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Cyberbullying and self-esteem in Australian adults

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Abstract

Cyberbullying research is currently focused on identifying personal factors which increase the risk of an individual being involved in the behaviour. Recent findings indicate that within the web of cyberbullying culture a large group of individuals are both cyberbullies and victims. This group of cyberbully/victims has been shown to differ from pure cyberbullies or victims on various factors during adolescence; particularly self-esteem. However, little research to date has investigated cyberbullying behaviour in adults. The current study examined the prevalence of cyberbully typologies and their relationship with self-esteem within a convenience sample of 164 Australian young adults (72% being females; 17-25 years). Results found that the largest group identified were cyberbully/victims (62%), followed by individuals not involved (17%), cyberbullies (11%) and cybervictims (10%) respectively. The ratio of males and females in each of the four cyberbully typologies was similar. Contrary to previous research, all four cyberbully typologies reported similar levels of self-esteem. These findings suggest that research should examine cyberbullying behaviour across all age groups to determine if this is related to different factors in adolescence compared to adulthood. Limitations and future recommendations are discussed.

Keywords: cyberbullying, cybervictimisation, cyberbully typologies, self-esteem, adults

Introduction

Cyberbullying is a pervasive behaviour which has come to the attention of researchers and the media over the last decade. As a growing field, cyberbullying research has explored various aspects of the behaviour; with a focus on the personal and demographic factors of individuals involved. In particular, research has been centred on these factors within the adolescent population; where all forms of bullying are most prevalent (Carney & Merrell, 2001; Eslea & Rees, 2001). However, it remains important to study other populations where the behaviour might not be so common (e.g. adults) in order to evaluate the generalisation of the findings from previous studies. Many of the personal factors studied in association with cyberbullying in adolescence, for example self-esteem levels, have previously been found to change with age (Robins, Trzesniewski, Tracy, Gosling & Potter, 2002). It is therefore necessary to determine whether these factors remain related to cyberbullying behaviour across differing age groups. Furthermore, while cyberbullying research into adult populations is slowly increasing, studies have been inclined to examine only whether an individual can be identified solely as a cyberbully or cybervictim (Zacchilli & Valerio, 2011). In contrast, most research with adolescents distinguishes several different cyber-identities, which allows for a much deeper understanding of the behaviour. This paper examines four cyber-identities (cyber-bully, -victim, -bully/victim, and non-involved) in young adults, as well as how self-esteem relates to these identities.

A broad definition provided by Smith et al. (2008) states that cyberbullying is "an aggressive, intentional act carried out by a group or individual using electronic forms of contact, repeatedly and over time against a victim who cannot easily defend him or herself" (p. 366). This definition is similar to that of traditional offline bullying (physical, verbal and relational bullying) and consists of three main components which distinguish acts of bullying from acts of harassment or assault (Sevcikova & Smahel, 2009). Specifically, an act of bullying needs to include aggressive behaviour, a recognisable imbalance of power between the bully and the victim, and the act needs to be repeated over a short period of time (Newey & Magson, 2010). However, applying this definition to cyberbullying has raised debate over whether cyberbullying is an extension of traditional bullying featuring the same components (Beran & Li, 2005), or a distinct behaviour with unique characteristics (Ybarra, Diener-West & Leaf, 2007). Despite the contention, clear consensus exists over the range of activities and methods involved in cyberbullying.

Cyberbullying can be perpetrated over a large number of technological mediums, including: social networking media (e.g. Facebook, Twitter), email, instant messaging, text messaging, pictures or videos taken via mobile phones/webcams, chat rooms or forums, and many other types of websites (Smith, Mahdavi, Carvalho & Tippett, 2006). Additionally, cyberbullying is not limited to simply sending hurtful or insulting messages; it encompasses a range of behaviours, from publicly revealing personal information about someone, to creating a fake persona in order to gain information or humiliate a victim (Willard, 2005). Furthermore, research has determined that these are not just simply cyberbullies and cybervictims. Instead, cyberbullying consists of several identities, sometimes known as typologies, which address the different roles that individuals take on in relation to cyberbullying.

