen & Nielsen, 2014). Anxiety was found to be associated with peer-victimisation in the workplace, through two strands: PTSD and general anxiety symptoms, with the former being particularly prevalent (Verkuil, Atasayi & Molendijk, 2015). Additionally, workplace peer-victimisation has also been found to predict

job related outcome variables, such as absenteeism, low level of job satisfaction and intention to leave the workplace (Nielsen & Einarsen, 2012).

To summarise, the prevalence rate of peer-victimisation in children and adolescents is similar to university students when cyber victimisation is explored, though the prevalence rate for traditional forms of victimisation seems to decrease in higher education (Lund & Ross, 2017; Modecki, Minchin, Harbaugh, Guerra & Runions, 2014). The role of authority figures is highlighted in research in both children and adolescents, and in the study of workplace peer-victimisation. Research generally found that peer-victimisation occurred in schools when an authority figure was not present (Vaillancourt et al., 2010). However, the workplace peer-victimisation literature found that perpetrators were often authority figures, such as managers (Einarsen & Skogstad, 1996).

The relationship between peer-victimisation and mental health

Much of the research examining the relationship between peer-victimisation and mental health problems, has been conducted in the context of samples of children and adolescents. Peer-victimisation has been paired with several adjustment difficulties, including anxiety, depression, loneliness and poor academic functioning (Crick & Grotpeter, 1996; Reijntjes, Kamphuis, Prinzie & Telch, 2010; Schwartz, Gorman, Nakamoto & Toblin, 2005). For example, research has reported peer-victimisation leading to issues with social anxiety, social avoidance and a fear of negative evaluation (Slee, 1994) and issues with loneliness and self-worth (Graham & Juvonen, 1998). In addition, Storch, Masia-Warner, Crisp and Klein (2005) found a longitudinal relationship as they reported that peer-victimisation leads to symptoms of social phobia a year later. Such research implies a potential long-lasting effect of peer-victimisation.

Similar relationships have been found between peer-victimisation and depression in samples of children and adolescents, with both direct and indirect victimisation leading to higher reported levels of depression and suicidal ideation (Kaltiala-Heino, Rimpela, Rantanen & Rimpela, 2000; Van der Wal, de Wit & Hirasing, 2003). In addition, depressive

symptomology has been found to be a mediator between peer-victimisation and other adjustment issues, such as poor academic functioning (Schwartz, Gorman, Nakamoto & Toblin, 2005). Furthermore, there is research to suggest that whilst peer-victimisation can lead to depressive symptomology, the relationship can be demonstrated in reverse, thus suggesting a cyclical effect. Sweeting, Young, West and Der (2006) found that the relationship between peer-victimisation and depression can change over time, where depression can also be a predictor of further peer-victimisation. A possible explanation for this relationship may be that an individual continues to experience peer-victimisation after displaying symptoms of depression, due to depression and loneliness being highly correlated (Erzen & Çikrikci, 2018). The loneliness of an individual therefore may increase their chances of becoming a victim of peer-victimisation, due to the lack of a social network to support them.

As there is a lack of research examining peer-victimisation in university students, there is also a distinct lack of research examining the relationship between peer-victimisation and mental health in this sample. Of the limited research base, findings have shown that peer-victimisation in university students is associated with poor wellbeing and mental health outcomes (e.g. Sinkkonen, Puhakka, & Meriläinen, 2014). For example, Villora, Yubero and Navarro (2020) found that peer-victimisation was associated with poor wellbeing in a sample of Spanish university students. Additionally, Lin, Wolke, Schneider and Margraf (2020) found similar findings in a sample of Chinese university students, as well as low levels of social support and self-efficacy.

Several studies have also examined cyber victimisation and mental health outcomes. Musharraf and Anis-us-Haque (2018) found that victims of cyberbullying in a sample of Pakistani students reported poorer levels of general wellbeing, in comparison to students who reported being perpetrators. Furthermore, Schenk and Fremouw (2012) found that experiences of cyberbullying were associated with anxiety, depression and suicidal ideation. Whilst the research is limited, the severity of outcomes arising from experiences of peer-

victimisation suggests that universities should explore suitable support methods for their students.

Many of the existing papers examining the relationship between peer-victimisation and mental health are based on samples of students outside of the UK e.g. in the US (e.g. Schenk & Fremouw, 2012; Sinkkonen, Puhakka, & Meriläinen, 2014). It is important to be aware of the cultural differences between US college campuses, and UK universities. However, the research findings can still produce an insight into student peer-victimisation. Cultural differences may include differing accommodation types between the UK and US. US college campuses are generally organised via dormitories, fraternities and sororities and are generally more sociable and closer (Switzer & Taylor, 1983), whereas accommodation options at UK universities allow for more independence, fewer housemates, and flexible learning opportunities, for example remote learning. The flexibilities offered to students in the UK allow students more control over their studies and social interactions. Therefore, where students may perceive the traditional university experience to be distressing, perhaps due to previous experiences of victimisation, students can choose a desirable accommodation and study arrangement to reduce the chances of becoming a victim, and thus reduce the chances of poorer mental health. Therefore, the discrepancies in social behaviours may influence levels of peer-victimisation due to the varying emphasis on socialisation during studies.

Whilst there is a lack of research examining peer-victimisation and mental health in higher education students in the UK, there is a strong research base to suggest a relationship between peer-victimisation and mental health in other samples. Additionally, there is also an emerging research base suggesting aggression continues into higher education, particularly in the US, and thus peer-victimisation must continue throughout the education system. For example, Pontzer (2010) found that approximately half of perpetrators at university, were also perpetrators in school. To further the research base into peer-victimisation and mental health in university samples, it would be beneficial to examine why

such a relationship may exist. It is possible that perfectionism may link into this relationship, as perfectionism is also strongly related with mental health issues (e.g. Sherry, Hewitt, Flett & Harvey, 2003).

Perfectionism

Perfectionism is defined as a multi-dimensional personality trait, which is characterised by high levels of standards in oneself and others (Hewitt & Flett, 1991a). Within the literature, perfectionism has been separated into different sub-types; with each encapsulating a particular element of perfectionism. This is reflected in the two multi-dimensional models of perfectionism; the Frost, Marten, Lahart and Rosenblate (1990) and the Hewitt and Flett (1991a) models.

Frost, Marten, Lahart and Rosenblate (1990) highlighted that perfectionism could be divided into six dimensions: personal standards – this is defined as having extremely high standards, concern over making mistakes, doubts about actions such as being indecisive, parental expectations and criticisms, and organisation, such as valuing tidiness. Hewitt and Flett (1991a) then postulated that perfectionism can be categorised as self-oriented perfectionism, social prescribed perfectionism, and other-oriented perfectionism. Self-oriented perfectionism and social prescribed perfectionism are dimensions which typically refer to perfectionism within oneself. SOP is typically viewed as expecting oneself to be perfect, and thus setting high standards to strive for. SPP is similar, however the belief is that others expect oneself to be perfect. Finally, other oriented perfectionism describes these same set of standards, but applied to other individuals. Individuals high in OOP expect others to perform to high standards. Following a factor analysis on the above multi-dimensional models, Frost et al. (1993) merged the dimensions proposed by Hewitt and Flett (1991a) and Frost et al. (1990) to highlight two key dimensions of perfectionism: perfectionistic strivings (personal standards, organisation, SOP and OOP), and perfectionistic concerns (concern over mistakes, doubts about actions, parental expectations and criticisms, and SPP). These two dimensions highlighted the adaptive and maladaptive

traits of perfectionism. It is the maladaptive dimension, perfectionistic concerns, which has been suggested to be related to psychopathology, particularly SPP which is encapsulated in perfectionism concerns (e.g. Dunkley, Blankstein, Halsall, Williams & Winkworth, 2000) and interpersonal difficulties (Sherry, Mackinnon & Gautreau, 2016).

The relationship between peer-victimisation and perfectionism

Perfectionism has been linked to interpersonal issues such as peer conflict (Sherry, Mackinnon & Gautreau, 2016). For example, Mackinnon et al. (2012) found that perfectionistic concerns predicted conflict between romantic couples. Such associations may result due to conflicting levels of expectations between peers both high and low in SPP. An individual with high levels of SPP may perceive pressure from their peers to be perfect, which creates tension during interactions. Additionally, tension may also arise with the peers of those high in OOP. The expectation that one's peers must be perfect may create a strain on the relationship. It can be theorised that these strains and tensions that may arise between peers may lead to interpersonal conflict such as peer-victimisation.

One possible indirect route between perfectionism and peer-victimisation utilises research by Jacobson and Anderson (1982), who found individuals with depression were focused on themselves in conversations and were less likely to fully engage with others. This lack of engagement may result in poor, weak social relationships. As perfectionism and depression have been found to have an association in many papers (e.g. Hewitt & Flett, 1990), it may be that perfectionistic behaviours leads to depressive symptomology, which in turn leads to poorer social relations; which then opens up the individual to be a likely victim of peer-victimisation. To summarise, this suggestion would propose a mediational link between perfectionism and peer-victimisation and depression.

The route between perfectionism and peer-victimisation may be more direct. Habke and Flynn (2002) proposed that those with perfectionistic traits limit their social contacts in an attempt to minimise their expectations to be perfect; and thus, lower levels of SPP. The

lack of social contacts will thus likely lead to loneliness, which could then lead to interpersonal issues such as peer-victimisation.

There are research papers that suggest the reverse relationship, in that peer-victimisation, particularly during childhood, could lead to higher levels of perfectionism in adulthood. For example, Wilson, Hunter, Rasmussen and McGowan (2015) found that students' recalled indirect peer-victimisation from their childhood, predicted current levels of SOP and SPP; with no significant findings between recalled indirect peer-victimisation and OOP. These findings support the idea that individuals may believe that setting higher standards for themselves, and thus being "perfect", will lower the chances of further peer-victimisation. This is particularly interesting as Curwen, McNichol and Sharpe (2011) conducted research to suggest that the victim role stays consistent throughout education, which could infer that this relationship between peer-victimisation and perfectionism may continue throughout an individual's education. Similar findings were reported by Miller and Vaillancourt (2007), who also added that the lack of significant relationship between recalled peer-victimisation and OOP may be due to OOP being more related to perpetration.

