

The Influence of Cyberbullying through Social Media on Suicide Ideation in College Students

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BACKGROUND

Cyberbullying is defined as aggression that is perpetrated through the use of electronic communication technologies that is intended to inflict harm or discomfort on others (Mehari et al., 2014; Tokunaga, 2010). Research findings indicate that 10% to 29% of college students have reported being a victim of cyberbullying (Zalaquett & Chatters, 2014) and that being cyberbullied is associated with suicide thoughts and attempts in youth (as reviewed by Klomek et al., 2010 & Kowalski et al., 2014). Although it may be hypothesized that cyberbullying victimization can decrease one's sense of belongingness and increase one's sense of burden on others, scant research (e.g., Mitchell, 2016) has examined cyberbullying within the interpersonal theory of suicide. Moreover, to our knowledge, no published studies have examined suicide thoughts and behavior in relation to cyberbullying through specific social media avenues.

PURPOSES AND HYPOTHESES

For the present study, we developed a new cyberbullying measure that assesses cyberbullying victimization and perpetration through texting, email, Facebook, Twitter, Tumblr, Instagram, and online gaming. The purposes of the study were (1) to examine the influence of cyberbullying through social media on suicide ideation in college students; and (2) to study this influence within the context of the interpersonal theory of suicide. We expected that:

- Cyberbullying victimization would be associated with anxiety sensitivity, depression, hopelessness, perceived stress, ineffective perceived social support, thwarted belongingness, burdensomeness, fearlessness about death, and suicide ideation.
- Cyberbullying victimization would moderate the relationship between anxiety sensitivity and suicide ideation.
- Burdensomeness and thwarted belongingness would mediate the relationship between cyberbullying victimization and suicide ideation.

METHODS

Participants

•Participants were 486 undergraduate students (female = 67%, male = 32%, transgender = 1%) from south Texas ($n = 206$) and north Ohio ($n = 280$). M age = 20.1 ($SD = 3.6$). **Year in school:** 23% freshmen, 25% sophomore, 13% junior, 9% senior. **Ethnicity:** 43% Latino/a, 39% White, 14% African American, 4% other.

Measures

•**Social Media Cyberbullying Questionnaire:** Newly developed 66-item measure of frequency (over past 6 months) of being cyberbullied and cyberbullying others through text, email, Facebook, Twitter, Tumblr, Instagram, and online gaming (Hovey et al., 2014). The present study utilized the victimization scale ($\alpha = .91$). Please contact the first author for examples of items.

•**Anxiety Sensitivity Index-3:** Measures fear of anxiety-related sensations, which may arise from beliefs that these sensations have harmful somatic, cognitive or social consequences (Taylor et al., 2007).

•**Beck Depression Inventory-II:** Measures severity of depressive symptoms (Beck et al., 1996).

•**Beck Hopelessness Scale:** Measures loss of motivation and negative attitudes and expectations about the future (Beck, 1988).

•**Perceived Stress Scale:** Measure the degree to which life situations are appraised as stressful (Cohen, 1994).

•**Personal Resource Questionnaire-Part 2:** Measures perceived social support (Weinert & Brandt, 1987).

•**Interpersonal Needs Questionnaire:** Burdensomeness and thwarted belongingness (Van Orden, et al., 2011).