Olweus (1997) first introduced the idea of types of bullies, and suggested that bullying should be examined along a continuum which accounts for different groups of bullies, victims and bystanders. The use of typologies within cyberbullying literature has changed somewhat from Olweus' original categorisation, with variation present across studies. A common finding is that there appear to be four main types of persons involved in cyberbullying: pure cyberbullies, pure cybervictims, cyberbully/victims, and those who have neither cyberbullied nor been cybervictimised (Florell & Wygant, 2013; Kowlaski, Morgan & Limber, 2012). In offline bullying, the largest group often appear to be the pure victims; individuals who have been bullied but have never perpetrated bullying behaviours themselves (Raskauskas & Stoltz, 2007). In contrast, bully/victims, those individuals who both bully and are bullied, often represent one of the largest identified groups in relation to cyberbullying (Florell & Wygant, 2013; Li, 2007). Many studies report a large overlap between cyberbullying and cybervictimisation; with Law, Shapka, Hymel, Olson and Waterhouse (2012) identifying a single factor consisting of combined cyberbullying/victimisation in comparison to separate offline bullying and offline victimisation factors. Few explanations for this finding have been offered within the literature; however, it follows logically that there are characteristics of this cyberbully/victim group which encourage higher involvement with cyberbullying.

Overall estimates of the prevalence of cyberbullying vary, with studies reporting that between 20-40% of school-aged children and adolescents have experienced cyberbullying as victims (Tokunaga, 2010), while approximately 2-21% self-report being a cyberbully (Livingstone, Haddon, Gorzig & Olafsson, 2011; Raskauskas & Stoltz, 2007). While there is the suggestion that cyberbullying behaviour decreases with age (Sevcikova & Smahel, 2009), this has typically been demonstrated within adolescent samples; with cyberbullying increasing through the middle teenage years before declining in the last years before adulthood (Slonje & Smith, 2008; Ybarra & Mitchell, 2004). Furthermore, studies with adult samples typically use different methodologies (Zacchilli & Valerio, 2011) or include much wider age ranges (Sevcikova & Smahel, 2009) than seen in adolescent samples, which make it difficult to assess the validity of this suggestion. For example, within a non-adolescent population, Sevcikova and Smahel (2009) found that approximately 35% of adults identified as victims of cyberbullying (out of 993 adults aged over 20 years). In contrast, a study of Australian adult males by Privitera and Campbell (2009), found that only 10.7% reported being cyberbullied in the workplace. In regards to being a cyberbully, Zacchilli and Valerio (2011) reported that only 3.6% of adult college students identified as having engaged in bullying behaviour while at college, while approximately 20% of all adults in Hoff and Mitchell's (2009) study reported cyberbullying behaviour; with the majority of those adults being under 35 years. There are few studies addressing cyberbullying in adults, however it is clear that findings vary widely amongst those that do. The current study utilises a young adult population with a small age range, and a measure of cyberbullying behaviour validated with adolescents.

The relationship between cyberbullying and gender has also not shown a clear trend. Research on offline bullying has consistently shown that males are more likely to engage in physical bullying (Card, Stucky, Sawalani & Little, 2008), while females are more often involved in relational bullying; which includes gossiping and the exclusion of others (Crick & Bigbee, 1998). It has, therefore, often been theorised that girls are more likely than males to be cyberbullies due to the relational style of cyberbullying (Keith & Martin, 2005). Hinduja and Patchin (2009) also suggested that the disinhibition afforded by online communication could allow girls to be more aggressive than they would be in offline interactions. In contrast to this theory, several studies have found that males are more likely to self-report as cyberbullies than girls (Erdur-Baker & Kavsut, 2007; Mitchell, Finkelhor & Wolak, 2004); while a comparable number of studies have also found no significant difference in the gender of cyberbullies (Smith et al., 2008; Zacchilli & Valerio, 2011). However, the majority of studies examining gender and cyberbullying target adolescents, and may be limited by the perceived social consequences associated with reporting cyberbullying behaviour (Raskauskas & Stoltz, 2007).

