
PREDICTING RESILIENCE AFTER CYBERBULLY VICTIMIZATION AMONG HIGH SCHOOL STUDENTS

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Abstract

The current study was conducted to better understand cyberbullying and resilience among a high school student population. Prior studies have identified factors which may increase an individual's resilience, but few studies have explored the direct connection between cyberbully victimization in adolescents and subsequent resilience. This study utilized a survey of scales to measure cyberbullying and resilience, and was completed by 62 high school students between the ages of 14 and 18. Results suggest that self-reported cyberbullying was predictive of personal competence, structured style, and family cohesion. Discussion of these findings and limitations of the study are noted.

Keywords: bullying; resilience; cyberbullying; adolescents

Introduction

Recently, research has increasingly focused on bullying and its recurring presence in schools and the workplace. One aspect of this research has explored the effects bullying has on the adolescent population. In 2009, 19.9% of students reported being bullied on school property within the previous twelve months, with the average being slightly higher for girls than for boys (Eaton et al., 2010).

Definitions of bullying vary, yet there are overarching concepts between definitions that are present across prior studies. Olweus (2011), for

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example, identified three common concepts which he believes most practitioners have accepted: that bullying is (a) purposeful behavior which is adverse in nature, (b) usually takes place more than once, and (c) the intended victim is usually one who has trouble withstanding the bullying. The Centers for Disease Control and Prevention (2014) describes bullying as unsolicited behavior, combative in nature, that is experienced by a young person (or group) who is neither related to nor currently dating the aggressor(s). Bullying research to date has distinguished two categories of bullying, that of traditional bullying and cyberbullying, the latter identified by the use of technology to engage in bullying. Before the introduction and widespread use of cellular phones, the internet, and social media, cyberbullying was non-existent. Research has only recently identified cyberbullying as a new phenomenon (Carvalho, Fisher, Mahdavi, Russell, Smith, & Tippett, 2008).

There may be factors which increase an individual's risk for bully victimization. For example, an individual who is at risk may feel socially isolated and lack basic support. Adolescents who are at increased risk of being bully victims may have low self-esteem, have poor relationships with peers, or be described by others as "quiet" (CDC, 2014). People who do not possess these characteristics can also be bullied. Being the victim of bullying may put an individual at risk for negative outcomes including physical harm and emotional harm. Victims may also undergo physical or psychological harm as well. Adolescents who are victimized may be at an increased risk for poor mental health functioning, headaches, anxiety, and depression (CDC, 2014). Bannink, Broeren, de Waart, Raat, and van de Looij-Jansen (2014) as well as the CDC (2014) also note the linkage between being an adolescent bully victim in relation to mental health concerns and suicide.

Cyberbullying

Technology is prominent in modern society. With increasing technological advancements, a larger part of the population has access to the internet. With increasing access to the internet, the realms where bullying may take place have also expanded. Cyberbullying is often described similarly to traditional bullying (Hinduja & Patchin, 2010) but uses technology (i.e. mobile phones, e-mail, the internet) to carry out harmful acts (Brighi, Elipe, Genta, Guarini, Mora-Merchán, Ortega, & Tippett, 2012). There are now a growing number of social media websites that could potentially act as an avenue for

bullying activity including Facebook, Twitter, and Instagram. One factor which may encourage individuals to engage in cyberbullying rather than traditional bullying is that the interaction does not occur face to face. Cyberbullying combines both the anonymity of indirect bullying as well as the targeted attack seen with direct bullying (Carvalho et al., 2008). Carvalho et al. (2008) found that roughly five to ten percent of students had been victims of cyberbullying within their last school term. Although their findings suggest cyberbullying occurs less frequently than traditional bullying, the authors note the possibility of underreporting by participants. Carvalho et al. (2008) pointed out that although the duration of cyberbullying is generally shorter than traditional bullying, this does not mean there is any less of a negative impact. The authors suggested that although cyberbullies are less likely to receive a response from the victim, they may receive some sort of gratifying response from their peers.