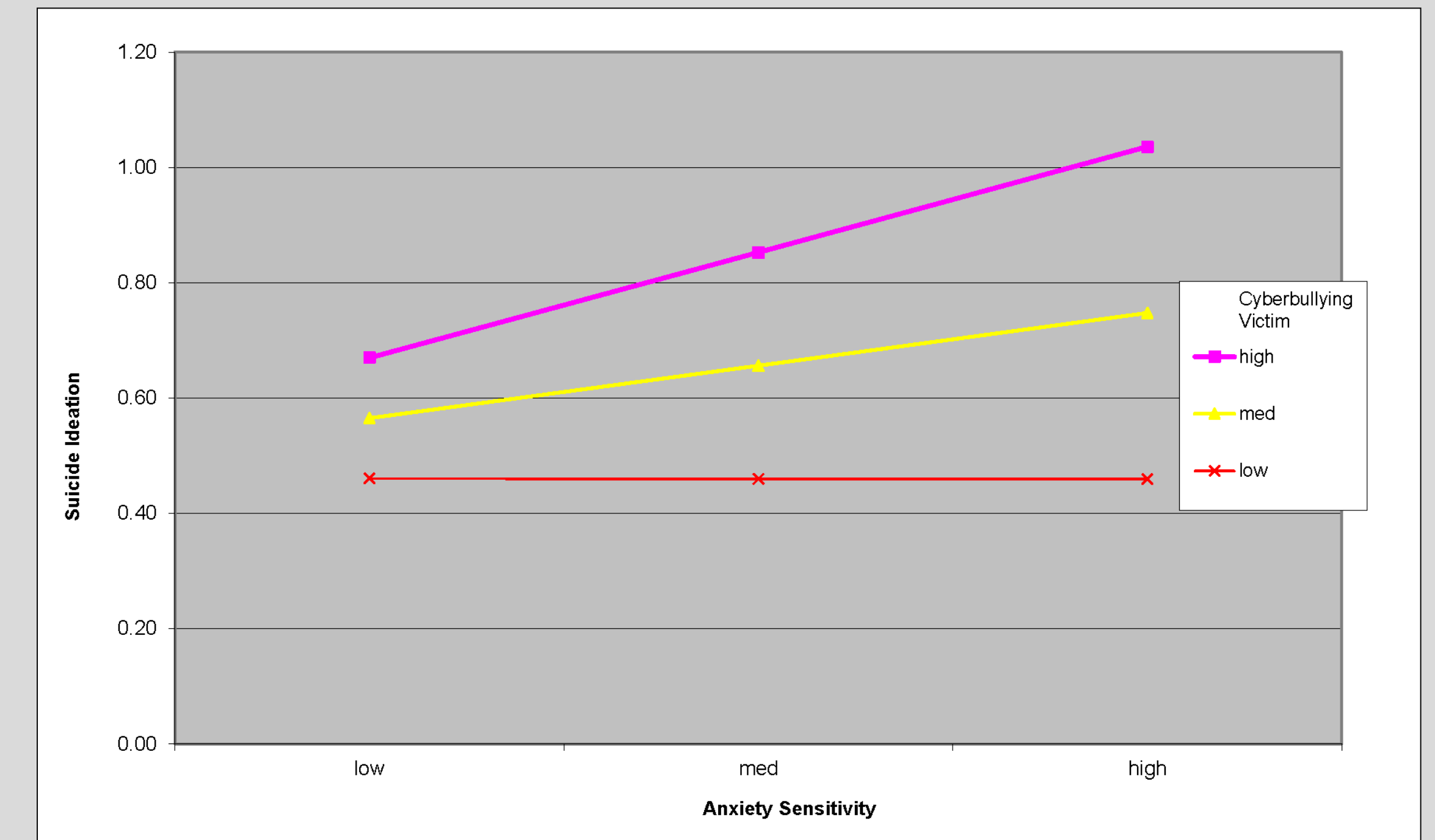
•**Acquired Capability for Suicide Scale:** Measures fearlessness about death (Ribeiro et al., 2014).

•**Suicidal Behaviors Questionnaire-Revised:** Assesses history of suicide attempts, frequency of suicide ideation during past year, communication of suicide intent, and likelihood of future attempts (Osman et al., 2001).