To date, there is a lack of research examining the relationship between peer-victimisation and perfectionism. However, both peer-victimisation and perfectionism have been found to be associated with various similar adjustment issues such as depression **(**Kaltiala-Heino, Rimpela, Rantanen & Rimpela, 2000; Sherry, Hewitt, Flett & Harvey, 2003), loneliness (Crick & Grotpeter, 1996; Hewitt & Flett, 1991a), and social issues such as low self-esteem, self-worth and self-acceptance (Flett, Besser, Davis & Hewitt, 2003; Slee, 1994).

Perfectionism and mental health issues

Perfectionism has been found to be related to mental health difficulties in students, such as eating disorders (Hewitt, Flett & Ediger, 1995), self-esteem (Preusser, Rice & Ashby, 1994) and suicidal ideation (Hewitt, Flett & Weber,1994). However, in the literature, there is a strong focus on the relationship between perfectionism and depressive

symptomology (Sherry, Hewitt, Flett & Harvey, 2003). Typically, SPP and SOP have been found to be most closely related to depressive symptomology (Flett, Besser, Davis & Hewitt, 2003; Hewitt & Flett, 1990; Hewitt & Flett, 1993), with less support for OOP being related to depression (e.g. Flett, Endler, Tassone & Hewitt, 1994). This can be explained due to the focus on the different types of perfectionism. Where SOP and SPP relate to behaviours focused on oneself, OOP focuses on other individuals. It would therefore make sense for a relationship between depression and OOP to be mild or non-existent. However, Hewitt and Flett (1993) noted that OOP may indirectly contribute to distress, due to high expectations of others potentially damaging relationships, thus resulting in loneliness and poor mental health.

The research examining the relationship between OOP and depression is varied; with many studies suggesting that there is no correlation (Martin, Flett, Hewitt, Krames & Szanto, 1996), and as a result, omitting the OOP scale from studies within this area (Enns & Cox, 2005). However, Hewitt and Flett (1990) found that higher levels of OOP correlated with higher levels of reported depression in students. It has been suggested that OOP can be indirectly related to depression, as OOP was found to be associated with low unconditional self-acceptance, which was found to be related to depression. It may be that studies that find an association between depression and perfectionism, are via mediational links.

There are several variables which may detail the interaction between perfectionism – particularly SPP, and depression. For example, Preusser, Rice and Ashby (1994) found that self-esteem mediates such relationship, and Flett, Besser, Davis and Hewitt (2003) found similar results with unconditional self-acceptance**.** Furthermore, Enns and Cox (2005) also found that SPP predicted depressive symptomology twelve months later in a clinical sample. Additionally, Chang and Sanna (2001) found that the longitudinal relationship between perfectionism and depression were moderated by negative attribution style.

Compared to depression, the relationship between perfectionism and trait and state anxiety has also been studied, to a lesser extent. Trait anxiety is defined as a consistent trait which tends to remain throughout situations, whereas state anxiety is defined as anxiety resulting from particular situations, and thus is inconsistent (Spielberger, 1966). Many studies have focused on the relationship between trait anxiety and perfectionism (Frost & DiBartolo, 2002). For example, Flett, Hewitt and Dyck (1989) found that trait anxiety was related to SOP. Less research has focused on the relationship between state anxiety and perfectionism. However, of the research that currently exists, there is a growing research base to suggest a relationship. For example, SOP and SPP have been found to correlate with state anxiety in student samples (Flett, Endler, Tassone & Hewitt, 1994; Hewitt & Flett, 1991b); in addition to research focusing on the relationship between maladaptive perfectionism and state anxiety (e.g. Kawamura, Hunt, Frost & DiBartolo, 2001). However, no associations were found between OOP and state anxiety in students (Flett, Endler, Tassone & Hewitt, 1994). In addition to the above, the relationship between state anxiety and perfectionism has also been studied in clinical samples, such as individuals with a diagnosis of social phobia, panic disorder and obsessive compulsive disorder. For example, Antony, Purdon, Huta and Swinson (1998) found that levels of SPP were higher in clinical samples, compared to non-clinical samples. However, these comparisons were not likewise when SOP were studied (Hewitt & Flett, 1991b).

To summarise, perfectionism has been found to be a predictor of mental health issues such as anxiety and depression (Kawamura, Hunt, Frost & DiBartolo, 2001; Sherry, Hewitt, Flett & Harvey, 2003), similarly to peer-victimisation (e.g. Sweeting, Young, West & Der, 2006). Additionally, there is research suggesting a relationship between peer-victimisation and perfectionism (Wilson, Hunter, Rasmussen & McGowan, 2015). Whilst limited, research on these relationships suggest a link between perfectionism, peer-victimisation and mental health outcomes. Several theories can provide an insight into how these variables may link.

Social Reaction and Social Disconnection Theories

Social Reaction Theory

The social reaction model (Flett et al., 2002) is part of several theories that aim to explore how perfectionism may develop, and whether other variables lead to the development of perfectionism. Other theories include the social learning model (Bandura, 1986) which highlights that as children are impressionable, they tend to idealise their parents or caregivers. This can potentially lead to idolising individuals who display perfectionistic behaviour and leading to the child imitating these behaviours. These behaviours then set the basis for a child to show high levels of perfectionism through their life, as the imitation of parents sets the basis (Kearns, Forbes, Gardiner & Marshall, 2008). The anxious rearing model (Mitchell, Broeren, Newall & Hudson, 2013) is an alternative model that focuses on the style of parenting a child may be exposed to. The model posits that anxious parents may worry about their child's performance being imperfect, which leads to parental behaviour including reminding the child not to make mistakes and being overprotective of the child. In addition, the social expectations model (Damian, Stoeber, Negru & Baban, 2013) is similar to the anxious rearing model, in terms of expectations from the parents of a child. The social expectations model highlights the relevance of parental approval on the impact of the development of perfectionism in a child. The model suggests that the approval gained from parents regarding achievements and "perfect" behaviour is sought after by the child, thus leading pressure on the child to perform perfectly (Flett et al., 2002).

The social reaction model (Flett et al., 2002), highlights that perfectionism may stem from a harsh environment in childhood, particularly in relation to the home environment. As a child experiences a harsh environment, perfectionistic behaviours may result as a coping mechanism to gain control over their life and their environment (Appleton, 2009). The social reaction model has been recognised to overlap with the social expectation model, as they both posit that perfectionism stems from parental approval. However, the former is focused on hostility, rather than expectations (Speirs Neumeister, Williams & Cross, 2009). The social reaction model may be deemed as the most expansive theory, due to the broad

explanation of the development of perfectionism. Flett et al. (2002) acknowledge that the model can be extended to the wider environment, including the workplace and educational establishments. For example, individuals can be exposed to harsh environments in various places. Additionally, Harris (1995) highlighted that peers may be more influential in the development of perfectionism, in comparison with parents and caregivers. Therefore, there is a potential for perfectionism to develop from harsh learning environments, as an individual may be exposed to negative peer behaviours such as criticism or negative feedback.

There is a limited research base to support the social reaction model in the context of educational establishments. Firstly, the model has been studied within adolescent samples, using longitudinal methods to establish the relationship between peer-victimisation and perfectionism. Farrell and Vaillancourt (2019) found several significant cross-lagged paths from peer-victimisation to SPP in samples of young individuals; additionally, Vaillancourt and Haltigan (2018) and Speirs Neumeister, Williams and Cross (2009) also found that peer-victimisation predicted high levels of SPP. As SPP is the belief that others expect oneself to be perfect, this finding shows a potential effort to minimise any experienced peer-victimisation around the individual's behaviours by presenting themselves as a perfect individual with no flaws to be identified. Such flaws may be the subject of peer-victimisation therefore the victim may view the solution to hide the flaws completely; thus resulting in lower levels of peer-victimisation. Despite the lack of research on the social reaction model in universities, these studies provide support for the model.

Findings have also been reported in university students using a retrospective design into adverse child experiences such as abuse or neglect. Chen, Hewitt and Flett (2019) found that childhood experiences of abuse, neglect and household dysfunction correlated with current elevated levels of SPP, suggesting that previous negative experiences can have a long-term impact on levels of perfectionism. However, there are two key papers that examine this relationship in further detail, in the context of recalled peer-victimisation from the participants' childhood. Miller and Vaillancourt (2007) reported that recalled indirect peer-

victimisation predicted SPP, SOP, and OOP, with the latter showing a negative correlation. The implications of such findings show the importance of indirect peer-victimisation on the levels of perfectionism, particularly in relation to SOP and SPP. Similarly, to the points mentioned above, the victim may be attempting to reduce levels of peer-victimisation by expecting perfection within themselves, and the idea that others are expecting oneself to be perfect too. It may be the belief that presenting flaws is the nature of their victimisation, and thus to reduce the levels of distress, they must become perfect. Additionally, it is expected the peer-victimisation would not be associated with higher levels of OOP, due to OOP concerning views of other individuals, rather than the self. Therefore, the reported negative relationship between indirect peer-victimisation and OOP is expected and could perhaps be interpreted as suggesting a bully role rather than a victim role (Miller & Vaillancourt, 2007). As OOP is the expectation that others such be perfect, it could be that this is manifested through aggressive, peer-victimisation behaviour; thus, minimising the likelihood of such individual becoming a victim of peer-victimisation instead.

In light of the research by Miller and Vaillancourt (2007), Wilson, Hunter, Rasmussen and McGowan (2015) attempted to replicate such research, whilst introducing depressive symptomology as an additional variable. Similarly, to the findings reported above, Wilson, Hunter, Rasmussen and McGowan (2015) found that recalled indirect peer-victimisation significantly predicted levels of SOP and SPP, with no significant relationship between physical and verbal peer-victimisation and perfectionism. Findings also showed a relationship with depressive symptomology, as recalled indirect peer-victimisation was found to be indirectly related to depression, with the relationship mediated by SPP. Such findings both provide support for the social reaction model, whilst also suggesting a potential expansion to the theory due to the relevance of depression as a third variable. It may not just be recalled peer-victimisation that leads to perfectionism, but perhaps more recent levels of experienced peer-victimisation. Whilst the research above provides an insight into how recalled peer-victimisation predicts perfectionism, it does not provide a time frame of how

long it takes the experienced peer-victimisation to lead to increasing levels of perfectionism. It may be that such outcome is immediate, with long lasting effects. It would be useful to examine the development of such a relationship via a longitudinal method.