Measuring cyberbullying is a rather new phenomenon due to an abundance of technological advancements in a relatively short period of time. Bannink et al. (2014) point out that there is currently no universal way scientists measure cyberbullying. Brighi et al. (2012) utilize the DAPHNE questionnaire, a previously developed scale (as cited in Genta, Smith, Ortega, Brighi, Guarini, Thompson, Tipett, Mora-Merchan, & Calmaestra, 2012) which consists of a self-reported compilation of questionnaires about bullying and cyberbullying. Hinduja and Patchin (2010) developed a scale, *Cyberbullying*, which measures if, and how often, an individual is cyberbullied as well as the media used to bully them. Because of the increasing role technology plays in the lives of adolescents, further measures must be developed to investigate cyberbullying in greater detail.

Traditional Bullying and Cyberbullying

Research notes a relationship between cyberbullying and traditional bullying (Brighti et al., 2012). Although bullying still occurs within homes and schools, it has made its way to cyberspace (Arnold & Rockinson-Szapkiw, 2012). According to research, traditional bullying is still more prevalent than cyberbullying (Carvalho et al., 2008). In terms of where the bullying takes place, cyberbullying is more likely to take place off school property (Carvalho et al., 2008). With regards to the impact of one method of bullying versus another, Hinduja and Patchin (2010) found that victims of cyberbullying had lower self-esteem even after controlling for demographic factors. A study which

employed the use of focus groups to collect data discovered that certain types of cyberbullying, utilizing pictures or videos, had more of a negative impact on the students than did traditional bullying (Carvalho et al., 2008). Conversely, some have questioned the impact of cyberbullying in comparison to traditional bullying. Some other avenues of cyberbullying were seen as not having a greater impact or having less of an impact than traditional bullying (Carvalho et al., 2008). With regards to impact between cyberbullying and traditional bullying, one study found negative feelings associated with cyberbullying were lower when compared with traditional bullying (Brighi et al., 2012). Although there may be some discrepancy regarding how impactful one type of bullying is in comparison to another, experiencing either type of bullying may have a negative impact on the adolescent. This warrants the need to identify how bully victims are impacted by their encounters. One way this impact can be assessed is by identifying resilience, comprised of strengths and weaknesses an individual possesses.

Resilience

There is no universal definition for the concept of resilience, although most definitions incorporate similar underlying concepts. As Kolar (2011) notes, definitions of resilience are often based on discipline. From the child psychology and psychiatry perspective, Rutter (2006) defines resilience as a positive outcome in a potentially risky or adverse situation. Hjemdal, Friborg, Stiles, Martinussen, and Rosenvinge (2006) define resilience in terms of the protective means that help an individual overcome potential risk for mental health issues. One definition is geared toward assessing resilience in terms of an outcome while the other identifies resilience in terms of the means used to cope rather than the final result produced. Although these definitions may be looking at two different points in time, they both take potential risk into account. Because definitions of resilience vary, researchers have generally established two main ways to categorize resilience from a process perspective and an outcome perspective. Resilience may be viewed as either a process or an outcome and it is important to establish the difference between the two (Bond, Burns, Olsson, Sawyer, & Vella-Brodrick, 2003). This research approaches resilience from a process perspective. A combination of factors are taken into account in order to gauge resilience in the sample of adolescents.

Resilience as a process suggests that resilience is ongoing; an individual is constantly adapting to his/her situation. As Rutter (2006) noted, there has been a call for the need to look at resilience over the course of an individual's life span rather than at a single point in time. Identifying resilience as a process gives the ability to look at the bigger picture. Bond et al. (2003) describe this process as being used to identify the way that the way an outcome of an adverse situation may be altered through the use of risk and protective processes by the individual. Ongoing resilience has been assessed through identification of both risk and protective factors (Bond et al., 2003). This idea weighs the benefit of having protective factors present with vulnerability due to one or more identified risk. Protective factors can include individual characteristics, peer and family strengths and characteristics, and community and school resources (Bond et al., 2003; Brownlee, Franks, & Rawana, 2013; Hjemdal et al., 2006). This research examines resilience as a process rather than an outlook, as it assesses several variables which may buffer the impact of being bullied rather than gauging the adjustment of the victim. In regards to how resilience may be measured, Hjemdal et al. (2006) have recently developed a scale that specifically targets measuring resilience in the adolescent population, the Resilience Scale for Adolescence (READ). This scale uses specific variables that measure individual, family, and social factors (Hjemdal et al., 2006), and was validated on a sample of over 6,700 Norwegian high school students (von Soest, Mossige, Stefansen, & Hjemdal, 2010).