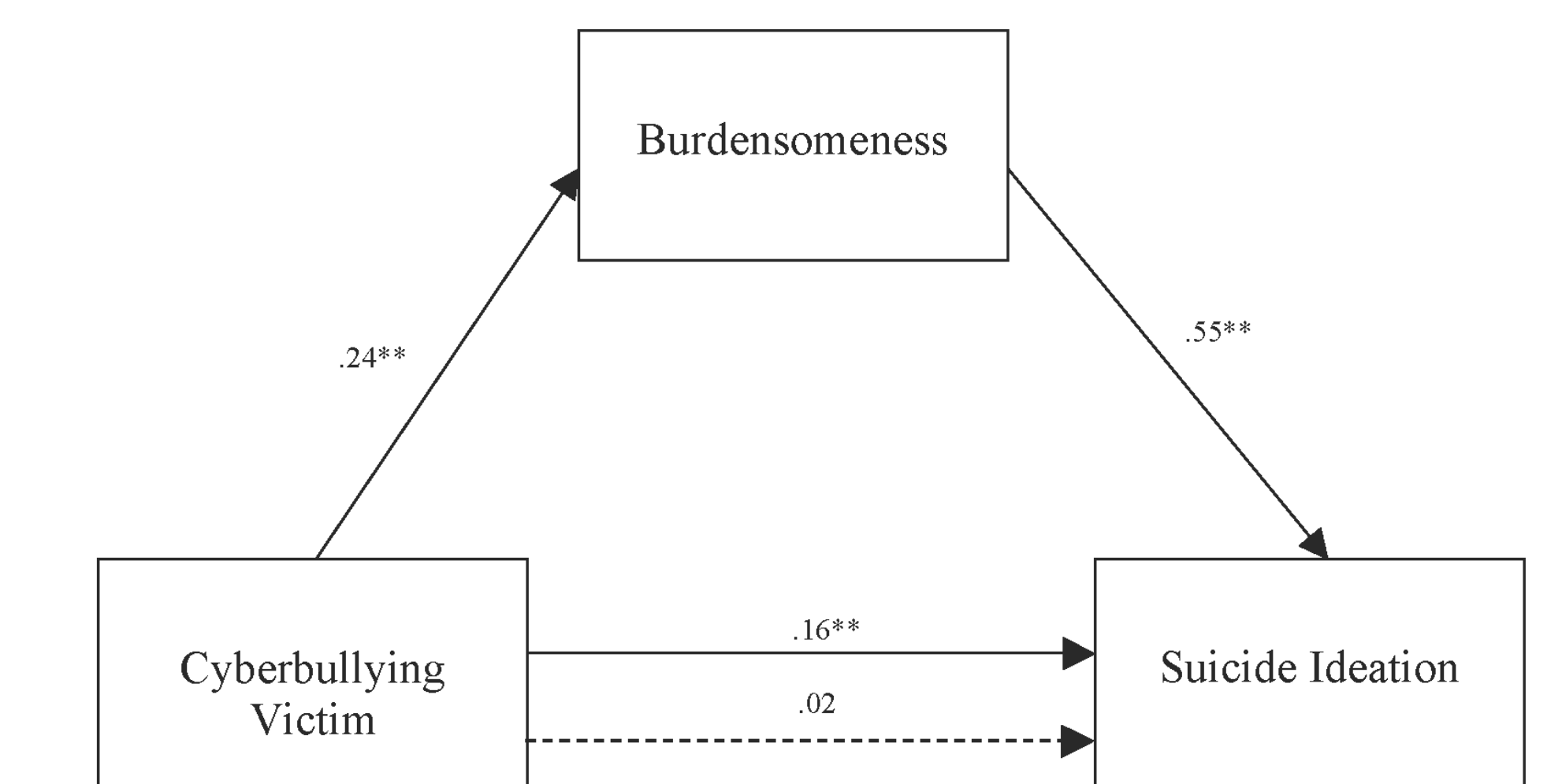
Procedure

Data were collected through the PsychData online survey program. Some students were given extra credit for their participation; other students participated through introductory psychology research pools.

RESULTS CONTINUED



Burdensomeness as a Mediator between Cyberbullying Victim Scores and Suicide Ideation



Notes: The above values are standardized beta coefficients. ** $p < .0001$. The indirect effect was significant according to a Sobel test ($Z = 5.02$) and bootstrapping procedures (10,000 samples; unstandardized $CI = .0108, .0248$) (Hayes, 2013).

RESULTS

	Anxiety Sensitivity	Depression	Hopelessness	Perceived Stress	Social Support	Thwarted Belonging	Perceived Burden	Suicide Ideation	M (SD)
Cyber Victim	.21***	.14**	.18***	.08*	-.16***	.10*	.24***	.16***	3.97 (7.0)
Anx Sensitivity	--	.48***	.38***	.42***	-.23***	.26***	.42***	.30***	35.0 (13.1)
Depression	.48***	--	.62***	.60***	-.36***	.48***	.59***	.44***	12.9 (11.3)
Hopelessness	.38***	.62***	--	.51***	-.52***	.58***	.55***	.40***	3.95 (3.9)
Stress	.42***	.60***	.51***	--	-.33***	.44***	.45***	.33***	19.6 (6.6)
Social Support	-.23***	-.36***	-.52***	-.33***	--	-.74***	-.39***	-.28***	134.2 (26.1)
Thwarted Bel	.26***	.48***	.58***	.44***	-.74***	--	.48***	.37***	23.7 (12.6)
Burdensome	.42***	.59***	.55***	.45***	-.39***	.48***	--	.56	8.69 (5.4)
Ideation	.30***	.44***	.40***	.33***	-.28***	.37***	.56***	--	1.53 (1.0)