Original Social Disconnection Theory

The social disconnection model was originally proposed by Hewitt, Flett, Sherry and Caelian (2006), to explain the relationship between perfectionistic concerns and suicide behaviour. This model differs from the social reaction model, in that is focuses on perfectionism as a predictor of social disconnection such as peer-victimisation, rather than vice versa. The model posits that this relationship is mediated by two forms of social disconnection: objective social disconnection and subjective social disconnection. Subjective social disconnection is the most researched type of social disconnection and is described as perceiving the self to be experiencing isolation (Sherry, Mackinnon & Gautreau, 2016). Furthermore, objective social disconnection is described as reported issues with interpersonal relationships, such as infrequent social contact (Sherry, Law, Hewitt, Flett & Besser, 2008). Overall, social disconnection describes interpersonal difficulties, which are often associated with those with high levels of perfectionism - particularly high levels of SPP (Barnett & Johnson, 2016). Research has already proposed a link between perfectionism and psychopathology, as well as a link between perfectionism and social disconnection (Sherry, Mackinnon & Gautrea, 2016). Therefore, the social disconnection model aims to highlight the two relationships, by proposing that perfectionism leads to negative outcomes such as suicidal behaviour and depression, through the mediation of social disconnection (Mackinnon, Kehayes, Leonard, Fraser & Stewart, 2017).

Early research has offered support for the social disconnection model. For example, Roxborough et al. (2012) reported that in a clinical sample of adolescents, the relationship between perfectionism and suicidal ideation was mediated by experiences of peer-victimisation (objective social disconnection) and social hopelessness (subjective social disconnection). Similar findings were also reported by Sherry et al. (2013), who found

interpersonal discrepancies mediated the relationship between perfectionism and depression. Additionally, Sherry, Law, Hewitt, Flett and Besser (2008) operationalised objective and subjective social disconnection, as received and perceived social support, respectively. It was found that only subjective social disconnection mediated the relationship between SPP and depressive symptomology. Furthermore, this mediation was only partial, thus suggesting that other potential mediators are possible. Contrary to the research mentioned previously regarding the role of objective social disconnection as a mediator; this study did not find a correlation between SPP and the objective social disconnection variable - received social support, thus indicating no mediational effect. The difference in findings may be due to the focus on objective and subjective social disconnection. As SPP is the belief that others expect oneself to be perfect, a subjective view, it is expected that only subjective variables would influence this.

Overall, the research highlighted above suggests that social disconnection provides an insight into the relationship between perfectionism and depressive outcomes. However, it may be the proposed, operationalised types of objective and subjective social disconnection that impact the mediational effect. For example, the lacking significance of receive social support found by Sherry, Law, Hewitt, Flett and Besser (2008) may be due to how the individual interprets the social support. An individual reporting high levels of perfectionism may receive great levels of social support from friends and family; however, they may perceive it as lacking or not genuine. This would therefore explain the significance of perceived social support in this study.

Expanded Social Disconnection Theory

Following the original social disconnection model, an extension to the model was proposed by Hewitt, Flett and Mikail (2017). The original model focused on SPP and depression and suicidal outcomes, however the expanded model recognises the importance of both OOP and SOP. Upon a review of literature by Stoeber, Noland, Maweun, Henderson and Kent (2017), it was found that OOP and SPP generally positively correlates with social

disconnection, whereas SOP negatively correlates with social disconnection. The positive relationship between OOP and SPP with social disconnection can be explained due to these two facets of perfectionism relating to other individuals. For example, an individual high in OOP and SPP are likely to feel the pressure to be perfect, whilst expecting others to be perfect. This may lead to potentially hostile and damaged relationships with others, thus leading to social disconnection. Furthermore, it would be expected that SOP deviates from this pattern, due to SOP relating to the expectation of oneself.

Research has supported the expanded social disconnection model through examining the relationship between all types of perfectionism, social disconnection and various negative outcome variables. For example, Smith et al. (2018) found support for the model, where social disconnection was operationalised as social hopelessness and interpersonal discrepancies. Additionally, Nepon, Flett, Hewitt and Molnar (2011) illustrated support for perfectionism leading to symptoms of both anxiety and depression, through negative social feedback and rumination about interpersonal offences.

Many of the variables used to measure social disconnection, have focused on subjective social disconnection, in the form of perceived social support, social feedback and disrupted interpersonal relationships (Barnett & Johnson, 2016; Nepon, Flett, Hewitt & Molnar, 2011; Sherry et al., 2013). As subjective social disconnection is studied more frequently than objective social disconnection within this theory (Sherry, Mackinnon & Gautreau, 2016), it would be beneficial to examine the social disconnection model with a focus on objective social disconnection. Roxborough et al. (2013) chose to operationalise objective social disconnection as experiences of peer-victimisation. This study found that experiences of peer-victimisation significantly mediates the relationship between perfectionism and suicide behaviour, thus suggesting that experiences of peer-victimisation play a significant role in the relationship between perfectionism and mental health issues. However, it can be argued that experiences of peer-victimisation could be considered both objective and subjective. Experiences of peer-victimisation may be measured objectively by

highlighting the number of occasions an individual experiences a type of peer-victimisation. However, the experiences of peer-victimisation can also be subjective. For example, an individual may experience a type of verbal peer-victimisation from a friend. This could be perceived by the individual as victimisation, or they may view it as “banter” with their friend (Buglass, Abell, Betts, Hill & Saunders, 2020). As many studies of this theory utilise a self-report questionnaire, it is the individual in question that decides whether behaviour directed towards them is considered peer-victimisation, thus being subjective. Nonetheless, the research proposed by Roxborough et al. (2013) provides a usual basis into how peer-victimisation, perfectionism and mental health issues may be related.

The present study

There is a wealth of research suggesting a relationship between peer-victimisation and mental health outcomes in children, adolescents and adults in the workplace (e.g. Sweeting, Young, West & Der, 2006; Verkuil, Atasayi & Molendijk, 2015), and a small growing research area to suggest a similar relationship in university students (Lund & Ross, 2017). Such a relationship may highlight why mental health issues reported by university students are high (All Party Parliamentary Group on Students, 2015). Additionally, if the relationship between peer-victimisation and mental health outcomes were to be significant in a sample of university students, it would be beneficial to explore any further variables relevant to this relationship, such as perfectionism.

The social reaction model highlights that perfectionism arises from harsh environmental experiences, such as peer-victimisation. Research also suggests that symptoms of depression may play a role in the relationship, as Wilson, Hunter, Rasmussen and McGowan (2015) found that SPP may mediate the relationship between peer-victimisation and depression. Furthermore, the social disconnection model posits that high levels of perfectionism can lead to peer-victimisation via a mediational model, where perfectionism leads to social disconnection, which can include peer-victimisation, which in turns leads to mental health issues. To date, one paper has compared the two models within

one piece of research. Farrell and Vaillancourt (2019) conducted a longitudinal study on a young sample, testing cross-lagged relationships between perfectionism to peer-victimisation. Results found that the relationship between these two variables offered support to the social disconnection model, as perfectionism predicted peer-victimisation. However, this pattern was later reversed as peer-victimisation begun to predict further perfectionism. Therefore, it is possible that both theories have relevance to this area of research, although to date, research is limited.

It can be argued that both models argue contradictory points and can be viewed as opposite models. Elements of both theories outline that peer-victimisation can lead to perfectionism, and vice versa. The theories also introduce mental health issues as an additional variable, which is particularly key due to strong associations with both peer-victimisation and perfectionism. It is possible that there is a relationship between peer-victimisation, perfectionism and mental health issues, such as anxiety and depression. Due to the lacking research of these theories in the context of peer-victimisation, in addition to the lacking research on university peer-victimisation, it would be beneficial to research to examine these theories to provide an insight into which theory provides a more accurate representation of the relationship between perfectionism and peer-victimisation.

The social disconnection (Hewitt, Flett, Sherry & Caelian, 2006) and social reaction (Flett et al., 2002) models provide theoretical explanations into how perfectionism, peer-victimisation and mental health may be related. Therefore, the present study aims to explore the social reaction and social disconnection models to assess whether there are relationships between perfectionism, peer-victimisation and mental health, and whether support for either model can be provided. Additionally, the present study also aims to provide an insight into peer-victimisation in UK universities, due to the lack of current existing research. Specifically, the following study will address the following research questions:

- What is the prevalence rate of peer-victimisation in undergraduate students in the UK?

- Is there a relationship between peer-victimisation and mental health in undergraduates students in the UK?
- Consistent with the social reaction model (Flett, Hewitt, Oliver & Macdonald, 2002), does perfectionism mediate the relationship between peer-victimisation and mental health?
- Consistent with the social disconnection model (Hewitt, Flett, Sherry & Caelian, 2006), does peer-victimisation mediate the relationship between perfectionism and mental health?

Methodology

Participants

Participants were 158 UK university students responded to an online survey, with 82.9% being female respondents (*n* = 131), 16.5% of respondents being male (*n* = 26), and one respondent reporting their gender as “other” (0.6%). The age of respondents varied from 18 to 48 years old with a mean age of 21.63 years old (*SD* = 4.00). Respondents were at various points in their university programme, with 24.5% in their first year of study (*n* = 34), 23.4% in their second year of study (*n* = 37), 45.6% in their third year of study (*n* = 72) and the remaining 9.5% were in their fourth year or above of study (*n*=15). Additionally, 95.6% of respondents were studying their course full time (*n* = 151), and the remaining 4.4% were studying part time (*n* = 4.4%).

Measures

Demographics

Demographic details of the participants were firstly collected. These questions consisted of asking the respondents for their age, sex, student status e.g. full time or part time, and year of study.

