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Mediating Effects of Positive Thinking and Social Support on Suicide Resilience

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Abstract

Suicide has been the second leading cause of death for 18- to 24-year-olds in the United States since 2011. The stress experienced by undergraduate college students has the potential to increase one's risk for suicide. Resilience theory was used as a theoretical framework to examine the interplay between risk and protective factors. A cross-sectional and correlational design was used to assess the mediating effects of positive thinking and/or social support on suicide resilience in 131 college students

18 to 24 years old who completed an online survey. The study found an indirect effect of self-esteem on suicide resilience through positive thinking and social support indicating that as self-esteem increases, positive thinking and social support also increase, which leads to an increase in resilience. The study also found a direct effect of self-esteem, positive thinking, and social support on suicide resilience. The findings inform the development of tailored interventions to build suicide resilience in college students.

Keywords

Currently, suicide ranks as the second leading cause of death for 15- to 29-year-olds globally as well as in the United States (Centers for Disease Control and Prevention [CDC], 2016; World Health Organization [WHO], 2014). Suicide is a death that occurs as a result of harming oneself with the intention of dying (WHO, 2014). When comparing 18- to 25-year-olds with other adult age groups, young adults were found to have an increase in suicidal ideation (SI; CDC, 2016). From 2012 to 2013, there was an increase from 6.6% to 8% of full-time college students having serious thoughts of suicide (U.S. Department of Health and Human Services [US DHHS], 2014). Due to the increasing number of deaths by suicide, the need for suicide prevention programs has become an important initiative. Recommendations for suicide prevention from the Department of Human Services (US DHHS, 2014) indicate the need to examine the risk and protective factors in forming suicide prevention efforts. Therefore, the purpose of this study is to examine the mediating effects of positive thinking and social support, as protective factors, on suicide resilience among college students.

Research on Suicide

The negative psychological effects of SI and suicide attempts (SA) affect not only the individual but also the mental health of the society itself (Osman et al., 2004). For every death by suicide, the affected family and friends are considered to be the loss survivors of suicide. In 2014, it was estimated that there were 18 suicide loss survivors per death by suicide, indicating that each year around 750,000 loss survivors are living beyond a death caused by suicide (American Association of Suicidology, 2015). The survivors of suicide have an increased risk for attempting suicide themselves, blaming themselves for not preventing the suicide, and grieving their personal loss (CDC, 2016).

College is a time of transition when individuals experience stress due to environmental and developmental changes (Hunt & Eisenberg, 2010). College students experience many stressors that have the potential to affect one's self-esteem and social support. The college experience presents a unique and challenging spectrum of stress. The stress experienced by undergraduate college students has the potential to increase one's risk of suicide (Wilburn & Smith, 2005). Older adolescents and young adults, 18- to 25-year-olds, were more likely than the other age groups to have suicidal thoughts (CDC, 2015) and have a plan to commit suicide (US DHHS, 2014). A study surveying 1,162 students found that, of the 84.4% who were at moderate or high risk for suicide, only 19.4% met with a counselor in-person (Haas et al., 2008). Due to the increased risk of suicide in college students and

concern of a decreased use of resources, the need for suicide prevention programs has become an important initiative.

Theoretical Models of Suicide Resilience

Resilience theory

Resilience theory serves as the framework for this study. Resilience is the interplay between risk and protective factors that maintains one's stability when encountering adversity, thus enhancing the ability to adapt to challenging situations (American Psychological Association, 2015). Resilience has been used to understand healthy development in adolescents with a focus on strengths (Fergus & Zimmerman, 2005). Due to the dynamic nature of resilience, individuals can respond differently to the same adverse event (Yates, Tyrell, & Masten, 2015). Resilience is associated with healthy development, positive health outcomes, and ability to withstand stressors in one's life (Yates et al., 2015). An individual's perception of having resilience was found to relate to a decrease in suicide ideation (Cleverly & Kidd, 2011). To further the suicide prevention efforts, The National Institutes of Health (2008) indicated the importance of future studies to examine the effects of risk and protective factors of suicide that are modifiable.