Self-esteem is a commonly studied factor within cyberbullying research, and one which may be able to point to the differences between cyberbullies, victims and bully/victims. Conceptualised as one's feelings of self-worth (Rosenberg, 1986), self-esteem has been found to be lower in adolescent victims of bullying and cyberbullying (Perren, Dooley, Shaw & Cross, 2010). Research by Brighi et al. (2012) found that severe cyberbullying was more strongly linked to lower levels of adolescent self-esteem than only occasional cyberbullying; with victims who experienced both traditional and cyberbullying reporting the lowest levels. However, this pattern has not been consistently found in traditional or cyberbullies (Patchin & Hinduja, 2010). Studies examining the relationship between bully/victim status and psychological distress have shown that individuals involved in any type of bullying behaviour are often at higher risk for feelings of hopelessness, depression and anxiety (Harmen, Hansen, Cochran & Lindsey, 2005; Roland, 2002). Perren, Dooley, Shaw and Cross (2010) investigated depressive symptoms in adolescents and identified traditional and

cybervictims, as well as traditional bully/victims, as reporting higher levels of negative symptoms (cyberbully/victims were not included in the analyses).These findings indirectly support the suggestion that cyberbullies should possess low levels of self-esteem, similar to cybervictims.

However, other findings would seem to contradict this suggestion. In a study investigating the predictive utility of loneliness, Sahin (2012) found that feelings of loneliness successfully predicted cybervictimisation but not cyberbullying. This would indicate that the mechanisms of cyberbullying and victimisation are somehow intrinsically different, yet many studies (including Sahin's) continue to identify a strong correlation between cyberbullying and victimisation (Law, Shapka, Hymel, Olson & Waterhouse, 2012). One possible aspect which may provide insight into the relationship between perpetration and victimisation is the role of cyberbully/victims. The nature of electronic communication and media is conducive for reduced behavioural restraint, and it could be that individuals with low self-esteem are able to take on more powerful roles online than in face-to-face interactions without necessarily exhibiting the distinctive features of a cyberbully. This could certainly offer explanation for the increase in cyberbully/victims, with victims able to more easily step into the role of cyberbully to take revenge or to assert themselves online. With consideration to the finding that traditional bully/victims report the lowest levels of self-esteem (Brighi et al., 2012), it is possible that cyberbully/victims also possess self-esteem levels more closely related to pure cybervictims. Therefore, it is important to examine the levels of self-esteem within the different cyber-identities in order to establish whether there is indeed a pattern whereby differential involvement in cyberbullying is linked to lower self-esteem.

Furthermore, research has consistently shown that, on average, self-esteem declines during adolescence before increasing steadily up until late adulthood (Robins, Trzesniewski, Tracy, Gosling & Potter, 2002). Longitudinal studies have shown that adulthood is generally indicative of higher, and more stable, levels of self-esteem; with these levels remaining consistently higher than those found during adolescence (Trzesniewski, Donnellan & Robins, 2003). Therefore it is necessary to examine the relationship between self-esteem and cyberbullying in all stages of adulthood, in order to determine its consistency. Additionally, gender differences are also often reported in regards to self-esteem; with males considered to report higher self-esteem than girls, particularly during adolescence (Robins & Trzesniewski, 2005). Given the above-noted gender discrepancies within cyberbullying research, it is important to consider the proportion of males and females within research samples when the focus is on gender-influenced variables such as self-esteem.

The current study aims to investigate the presence of cyberbully typologies and their relation to self-esteem in a sample of young Australian adults. Firstly, it is predicted that rates of cyberbullying and cybervictimisation will be similar to those found previously in adolescents; with more individuals identifying as cyberbully/victims than as pure cyberbullies or cybervictims, in line with Florell and Wygant (2013). Bullying and victimisation scores are also expected to differ between the typologies; specifically that cyberbully/victims will report a higher rate of bullying and victimisation than pure cyberbullies or cybervictims. The rate of cyberbullying and victimisation is predicted to decrease with age. Contrary to Smith et al. (2008), there will be a difference in the rate of cyberbullying and victimisation between males and females. Finally, it is hypothesised that there will be differences in self-esteem between the four cyberbully types. The cyberbully/victim group is expected to exhibit the lowest level of self-esteem, followed by the cyberbully and cybervictim groups. The group of non-involved individuals is predicted to have the highest level of self-esteem.