Peer-victimisation

Peer-victimisation was measured using an adapted version of the Direct and Indirect Aggression Scales (DIAS) **(**Bjorkqvist,Osterman, & Kaukiainen, 1992**).** The original version of the DIAS was used to assess peer-victimisation in children. Therefore, the adapted version by Owens, Daly and Slee (2005), was used to assess peer-victimisation in university students (see Appendix E). The adapted version of the DIAS consists of 18 items relating to direct verbal peer-victimisation (5 items, e.g. *someone teases you*), direct physical peer-victimisation (5 items, e.g. *someone shoves or pushes you*) and indirect peer-vicimisation (8 items, e.g. *you are left out or excluded from a group*). Participants were first given the instruction: *How often has each of the following behaviours been directed at you, during the past four weeks?* Participants were then asked to rate statements on a 5-point likert scale ranging from never =

0 to very often = 5. Scores were then totaled. A higher score indicated higher levels of reported peer-victimisation. Cronbach's alpha scores were requested to assess the suitability of the scale on the present sample and found an alpha score of α=.53 for total peer-victimisation.

Perfectionism

Perfectionism was measured using the short form version of the Hewitt-Flett Multi-Dimensional Perfectionism Scale (Hewitt et al., 2008), consisting of 15 items. Participants were given the following instruction: *Listed below are a number of statements concerning personal characteristics and traits. Read each item and decide whether you agree or disagree and to what extent. If you strongly agree, circle 7; if you strongly disagree, circle 1; if you feel somewhere in between, circle any one of the numbers between 1 and 7. If you feel neutral or undecided, the midpoint is 4. These questions are about the kind of person you generally are, that is, how you usually have felt or behaved over the past several years*.

Participants were then asked to rate each of the statements on a 7-point likert scale, ranging from strongly agree to strongly disagree. These statements break down into three subscales which provide scores for OOP, SOP and SPP, each subscale has five items. An example statement for the OOP subscale is *I cannot stand to see people close to me make mistakes*. An example statement for the SOP subscale is *I strive to be as perfect as I can be*. Finally, an example statement for the SPP subscale is *people expect nothing less than perfection from me*. Scores for each subscale are then summed, a larger score indicates higher levels of that type of perfectionism. Cronbach's alpha scores suggested the scale has good internal reliability, with α =.89 for the SOP subscale, was α =.88 for the SPP subscale, and was α =.86 for the OOP subscale.

Depression

Depression was measured using the short form version of the Center for Epidemiological Depression (CES-D-10)**,** which consists of ten items. Participants were given the following instructions: *Listed below are a number of statements relating to depressive symptoms. Please rate each answer in terms of how you have felt over the past month.* Participants were then presented with statements and were asked to rate each statement on a 4-point likert scale ranging from rarely or none of the time = 0 to most or all of the time = 3. Example statements included *I felt lonely* and *I felt my life had been a failure*. Scores from each statement are totalled to produce an overall score. No cut off scores are provided; however a larger score indicates higher levels of depression. The cronbach's alpha score for this scale was α =.73.

Anxiety

Anxiety was measured using the Generalised Anxiety Disorder Assessment (GAD-7)**,** consisting of seven items. Participants were firstly given the following instruction: *In the past 2 weeks how often have you been bothered by any of the the following problems*. Participants were then asked to rate each of the seven statements on a 4-point likert scale ranging from not at all = 0 to nearly every day = 3. Example statements included: *worrying too much about different things* and *feeling nervous, anxious or on edge*. The overall score is calculated by adding the scores to each statement. Cut off scores are provided to indicate mild (5), moderate (10) or severe anxiety (15). The cronbach's alpha score for this scale was 0.93.

Procedure

Ethical approval was granted by the York St John Cross School Research Ethics Committee (see Appendix A). Participants were recruited from various online websites to target students studying undergraduate courses at universities across the UK. Informed consent was obtained electronically from participants at the start of the survey (see

Appendix B for a copy of the information sheet and Appendix C for the consent form), followed by a debrief at the end of the survey.

The questionnaire was shared on various online websites including social media websites (Facebook, Instagram and Twitter), The Student Room, The Student Mental Health Research Network, and the York St John University Moodle page for psychology students. A brief overview of the questionnaire was provided on each of the websites, along with a web link to view the information sheet and complete the questionnaire. The full questionnaire was completed electronically, in the respondents' free time via Qualtrics (see Appendix D for the full questionnaire including debrief). A debrief was presented at the end of the survey. The debrief consisted of details of relevant charities, should the participants have experienced any difficulties completing the questionnaire. Data collection commenced December 1st 2019 and ended on May 28th 2020.

Data analysis

Results were downloaded from Qualtrics and exported to SPSS (version 24) for initial analyses. Initially, 248 responses were downloaded, of these 90 were deleted due to incomplete responses. Incomplete responses were defined as any responses that only had completed the consent form and demographic information at the beginning of the questionnaire, and did not continue onto the peer-victimisation, mental health or perfectionism questionnaire sections. After incomplete responses were deleted, 158 responses remained for data analysis. Mean scores were calculated using the items for each measure (perfectionism, anxiety, depression, and peer-victimisation). Descriptive data and correlations were then calculated.

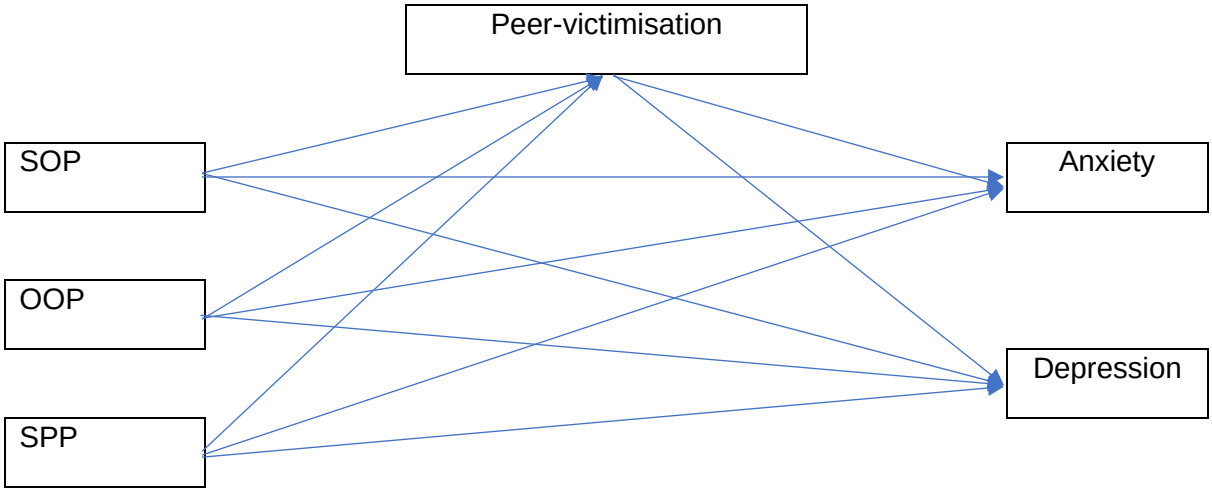
Further analyses were then conducted by downloading the SPSS dataset into Mplus (version 8.1). To assess the original social reaction model, which highlights that perfectionism arises from peer-victimisation, a multiple regression model was conducted using maximum likelihood with robust standard errors (MLR) due to the dataset deviating from normality. Three multiple regressions were conducted. Peer-victimisation was entered

as the predictor variable and OOP, SOP and SPP were entered as the outcome variable in each model.

Mediational analyses were then conducted, using maximum likelihood (ML) with bootstrapping (5000) due to the dataset deviating from normality. Maximum likelihood with robust standards error (MLR) was not used due to the need to include bias corrected confidence intervals. Firstly, the social disconnection model was analysed (see Figure 1 for a diagram of the model).

Figure 1

Social Disconnection Model



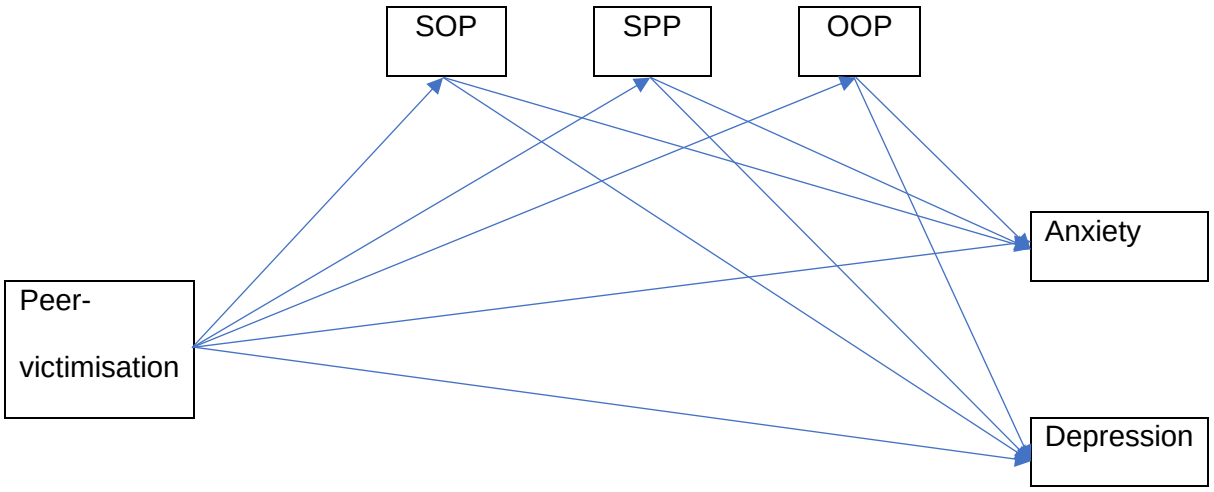
Note. OOP = other-oriented perfectionism, SPP = social prescribed perfectionism and SOP = self-oriented perfectionism

The model highlighted in Figure 1 suggests that mental health outcomes such as anxiety and depression, arise from perfectionism via a peer-victimisation mediator. Firstly, anxiety was examined as an outcome variable. Three models were produced, each with a predictor variable of OOP, SOP and SPP, and all with peer-victimisation as the mediator variable. Secondly, this was repeated with depression as the outcome variable.

The proposed extended version of social reaction model was then analysed (see Figure 2 for a diagram of the model).