Resilience and Bullying

Because research regarding the topic is limited, it is unknown how some bully victims are able to overcome their negative experiences and function normally (Sapouna & Wolke, 2013). While it is important to draw attention to the seriousness of bullying, it is also important to remember that individuals possess characteristics individually, through their family, or within the community, that may help them overcome a bullying experience. For instance, Rutter (1981) argued the importance that individual factors played in how an individual views and overcomes a stressful event. He also argued that these individual characteristics are what cause differences in perception and outcomes of similarly stressful situations. With regards to family factors, Arseneault, Bowes, Caspi, Maughan, and Moffitt (2010) suggested that although warm family relationships are important for all children, they may be

especially beneficial for children dealing with bully victimization. Individual, family, and community factors may act as buffers for adolescence who have experienced bullying.

If an individual experiences bullying, it does not mean they are automatically going to experience a negative outcome. Regardless of gender, Donnon (2009) inferred that certain positive factors of resilience will increase the likelihood that individuals will choose to live more positive lifestyles. Furthermore, he found that individuals who reported having more strengths were less likely to engage in bullying behaviors as well as become a victim compared to individuals who reported fewer strengths (Donnon, 2009). This evidence suggests that possessing strengths can be beneficial for reducing both the number of victims as well as bullies.

It is also important to note that there has been some indication of gender differences with regards to protective factors. A study by Brownlee, Franks, and Rawana (2013) examined the relationship between strengths in the youth population in comparison to bully experiences found that there were gender differences in reported strengths. Because research linking both bullying and resilience is scarce, it is difficult to identify the extent to which these gender differences occur.

Objectives

This study seeks to identify predictive relationships between being bullying (both traditional and cyber) and individual resilience. The study aims to explore if bullying (both cyber and traditional) is predictive of resilience as measured by the Resilience Scale for Adolescents (READ). These hypotheses are as follows:

1. Cyberbullying is a significant predictor of personal competence scores such that as cyberbullying scores increase, personal competence scores decrease.
2. Cyberbullying is a significant predictor of social competence scores such that as cyberbullying scores increase, social competence scores decrease.
3. Cyberbullying is a significant predictor of structured style scores such that as cyberbullying scores increase, structured style scores decrease.

4. Cyberbullying is a significant predictor of social resources such that as cyberbullying scores increase, social resources scores decrease.

5. Cyberbullying is a significant predictor of family cohesion such that as cyberbullying scores increase, family cohesion scores decrease.

Method

Participants

The current study was conducted via paper and pencil survey at two local senior high schools (grades 9-12). Institutional Review Board approval was obtained prior to the schools being contacted. All requests made by the schools were followed. In compliance with the Institutional Review Board, consent forms were given to the parents as well as the children. Students were instructed to read over the consent form with their parent or guardian before signing. Minor students were not given the survey unless both the parental and child consent forms were signed. The consent form was given to students at least one day prior to potentially taking the survey. Between the two participating schools, 62 students completed the survey (N=62).

Demographics

The first portion of the survey consisted of demographic questions which requested basic information about the student completing the survey. These questions asked about age, grade, gender, and grade point average. A summary of demographic findings is presented in Table 1.

The population for this study consisted of 62 middle adolescent students between the ages of 14 and 18 years old. In regards to gender, 22 males and 40 females participated in the survey. The average participant was 16.5 years of age and the average grade point average was 3.35. Additionally, the average grade for participants was 10.9.

