Relationships Between Self-Esteem, Mental Health, and Cyber-Victimization Among Middle School Students

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Abstract

Introduction: Cyber-victimization is highly prevalent among middle school students. Research has shown that low self-esteem may place adolescents at risk for victimization. However, research has yet to examine mechanisms in which self-esteem is associated with cyber-victimization. The current study examined the role of mental health symptoms in this relationship between self-esteem and cyber-victimization. It was hypothesized that low self-esteem would be associated with cyber-victimization via heightened mental health.

Method: Participants in this study (N = 316) were sixth graders from a large public middle school. Participants completed self-reported questionnaires on self-esteem, mental health symptoms (i.e., depression and anxiety), and cyber-victimization. The study hypothesis was examined using a mediational path analysis.

Results: Students displayed high rates of cyber-victimization (60.8%), low levels of self-esteem (37.6%), and at-risk or clinical levels of depression (44.6%) and anxiety (46.9%). The analysis showed that lower levels of self-esteem were associated with greater levels of anxiety ($B = -.530$, $p < .001$) and depression ($B = -.999$, $p < .001$). Greater amounts of depressive symptoms were associated with higher levels of cyber-victimization ($B = .108$, $p < .05$). Finally, high levels of depressive symptoms fully mediated the relationship between low levels of self-esteem and high levels of cyber-victimization ($B = .014$, $p < .05$).

Discussion: These results illustrate that heightened depressive symptoms may make adolescents with low self-esteem more susceptible to cyber-victimization. Middle school administrators and practitioners can utilize these results to incorporate aspects around the promotion of self-esteem and mental health in cyber-victimization prevention programs.

Keywords: Middle school, Cyber-Victimization, Mental Health, Anxiety, Depression, Self-Esteem

Introduction

Cyber-victimization is gaining increasing attention from researchers, and for good reason. In 2017, 14.9% of high school students experienced cyber victimization (Youth Risk Behavior Surveillance [YRBS], Center for Disease Control and Prevention [CDC], 2018). In 2018, 59% of adolescents age 13-17 had experienced cybervictimization in their lifetime (Pew Research Center, 2018). Studies have demonstrated such a wide gap in reported rates, perhaps due to how cyber-victimization (also referred to as experiencing cyberbullying) is measured. Nevertheless, these rates are cause for concern because of the plethora of negative consequences associated with experiencing cyber-victimization. For example, experiencing cyber-victimization has been found to place youth at risk for somatic symptoms (Vieno et al., 2015), depressive symptoms (Kowalski & Limber, 2013; Perren, Dooley, Shaw, & Cross, 2010) and social anxiety symptoms (Fahy et al., 2016).

Self-esteem and Cyber-victimization

Due to the prevalence and negative outcomes associated with cyber-victimization among adolescents, scholars have been urged to consider factors that place youth at higher or lower risk for cyber-victimization. One such factor is self-esteem; like cyber-victimization, self-esteem has been implicated in negative consequences. Researchers have found that low self-esteem (Steiger, Allemand, Robins, & Fend, 2014) and decreases in self-esteem (Masselink et al., 2018; Steiger et al., 2014) during adolescence are associated with greater depressive symptoms. Additionally, having low self-esteem is associated with an increased susceptibility for cyber-victimization (Kowalski & Limber, 2013). Although the link between self-esteem and cyber-victimization is well-established in the literature, the current study sought to explore mechanisms that explain

why low self-esteem is associated with an increased risk for cyber-victimization among a sample of sixth-grade middle school students.