Risk factors

Risk factors are stressors that lead to a decrease in physical or mental health, academic performance, and/or adjusting to one's social environment (Braverman, 2001, p. 1). Risk factors are often referred to as negative or unwanted outcomes (Yates et al., 2015, p. 775) and increase one's risk for attempting suicide (Suicide Prevention Resource Center, 2014). One of the modifiable risk factors for suicide is low self-esteem that has been found to be a risk factor for suicide in college students (Suicide Prevention Resource Center, 2014). This was consistent with the findings from a qualitative study using the responses from inpatient psychiatric nurses who identified self-esteem as a risk factor for adolescent patients who were admitted for attempting suicide (Matel-Anderson & Bekhet, 2016). Self-esteem is defined as the feeling of being worthy of respect (Modrcin-Talbott, Pullen, Ehrenberger, Zandstra, & Muenchen, 1998). College students who have low self-esteem were found to have an increased risk of suicidal behavior, whereas students with higher self-esteem have a lower risk of suicide (Lakey, Hirsch, Nelson, & Nsamenang, 2014). Another study found that SI was predicted by negative stress and self-esteem (Wilburn & Smith, 2005).

Protective factors

The second component of resilience is referred to as protective factors. Protective factors promote resilience by supporting and promoting the health of individuals when challenging situations occur, which decreases the likelihood of suicidal behavior (U.S. Surgeon General and the National Action Alliance for Suicide Prevention, 2012). A protective factor decreases the effects of the negative outcomes from the risk factors (Braverman, 2001) or in other words, they mitigate the effects of risk factors and decrease the threat of attempting suicide (Suicide Prevention Resource Center, 2014; Yates

et al., 2015). Family support and connectedness, emotional well-being, and accessibility to student support services are some of the protective factors (Suicide Prevention Resource Center, 2014).

For this study, two modifiable protective factors, social support and positive thinking, will be conceptualized as protective factors. Positive thinking has been defined as creating an optimistic perception that helps in problem solving and assists individuals to have a future positive outlook (Bekhet & Zauszniewski, 2013). Positive thinking leads to having positive feelings and emotions which protects one's physical and mental health, especially when confronting challenges (Naseem & Khalid, 2010), whereas perceived social support is the perception of being understood by individuals in one's life and feeling supported (Liu, Mei, Tian, & Huebner, 2016). The perception of the presence of social support, or perceived social support, is having access to individuals to seek assistance when needed from by those who are considered to be someone's social support (Awang, Kutty, & Ahmad, 2014). Perceived social support also includes availability of the support provided by others and the history of the relationship (Awang et al., 2014). The perception of social support for adolescents often comes from their family, especially their parents, and from their community.

Suicide resilience

The outcome variable, suicide resilience, is the perception and competence of having the ability to use one's resources in regulating suicidal thoughts and feelings (Osman et al., 2004). As used in this study, suicide resilience refers to the evaluation of the risk and protective factors related to suicidal behaviors. Therefore, suicide resilience incorporates not only suicide risk but also factors that protect an individual from suicide. The level of one's resilience has been linked to their risk for suicide. In undergraduate college students, low levels of hardiness, or resilience, and stress were predictors for SI (Abdollahi, Talib, Yaacob, & Ismail, 2015). These studies show a connection between risk for suicide and resilience in undergraduate students. Rather than assessing in general resilience, this study will investigate the more specific variable of suicide resilience. Therefore, in analyzing the interplay of self-esteem with perceived social support and/or positive thinking on suicide resilience, this study has the potential to aid in the key components for interventions aimed to decrease SA in college students.