Method

An online survey featuring demographic questions, a cyberbullying questionnaire and a self-esteem measure was responded to by a self-selected, convenience sample. The study relied upon a snowball effect for recruitment, as well as on-campus advertising (visiting lectures and word-of-mouth) at two regional Australian universities. Advertising for the study highlighted that the study was investigating the link between cyberbullying behaviour and several common personality variables.

Participants

Participants were Australian males (n = 46, 28%) and females (n = 118, 72%) aged between 17 and 25 years of age (M = 19.5, SD = 2.21). The Queensland schooling system allows for first year undergraduate students to be aged 17 years. Any participants in this study aged 17 were considered to be young adults due to their enrolment at university. Participants were recruited mainly via a university research participation website and social networking websites resulting in a sample largely based in regional Queensland, Australia.

Materials

Revised Cyber Bullying Inventory (RCBI). Devised by Erdur-Baker and Kavsut (2007, in Topcu & Erdur-Baker, 2010) the RCBI is a 28 item self-report measure with a 4-point Likert scale which requires the participant to respond to two subscales: first if they have performed the fourteen listed behaviours (Bully scale), and second, if others have used

the behaviours against them (Victim scale) during the previous twelve months. Behaviours included in the questionnaire relate to aggressive email, mobile phone, social networking, and general computer usage. Summed scores range from 14-56 with higher scores indicating more frequent cyberbullying or victimisation. The RCBI has been found to have strong reliability with Cronbach coefficients at .92 for the Bully scale and .80 for the Victim scale. It also provides higher construct validity than similar scales by assessing fourteen specific instances of behaviour, rather than singular global measures of bullying behaviour (Topcu & Erdur-Baker, 2010). For this sample, the Bully scale was calculated to have a Cronbach coefficient of .79; while the Victim scale had a coefficient of .86.

Rosenberg Self-esteem Scale (RSES). Developed by Rosenberg (1989), the RSES features 10 items, a 4-point Likert scale and is one of the most commonly used self-report measures of self-esteem in both research and clinical settings. Summed scores on the RSES range from 10-40, with a mean score ranging from 29.67 to 31.07 for a population of young adults aged 18-25 years. It has repeatedly been found to have high validity and high reliability, with Cronbach coefficient scores ranging from .84 to .95 (Sinclair et al., 2010). For this sample, the Cronbach coefficient was determined to be .91.

Procedure

Upon recruitment, participants were issued a secure web address for the online questionnaire. Participants were free to withdraw from the study without penalty at any time during the completion of the questionnaire by simply exiting the browser window. Participants were able to complete the questionnaire in a location of their choice and there was no time limit for completion. All responses were anonymous, and the questionnaire remained open for participation during a two-month period.

Results

Descriptives

Within the sample, a large number of participants reported being victims of at least one instance of aggressive cyber-behaviour in the previous twelve months (n = 117, 71%), while an equally large group reported having cyberbullied others at least once in the previous twelve months (n = 119, 72%).

Based on the RCBI sub-scale scores, participants were categorised into the following groups: cyberbullies, victims, bully/victims, and non-involved. To classify as a cyberbully or cybervictim, individuals needed to have reported engaging in or experiencing at least one of the fourteen behaviours (on the bully or victim scale respectively) on two or more occasions. A single behaviour on one occasion was not considered to be cyberbullying or cybervictimisation, as the operationalised definition of cyberbullying requires the behaviour to be repeated. Those in the cyberbully/victim group were required to meet the criteria for both a bully and a victim. The fourth group, the non-involved individuals, reported either a single behaviour on a single occasion on either scale, or reported never having engaged in or experienced any of the behaviours. However, the RCBI did not further distinguish between individuals who may have observed acts of cyberbullying; whom are often referred to as bystanders in previous studies. The classification process resulted in the following groups: Bullies (n = 18, 11%), Victims (n = 16, 10%), Bully/Victims (n = 101, 62%), Non-Involved (n = 29, 17%). A Chi-Square Goodness of Fit confirmed that the four groups were not equally represented in size χ^2 (3, N =164) = 119.46, p < .001).