Self-esteem, Mental Health and Cyber-victimization

The presence of mental health symptoms may be an important mechanism to consider in the association between self-esteem and cyber-victimization, particularly as examining the role of mental health may be specifically pertinent among adolescent populations. For example, 31.5% of high school students have experienced periods of persistent sadness and/or hopelessness (i.e. depressive symptoms; CDC, 2018). Ghandour and colleagues (2019) have illustrated that as of 2018, 3.2% of children, or roughly 1.9 million children, have been clinically diagnosed with depression. These numbers are alarming to many practitioners and researchers as adolescents' depression negatively impacts their emotional, social, and physical well-being (Gámez-Guadix, Orue, Smith, & Calvete, 2013; Ghandour et al., 2019; Graham & Bellmore, 2007; Keenan-Miller, Hammen, & Brennan, 2007). In addition, anxiety is another mental health concern that is prevalent within adolescents. About 7.1% of children ages 3-17 years, approximately 4.4 million children, have been clinically diagnosed with anxiety (Ghandour et al., 2019).

Thus, mental health symptoms may be an important factor to consider in the relationship between self-esteem and cyber-victimization. For example, research has shown adolescents who are more likely to experience cyber-victimization also have high levels of social anxiety and depression (Graham & Bellmore, 2007). It can be hypothesized that the reason for increased susceptibility to cyber-victimization in adolescents with mental health concerns is a lack of social skills and/or the act of self-isolation (Gámez-Guadix et al., 2013). Because adolescents with mental health concerns may not possess proper protective skills (e.g. social skills), they may

be a target to their offending peers. Therefore, individuals who have significant mental health concerns may be at an elevated risk of cyber-victimization.

In addition, researchers have also demonstrated low self-esteem is associated with heightened mental health symptoms among adolescents. For example, scholars have found low self-esteem to be a significant predictor of increased depressive and anxiety symptoms (Masselink et al., 2018; Sowislo & Orth, 2013). In a meta-analysis of longitudinal studies on the relationship between low self-esteem and depression, individuals with low self-esteem may excessively seek reassurance, which strains social relationships, leading to depressive symptoms (Sowislo & Orth, 2013). Individuals with low self-esteem also may seek negative feedback from those around them, which erodes their relationships and increases risk of depression (Sowislo & Orth, 2013). These studies highlight the important link between self-esteem and mental health.

Current Study

Adolescents are at an increased risk for experiencing cyber-victimization, and researchers have found low self-esteem and heightened mental health symptoms, such as symptoms of depression and anxiety, may be factors to consider as risk correlates of cyber-victimization. Although empirical research has found evidence for these associations, few studies have examined these relationships with adolescents in the United States, a group at high risk for mental health concerns and cyber-victimization (Ghandour et al., 2019; Kowalski & Limber, 2013). Additionally, the current study examined mental health symptoms as potential mediators in the relationship between self-esteem and cyber-victimization, specifically if heightened mental health symptoms explain (or mediate) the relationship between low self-esteem and cyber-victimization. To our knowledge, this relationship has not yet been examined in the empirical literature among early adolescents. Finally, the current study also examines these relationships

among a sample of American middle school students, expanding research in this area to another diverse group of adolescents.

The current study explored hypotheses for the following four research questions: 1) What is the association between self-esteem and experiences of cyber-victimization? It was hypothesized higher levels of self-esteem would be associated with a decrease in experiences of cyber-victimization; 2) Is self-esteem related to mental health outcomes? It was hypothesized self-esteem would be negatively related to anxiety and depressive symptoms; 3) Are mental health symptoms related to experiences of cyber-victimization? It was hypothesized heightened mental health symptoms would be positively associated with experiences of cyber-victimization; and 4) What explains the relationship between self-esteem and cyber-victimization? It was hypothesized low self-esteem would be associated with cyber-victimization via heightened mental health symptoms.

Method

Study Design & Participants

The current study is based on a larger study examining mental health, social-emotional and behavioral needs of middle school students from a large public school. The middle school that participated in the study is located in a semi-urban city in the Midwest United States (Garthe & Klingenberg, 2019). Participants in the current study were 316 sixth-grade students, with an average age of 11.67 years old. Students included 142 males, 163 females, three transgender youth, and eight who did not identify as male, female, or transgender. The current study included a diverse racial and ethnic group of students (34% African American, 24% White, 15% Hispanic, 7% Asian, and 20% identified as other races or ethnicity or multi-racial).