Most of the research that have been done among undergraduate students focused on suicide behavior, risk for suicide, or SI (Peter & Taylor, 2014; Wang, Lightsey, Tran, & Bonaparte, 2013). To date, none of the reviewed studies have focused on positive concepts, such as positive thinking and its relationship to suicide resilience and self-esteem in undergraduate students as proposed in this study. As the current trend now is to move toward primary prevention, it is important to study the relationships between positive thinking, self-esteem, social support, and suicide resilience to develop tailored interventions to build suicide resilience and to facilitate prevention of suicide in undergraduate students. The results of this study will provide directions for tailored nursing interventions to enhance suicide resilience in undergraduate students.

Purpose

The purpose of this study is to determine whether positive thinking and/or social support have a mediating effect on suicide resilience in college students.

Research Questions

- **Research Question 1:** Does self-esteem, positive thinking, and social support have direct effects on suicide resilience?
- **Research Question 2:** Does self-esteem have a direct effect on positive thinking and/or social support?
- **Research Question 3:** Does positive thinking and/or social support have a mediating effect on suicide resilience?

Method

Design

The study used a cross-sectional, correlational design to assess whether positive thinking and social support have a mediating effect on suicide resilience in college students.

Sample

The study included 131 undergraduate students, who were 18 to 24 years old, enrolled part- or full-time in an undergraduate program, and were able to read English. The sample was obtained by emailing 370 randomly selected students. The Monte Carlo simulation was used in determining the sample size (Muthén & Muthén, 2002; Schoemann, Miller, Pornprasertmanit, & Wu, 2014), with the R package simsem (Jorgensen, Pornprasertmanit, Miller, & Schoemann, 2017). The effect sizes were based on previous work done in this area of study. A low effect size ($b = 0.1$) was used in this study for the relationship between self-esteem and suicide resilience. For the relationship between self-esteem and social support and between self-esteem and positive thinking, a medium effect ($b = 0.3$) was used. For the relationship between social support and suicide resilience and the relationship between positive thinking and suicide resilience, we used the higher end of a medium effect ($b = 0.45$). When calculated, the Monte Carlo simulation (Muthén & Muthén, 2002; Schoemann, Miller, Pornprasertmanit, & Wu, 2014) sample size estimated 120 adolescents were an adequate sample size for the study, and the total effect was 0.37.

Variables and Measures

Table 1. Summary of Instruments and Their Reliabilities.

Variables/Concepts	Measures	Number of Items	Possible Scores	Actual Scores	M (SD)	Reliabilities Reported in This Study
Independent: Self-esteem	Collective Self-Esteem Scale	16	16-112	48-112	87.29 (12.5)	0.862
Mediating: Positive thinking skills	Positive Thinking Skills Scale	8	0-24	1-24	12.62 (4.49)	0.853
Mediating: Perceived social support	Multidimensional Scale of Perceived Social Support	12	1-7	2-7	5.81 (0.98)	0.923
Dependent: Suicide resilience	Suicide Resilience Inventory	25	1-6	2.28-6	5.23 (0.72)	0.952

Independent variable

Self-esteem was conceptualized as a risk factor for this study and was measured using the Collective Self-Esteem Scale (CSES). The CSES is a 16-item, 7-point Likert-type scale, ranging from 1 = *strongly disagree* to 7 = *strongly agree*. The scores may range from 16 to 112, after reverse coding eight items, with the higher scores indicating higher self-esteem (Luhtanen & Crocker, 1992). The Cronbach's alpha was .85 for the total scale (Luhtanen & Crocker, 1992). When assessing validity, there was a moderate correlation between the CSES and the Rosenberg Self-Esteem Scale in a sample of 83 psychology students (Luhtanen & Crocker, 1992). The Cronbach's alpha reported in that study was .68 (Luhtanen & Crocker, 1992).