Hypothesis: Cyberbully Status

As the RCBI data did not meet the assumptions of normality for an Independent t-test, a Mann-Whitney U test was used to compare the Bully group and Bully/Victim group on the overall Cyberbully Score from the RCBI. A small significant difference was found, with the Bully/Victim group reporting significantly higher cyberbullying scores (U = 430, z = -3.58, p < .001, r = .33). A second Mann-Whitney U test was utilised to compare the Victim group and the Bully/Victim group on the overall Cybervictim score from the RCBI. Again, the Bully/Victim group scored significantly higher than the Victim group (U = 556.5, z = -2.01, p < 0.05, r = .18). Additionally, a Pearson's Product Moment correlation revealed that being classified as a Cyberbully was moderately and positively associated with being classified as a Cybervictim (r = .71, p < .001).

Hypothesis: Age and Gender

A Pearson's correlation was conducted to examine the relationship between overall cyberbullying score on the RCBI and age. The analysis revealed no significant correlation (r = -.09, p = .24). A second correlation was used to examine the relationship between overall cybervictim score on the RCBI and age. Again, no significant correlation was identified (r = -.14, p = .07). A Chi-Square Test of Independence was used to determine if there were differences in the number of males and females in each cyberbully group; however there were no significant differences in the ratio of males and females in each of the four cyberbully groups χ^2 (3, N =164) = 1.61, p = .66.

Hypothesis: Self-Esteem and Cyberbullying

A One-Way ANOVA was conducted to compare the mean level of self-esteem between the four cyberbully types. No significant differences were identified between the Cyberbully ($n = 17$, $M = 30.06$, $SD = 6.07$), Cybervictim ($n = 16$, $M = 31.56$, $SD = 5.4$), Cyberbully/Victim ($n = 101$, $M = 28.18$, $SD = 5.91$), and Non-Involved groups ($n = 29$, $M = 28.0$, $SD = 5.64$).

Types of Cybervictimisation Behaviours Reported

Frequency tables were produced in order to examine the frequency of the fourteen different cybervictimisation behaviours reported by the Victim and Bully/Victim groups. Cybervictimisation behaviours were classified as Common, Occasional or Rare based on the percentage of participants in each group who reported experiencing the behaviours at least two or more times. The most common behaviours identified by both the Victim and Bully/Victim groups were: online insults; online exclusion; being made fun of online; receiving threatening or hurtful text messages; and having an embarrassing photo published online without permission.

Cybervictimisation behaviours which were reported to a lesser extent included: online threatening; having private internet conversations shared publically without permission; and receiving threatening or hurtful emails. Finally, behaviours which were not reported, or rarely reported, included: stealing of personal information; stealing of nicknames/screen names; stealing email access to either block the owner's access or to read personal messages; having fake and slanderous photos posted online; and being misled by a fake persona. Table 1 shows the total frequency of cybervictimisation behaviours as reported by all participants; whilst Table 2 presents the total frequency of reported cyberbullying behaviours.

Severity of Bully/Victim Involvement and Self-Esteem

As the Bully/Victim group was both substantially larger than all three other groups, and reported higher mean scores for both the Bully and Victim subscales of the RCBI, further investigation of this group was conducted. The group was further classified into two subgroups, based on the severity of involvement as a Bully/Victim. The Mild-Involvement subgroup contained participants who scored between 28 (minimum score of combined RCBI subscales) and 52 (cut-off score obtained by examining scores identified as extreme during normality checks); whilst the Severe-Involvement subgroup contained participants who scored between 54 and 84 (maximum score of combined RCBI subscales).

Table 1. Total frequency of cybervictimisation behaviour as reported by all participants.

Cybervictim Behaviour	0	1	2-3	>3
Stealing of personal information from computer (like files, email addresses, pictures, IM messages, or Facebook info)	147	12	4	1
Stealing of computer nicknames or screen names	155	5	3	1
Threatening in online forums (like chat rooms, Facebook or twitter)	138	13	9	4
Insulting in online forums (like chat rooms, Facebook or twitter)	118	21	20	5
Excluding in online forums by blocking others' comments or removing them	120	24	16	4
Slander by posting fake photos on the internet	151	4	8	1
Sharing private internet conversations without the other's knowledge (such as chatting with a friend on Skype with other(s) in the room)	131	13	13	7
Making fun of comments in online forums (such as Facebook)	101	27	26	10
Sending threatening or hurtful comments through email	138	16	8	2
Stealing email access (usernames and passwords) and blocking true owner's access	153	8	2	1
Stealing email access and reading personal messages	143	13	6	2
Sending threatening and or hurtful text messages	123	21	14	6
Misleading by pretending to be other gender (male/female)	154	5	3	2
Published online an embarrassing photo without permission	117	26	15	6