Parents and guardians of the sixth-grade student participants were informed of the study prior to the student survey administration. Passive parental consent was used, meaning parents and guardians signed and returned the form only if they did *not* want their child to participate. All sixth-grade students (during the 2018-2019 school year) were eligible and invited to participate in the study. The survey was taken on electronic tablets and offered in English, French, and Spanish. To administer the survey, the research team went into classrooms and the Principal Investigator or the graduate research assistant explained the purpose of the study. The survey took approximately 20-30 minutes for students to complete. A university institutional review board approved all study procedures.

Measures

Self-esteem, depression, and anxiety. Self-esteem and mental health symptoms (i.e., symptoms of depression and anxiety) were measured using the Behavioral Assessment System for Children Self-Report of Personality Adolescent Version (BASC-3 SRP-A; Reynolds & Kamphaus, 2015). Participants indicated agreement with the items with either "True" or "False," or from a 4-point scale ranging from "Never" to "Almost Always." The BASC-3 is a validated measurement related with other clinical assessments and reviewed by experts for content validity in relation to the Diagnostic and Statistical Manual of Mental Disorders (DSM-5; American Psychiatric Association, 2013). To measure self-esteem, seven questions were asked ($\alpha = .82$). For depression, 12 items were asked ($\alpha = .84$), and 13 items were asked ($\alpha = .87$) for anxiety. Based on gender and age normed scores, t-scores for self-esteem, anxiety, and depression were used in the study analyses. Higher scores indicated higher levels of self-esteem, anxiety, and depression.

Cyber-victimization. A modified version of the Cyber-Victimization Scale (CVS; α = .92; Bennett, Guran, Ramos, & Margolin, 2011) was used to assess cyber-victimization. Seventeen items were used to examine experiences of cyber-victimization by asking: "In the past year, have any of these things happened to you? If yes, check the following: friend, boyfriend/girlfriend, someone at school, other (e.g., stranger or family member)." The CVS was originally validated with a college-aged population; thus, the current study modified the measure into adolescent-age appropriate answer choices (e.g., adding someone at school) and examples (e.g., Snapchat, Instagram). For each item, participants indicated with "Yes" or "No" if they experienced that specific victimization and then reported whom the perpetrator was.

Data Analyses

Data were cleaned and variables were created using IBM SPSS (Version 26; IBM Corporation, 2017) software. Gender identity was dummy-coded (Male = 1, Female and Other = 0) to be included as a covariate in the data analyses. Continuous variables, including self-esteem, anxiety, depression, and cyber-victimization, were all examined for assumptions of normality (e.g., skew, kurtosis). Next, data were analyzed using Mplus (Version 8.3; Muthen & Muthen, 2018) software, which makes corrections for any concerns of non-normality with maximum likelihood estimation with robust standard errors (MLR). Additionally, missing data was handled in Mplus by Full-Information Maximum Likelihood (FIML); the analytic sample size was 316. The data analytic plan consisted of three steps. First, descriptive statistics, including means and standard deviations, were calculated for the continuous variables. Also, bivariate correlations were calculated. Second, regression pathways were tested, including: 1) self-esteem to anxiety and depression, 2) self-esteem to cyber-victimization, and 3) anxiety and depression to cyber-victimization. Third, the indirect pathways (i.e., mediational model) were tested, examining

anxiety and depression as mediators in the relationship between self-esteem and cyber-victimization. Gender was included in this model as a covariate.

Results

Descriptive Statistics and Bivariate Correlations

Participants reported high levels of cyber-victimization in the past year (60.8%), and a large number of students had clinically significant levels of depression (27.3%) and anxiety (21.3%). Also, 37.6% of students self-reported low levels of self-esteem (i.e., defined as more than one standard deviation below the mean). As shown in Table 1, means and standard deviations, as well as bivariate correlations are shown. There was a significant correlation between self-esteem and anxiety ($r = -.608$), depression ($r = -.804$), and cyber-victimization ($r = -.328$). Anxiety ($r = .343$) and depression ($r = .408$) were positively associated with cyber-victimization.