Table 1. Demographic information for participants

	N	%	Mean	SD
Age			16.50	1.25
Grade level			10.90	1.20
Senior	29	46.8		
Junior	10	16.1		
Sophomore	11	17.1		
Freshman	12	19.4		
Gender			.65	.48
Male	22	35.5		
Female	40	64.5		

Measures

The survey consisted of two scales: a scale developed by Hinduja and Patchin (2010) was used to measure cyberbullying and a second scale, the Resilience Scale for Adolescents (READ) (Hjemdal et al., 2006), was used to measure resilience.

Cyberbullying. Cyberbullying was measured by using a scale developed by Hinduja and Patchin (2010). This scale consists of 10 questions which are answered by using a five point Likert scale (Never, Once or Twice, A Few Times, Many Times, Every Day). One question was updated which previously read “Had something posted on Myspace that made you upset”. This question was changed to “Had something posted on Facebook that made you upset”. Brighi et al. (2012) describe cyberbullying as taking place in the context of various arenas of cyberspace, including social media websites. As a result a question was added which read, “Had something posted on Twitter that made you upset”. These questions were adapted due to the shift in social media sites utilized by adolescents since the measure was developed.

Because the study called for regression analyses to be conducted where, per convention, approximately ten cases are needed per predictor variable, the cyberbullying scale was reduced using exploratory factor analysis (EFA). Results of this analysis indicated that the cyberbullying scale could be collapsed into two composite variables, with any item not attaining .60 on either aggregate scale being eliminated. The two identified scales were then used as predictors in the regression analyses. Results of the EFA are presented in Table 2.

Table 2. Exploratory factor analysis results of cyberbullying measure

Scale Item	Factor Loadings	
Received and upsetting email from someone you know	.87	-.03
Received an instant message that made you upset	-.14	.93
Had something posted on your Facebook page that made you upset	-.25	.89
Had something posted on your twitter account that made you upset	.19	.60
Been made fun of in a chat room	.90	-.03
Received and upsetting email from someone you did not know	.94	-.20
Had something posted about you on another web page that made you upset	.39	.40
Something has been posted online about you that you did not want others to see	.05	.85
Been pick on or bullied online	.44	.48
Been afraid to go on the computer	.90	.01
At least one of the above, two or more times	.40	.58

The first scale centered on email and computer use, and converged using 4 questions which scored higher than .60. Specifically, these items included “Received an upsetting email from someone you know”, “Been made fun of in a chat room”, “Received an upsetting email from someone you did not know”, and “Been afraid to go on the computer”.

The second scale centered on social media, and converged using 4 questions which score higher than .60 in the analysis. Specifically, these items included “Received an instant message that made you upset”, “Had something posted on Facebook that made you upset”, “Had something posted on twitter that made you upset”, and “Something has been posted about you online that you did not want others to see”.

Resilience. Adolescent resilience was measured using the Resilience Scale for Adolescence (READ) (Hjemdal et al., 2006), which was originally adapted from the Norwegian Resilience Scale for Adults (RSA) (Friborg, Hjemdal, Rosenvinge, & Martinussen, 2003). The scale consists of 28 questions which use a 5 point Likert design (Totally Agree, Agree, Average, Disagree, or Totally Disagree). The scale measures five different factors including personal competence, social competence, structured style, family cohesion, and social resources (Hjemdal et al., 2006). Hjemdal et al. (2006) note that the scale coincides with the three overarching factors of resilience. These include personal competence, social competence, and social structure. Personal competence measures individual factors of resilience, family cohesion measures family support factors, and social resources can be used to measure social support structure (Hjemdal et al., 2006).

Procedure

The principals of two participating high schools agreed to allow potential student participation in the data collection process. A parental consent form was sent home with each student along with a child consent form. Additionally, one of the participating schools requested an additional letter be sent home to parents, stating similar information to the consent forms. Parents and students were informed that the survey was voluntary and all information collected was anonymous. In order for a student to participate in the study, both the parental and child consent forms had to be signed and returned to the researcher. Potential participants were informed that participation would enter them in a random drawing for a \$25 gift card to local food establishments. Each school was allocated ten \$25 dollar gift cards and was responsible for distributing said cards to the ten randomly chosen students who returned completed consent forms. At both schools, the survey was conducted during the school day. All participating school personnel were informed of the procedure prior to the data collection.