Figure 2

Social Reaction Model (Extended Version)



Note. OOP = other-oriented perfectionism, SPP = social prescribed perfectionism and SOP = self-oriented perfectionism

The model highlighted in Figure 2 outlines that mental health outcomes such as anxiety and depression, arise from peer-victimisation via perfectionism as a mediator variable. Firstly, anxiety was examined as an outcome variable. Three models were produced, each with a predictor variable of peer-victimisation, and all with OOP, SOP, SPP as the mediator variables - each in a separate model. Secondly, this was repeated with depression as the outcome variable.

Results

The prevalence of peer-victimisation in university students

Table 1 shows the prevalence of different forms of peer-victimisation. Overall, 81% (n = 128) of participants expressed being a victim of at least one form of peer-victimisation listed in Table 1. Table 1 shows that the most prevalent types of peer-victimisation were being insulted, excluded or ignored. Additionally, the least prevalent types of peer-victimisation were being kicked or hit.

Table 1

The prevalence of different forms of peer-victimisation n(%).

Type of Peer-Victimisation	Never	1	2	3	4	Very often
Someone hits you	140 (88.6%)	7 (4.4%)	4 (2.5%)	4 (2.5%)	0 (0%)	3 (1.9%)
Someone kicks you	146 (92.4%)	3 (1.9%)	2 (1.3%)	2 (1.3%)	0 (0%)	3 (1.9%)
Someone trips you up	139 (88%)	9 (5.7%)	4 (2.5%)	3 (1.9)	0 (0%)	3 (1.9%)
Someone shoves or pushes you	122 (77.2%)	17 (10.8%)	7 (4.4%)	5 (3.2%)	3 (1.9%)	3 (1.9%)
Someone takes your things	116 (73.4%)	17 (10.8%)	12 (7.6%)	6 (3.8%)	1 (0.6%)	6 (3.8%)
Someone yells at you	90 (57%)	23 (14.6%)	19 (12%)	14 (8.9%)	5 (3.2%)	6 (3.8%)
Someone calls you names	98 (62%)	19 (12%)	19 (12%)	9 (5.7%)	7 (4.4%)	5 (3.2%)

Table 1 (continued)

The prevalence of different forms of peer-victimisation n(%).

Type of Peer-Victimisation	Never	1	2	3	4	Very often
You are insulted by someone e.g. about your clothing or appearance	98 (62%)	29 (18.4%)	14 (8.9%)	6 (3.8%)	2 (1.3%)	9 (5.7%)
Someone teases you	71 (44.9%)	28 (17.7%)	26 (16.5%)	15 (9.5%)	10 (6.3%)	8 (5.1%)
Someone threatens you	137 (86.7%)	10 (6.3%)	3 (1.9%)	1 (0.6%)	3 (1.9%)	4 (2.5%)
Someone tells bad or false things about you e.g. rumours	110 (69.6%)	24 (15.2%)	10 (6.3%)	6 (3.8%)	2 (1.3%)	6 (3.8%)
You are left out or excluded from a group	76 (48.1%)	32 (20.3%)	21 (13.3%)	10 (6.3%)	9 (5.7%)	9 (5.7%)
Someone writes or spreads nasty notes about you	139 (88%)	5 (3.2%)	4 (2.5%)	3 (1.9%)	2 (1.3%)	5 (3.2%)
You receive nasty anonymous electronic message from other students e.g. text message or emails	136 (86.1%)	12 (7.6%)	2 (1.3%)	3 (1.9%)	0 (0%)	4 (2.5%)
Someone tells your secrets to other people e.g. breaking confidences	123 (77.8%)	12 (7.6%)	11 (7%)	6 (3.8%)	2 (1.3%)	4 (2.5%)

Table 1 (continued)

The prevalence of different forms of peer-victimisation n(%).

Type of Peer-Victimisation	Never	1	2	3	4	Very often
You receive prank telephone calls from other students	150 (94.9%)	3 (1.9%)	0 (0%)	2 (1.3%)	0 (0%)	3 (1.9%)
You are ignored	65 (41.1%)	33 (20.9%)	26 (16.5%)	14 (8.9%)	7 (4.4%)	13 (8.2%)
You are the subject to “daggers” or dirty looks	101 (63.9%)	21 (13.3%)	16 (10.1%)	10 (6.3%)	4 (2.5%)	6 (3.8%)

Table 2 shows the descriptive statistics for the scales and subscales used in the analysis. Table 2 also shows the correlation matrix in relation to all variables within the design.

Table 2

The means and standard deviations for the relevant subscales (N = 158) and correlation matrix of all variables.

Variable	M(SD)	Anxiety	Depression	Total Peer-Victimisation	SOP	SPP	OOP
Anxiety	1.54 (0.90)	-	0.74*	0.39*	0.35*	0.30*	0.16*
Depression	1.30 (0.52)	-	-	0.26*	0.28*	2.69*	0.00
Total Peer-Victimisation	4.18 (1.28)	-	-	-	0.11	0.29*	0.23*
SOP	4.69 (1.66)	-	-	-	-	0.60*	0.53*
SPP	4.36 (1.53)	-	-	-	-	-	0.48*
OOP	3.49 (1.41)	-	-	-	-	-	-

*= $p<0.05$

Social Disconnection Model

To test the social disconnection model, a mediational approach was used to assess whether peer-victimisation mediated the relationship between OOP, SOP and SPP and anxiety and depression via (see Table 3). Findings showed that SOP predicted both anxiety and depression ($p<0.001$), OOP predicted depression ($p<0.001$), SPP predicted peer-victimisation, ($p<0.001$) and peer-victimisation predicted both anxiety ($p<0.001$) and depression ($p<0.05$). The variance for peer-victimisation was 13.1%, 26.4% for anxiety and 22.2% for depression. The indirect effects of OOP, SOP and SPP on anxiety via peer-victimisation as a mediator were assessed. The analysis on the indirect effects showed that only SPP predicted anxiety via peer-victimisation with a significance level of $p<0.001$.

Table 3

The beta values, confidence intervals and level of significance for the regressions for the social disconnection model.

Predictor Variable	Outcome Variable	B	SE	β	CIs (95%)
Direct paths					
SOP	Anxiety	0.18	0.05	0.33***	0.14:0.51
SPP	Anxiety	0.04	0.06	0.08	-0.11:0.27
OOP	Anxiety	-0.09	0.06	-0.15	-0.33:0.04
SOP	Depression	0.10***	0.03	0.31***	0.14:0.48
SPP	Depression	0.07	0.04	0.19	0.00:0.40
OOP	Depression	-0.12***	0.04	-0.32***	-0.54:-0.11
Path a					
SOP	Peer-Victimisation	-0.09	0.06	-0.16	-0.37:0.04

Table 3 (continued)

The beta values, confidence intervals and level of significance for the regressions for the social disconnection model.

Predictor Variable	Outcome Variable	B	SE	β	CIs (95%)
SPP	Peer-Victimisation	0.19***	0.06	0.33***	0.15:0.50
OOP	Peer-Victimisation	0.12	0.08	0.18	-0.06:0.40
Path b					
Peer-Victimisation	Anxiety	0.37***	0.07	0.38***	0.25:0.50
Peer-Victimisation	Depression	0.16	0.09	0.27*	0.02:0.48
Indirect effects					
SOP – peer-victimisation - anxiety	-	-0.03	0.02	-	-0.08:0.00-
SPP – peer-victimisation - anxiety	-	0.07***	0.02	-	0.03:0.12
OOP – peer-victimisation - anxiety	-	0.04	0.03	-	-0.01:0.11
SOP – peer-victimisation - depression	-	-0.01	0.01	-	-0.05:0.00

Table 3 (continued)

The beta values, confidence intervals and level of significance for the regressions for the social disconnection model.

Predictor Variable	Outcome Variable	B	SE	β	CIs (95%)
SPP – peer-victimisation - depression	-	0.03	0.02	-	0.00:0.07
OOP – peer-victimisation - depression	-	0.02	0.01	-	0.00:-0.05

*p<.05, **p<.01, ***p<.001

Social Reaction Model

The social reaction model was then tested via a multiple regression (see Table 4). The variance for SOP, SPP and OOP are 1.2%, 8.5% and 5.5% respectively. To extend on the original social reaction model, maximum likelihood with 5000 bootstrapping was used to assess whether peer-victimisation predicted depression via OOP, SOP, and SPP as mediators. The findings showed that peer-victimisation predicted anxiety ($p<0.001$), OOP ($p<0.001$) and SPP ($p<0.001$), SOP predicted both anxiety and depression ($p<0.001$), and OOP predicted depression ($p<0.001$). The variances were 24.4% for depression, 1.2% for SOP, 5.4% for OOP and 8.5% for SPP. The analyses were then adapted to assess whether peer-victimisation predicted anxiety via OOP, SOP, and SPP as mediators, where no significant relationships were found. The variances were 26.9% for anxiety, 1.2% for SOP, 5.4% for OOP and 8.5% for SPP.

Table 4

The beta values, confidence intervals and level of significance for the multiple regressions and mediations between peer-victimisation, SOP, SPP and OOP.

Predictor Variable	Outcome Variable	B	SE	β	CIs (95%)
Direct paths					
Peer-Victimisation	Anxiety	0.37***	0.07	0.38***	0.25:0.50
Peer-Victimisation	Depression	0.16	0.09	0.27*	0.02:0.48
Path a					
Peer-Victimisation	SOP	0.20	0.16	0.11	-0.06:0.28
Peer-Victimisation	SPP	0.50***	0.11	0.29***	0.16:0.43
Peer-Victimisation	OOP	0.37***	0.14	0.23***	0.06:0.41
Path b					

SOP	Anxiety	0.18	0.05	0.33***	0.14:0.51

Table 4 (continued)

The beta values, confidence intervals and level of significance for the multiple regressions and mediations between peer-victimisation, SOP, SPP and OOP.