Regression and Mediation Analyses

As shown in Table 2, higher levels of self-esteem were significantly associated with anxiety ($B = -.530$, $p < .001$) and depression ($B = -.999$, $p < .001$). Self-esteem was not associated directly with cyber-victimization ($B = .014$, $p = .755$). More depressive symptoms ($B = .108$, $p = .004$) were significantly associated with higher levels of cyber-victimization, though anxiety was not. Gender was included in these analyses, though it was not associated with any of the study variables. In the examination of indirect pathways for the mediation analyses (see Figure 1), depression symptoms fully mediated the relationship between self-esteem and cyber-victimization ($B = -0.108$, $p = .004$). Thus, high self-esteem was associated with lower levels of cyber-victimization through fewer depression symptoms. Anxiety did not mediate the relationship between self-esteem and cyber-victimization.

Discussion

A concerning number of adolescents are experiencing cyber-victimization, all of which can increase their risk for a multitude of negative outcomes. The current study found that 60.8% of sixth-grade students had experienced a form of cyber-victimization in the past year, which highlights the urgency of research examining these experiences among youth. The current study contributed to existing research by examining risk correlates of cyber-victimization among a sample of sixth-grade students, finding significant associations between cyber-victimization, depression, and self-esteem.

Self-esteem and cyber-victimization. Approximately one in three sixth-grade students in this sample reported low levels of self-esteem. Also, consistent with previous research, higher levels of self-esteem were negatively associated with experiences of cyber-victimization (Kowalski & Limber, 2013; Patchin, J. W. & Hinduja, 2010). This finding supports this line of empirical work, suggesting that self-esteem is an important factor to consider when looking at cyber-victimization among middle schoolers. With the rise of social media use, adolescents are becoming more subject to cyber-victimization. For example, research has shown increased social media use within adolescents is related to lower self-esteem (Woods & Scott, 2016). This could be because adolescents may receive negative feedback on social media sites or possibly compare themselves to others on their social media (Woods & Scott, 2016). This negative feedback and social comparison may lead to a lower self-esteem, and ultimately, higher levels of victimization within cyberspace.

Mental health symptoms and cyber-victimization. The current study found that an alarming number of sixth-grade students reported clinically significant levels of depression (27.3%) and anxiety (21.3%) symptoms. Although both mental health symptoms were prevalent

among this sample, only depressive symptoms were significantly associated with cyber-victimization in the current study. This association is in accordance with prior research (e.g., Graham & Bellmore, 2007; Kowalski & Limber, 2013). Ybarra (2004) suggests that this association may be a result of the way youth with depressive symptoms handle the ambiguous nature of online communication. Because of the lack of social cues on the internet, youth with depressive symptoms may be more likely to perceive threats online. This is a possible explanation for the relationship from depressive symptoms to cyber-victimization, which has not been examined as much as the opposite relationship of cyber-victimization to depressive symptoms (Reijntjes, Kamphuis, Prinzie, & Telch, 2010). Furthermore, although anxiety was not significantly associated with cyber-victimization in the current study, future studies may want to tease apart anxiety and examine how forms of anxiety may be associated with cyber-victimization (e.g., social anxiety; Reijntjes et al., 2010).

Self-esteem and mental health. The current study also supports prior research by finding significant associations between self-esteem and depressive symptoms (Masselink et al., 2018; Sowislo & Orth, 2013). Among this sample of sixth-grade students, higher levels of self-esteem were associated with fewer depression symptoms, though not with anxiety symptoms. The majority of research has focused on the link between self-esteem and depression (Masselink et al., 2018; Sowislo & Orth, 2013), suggesting low self-esteem may have a stronger association with depressive symptoms compared to anxiety symptoms. However, since self-esteem can be negatively affected by the transition to middle school, paying attention to self-esteem in middle school may prevent youth from experiencing mental health symptoms (Blyth & Traeger, 1983). This area needs to be continued to be examined, especially as a concerning number were already reporting clinical levels of anxiety and depression.