Results

Data collected from the surveys was first explored through a bivariate correlational analysis. Results of the analysis showed that several variables of interest were significantly correlated. A table containing correlations for the study can be found in Table 3. Several correlations were noted as significant between predictor variables and resiliency variables, as well as significant correlations between resiliency variables.

Table 3. Correlations among variables of interest

	1	2	3	4	5	6	7
1. Social Media Factor	1						
2. Email and Computer Factor	.56**	1					
3. Personal Competence	.33**	-.44**	1				
4. Social Competence	-.16	-.20	.65**	1			
5. Structured Style	-.18	-.35**	.64**	.68**	1		
6. Social Resources	-.27*	-.21	.41**	.42**	.51**	1	
7. Family Cohesion	-.46**	-.32**	.45**	.45**	.59**	.70**	1

Note: * p < .05; ** p < .01

In order to address Hypothesis one, a multiple regression analysis was conducted to examine the relationship between personal competence and the two identified cyberbullying factors. Table 4 summarizes the results of the analysis. The multiple regression analysis was significant, where adjusted $R^2=.181$, $F(2, 55)=7.290$, $p<.01$. The effect size was small for this analysis ($f^2=0.22$), using Cohen's (1988) general rules of interpretation. The results of the ANOVA indicated that the email and computer factor was a significant predictor of personal competence ($t=-2.549$, $p<.05$). Specifically, as personal competence scores increased email and computer cyberbullying scores decreased by .369.

In order to address Hypothesis two, a multiple regression analysis was conducted to examine the relationship between social competence and the two identified cyberbullying factors. Table 4 summarizes the results of the analysis. The multiple regression analysis was not significant, where adjusted $R^2=.012$, $F(2, 55)=1.344$, $p>.05$. Due to the non-significance of the finding, no further analysis was conducted.

To address Hypothesis three, a multiple regression analysis was conducted utilizing the two identified factors of cyberbullying and the dependent variable of structured style. Table 4 summarizes the results of the analysis. The multiple regression analysis was significant, where adjusted $R^2=.093$, $F(2, 55)=3.918$, $p<.05$. The effect size was very small for this analysis ($f^2=0.10$), using Cohen's (1988) general rules of interpretation. The results of the regression indicated that the email and computer factor was a significant predictor of structured style, such that a one point increase in structured style was associated with a .361 decrease on the email and computer factor variable.

In order to address Hypothesis four, a multiple regression analysis was conducted to examine the relationship between social competence and the two identified cyberbullying factor variables. Table 4 summarizes the results of the analysis. The multiple regression analysis was not significant, where adjusted $R^2=.045$, $F(2, 55)=2.356$, $p>.05$. Due to the non-significance of the finding, no further analysis was conducted.

Hypothesis five was addressed by conducting a multiple regression analysis utilizing the identified cyberbullying factors as independent variables with the dependent variable of family cohesion. Table 4 summarizes the results of the analysis. The multiple regression analysis was significant, where adjusted $R^2=.197$, $F(2, 55)=7.982$, $p<.01$. The effect size was small for this

analysis ($f^2=0.25$), using Cohen's (1988) general rules of interpretation. The results of the regression indicated that the social media factor variable was a significant predictor of family cohesion, such that a one point increase in family cohesion was associated with a .421 decrease on the social media factor variable.