Predictor Variable	Outcome Variable	B	SE	β	CIs (95%)
SPP	Anxiety	0.04	0.06	0.08	-0.11:0.27
OOP	Anxiety	-0.09	0.06	-0.15	-0.33:0.04
SOP	Depression	0.10***	0.03	0.31***	0.14:0.48
SPP	Depression	0.07	0.04	0.19	0.00:0.40
OOP	Depression	-0.12***	0.04	-0.32***	-0.54:-0.11
Indirect effects					
Peer-victimisation – SPP – anxiety	-	0.00	0.03	-	-0.05:0.06
Peer-victimisation – SOP – anxiety	-	0.04	0.03	-	-0.02:0.11
Peer-victimisation – OOP – anxiety	-	-0.03	0.03	-	-0.10:0.01
Peer-victimisation – SPP – depression	-	0.02	0.02	-	-0.01:0.06
Peer-victimisation – SOP – depression	-	0.02	0.02	-	-0.01:0.07
Peer-victimisation – OOP - depression	-	0.04	0.02	-	-0.10:0.01

*p<.05, **p<.01, ***p<.001

Discussion

The aims of this study were to assess the social reaction and social disconnection models in a sample of undergraduate students. Overall, findings showed a significant relationship between peer-victimisation and anxiety and depression. Furthermore, anxiety was also associated with SOP, and depression was associated with SOP and OOP. Peer-victimisation was related to both OOP and SPP, however no significant mediational relationships were found, thus highlighting a lack of support for the extended social reaction model (Wilson, Hunter, Rasmussen & McGowan, 2015). However, partial support was provided for the social disconnection model as peer-victimisation was found to mediate the relationship between SPP and anxiety.

The prevalence of peer-victimisation

The findings showed that 81% of participants indicated that they had experienced at least one type of peer-victimisation. This prevalence rate is significantly higher than reported in the meta-analysis conducted by Lund and Ross (2017). This may be due to the method used to calculate prevalence across studies. The present study did not utilise a peer-victimisation scale which allowed prevalence to be calculated based on the scores for each question. To calculate prevalence, the present study identified a participant as a victim of peer-victimisation, if they had a score of at least one for at least one of the questions. This approach may be particularly sensitive to experiences of peer-victimisation, thus resulting in a higher prevalence rate.

The least common types of peer-victimisation experienced were physical victimisation such as being kicked or hit. This supports the suggestion that experiences of physical peer-victimisation decrease as individuals reach adulthood, due to the potential consequences an individual may face (Curwen, McNichol & Sharpe, 2011). It may be that individuals that otherwise may have shown physical aggression, resort to a discrete form of peer-victimisation such as indirect peer-victimisation. This is supported due to the present study finding that the most common types of peer-victimisation experienced were being

insulted, excluded and ignored, thus providing support that indirect peer-victimisation is the most commonly experienced type of victimisation in universities (Lund & Ross, 2017).

Peer-victimisation and mental health outcomes

The present study found significant results for the peer-victimisation and mental health relationships. As previously highlighted, there is a strong link between peer-victimisation and mental health issues such as anxiety and depression. Therefore, this relationship was analysed first. Due to the vast support for such a relationship within children (Schwartz, Gorman, Nakamoto & Toblin, 2005), adolescents (Sweeting, Young, West & Der, 2006) and in the workplace (Verkuil, Atasayi & Molendijk, 2015), this relationship is expected. The internalising risks model (Hoglund & Chisholm, 2014) provides an insight into why a relationship between peer-victimisation and mental health exists. It may be that existing mental health issues such as anxiety, create a vulnerability for the individual which exposes them to the risk of peer-victimisation; thus, leading to greater levels of anxiety and a cyclic relationship between peer-victimisation and anxiety. For example, Hoglund and Chisholm (2014) highlights that negative reactions may be experienced by children with anxiety due to the lack of social compatibility with non-anxious children. Therefore, the negative response from peers, and the potential social exclusion that goes with it, may lead the individual to being vulnerable to peer-victimisation. The experienced peer-victimisation may then lead to further symptoms of anxiety.

Perfectionism and mental health outcomes

The relationship between perfectionism and depression was then analysed. The results showed that both SOP and OOP predicted symptoms of depression, whilst SPP did not. There is a large research base supporting the relationship between SOP and depression (e.g. Hewitt & Flett, 1993). However, the research support for OOP predicting depression is currently debated, with research providing both support (e.g. Hewitt & Flett, 1990) and a lack of support for such relationship (e.g. Flett, Endler, Tassone & Hewitt, 1994). It may be that the significant relationship between OOP and depression arose

indirectly, as suggested by Hewitt and Flett (1993). As OOP has the potential to cause distress when peers are not meeting one's perfect standards, this may damage peer relations, thus leading to loneliness. As loneliness and depression have been found to be linked (Erzen & Çikrikci, 2018) it may be this mediational model that causes the relationship between OOP and depression.

Finally, whilst research generally provides support for a relationship between SPP and depression (e.g. Habke & Flynn, 2002), the present study did not. However, an explanation for this may arise from the type of perfectionism studied in this relationship. SPP is the belief that others expect one to be perfect (Hewitt & Flett, 1991a**)**, and therefore has a focus on other individuals rather than the self completely. It may be that the pressure to be perfect from others may only lead to symptoms to depression, when pressure is placed upon the self to be perfect, due to a potential lack of fulfilment of desires. For example, an individual with high levels of SPP, may have utilised mechanisms to cope with external pressures from other individuals, without it impacting their levels of depression.

The relationship between perfectionism and anxiety was then analysed. As expected, SOP was found to be a predictor of anxiety, which aligns with findings from previous research suggesting an existing relationship. For example, Hewitt and Flett (1991b) found similar findings in student samples. This relationship may be due to SOP concerning the self, and thus the pressure to be perfect amplifies symptoms of anxiety due to the fear that perfection cannot be achieved. Additionally, as expected, OOP was found to not be a predictor of anxiety, similarly to Flett, Endler, Tassone and Hewitt (1994). This is likely to be the case due to OOP focusing on others being perfect, rather than the self. Therefore, symptoms of anxiety are not expected to be impacted by focusing on their peers' levels of perfection.

The relationship between perfectionism and peer-victimisation

The relationship between perfectionism and peer-victimisation was examined. Specifically, the present study analysed whether perfectionism predicted peer-victimisation, and whether peer-victimisation predicted perfectionism.

Does peer-victimisation predict perfectionism?

The original social reaction model was first tested by analysing whether peer-victimisation predicted perfectionism. Partial support was provided for the model as peer-victimisation was found to predict both SPP and OOP. The present study found that peer-victimisation predicted SPP which is in line with previous research (e.g. Miller and Vaillancourt, 2007). This relationship may be significant due to victims of peer-victimisation believing that they are facing these experiences due to having flaws, and thus not being perfect. This would reinforce any thoughts that oneself is not perfect. Additionally, the present study found that peer-victimisation predicted high levels of OOP. This finding is interesting due to OOP often being associated with the perpetrator and aggressive behaviour (Stoeber & Hadjivassiliou, 2020). This finding may be reflective of the bully-victim role. Research has shown that there is often an overlap in the victim role and bully role in children, suggesting that some children may simultaneously experience peer-victimisation whilst directing aggression at other peers (Goldbach, Sterzing & Stuart, 2018). Therefore, the relationship between peer-victimisation and OOP may be intertwined with a possible relationship between perpetration and OOP in the present study's sample.

No relationship was found between peer-victimisation and SOP. Whilst Miller and Vaillancourt (2007) found support for a relationship between peer-victimisation and SOP, the present study found no such relationship. These differing findings may be due to different methods being utilised and different age ranges being studied. Miller and Vaillancourt (2007) analysed recalled experiences of peer-victimisation from childhood, whereas the present study analysed experiences of peer-victimisation in adulthood. It may be that there is a delay

on SOP being developed as an outcome of peer-victimisation, that the present study did not uncover due to the cross-sectional methodology utilised.

Does perfectionism predict peer-victimisation?

The reverse relationship between perfectionism and peer-victimisation was analysed. There was no significant relationship between OOP and peer-victimisation. Whilst Stoeber, Noland, Maweun, Henderson and Kent (2017) found that OOP correlated with general social disconnection, it may not be relevant to specific types of social disconnection, such as peer-victimisation. It may be that no relationship exists between OOP and being a victim of peer-victimisation, as OOP instead correlates with being a bully (Miller & Vaillancourt, 2007). There is research support for the relationship between OOP and aggression, therefore suggesting these individuals may be the aggressors rather than the victim (Stoeber & Hadjivassiliou, 2020). Additionally, there was also a lack of relationship between SOP and peer-victimisation. This finding is in line with findings reported by Stoeber (2017) which suggest no positive correlation between SOP and social disconnection (Stoeber, Noland, Maweun, Henderson & Kent, 2017). It may be that despite placing pressure on the self to be perfect, this pressure is self-contained and does not make the individual vulnerable to peer-victimisation.

Social Reaction Model

The extended social reaction model was then assessed. The extended version of the model highlights that the relationship between peer-victimisation and perfectionism can be expanded upon (Wilson, Hunter, Rasmussen & McGowan, 2015). Thus, the model suggests that the relationship between peer-victimisation and mental health outcomes is mediated by perfectionism. No support was provided for the extended social reaction model, as perfectionism did not mediate the relationship between peer-victimisation and anxiety and depression. The model was proposed by Wilson, Hunter, Rasmussen and McGowan (2015) with reference to children. Therefore, it may be that whilst this model is appropriate for samples of children, the effects of peer-victimisation and perfectionism minimise as an

individual reaches adulthood. This may be due to adults developing better coping mechanisms to avoid distressing situations (Diehl et al., 2014). For example, a coping mechanism may be students leaving their studies or transferring to a different higher educational establishment, to avoid experiences of peer-victimisation.

Social Disconnection Model

The social disconnection model was then analysed (Hewitt, Flett & Mikail, 2017). The theory differs from the social reaction model in that it focuses on the mediating role of peer-victimisation between perfectionism and mental health issues. As predicted, SPP was found to be a predictor of peer-victimisation, similarly to the findings suggested by Stoeber, Noland, Maweun, Henderson and Kent (2017). It is plausible that individuals receiving pressure from others to be perfect, may also be victims of peer-victimisation – potentially by the same individuals due to the potential for overlap in both scenarios. Furthermore, this relationship can be built up due to the significance of the mediational analysis and support provided for the social disconnection model. SPP was found to predict anxiety via peer-victimisation as a mediator. The relationship between these three variables can be explained by utilising research from Barnett and Johnson (2016). Barnett and Johnson (2016) found that high levels of SPP were related to interpersonal difficulties, potentially due to the relationships being impaired by unrealistic expectations to be perfect. It may be that the high levels of SPP cause a breakdown in relationships, which create a vulnerability to peer-victimisation, perhaps due to a lack of support network and loneliness. The combination of both SPP and peer-victimisation, then leads to worsening mental health issues such as anxiety.