Depressive symptoms as a mediator. The current study also made a significant contribution to the literature, finding depressive symptoms mediated the relationship between self-esteem and cyber-victimization. Higher levels of self-esteem were associated with lower levels of cyber-victimization via lower levels of depressive symptoms. Previous work suggested self-esteem may increase vulnerability of cyber-victimization (Kowalski & Limber, 2013; Patchin, J. W. & Hinduja, 2010), and the current study found depressive symptoms may help explain this vulnerability. This finding also shows it may not be enough to only target self-esteem in programming during middle school; mental health also needs to be addressed to prevent cyber-victimization. Since depressive symptoms mediated the relationship between self-esteem and cyber-victimization, it may be beneficial to target depressive symptoms, while also considering youths' self-esteem, in order to decrease experiences of cyber-victimization.

Limitations

Although the current study made significant contributions to the empirical literature – highlighting the important associations between self-esteem and depressive symptoms with cyber-victimization experiences among early adolescents – there are several limitations to consider. First is the correlational nature of the study; thus, the current design limits the ability to establish directional or causal relationships between self-esteem, mental health symptoms, and cyber-victimization. Future research should be done with longitudinal designs to better investigate the directions of the associations. For example, one could follow the same students from sixth to eighth grade and assess how self-esteem is associated with changes in mental health symptoms and cyber-victimization across time. Another limitation is the generalizability of the findings. Sixth graders from only one middle school in the Midwest United States participated in the current study. Thus, this sampling is unlikely to be a representative sample of

all sixth-grade students in the United States, so any generalizations should be made with caution. Future researchers should use samples of middle school students from various regions of the United States, including all grade levels across different timepoints to better understand these variables among early adolescents. Furthermore, future research should look at different types of anxiety (e.g., social anxiety) and internalizing problems (e.g., somatic symptoms). This study focused solely on general anxiety symptoms within early adolescents, which limited the specificity of our conclusions. By looking at other types of anxiety and internalizing problems within middle school students, more specific interventions can be created to address those specific needs.

Implications

In addition to the previously stated future research directions, this study also provides important implications for practice. For example, social workers, psychologists, and other health professionals can use these findings to inform their practice, particularly within school settings. The current study's findings have shown it is important for practitioners to acknowledge both the self-esteem and mental health concerns, namely depression, of a student, particularly as problems in these areas may allow practitioners to gauge student's susceptibility for cyber-victimization. Practitioners should consider screening for student's self-esteem and mental health at the beginning of middle school, as low self-esteem and depressive symptoms may heighten their risk for cyber-victimization. Furthermore, these findings suggest to practitioners it may be important to implement self-esteem interventions (e.g. workshops, informationals, etc.), or include aspects of self-esteem development in other existing programming, when working with middle school children.

Conclusion

The current study found a concerning number of sixth-grade students reported low self-esteem, mental health concerns, and experiences with cyber-victimization. Additionally, the current study found high self-esteem was associated with lower levels of cyber-victimization through lower levels of depression symptoms. It is recommended researchers replicate these findings with larger, more diverse samples. However, these results suggest middle school staff should consider implementing violence prevention programs, inclusive of victimization that may occur in cyber spaces, with a focus on self-esteem and depression symptoms.

References

American Psychiatric Association. (2013). *Diagnostic and statistical manual of mental disorders (DSM-5®)*. Retrieved from https://books.google.com/books?hl=ko&lr=&id=-JivBAAAQBAJ&oi=fnd&pg=PT18&dq=dsm+5&ots=ceVQ_3QGwb&sig=vyzfHRHe-zBcChUztq7BTN9UTQk

Bennett, D. C., Guran, E. L., Ramos, M. C., & Margolin, G. (2011). College students' electronic victimization in friendships and dating relationships: Anticipated distress and associations with risky behaviors. *Violence and Victims*, *26*(4), 410–429. https://doi.org/10.1891/0886-6708.26.4.410

Blyth, D. a, & Traeger, C. M. (1983). Self-Concept of Early Adolescents Self-Esteem. *Theory into Practice*, *22*(2), 91–97.