Note: * $p < .05$, ** $p < .01$, *** $p < .001$

Severe Cyberbullying Victim Scores (+SD 1.5) Versus Non-Severe Scores

	Severe ($n = 16$)		Non-Severe ($n = 463$)		t
	M	SD	M	SD	
Anxiety Sensitivity	43.4	16.8	34.7	12.9	2.6**
Depression	17.0	13.1	12.7	11.2	1.5
Hopelessness	6.3	4.6	3.9	3.9	2.4**
Perceived Stress	21.6	6.7	19.5	6.6	1.3
Perceived Social Support	115.4	20.8	134.8	26.0	-3.0**
Thwarted Belongingness	31.9	9.8	23.4	12.6	3.4**
Burdensomeness	14.9	7.6	8.5	5.2	4.8***
Fearlessness about Death	16.8	6.8	13.5	6.5	2.0*
Suicide Ideation	2.4	1.3	1.5	0.9	3.6***

Note: Significance levels are based on one-tailed tests. * $p < .05$, ** $p < .01$, *** $p < .001$

Multiple Regression Analysis of Suicide Ideation

Steps & Predictor Variables	β	t	p	R^2 change
Step 1				
Anxiety Sensitivity	.11	2.2	.01	.22***
Perceived Stress	.06	1.1	.15	
Depression	.23	3.9	.000	
Hopelessness	.19	3.5	.000	
Step 2				
Anxiety Sensitivity	.09	1.9	.03	.01*
Perceived Stress	.06	1.2	.12	
Depression	.23	3.9	.00	
Hopelessness	.18	3.3	.00	
Cyberbullying Victim	.08	1.9	.03	
Step 3				
Anxiety Sensitivity	.09	1.8	.03	.01*
Perceived Stress	.07	1.3	.10	
Depression	.24	4.1	.00	
Hopelessness	.17	3.1	.00	
Cyberbullying Victim	.01	0.1	.45	
Anx Sensitivity x Cyberbullying	.10	1.8	.04	
Step 4				
Anxiety Sensitivity	.12	2.3	.01	.10***
Perceived Stress	.03	0.6	.28	
Depression	.11	1.9	.03	
Hopelessness	.02	0.3	.38	
Cyberbullying Victim	.06	1.0	.16	
Anx Sensitivity x Cyberbullying	.12	2.3	.01	
Thwarted Belongingness	.09	1.8	.04	
Perceived Burdensomeness	.41	7.8	.00	

Notes: Overall $R^2 = .34$; * $p < .05$, ** $p < .01$, *** $p < .001$.

CONCLUSIONS

- Sixty-seven percent of participants reported *some* level of cyberbullying victimization. This percentage is higher than previous research of cyberbullying in college students. This may be due to the widespread use of social media in college students and to our comprehensive measurement of cyberbullying.
- Participants reported being cyberbullied more often through Facebook (27.6%) and texting (53.7%) than through the other avenues measured.
- Cyberbullying victimization appears to be associated with negative mental health, low social support, and burdensomeness and thwarted belongingness.
- Severe cyberbullying victimization may be associated with fearlessness about death.
- Cyberbullying victimization appears to interact with anxiety sensitivity to enhance the risk for experiencing suicidal thoughts.
- Similar to Mitchell et al.'s (2016) findings on retrospective cyberbullying, the influence of cyberbullying victimization on suicide ideation was mediated by burdensomeness whereas thwarted belongingness was not a significant mediator.
- Because of the widespread use of social media and the consequent risk for cyberbullying behaviors, additional research should examine the influence of cyberbullying through social media on mental health and suicide behaviors.
- To more precisely examine the ongoing influence of cyberbullying on mental health and suicide thoughts and behavior and because of the importance of thoroughly examining cyberbullying within a theoretical context, future research should use longitudinal research designs and statistical methods such as HLM and SEM.