As the relationship between SPP, peer-victimisation and anxiety was the only significant mediation, this means that all types of perfectionism did not predict depression via peer-victimisation, and SOP and OOP did not predict anxiety via peer-victimisation. There is a lack of research in this area, particularly with anxiety as the outcome variable, however the findings concerning depression as an outcome variable contrast with findings from similar

papers. For example, Sherry et al. (2013) found that perfectionistic concerns, which includes SPP, predicted depressive symptomology via interpersonal discrepancies. Additionally, Roxborough et al. (2012) found that social disconnection operationalised as peer-victimisation, mediated the relationship between SPP and SOP and suicide outcomes in children and adolescents.

Summary

To conclude, general support was provided for the original social reaction model, and partial support for the social disconnection model. It is clear from the findings of the present study that there are some significant relationships between the variables studied: peer-victimisation, perfectionism, anxiety, and depression. The social disconnection model was the only model to have a significant indirect effect, and therefore arguably the most supported model in the present study.

It is possible that another theoretical model or design may offer a greater insight into the relationship between these variables. The diathesis-stress model offers a similar theoretical model to the social disconnection model, however there is an emphasis on moderation analyses as opposed to mediation analyses. The diathesis-stress model highlights that individuals with high perfectionism scores are more likely to experience depressive symptoms, only where strong interpersonal stressors occur (Sherry, Mackinnon & Gautreau, 2016). Such stressors include those likely to involve and impact one's ego. It is possible that peer-victimisation may meet the criteria for such stressor, and therefore the relationships analysed in the present study, may provide an alternative insight via moderation analyses. Sherry, Mackinnon and Gautreau (2016) highlights that an integrated moderation-mediation analysis would provide a more in-depth analysis into the relevance and strength of both the social disconnection model and diathesis-stress model, and potentially lead to a combined model. Therefore, future research may look at furthering the analysis of the social disconnection model by utilising the proposed combined model with the diathesis-stress model, to further examine experiences of university students.

An alternative approach to the examined relationships in the present study may be the downward spiral model, which also offers similarities to the social disconnection model. The model posits that perfectionism leads to stressors which then leads to poorer mental health (Levine, Milyavskaya & Zuroff, 2019). Stressors may include experiences of peer-victimisation. This order of events then leads to further stressors and further detrimental mental health symptoms. Levine, Milyavskaya and Zuroff (2019) examined this model using a longitudinal design, and found support for the downward spiral model, in a sample of undergraduate students. Additionally, the paper found greater support for the downward spiral model when compared to the diathesis-stress model mentioned previously, suggesting that the downward spiral model may be a useful model to utilise in future research within this area.

Conclusion

Evaluation of the study

The present study offers several strengths with regards to the measures utilised for depression and perfectionism. Potential measures for perfectionism were collated and examined based on levels of reported reliability in similar studies. The short form version of the Hewitt-Flett Multi-Dimensional Perfectionism Scale was selected due to demonstrating the highest levels of reliability (Stoeber, 2018). In addition, the short form version was utilised due to containing fewer questions, thus reducing participant fatigue and participant drop out. A similar method was used to choose the most appropriate measure of depression. Upon examining the commonly used measures in the literature, the CES-D-10 short form was selected due to higher levels of reliability (Cole, Rabin, Smith & Kaufman, 2004).

The present study accounted for the length of time that students typically take to form relationships and peer relations. Data collection began approximately nine weeks into semester one of the academic year (estimated 29th September). Van Duijn, Zeggelink, Huisman, Stokman and Wasseur (2003) highlights that it takes between three and nine weeks for friendships to develop at university. Therefore, data collection was delayed until

nine weeks into a standard semester, with the assumption that the majority of universities' semester one starts before the end of September. This was to allow for peer relations to develop among students, particularly among first year students who will have had no previous interaction with their peers at university. This allowed time for any potential victimisation of students to develop.

The lack of full support for the social disconnection model and the social reaction model, may have arisen from the design the present study utilised. One study examining peer-victimisation in university students is by Kwan, Gordon, Minnich, Carter and Troop-Gordon (2017), who examined a possible bi-directional relationship between peer-victimisation and symptoms of eating disorders, using a longitudinal design. As previously mentioned, much of the research within this area examines how peer-victimisation leads to adjustment issues. However, Kwan, Gordon, Minnich, Carter and Troop-Gordon (2017) found that whilst peer-victimisation leads to symptoms of eating disorders eight weeks later; the symptoms further increase the levels of reported peer-victimisation, thus suggesting a cyclic relationship. In addition to the suggested bi-directional relationship between depressive symptomology and peer-victimisation, Hoglund and Chisholm (2014) also found support within a sample of children. Hoglund and Chisholm (2014) found that children with pre-existing internalizing problems, such as anxiety and depression, are often victims of aggressive behaviour which leads to worsened anxiety and depression. This suggests a cyclical pattern of peer-victimisation and mental health problems. However, research has also reported that this cyclic pattern has no support (e.g. Storch, Masia-Warner, Crisp & Klein, 2005). Therefore, this may produce a rational for future research utilising a longitudinal design, rather than a cross-sectional design that the present study used. A longitudinal design would allow researchers to see how relationships of assessed variables change over time. For example, an individual may need to have experienced peer-victimisation for a longer period of time to develop high levels of SOP. The present study fails to capture time frames and the potential development of the variables over the course of undergraduate

study. Adapting the present study to a longitudinal, cross-lagged method may be able to provide insight into the relationships between peer-victimisation, perfectionism and mental health over time; and whether greater support for either of the studied models is present.

There are several issues with the questionnaire used to measure peer-victimisation (Bjorkqvist,Osterman, & Kaukiainen, 1992). The measure was originally intended for samples of children, and then adapted by Owens, Daly and Slee (2005) to suit university samples. There is not currently a validated peer-victimisation scale for university students, therefore the adapted version offers suitability to studies into peer-victimisation at universities. The present study found a reliability score of 0.53 for the overall peer-victimisation score which is highlighted as “poor” by George and Mallery (2003), however it is not “unacceptable”. The low reliability score may be explained due to the questionnaire’s lack of reflection on university students’ experiences, and instead examines peer-victimisation experiences that children would typically experience. It would be ideal to develop a measure tailored to university students which demonstrates better levels of reliability. The poor reliability of a peer-victimisation scale initially intended for children, and adapted to university students, provides a rationale for future research developing a scale intended for university students. Such scale would allow for peer-victimisation to be explore more reliably in samples of university students.

The sample used in the present study highlights some issues. Firstly, almost half of the sample were in the third year of undergraduate study (45%). This means that the findings are perhaps more relevant to third year undergraduate students, as opposed to all undergraduate students. It may be that experiences and thus relationships between perfectionism, peer-victimisation and mental health vary between each year of study. For example, students that may have experienced more intense levels of peer-victimisation when attending university, may have left their course before they reach the final year of their studies. Additionally, 82.9% of the sample were female students. This gender imbalance may have caused bias in the findings. For example, whilst gender differences are not

present in similar studies examining university students, it is possible a gender difference was present in this study, thus creating bias in the findings. For example, the present study's findings showed that relational peer-victimisation was the common type of experienced peer-victimisation. Previous research has shown that girls typically experience this type of peer-victimisation more commonly, and therefore this pattern may continue into adulthood. As the present study's sample was predominately female, it may be that the findings are biased and may be different should there be a 50:50 gender balance within the sample.

Implications

Research has highlighted that student mental health is a growing concern (e.g., All Party Parliamentary Group on Students, 2015) and the present study adds to this growing research area as the analyses highlighted that peer-victimisation and perfectionism are predictors of mental health issues in students. The relationship between peer-victimisation and mental health highlights a requirement for universities to explore why peer-victimisation takes place in universities, and what additional support could be provided to students.

The present study provides an insight into why mental health issues may be present in the student population. While schools tend to be held accountable for aggression occurrences at school, universities and higher education establishments seem to diminish the responsibility, possibly due to the students being legal adults (Harrison, Fox & Hulme, 2020). The lack of support that victims of peer-victimisation receive, indicates that universities may not be providing sufficient support for students or may be unaware of the issues or actively ignoring them. The present study highlights that peer-victimisation occurs in higher education settings and has the potential to lead to unhealthy perfectionistic behaviours, in addition to mental health issues within undergraduate student populations.

The research into peer-victimisation highlights a need for anti-bullying policies and interventions within higher education. Schools generally implement anti-bullying policies, which have been found to be effective (e.g. Smith, Schneider, Smith & Ananiadou, 2004). Whilst some universities have a policy for such behaviour (Harrison, Fox & Hulme, 2020),

Campbell (2016) reported that students do not find the current format and utilisation helpful. Additionally, Harrison, Fox and Hulme (2020) found that many policies advised victims and perpetrators to resolve conflicts informally, and outside of university support. This finding suggests that universities are reluctant to intervene or provide support to victims of peer-victimisation, thus being the reason why many students do not seek university support for such experiences (National Union of Students, 2008). However, it has been recognised that implemented and effective anti-bullying policies are the first step to reducing and preventing peer-victimisation, therefore it is a key area that universities should focus on (Campbell, 2005; Campbell, 2016).

To conclude, partial support was provided for both the social reaction and social disconnection models. The significant relationships highlighted in the findings suggest that mental health issues in students are partially resulting from high levels of perfectionism and peer-victimisation experienced at university, thus highlighting a need for further research. However, further research may wish to utilise alternative theories and methods to build upon the present study. Additionally, it would be beneficial to validate a peer-victimisation scale designed for university students to enable a reliable analysis of experiences at university. Furthermore, the findings of the present study suggest a need for further rigorous anti-bullying policies to be developed and implemented by universities, to allow sufficient support for students experiencing peer-victimisation and mental health issues.