Note: Total frequency of cybervictim behaviours in response to *"How often have the instances described happened to you?"* 0 = Never; 1 = Once; 2-3 = Two or Three Times; >3 = More than Three Times

Table 2. Total frequency of cyberbullying behaviour as reported by all participants.

Cyberbully Behaviour	0	1	2-3	>3
Stealing of personal information from computer (like files, email addresses, pictures, IM messages, or Facebook info)	141	17	3	3
Stealing of computer nicknames or screen names	151	9	2	2
Threatening in online forums (like chat rooms, Facebook or twitter)	150	11	3	0
Insulting in online forums (like chat rooms, Facebook or twitter)	126	19	15	4
Excluding in online forums by blocking others' comments or removing them	104	28	25	7
Slander by posting fake photos on the internet	156	6	1	1
Sharing private internet conversations without the other's knowledge (such as chatting with a friend on Skype with other(s) in the room)	130	19	9	6
Making fun of comments in online forums (such as Facebook)	77	30	41	16
Sending threatening or hurtful comments through email	156	5	3	0
Stealing email access (usernames and passwords) and blocking true owner's access	157	4	2	1
Stealing email access and reading personal messages	143	12	4	5
Sending threatening and or hurtful text messages	139	13	12	0
Misleading by pretending to be other gender (male/female)	155	5	2	2
Published online an embarrassing photo without permission	138	21	3	2

Note: Total frequency of cybervictim behaviours in response to *"How often have you done the instances described to others?"* *0* = Never; *1* = Once; *2-3* = Two or Three Times; *>3* = More than Three Times

A Mann-Whitney U Test was used to compare the mean level of Self-Esteem between the Mild- and Severe-Involvement Bully/Victim subgroups. No significant difference in Self-Esteem was identified between the Mild-Involvement (n = 90) and Severe-Involvement (n = 11) groups, (U = 426, z = -.75, p = .45, r = -.07).

Discussion

The aim of the current study was to examine the relationship between cyberbully status and self-esteem in young adults. As expected, the categorisation of individuals into four cyberbully groups revealed prevalence rates similar to those observed in adolescent research. Specifically, groups consisting of pure cyberbullies (11%) and cybervictims (10%) remained relatively small in comparison to the overall sample; while the group of non-involved individuals (17%) was slightly larger. The largest group identified in this study was that of the cyberbully/victims (62%); individuals who had engaged in cyberbullying behaviour as well as being targeted themselves. This finding supports the suggestion that the nature of online communication, and by extension cyberbullying, allows for individuals who traditionally lack social power to become more assertive through mobile or internet communication (Hinduja & Patchin, 2009).

It was further predicted that the cyberbully/victim group would feature stronger bully and victim characteristics than the isolated cyberbully and cybervictims groups. The results supported this prediction, with cyberbully/victims reporting the highest bully and victim scores. This indicates that individuals in this group may be more likely to be caught in the bully cycle. It suggests that there are some additional characteristics of this group which increase their likelihood of perpetrating bullying behaviour, as well as being more often targeted by others. Exploration of what these additional factors may be has been observed in recent research; with studies examining factors including moral behaviour (Menesini, Nocentini & Camodeca, 2013), friendship networks (Festl & Quandt, 2013) and empathy (Ang & Goh, 2010).

Contrary to the prediction that cyberbullying and cybervictimisation rates would decrease with age, the results revealed that cyberbullying behaviour did not differ between individuals at the lower or higher end of the age range. However, the sample utilised featured young adults with an age range of eight years. This range may not be large enough to

detect the typically observed decrease in cyberbullying behaviour; particularly as current young Australian adults have been familiar with online communication methods for many years. No gender difference in relation to cyberbullying behaviour was observed. Male and female young adults were as likely to be cyberbullies, cybervictims or not-involved in any cyberbullying behaviour. These findings support various studies which have also reported similar rates of behaviour across both genders (Smith et al., 2008; Zacchilli & Valerio, 2011).