Table 4. Regression analysis predicting dependent variables from cyberbullying factors

	B	SE	β	VIF	Adj. R ²	P
<i>Personal Competence</i>					.181	.002**
Email & Computer	-.874	.343	-.369*	1.461		
Social Media	-.242	.264	-.133	1.461		
<i>Social Competence</i>					.012	.269
Email & Computer	-.270	.247	-.174	1.461		
Social Media	-.075	.190	-.063	1.461		
<i>Structured Style</i>					.093	.026*
Email & Computer	-.522	.220	-.361	1.461		
Social Media	.016	.169	-.015	1.461		
<i>Social Resources</i>					.045	.104
Email & Computer	-.146	.275	-.083	1.461		
Social Media	-.305	.211	-.226	1.461		
<i>Family Cohesion</i>					.197	.001**
Email & Computer	-.238	.400	-.085	1.461		
Social Media	-.469	.308	-.421	1.461		

Note: * p < .05; ** p < .01.

Discussion and limitations

As the avenues where bullying take place expand, the need to identify how bully victims are able to overcome their victimization expands as well. Prior research on bullying and resilience has found that there may be factors will allow individuals to better overcome their experiences. This research study attempts to predict how being a victim of cyberbullying is predictive of aspects of resilience.

Resilience predicted from cyberbullying

Personal Competence

The regression analysis between cyberbullying and personal competence produced one significant predictor, the email and computer

factor. The personal competence variable is mainly concerned with constructs related to internalized views of the self. This view includes psychological concepts such as self-esteem and self-efficacy. It is logical to assume that those with higher personal competence scores would be, intrinsically, more resilient to bullying before a bullying incident ever took place. The current results indicate that personal competence after a bullying incident is also significant, perhaps indicative of individuals who possessed this type of resilience being present in the study. However, it may also indicate that those who have been cyberbullied in the past have developed a sense of personal competence as a result of the bullying. This particular view of the results may indicate that outcomes of bullying as a process is one that leads individuals to become more resilient in order to successfully cope with having been bullied in the past.

Structured Style

The analysis indicated that one factor, email and computer cyberbullying, was a significant predictor of structured style. As noted by van Soest, Mossige, Stefanses, and Hjemdal (2010), structured style concerns to what extent structure is present in daily life of the individual. The results of the analysis suggest that those victimized by non-social media cyberbullying are predicted to report more structured lives. This particular finding must be viewed with caution, as van Soest et al. (2010) themselves note that the scale contains only three items which needed further revision. It may be that individuals who have routines or behavioral patterns in place which bring them into frequent contact with email and computer usage would potentially experience increased frequency of cyberbullying through fear of using a computer or email. This line of thought, however, reverses the directionality of the regression. In this particular circumstance it is logical to assume that structured style is present before cyberbullying occurred, may in fact contribute to exposure to the cyberbullying, and continues to exist even after the cyberbullying ceases.

In addition, it should be noted that van Soest et al. (2010) found that females tended to score more highly on the structured style variable than males. As the majority of the respondents in this study are female, findings from this analysis should be considered with this knowledge in mind.

Family Cohesion

The relationship between cyberbullying and family cohesion identified the social media factor as a significant predictor. This finding is similar to that of Arseneault et al. (2010), which suggests that warm family relationships (family cohesion) may be especially beneficial for victims of bullying. In particular, the authors suggest that victims who have a close sibling relationship may have a less negative experience when that sibling acts as a positive outlet for the bully victim. It is possible that those who reported receiving the instant message that made them upset did not feel as if they could express those concerns to a family member. It is unknown as to whether this is because they simply do not have a relationship which allows for this or if it is because they do not wish to share they are being victimized. Nevertheless, this finding suggests a potential benefit to strong family relationships in relation to bullying victimization. Parents may act as a source of knowledge and protection for their adolescent, therefore it may be important to establish relationships which allow the adolescent to feel comfortable enough to request help from parents if they are being victimized. Therefore, close family ties may be important for an individual who is the victim of cyberbullying. Further research must be undertaken in order to identify how best to strengthen cohesion among family members and in what specific ways they impact resilience.