Center for Disease Control and Prevention [CDC]. (2018). *Youth Risk Behavior Surveillance — United States , 2017*.

Fahy, A. E., Stansfeld, S. A., Smuk, M., Smith, N. R., Cummins, S., & Clark, C. (2016). Longitudinal Associations Between Cyberbullying Involvement and Adolescent Mental Health. *Journal of Adolescent Health*, *59*(5), 502–509. https://doi.org/10.1016/j.jadohealth.2016.06.006

Gámez-Guadix, M., Orue, I., Smith, P. K., & Calvete, E. (2013). Longitudinal and reciprocal relations of cyberbullying with depression, substance use, and problematic internet use among adolescents. *Journal of Adolescent Health*, *53*(4), 446–452. https://doi.org/10.1016/j.jadohealth.2013.03.030

Garthe, R. C., & Klingenberg, J. (2019). *Understanding Middle School Student Needs to Support*

School Success. Unpublished report.

Ghandour, R. M., Sherman, L. J., Vladutiu, C. J., Ali, M. M., Lynch, S. E., Bitsko, R. H., & Blumberg, S. J. (2019). Prevalence and Treatment of Depression, Anxiety, and Conduct Problems in US Children. *Journal of Pediatrics*, *206*, 256-267.e3. https://doi.org/10.1016/j.jpeds.2018.09.021

Graham, S., & Bellmore, A. D. (2007). Peer victimization and mental health during early adolescence. *Theory into Practice*, *46*(2), 138–146. https://doi.org/10.1080/00405840701233081

IBM Corporation. (2017). *IBM SPSS Statistics for Windows*. Armok, NY: IBM Corp.

Keenan-Miller, D., Hammen, C. L., & Brennan, P. A. (2007). Health Outcomes Related to Early Adolescent Depression. *Journal of Adolescent Health*, *41*(3), 256–262. https://doi.org/10.1016/j.jadohealth.2007.03.015

Kowalski, R. M., & Limber, S. P. (2013). Psychological, physical, and academic correlates of cyberbullying and traditional bullying. *Journal of Adolescent Health*, *53*(1 SUPPL), S13–S20. https://doi.org/10.1016/j.jadohealth.2012.09.018

Masselink, M., Van Roekel, E., Hankin, B. L., Keijsers, L., Lodder, G. M. A., Vanhalst, J., … Oldehinkel, A. J. (2018). The Longitudinal Association Between Self-esteem and Depressive Symptoms in Adolescents: Separating Between-Person Effects from Within-Person Effects. *European Journal of Personality*, *32*(6), 653–671. https://doi.org/10.1002/per.2179

Muthen, L. K., & Muthen, B. O. (2018). *Mplus User's Guide*. Los Angeles, CA: Muthen & Muthen.

Patchin, J. W. & Hinduja, S. (2010). Cyberbullying and Self-Esteem. *Journal of School Health*,

80(12), 614–621.

Perren, S., Dooley, J., Shaw, T., & Cross, D. (2010). Bullying in school and cyberspace: Associations with depressive symptoms in Swiss and Australian adolescents. *Child and Adolescent Psychiatry and Mental Health*, *4*, 1–10. https://doi.org/10.1186/1753-2000-4-28

Pew Research Center. (2018). A Majority of Teens Have Experienced Some Form of Cyberbullying. In *Pew Research Center*. Retrieved from http://www.pewinternet.org/2018/09/27/a-majority-of-teens-have-experienced-some-form-of-cyberbullying/

Reijntjes, A., Kamphuis, J. H., Prinzie, P., & Telch, M. J. (2010). Peer victimization and internalizing problems in children: A meta-analysis of longitudinal studies. *Child Abuse and Neglect*, *34*(4), 244–252. https://doi.org/10.1016/j.chiabu.2009.07.009

Reynolds, C., & Kamphaus, R. (2015). *BASC3: Behavior assessment system for children*.