Mediating variables

Positive thinking was measured using the Positive Thinking Skills Scale (PTSS), an eight-item 4-point scale ranging from 0 = *never* to 3 = *always*. The final scores can range from 0 = *not using the positive thinking skills* to 24 = *more frequently using the skills* (Bekhet & Zauszniewski, 2013). The PTSS was studied in 109 caregivers of persons with autism spectrum disorder. Reliability was assessed using Cronbach's alpha, which was found to be .90. Validity was established by significant correlations in the expected direction with measures of resourcefulness, depression, and general well-being (r = .63, –.45, .40, respectively; p < .01; Bekhet & Zauszniewski, 2013).

Perceived social support was conceptualized as a protective factor in this study and was measured using the Multidimensional Scale of Perceived Social Support (MSPSS) scale. The MSPSS is a 12-item 7-point Likert-type scale ranging from 1 = *very strongly disagree* to 7 = *very strongly agree*. To calculate the total score, the sum of all of the 12 items (12-84 points) was divided by the total number of items (12) and the resulting scores may range from 1 to 7 with higher scores indicating high support (Zimet, Powell, Farley, Werkman, & Berkoff, 1990). The MSPSS was studied in 265 pregnant women, 74 adolescents, and 55 pediatric residents. The scale was found to have good internal reliability, with the Cronbach's α .84 to .92 for the scale as a whole (Zimet et al., 1990). Factorial validity for the subscales was tested using a multivariate analysis of variance, with p < .005 (Zimet et al., 1990). This finding supports the validity of the MSPSS.

Dependent variable

Suicide resilience was measured using the Suicide Resilience Inventory (SRI), a 25-item, 6-point Likert-type scale ranging from 1 = *strongly disagree* to 6 = *strongly agree*. To score the SRI-25 total, the sum of the items (25-150 points) was divided by the total number of items (25). The score ranges from 1 to 6, with higher scores indicating less suicide risk (Rutter, Freedenthal, & Osman, 2008). The reliability analysis indicated the Cronbach's alpha of this sample of high school and college students was.96. The validity of the SRI was established by examining the psychometrics of the SRI across populations, including adolescents and young adults (Osman et al., 2004) and college students (Rutter et al., 2008). When analyzing the discriminant validity for all three subscales for adolescents and young adults, the resilience score of the SI group was higher than the Suicide Risk group and the Nonsuicidal subgroup was significantly higher than the Suicide Risk group. The Suicide Risk group had a higher risk of attempting suicide, whereas SI is a lower level of risk for suicide. The nonsuicidal group and the SI group indicated a higher resilience mean score than the Suicide Risk group (Osman et al., 2004). The findings were consistent with the level of resilience one would expect in the groups. The validity of the SRI was also supported in a sample of 239 college students when there were correlations with the Becks Hopelessness Scale ($r = -.68$) and SI Questionnaire ($r = -.67$) (Rutter et al., 2008). The Cronbach's alphas reported in this study were.92, .92, and .86 (Rutter et al., 2008).

Data Collection Procedure

Institutional review board (IRB) approval was obtained from the university prior to the initiation of the study, recruitment of students, or collection of data. The study participants were provided an explanation of the study by email with a link to the survey. An IRB-approved consent form, that included the purpose of the research and the confidentiality issues, was posted on the first page of the survey. The survey data were collected on Qualtrics, which allowed for the survey responses not to be linked to the IP address. Participants were informed that their participation in the study was voluntary and they could withdraw at any time without penalty. Contact information for the university counseling center, a national suicide hotline, and a crisis text line were provided in the email invitation to participate in the study. Students who declined the study were not identified and the data were not collected.

Data Analysis

Data analysis was done with the software R (R Core Team, 2017), using the package lavaan (Rosseel, 2012). The mediation analysis was done from the framework of Structural Equation Modeling (SEM; Kline, 2015; Little, 2013); SEM allows us to estimate the direct and indirect effects simultaneously in a comprehensive model. Typically, with SEM models, we would present fit indexes; however, in this model, (a) the model fit is evaluated for the measurement model; the measurement model is the one that measured items that represent an unmeasurable latent factor, and the fit is intended to inform about how well does the respective factorial structure represents the data. The current project does not include a measurement model (there are no latent variables); the mediation analysis is done with measured variables. Second, (b) the mediation analysis is a saturated model; this means that it includes

all the relations between variables, which leaves us with a model fit with 0 degrees of freedom (*df*); in models with 0 *df*, model fit cannot be evaluated as it already represents the data covariance matrix.