Gender, Bullying, and Resilience

Almost two thirds of the sample consisted of female adolescents. It is possible that the majority of the variables of statistical interest represent relational aggression, due to the high number of female participants in the study. This may help to explain why certain results were present. First, because cyberbullying is similar to relational aggression, females may also be more likely to engage in cyberbullying (Carvalho et al., 2008). Because this study did not focus on the aggressor, it is unclear whether these results are directly related to the literature. However, a study conducted by Carvalho et al. (2008) found that girls were more likely to be the victim of cyberbullying than were boys.

The second reason girls may be reporting the majority of the relational aggression deals with the issue of self-reporting. Brighi et al. (2012) found that responses to victimization were guided by gender norms, where boys attempt to appear less impacted by their victimization. This finding may suggest that boys

are more reluctant to report being emotionally impacted by their bullying experience.

Conclusion

This study contributes to the growing body of research regarding bullying and resilience among adolescents. Specifically, this research identifies two factors, composed of variables associated with cyberbullying, which are predictors of resilience. Personal competence, structured style, and family cohesion were both predicted by prior cyberbullying. Email and computer cyberbullying was a significant predictor of personal competence and structured style, while social media cyberbullying was a significant predictor of family cohesion.

Although bullying can be detrimental to an adolescent, it is important to identify the factors that may be strengthened to help the adolescent overcome the experience. The current study is limited in generalizability due to a small sample size and homogenous sample population. However, when combined with existing research regarding resilience to bully victimization, the results of this study contribute to the scientific literature by identifying potential aspects of cyber bullying which are predictors of resilience among adolescents.

Limitations

There are several limitations to this study. First, a limited number of students chose to participate from the two schools which agreed to participate in this study. This limited the number of potential students who could participate in the survey. Future studies should attempt to recruit more schools and thus more potential students for a more robust analysis. Next, there was a larger female population took the survey compared to males, which may bias the results of the study. Future studies should attempt to recruit a more heterogeneous sample of students, making the data more generalizable. Also, the overall sample size of 62 respondents limits the generalizability of the results to the larger population. A larger sample would have allowed for greater insight as to the relationship between bullying and resilience and also allow for exploration of potential resilience differences between males and females.

Prior research has also identified methodological issues in studies on bullying where students may underreport the emotions associated with being a

victim of bullying. As suggested by Brighi et al. (2012), there may be some discrepancy in determining whether students are actually impacted by being victimized given their answer. For instance, several students reported being victimized but reported that it did not upset them. This brings forward the question as to why the individuals who answered that way may be doing so. Brighi et al. (2012) suggest that this could be because they are either resilient or they are used to being bullied and are no longer effected by it. Brownlee, Franks, and Rawana (2013) offer a possible explanation as to why students may indicate certain answers over others. They argue that social desirability may persuade a student to answer in a way that is specific to their experience rather than taking the whole truth into account. Discrepancies of self-reporting must be considered in future studies, although these discrepancies cannot be completely eliminated. Future studies should seek to identify why some students who indicate being bullied suggest it does not upset them, and how emotional impact is associated with bullying victimization. Future studies should also consider social desirability when identifying limitations to self-reporting.

This study attempts to identify whether exposure to cyberbullying could predict later resilience in individuals as an outcome. This directionality from bullying to later resilience is tenuous, however, and must be viewed as such. Since cross-sectional data on both cyberbullying and resilience was collected simultaneously, the current research cannot definitively illustrate that resilience is an outcome. Instead, the results must be considered an initial foray into potential individual growth for individuals who successfully deal with cyberbullying and any potential aftereffects. Further studies are needed which can track individual resilience prior to instances of cyberbullying and compare results to resilience once cyberbullying has occurred.

Finally, statistical issues must be taken into consideration when viewing the results. Issues of multicollinearity can lead to significant regression findings without statistically significant individual variables being identified (Cohen, Cohen, West, & Aiken, 2003). Collinearity is most often diagnosed using the VIF statistic, where a value exceeding 2.50 denotes issues of collinearity among variables used in the analysis. While significant correlations were present in the current analysis, the VIF for the regressions run did not exceed the 2.50 value. However, future studies must endeavor to identify more discrete aspects of resilience to reduce or eliminate collinearity during analysis.

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