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Appendices

Appendix A

Ethical approval

York St John University,
Lord Mayors Walk,
York,
YO31 7EX

13th June 2019

York St John University Cross School Research Ethics Committee
(Health Sciences, Sport, Psychological and Social Sciences and Business)

Dear Ebony,

Title of study: Perfectionism and peer-victimisation
Ethics reference: Collier_13/06/2019
Date of submission: 06/05/2019

I am pleased to inform you that the above application for ethical review has been reviewed by the Cross School Research Ethics Committee and I can confirm a favourable ethical opinion on the basis of the information provided in the following documents:

Document	Date
Ethics form	06/05/2019

Please notify the committee if you intend to make any amendments to the original research as submitted at date of this approval, including changes to recruitment methodology or accompanying documentation. All changes must receive ethical approval prior to commencing your study.

Yours sincerely,
KMarsh-Davies

Dr Katy-Marsh Davies
Senior Lecturer, Business School

cc. [Nathalie Noret]

Appendix B

Participant Information Sheet

Participant Information Sheet

Name of school: Psychological & Social Sciences
Title of study: The relationship between peer-victimisation, perfectionism and mental health in UK university students

Introduction
I am Ebony Collier, a MSc by Research student at York St John University under the supervision of Nathalie Noret and Dr Sarah Mallinson-Howard.

What is the purpose of this investigation?
The aims of my study are to examine the relationship between peer-victimisation and perfectionism, and whether mental health issues impact this relationship. It has been chosen to examine this relationship amongst undergraduate students, due to the lack of research examining such sample.

Do you have to take part?
Participation is voluntary and you do not have to take part. If you take part and later wish to withdraw your data, you contact the researchers with your pseudonym, that we ask you for on the survey. Once you have completed the survey if you decide to withdraw, you have until the 1st March, 2020 to do so After this point the data will be anonymised and analysed for my research project.

What will you do in the project?
You will be asked to complete an online questionnaire regarding your experiences at university. At the end of the questionnaire, you will be invited to leave your email address, and be entered into a prize draw to win a £50 Amazon voucher.

Why have you been invited to take part?
This study aims to examine experiences amongst any individual aged 18+ that is currently studying at a UK university on an undergraduate courses, whether part-time or full-time.

What are the potential risks to you in taking part?
The questionnaire includes questions that are quite sensitive, and which some people might find upsetting. Contact details for support charities are provided at the end of the questionnaire if needed. If you would like to withdraw your data upon completion, please contact the researchers with your chosen pseudonym before March 1st 2020. Your data will then be destroyed.

What happens to the information in the project?
All information disclosed will remain anonymous and confidential; and data will be securely stored on a password protected computer at York St John University. Anonymised data will be stored on the York St John RAY data repository (https://ray.yorksj.ac.uk/).

Thank you for reading this information – please ask any questions if you are unsure about what is written here.

What happens next?

If you wish to participate then you will be asked to sign a consent form. Your right to withdraw will remain after signing the consent form.

After the experiment, you will be able to contact the researchers by email if you would like a summary of the findings once completed.

This investigation has been granted ethical approval by the York St John University Cross School Research Ethics Committee (Psychology, Sport, Health & Business).

Researcher contact details:

Ebony Collier
Psychological & Social Sciences
York St John University,
Lord Mayors Walk,
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YO31 7EX

Email: ebony.collier@yorksj.ac.uk

Nathalie Noret
Psychological & Social Sciences
York St John University,
Lord Mayors Walk,
York,
YO31 7EX

Email: n.noret@yorksj.ac.uk

If you have any questions/concerns, during or after the investigation, or wish to contact an independent person to whom any questions may be directed or further information may be sought from, please contact:

Nathalie Noret
Chair of the Cross School Research Ethics Committee (Psychology, Sport, Health & Business)
School of Psychological and Social Sciences,
York St John University,
Lord Mayors Walk,
York,
YO31 7EX

Email: n.noret@yorksj.ac.uk

Appendix C
Participant Consent Form

Consent Form

Name of school: Psychological & Social Sciences
Name of researcher: Ebony Collier
Title of study: The relationship between peer-victimisation, perfectionism and mental health in UK university students

Please read and complete this form carefully. If you are willing to participate in this study, ring the appropriate responses and sign and date the declaration at the end. If you do not understand anything and would like more information, please ask.

• I have had the research satisfactorily explained to me in verbal and / or written form by the researcher.	**YES / NO**
• I understand that the research will involve: a questionnaire taking no longer than 20 minutes to complete.	**YES / NO**
• I understand that I may withdraw from this study at any time without having to give an explanation. This will not affect my future care or treatment. The deadline for withdrawing your data is 1st March 2020.	**YES / NO**
• I understand that all information about me will be treated in strict confidence and that I will not be named in any written work arising from this study.	**YES / NO**
• I understand that any audiotape material of me will be used solely for research purposes and will be destroyed on completion of your research.	**YES / NO**
• I understand that you will be discussing the progress of your research with others …….. at York St John University	**YES / NO**
• I consent to being a participant in the project	**YES / NO**

(PRINT NAME)	
Signature of Participant:	Date:

Appendix D

Participant Questionnaire including Debrief

Questionnaire

Demographics

Are you an undergraduate student?: Yes, No

Gender: Female, Male, Other (please specify)

Age: (enter)

Year of undergraduate study: 1, 2, 3, 4+

Mode of study: Full time, part time

Pseudonym

To create your pseudonym please enter:

Your date of birth (DD) e.g. 7th January is 07:

The last 2 digits of your postcode:

The last letter of your surname:

Peer-Victimisation (Amended by Owens, Daly, and Slee, 2005)

How often has each of the following behaviours been directed at you, during the past four weeks? Use the scale below, where 0 is never, and 5 is very often.

1. Someone hits you
2. Someone kicks you
3. Someone trips you up
4. Someone shoves or pushes you
5. Someone takes your things
6. Someone yells at you
7. Someone calls you names
8. You are insulted by someone e.g. about your clothing or appearance
9. Someone teases you
10. Someone threatens you
11. Someone tells bad or false things about you e.g. rumours
12. You are left out or excluded from a group
13. Someone writes or spreads nasty notes about you
14. You receive nasty anonymous electronic messages from other students e.g. text messages or emails
15. Someone tells your secrets to other people e.g. breaking confidences
16. You receive prank telephone calls from other students
17. You are ignored
18. You are the subject to “daggers” or dirty looks

Depression (CES-D Short-Form)

Listed below are a number of statements relating to depressive symptoms. Please rate each answer in terms of how you have felt over the past MONTH.

Rarely or none of the time, some or little of the time, moderately or much of the time, most or all of the time

1. I felt my life had been a failure
2. I felt fearful
3. I felt that I was just as good as other people
4. People were unfriendly
5. I felt that I could not shake off the blues even with the help from my friends or family
6. I was bothered by things that usually don't bother me
7. I felt that everything I did was an effort
8. I felt hopeful about the future
9. I felt lonely
10. I had trouble keeping my mind on what I was doing

Anxiety (Generalised Anxiety Disorder Assessment – GAD 7)

In the past 2 weeks how often have you been bothered by any of the following problems. Use the scale below: 0 = Not at all, 1 = Several days, 2 = More than half the days, 3 = Nearly every day

1. Feeling nervous, anxious or on edge
2. Not being able to stop or control worrying
3. Worrying too much about different things
4. Trouble relaxing
5. Being so restless that it is hard to sit still
6. Becoming easily annoyed or irritable
7. Feeling afraid as if something might happen

Perfectionism (Multidimensional Perfectionism Scale (Short Form HFMPS)

Listed below are a number of statements concerning personal characteristics and traits. Read each item and decide whether you agree or disagree and to what extent. If you strongly agree, circle 7; if you strongly disagree, circle 1; if you feel somewhere in between, circle any one of the numbers between 1 and 7. If you feel neutral or undecided, the midpoint is 4.These questions are about the kind of person you generally are, that is, how you usually have felt or behaved over the past several years.

(Disagree) 1 – 7 (Agree)

1. One of my goals is to be perfect in everything I do
2. I strive to be as perfect as can be.
3. It is very important that I am perfect in everything I attempt
4. I demand nothing less than perfection of myself
5. I have a strong need to be perfect
6. The better I do, the better I am expected to do
7. Success means that I must work even harder to please others
8. My family expects me to be perfect
9. People expect nothing less than perfection from me
10. People expect more from me than I am capable of giving
11. Everything that others do must be of top-notch quality
12. I have high expectations for the people who are important to me
13. I can't be bothered with people who won't strive to better themselves
14. If I ask someone to do something I expect it to be done flawlessly
15. I cannot stand to see people close to me make mistakes

Thank you for completing this questionnaire. We understand that we have asked you some questions on some sensitive topics, if you would like some more information on these issues you can visit the following website:

http://www.bullying.co.uk/general-advice/bullying-at-university/

Alternatively, if you would like to talk to someone about your experiences, or any negative feelings you may currently be experiencing, you can contact the following:

The Samaritans

https://www.samaritans.org/search/node/bullying

jo@samaritans.org / 116 123

Mind

https://www.mind.org.uk/information-support/helplines/

0300 123 3393 or text 86463

Your university may also have support pages on the wellbeing or welfare pages, check on there for more information on who to go to for support.

Appendix E

Adapted Version of the DIAS (Owens, Daly and Slee, 2005)

How often has each of the following behaviours been directed at you, during the past four weeks? Use the scale below, where 0 is never, and 5 is very often.

Someone hits you

Someone kicks you

Someone trips you up

Someone shoves or pushes you

Someone takes your things

Someone yells at you

Someone calls you names

You are insulted by someone e.g. about your clothing or appearance

Someone teases you

Someone threatens you

Someone tells bad or false things about you e.g. rumours

You are left out or excluded from a group

Someone writes or spreads nasty notes about you

You receive nasty anonymous electronic messages from other students e.g. text messages or emails

Someone tells your secrets to other people e.g. breaking confidences

You receive prank telephone calls from other students

You are ignored

You are the subject to “daggers” or dirty looks