For the appropriate estimation of the indirect effects, bootstrap was used as a resampling method (MacKinnon, Fairchild, & Fritz, 2007; MacKinnon, Lockwood, & Williams, 2004). The indirect effects were tested by creating an empirical distribution based on the bootstrap resamples, these empirical distributions were tested against the null hypothesis value of 0, and the inferences were made as a function of the confidence intervals (CIs). The model was estimated with 5,000 bootstrap samples and estimated with maximum likelihood and bias-corrected CI.

The model included the indirect effect of self-esteem on resilience through positive thinking ($a_1 \times b_1$), the indirect effect of self-esteem on resilience through social support ($a_2 \times b_2$), the direct effect of self-esteem on resilience (c'), the total effect of self-esteem on resilience ($a_1 \times b_1 + a_2 \times b_2 + c'$), and the difference between the indirect effects ($a_1 \times b_1 - a_2 \times b_2$).

Results

Descriptive Statistics

The sample consisted of 131 students from a Midwestern university. The participants were 18- to 24-year olds with a mean age of 20 (*M* = 20, *SD* = 1.29). The majority of the students indicated that they were White (70.99%), single (60.31%), and female (67.94%). The remaining participants indicated they were Asian (12.9%), Hispanic (7.6%), African American or Black (5%), or Other (3%). The four students who considered themselves as "other" wrote in as multi-ethnic, Asian/White, French mix White, and African and Mexican American. The level of college was mixed ranging from freshman to senior level. The participants were single, dating, or married/or in a domestic partnership. The data indicates that the variables of interest are positively correlated, with correlations ranging from 0.26 to 0.63 (Table 3).

Do Self-Esteem, Positive Thinking, and Social Support Have Direct Effects on Suicide Resilience?

Table 2 shows the parameter estimates for the indirect effect model. All the direct effects (b_1, b_2, c') are different from 0 (CI does not include 0); both indirect effects ($a_1 \times b_1$, $a_2 \times b_2$) also are different from 0. The total effect of self-esteem ($a_1 \times b_1 + a_2 \times b_2 + c'$) to resilience as well is different from 0. The difference between indirect effects shows that the indirect effects are not equal.

Table 2. Indirect Effects Model Parameters.

Parameter	Label	Estimate (SE)	CI	Standardized
SE → PT	a_1	0.094 (0.032)	[0.031, 0.155]	0.261
SE → SS	a_2	0.043 (0.006)	[0.031, 0.056]	0.552
SE → SR	c'	0.010 (0.004)	[0.003, 0.018]	0.170
PT → SR	b_1	0.039 (0.012)	[0.018, 0.064]	0.241
SS → SR	b_2	0.329 (0.054)	[0.219, 0.432]	0.446
SS ↔ PT	R	1.065 (0.314)	[0.499, 1.756]	0.304
SE →→ PT → SR	$a_1 \times b_1$	0.004 (0.002)	[0.001, 0.008]	0.063
SE → SS → SR	$a_1 \times b_2$	0.014 (0.003)	[0.009, 0.021]	0.246
Total	$a_1 \times b_1 + a_2 \times b_2 + c'$	0.028 (0.004)	[0.019, 0.036]	0.480
Difference	$a_1 \times b_1 - a_2 \times b_2$	−0.011 (0.004)	[−0.018, −0.004]	−0.183

Note. CI = confidence interval; Standardized = the change in standard deviations on the outcome for 1 standard deviation increase in the predictor; SE = self-esteem; PT = positive thinking; SS = social support; SR = suicide resilience.