In relation to self-esteem, it was surprising that there were no significant differences between the four bully groups. It was of interest that those individuals not involved in cyberbullying behaviour demonstrated similar levels of self-esteem to those individuals who were classified as cyberbullies or cybervictims. However, closer inspection of the sample's overall self-esteem scores revealed that all four groups still reported levels of self-esteem considered to be average for young adults (Sinclair et al., 2010). In addition, few participants reported extremely high rates of cyberbullying or cybervictimisation; which was further demonstrated through the examination of the Bully/Victim group. Most Bully/Victims could be classified as experiencing mild involvement; with a small group of individuals reporting noticeably high cyberbully and victim behaviour. Therefore, this finding suggests that in young adulthood, infrequent or moderate cyberbullying may not produce as dramatic variability in self-esteem as severe cyberbullying possibly could.

In 2012, Ortega et al. suggested that when examining victims and bullies it is important to distinguish between those individuals who report only mild or moderate distress from individuals who suffer severe distress as a result of bullying. Further investigation into the types of cybervictimisation behaviours reported by the Victims and Bully/Victims revealed that the most common behaviours were flaming or denigration (insults or being made fun of) and exclusion. In contrast, the behaviours which were rarely reported by participants can be classified as cyberstalking, trickery and impersonation. It may be the case that flaming and exclusion are commonly experienced by online users, and may be perceived as less hurtful or distressing by young adults in comparison to more serious cases of stalking and impersonation (which may carry criminal charges in Australia).

Furthermore, research has shown that there are numerous positive effects of using the internet or mobile communication (Shaw & Gant, 2002). It could also be the case that young adults approach internet usage with more maturity than adolescents, thus the positive effects of online communication could better negate the potential detrimental effects. Alternatively, it may be a result of no longer spending a significant amount of time in a secondary school environment where one sees the same group of people every day, regardless of whether they share a good relationship.

This study featured several limitations in regards to methodology, sample and conceptualisation. Firstly, as noted by Tokunaga (2010) the cross-study comparison of prevalence rates are hindered by the various measurement methods employed by researchers. While this study utilised a reliable and validated measure of cyberbullying, the timeframe included in the measure (twelve months) differs from other studies where it is often common to report behaviour from the previous two or three months. This will undoubtedly impact on the rates of cyberbullying behaviour being reported throughout the literature.

Secondly, aspects of the definition of cyberbullying behaviour are still debated within the literature and this debate is evident in the measurement methods utilised by different studies. Specifically some studies may include single occurrences of bullying behaviour within their results, whilst other studies, including this one, dictate that only occurrences above a certain number should be counted. This discrepancy requires further examination in order to ensure that this field of research progresses instead of remaining entangled in a definitional and measurement quagmire. Thirdly, the sample for this study was limited largely to a regional area and targeted university students as the main method of recruitment. As it is accepted that university students are not representative of the general population, caution should be used when extracting the current results (Gordon, Slade & Schmitt, 1986).

Finally, the measure of cyberbullying used within this study did not allow for distinction between those individuals not-involved in cyberbullying and those who have previously filled the role of bystander to an act of cyberbullying. While several participants within this study's Non-Involved group reported a single instance of cyberbullying or victimisation, it is entirely possible that other members of the group have observed cyberbullying behaviour without necessarily being involved. Given the very public nature of most online communication, it would be of great benefit to study what effect witnessing cyberbullying may have on a bystander. As previous studies suggest that any involvement in bullying places an individual at risk of hopelessness, depression and anxiety, it is important to determine whether this extends to bystanders (Harmen, Hansen, Cochran & Lindsey, 2005; Roland, 2002). Further development of cyberbullying measures which include an aspect of bystander behaviour should be encouraged.

Despite its limitations, this study has implications for the direction of further research in the cyberbullying field. Specifically, randomly selected community samples are worthy of investigation. Consideration should also be given to other personality variables, for example impulsivity, self-awareness and self-control, and how they are related to cyberbullying across varying age groups.

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