Sowislo, J. F., & Orth, U. (2013). Does low self-esteem predict depression and anxiety? A meta-analysis of longitudinal studies. *Psychological Bulletin*, *139*(1), 213–240. https://doi.org/10.1037/a0028931

Steiger, A. E., Allemand, M., Robins, R. W., & Fend, H. A. (2014). Low and decreasing self-esteem during adolescence predict adult depression two decades later. *Journal of Personality and Social Psychology*, *106*(2), 325–338. https://doi.org/10.1037/a0035133

Vieno, A., Gini, G., Lenzi, M., Pozzoli, T., Canale, N., & Santinello, M. (2015). Cybervictimization and somatic and psychological symptoms among Italian middle school students. *European Journal of Public Health*, *25*(3), 433–437. https://doi.org/10.1093/eurpub/cku191

Woods, H. C., & Scott, H. (2016). #Sleepyteens: Social media use in adolescence is associated

with poor sleep quality, anxiety, depression and low self-esteem. *Journal of Adolescence*, *51*, 41–49. https://doi.org/10.1016/j.adolescence.2016.05.008

Ybarra, M. L. (2004). Linkages between Depressive Symptomatology and Internet Harassment among Young Regular Internet Users. *Cyberpsychology and Behavior*, *7*(2), 247–257. https://doi.org/10.1089/109493104323024500

Table 1.

Descriptive Statistics and Correlations among Primary Study Variables (N = 316)

	1.	2.	3.	4.
1. Cyber-victimization	-			
2. Anxiety	.34*	-		
3. Depression	.41*	.70*	-	
4. Self-Esteem	-.33*	-.61*	-.80*	-
Mean (SD)	3.72	58.77	62.68	41.81
	(6.02)	(13.46)	(18.93)	(15.30)

Note. SD = Standard Deviation.

* $p < .05$

Table 2.

Direct and Indirect Pathway Coefficients of the Mediational Path Analysis (N = 316)

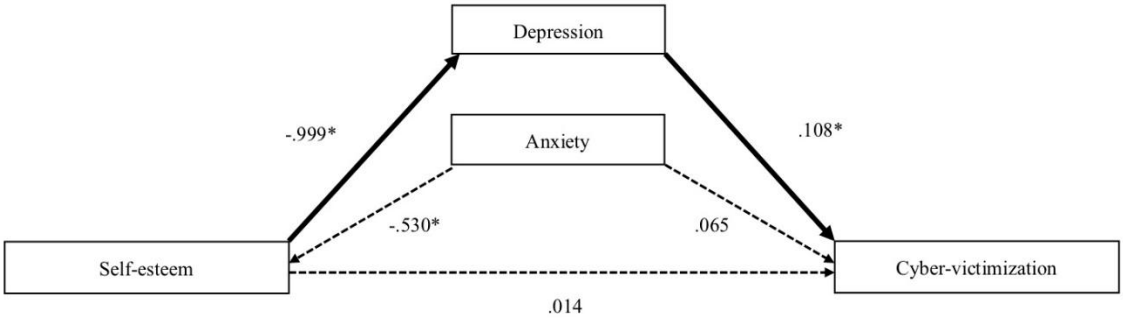
	DV: Cyber-victimization			
	B	β	*p*	R^2
Direct Pathways				.17
Self-esteem	.01	.04	.755	-
Anxiety	.07	.15	.076	.37
Depression	.11	.34*	.004	.65
Indirect Pathways (Mediation Analyses)				
Self-esteem → Anxiety → Cyber-victimization	-.04	-.09	.079	-
Self-esteem → Depression → Cyber-victimization	-.11	-.28*	.004	-

Note: DV = Dependent Variable

* $p < .05$.

Figure 1.

Relationships between self-esteem and cyber-victimizations, as mediated by depression and anxiety (N = 316).



Note. Bold lines indicate significant relationships.

*p < .05.