Does Self-Esteem Have a Direct Effect on Positive Thinking and/or Social Support?

The data indicated that as self-esteem increased 1 point, positive thinking increased (a1) 0.094 points; the standardized value indicated that positive thinking increased 0.261 standard deviations, which is considered a small to medium effect size. The R^2 = .068, indicating that 6.8% of the variance in positive thinking was explained by self-esteem. As self-esteem increased 1 point, social support increased (a2) 0.043 points; the standardized value indicated that social support increased 0.552 standard deviations, which is considered a medium to large effect size. The R^2 = .305, indicating that 30.5% of the variance of social support was explained by self-esteem.

Does Positive Thinking and/or Social Support Have a Mediating Effect on Suicide Resilience?

The indirect effect of self-esteem on resilience through positive thinking showed that as self-esteem increased, leading to an increase in positive thinking, which leads to an increase in resilience, the standardized estimate showed that the effect size of the indirect effect was trivial. The indirect effect of self-esteem on resilience through social support followed the same pattern, as self-esteem increased, leading to an increase in social support, and leading to an increase in resilience, the effect size of the indirect effect showed that this was a small to medium effect size. For the overall model, Resilience had an R^2 = .476, indicating that 47.6% of the variance in resilience was explained by self-esteem, positive thinking, social support, and the indirect effects of self-esteem through positive thinking and social support.

As self-esteem increased 1 point, resilience increased 0.010 points; the standardized value indicated that resilience increased 0.170 standard deviations, which is considered a small effect size. As positive

thinking increased 1 point, resilience increased 0.039 points; the standardized value indicated that resilience increased 0.241 standard deviations, which is considered a small to medium effect size (Figure 1, Table 2). As social support increased 1 point, resilience increased 0.329 points; the standardized value indicated that resilience increased 0.446 standard deviations, which is considered a medium effect size (Figure 1, Table 2). The correlation between positive thinking and social support showed that they have a medium positive linear relation between them; participants with a high score in one tended to have a high score in the other.
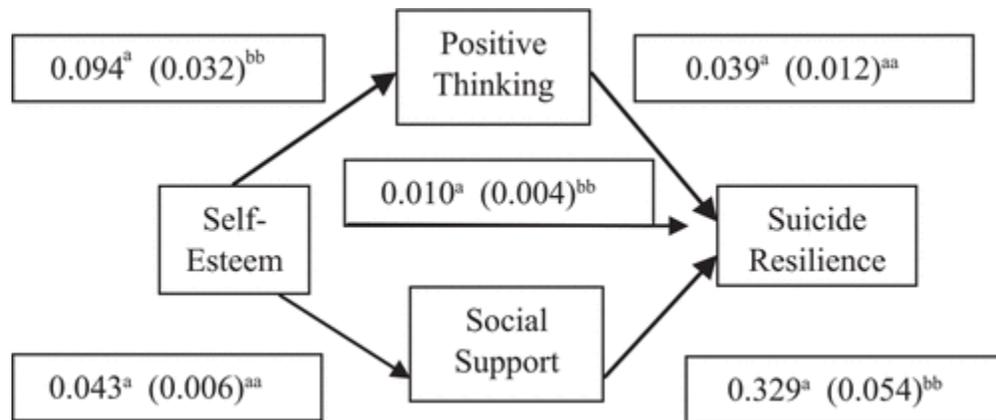

Figure 1. Path Analysis.

[a]Indicates the estimate of the direct effect.

[b]Indicates the standard error of the direct effect.

The total effect of self-esteem on resilience showed the sum of the direct and indirect effects; this showed that as self-esteem increased, resilience also increased, and the standardized estimate showed that this was a medium effect size. The difference between indirect effects showed that they were not equal; the effect size of this difference was small based on the standardized estimate. The indirect effect through social support was larger than the one through positive thinking.

Table 3. Bivariate Correlation Table.

	SRI	PTSS	MSPSS	CSE
SRI	1			
PTSS	0.46*	1		
MSPSS	0.63*	0.39*	1	
CSE	0.48*	0.26*	0.55*	1

Note. SRI = Suicide Resilience Inventory; PTSS = Positive Thinking Skills Scale; MSPSS = Multidimensional Scale of Perceived Social Support; CSE = Collective Self-Esteem Scale.
*p < .01.

Discussion

To date, this is the first study that investigated the mediating effects of positive thinking and social support on self-esteem and suicide resilience in college students. It is also the first to investigate the direct effects of self-esteem, positive thinking, and social support on suicide resilience. This study was in alignment with the recommendations from The National Institutes of Health (2008) by examining the effects of modifiable risk and protective factors. The results from this study found an indirect effect of self-esteem on resilience through social support, indicating that as self-esteem increases, social support also increases, which leads to an increase in resilience. In fact, the Suicide Prevention Resource Center (2014) pointed out that low self-esteem and social isolation or a lack of parental support in college students increase one's risk for suicide, which is in alignment with the findings from this study. Furthermore, the results of this study found an indirect effect of self-esteem on resilience through positive thinking indicating that as self-esteem increases, positive thinking also increases, which lead to an increase in resilience. The results of this study are consistent, in part, with the findings from another study where the results demonstrated college students who had higher self-esteem had less risk for suicide (Lakey et al., 2014). The study also found a direct effect of self-esteem, positive thinking, and social support on suicide resilience. These findings collectively have implications for practice.

Positive thinking training interventions can help college students to build suicide resilience. The PTSS is a short eight-item scale that measures the frequency of the use of positive thinking skills. Consequently, this can be used as a screening measure to see which skills are used by the students and which are not, so that interventions can be tailored according to their needs (Bekhet & Zauszniewski, 2013). The cut off score that was recently developed for the PTSS can be used for early identification of depressive thoughts (Bekhet & Garnier-Villarreal, 2017).

Social support interventions can also focus on building and strengthening social networks that could be avenues for supportive relationships and for behavioral modifications for college students (Hogan, Linden, & Najarian, 2002). These interventions are important because undergraduate students who had higher SI also were found to have lower social support and were less likely to seek help for SI from individuals other than professional services, such as a friend, family, or significant other (Yakunina, Rogers, Waehler, & Werth, 2010). This indicates these individuals are vulnerable and at greater risk for SA. Interestingly, when another study assessed the support from one's parents, it was found the relationship with one's father was important in decreasing SI (Arria et al., 2009) and suicidal behavior (Nkansah-Amankra et al., 2012). These findings demonstrate a need for further examining the specific individuals of one's social support and their role in suicide prevention interventions.

The study has some limitations. First, the data were collected from one university, which might not be representative of all college students. Second, although a random sample was selected, the resulting sample might not be representative of all undergraduate students due to the small sample size; 360 subjects were invited to participate and only 131 subjects completed the study. Third, as data were collected through Qualtrics, the study did not include those who do not have access to the Internet or who were not enrolled at that time. Finally, because the study was cross sectional, it is difficult to assess changes in the study variables over time. Future research should include a larger sample size

using various private and public universities. A future longitudinal study might be useful in examining causal effects among the study variables in college students over time. Despite these limitations, the findings from this study support the use of positive thinking and social support in enhancing suicide resilience in college students.

In conclusion, as the number of suicide completions has increased, primary preventive efforts become more valuable in screening and tailoring effective interventions for college students. This study identified modifiable protective variables against suicide, positive thinking, and social support, to inform the development of tailored intervention programs on college campuses for the goal of building suicide resilience. Positive thinking and social support have the potential to be strengthened, improving suicide resilience in college students. College students may be unaware of available resources indicating the need for professional help to point out available support to them or train the individual in positive thinking.

Declaration of Conflicting Interests

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