Research Article

The Role of Thwarted Belongingness and Perceived Burdensomeness on Suicidal Ideation in College Students

Zahrina Safariz Reginadita, Yudi Tri Harsono*, and Femmi Nurmalitasari

Department of Psychology, State University of Malang, Malang, East Java, Indonesia

Abstract.

College is a critical period that is vulnerable to suicide with a prevalence of suicidal ideation of around 12%. Data reports had suicidal ideation during their lifetime. Suicidal ideation is a desire, wish, or thought to commit suicide, which is the first step to suicide. Interpersonal Theory of Suicide (ITS) by Joiner said that suicidal ideation arises when two interpersonal needs are not met, like thwarted belongingness and perceived burdensomeness. This study was a quantitative research method that examine the role of TB and PB as two factors causing the emergence of suicidal ideation based on the ITS. The results showed a positive relationship between TB and PB with suicidal ideation in college students. This finding indicates that college students who feel socially disconnected and feel a burden to others tend to have higher suicidal ideation.

Keywords: suicide ideation, interpersonal theory of suicide, thwarted belongingness, perceived burdensomeness

Corresponding Author: Yudi Tri Harsono; email: yudi.tri.fppsi@um.ac.id

1. Introduction

College is a critical period in the transition from adolescence to adulthood [1]. According to Choi [2], experience of college students rapid environmental changes in their growth. The college years are a time when students face new impression, interaction, and life situations with greater and unprecedented exploration of demography identities [3]. Students entering college begin a developmental phase characterized by interpersonal and intrapersonal challenges and growth [4]. Identity and social development also occur during this period and are largely shaped through interactions with others [5]. The series of challenges of this unique life stage can create stress that locates university students at hazard for mental health [6].

Various stressors, such as social isolation, extremee use alcohol, and economic are common during college [7]. On the other hand, the transition to college can pose

several crucial challenges for young adults, including increased new social environments, increased independence, and academic strain and anxiety. According to Wang [8], the ability of college students to cope with negative events is relatively weak. Moreover, complex psychosocial pressure in terms of academics and future careers, cause psychological confusion and adaptation difficulties for college students [2].

According to Byun [9], college students are in an unstable period and are sensitive to external stimuli and changes so they tend to react more violently and impulsively than adults in dealing with them. Most students are in the age range of 18-25 years, where cognitive maturity and psychological stability have not yet been achieved, so they are at high risk of experiencing many psychosocial difficulties [9]. According to Wang [8], it causes college students to gradually develop suicidal thoughts when the individual cannot quickly resolve negative life events.

According to Wolford-Clevenger [10], university students are a part sample of population who are particularly susceptible to suicide with a prevalence of suicidal ideation during college of 12%. Whereas according to Kukoyi [11] suicide among college students vary abroad among different countries, approximately from 5% to 31%. According to Gerner [6], college students had suicidal ideation in their lifetime, and more than 65% reporting having that ideation.

According to Preston [5] negative feedback experiences experienced or perceived by college students can lead to social isolation, internal pressure, as well as suicidal thoughts. The accumulation of traumatizing events, may be particularly susceptible to the impact of stress and escalate the risk of higher suicide [7]. Factors such as life instability, high levels of stress and fatigue, insomnia, poor mood, increased psychological distress, and depression can cause vulnerable and prone to ideation of suicide [12]. Meanwhile, according to Hirsch [13] stressors such as shifting responsibilities, rising academic expectations, new financial obligation, more chances for drug and alcohol use, and separation from key support groups are frequently aspects of college life that are related to suicidal thoughts.

Suicide is an ongoing behavior that includes suicidal ideation as well as suicidal plans, attempts, and actions themselves [14]. Not all suicidal ideation will eventually become suicidal plans and attempts [15]. Examining suicidal behavior in seventeen countries, as much as 33.6% developed a plan of suicide, while 29% made a suicide attempt [15]. The conversion of ideation to suicidal behavior commonly occurs 1-2 years of the onset of

ideation [16]. According to Singh [17] ideation of suicide promotes about 7.4% of people who have such ideas may go on to attempt suicide within 12 months.

Silverman define suicidal ideation as desires, cravings, or thoughts about self-harming, either in the absence of suicidal intent, with an indeterminate degree of suicidal intension [17]. Whereas Flores-Kanter [18] define suicidal ideation as thoughts, images, beliefs that refers to ending the people life, or the intention to complete suicide. According to the Interpersonal Theory of Suicide (ITS), suicidal ideation (SI) develops from two proximal risk factors namely thwarted belongingness (TB) and perceived burdensomeness (PB) [19]. Van Orden stated that the most lethal form of SI is caused presence of two interpersonal variables, TB and PB [20].

TB is defined as feelings and lack of SI, whereas PB includes the belief that one is a burden on the lives of others or the community and feelings of self-hatred [6]. TB arises when an individual's basic need for connectedness is not met [21]. PB emerges as an individual's misperception that his or her death is better for others than the continuation of his or her life [22]. TB and PB are dynamic constructs over fairly short periods of time that are assumed to play a role in fluctuations in SI [23]. The results of studies, PB has been shown to be a predictor of SI than TB [24-25].

The results of Calear's [26] study showed that TB and PB, as well as their interaction, were significantly (p < 0.001) associated with higher rates of SI. Caro-Ca nizares' study [27] also showed a significant correlation between TB and PB to suicide risk in a clinical sample of adolescents in Spain. Based on the study of Solis-Espinoza [28] a regression model predict suicide risk based on TB and PB with an explained variance of 17%. The results of de Beurs [29] showed that the results of network analysis of both PB and TB were directly related to SI with the predictability metric showing that 16% of the variance in SI was explained by these two factors.

The foundation of ITS is the assumption that individuals commit suicide because they can and because they want to [30]. Interpersonal needs support to maintain relationships and are critical to one's well-being and happiness [31]. According to Schneidman in 1998, psychological pain—also known as psychaches—caused by the unmet basic psychological requirements is what leads to suicide ideation [32]. Schneidman found that there are five psychological principles that contribute to severe suffering and suicidal thoughts. Schneidmans' five primary psyches were subsequently integrated by ITS theorists into two primary ITS structures. TB linked to thwarted love and ruptured

relationships. On the other hand, the notion of PB unifies excessive anger, self-image, and fractured control [32].

In addition, Self-Determination Theory (SDT) argues that relatedness, autonomy and competence are elementary psychological needs. ITS summarizes these three needs. Competence and autonomy influence PB and on the other hand relatedness is synonymous with TB [32]. According to Belonging Theory, people need a sense of belonging in order to seek out, establish, and sustain interpersonal relationships. Four relationship characteristics—frequency, positivity, stability, and reciprocal care—that support belonging are incorporated by ITS theorists into the TB subconstruct [32]. In another study conducted by Gijzen [33], Suicidal thoughts were most closely linked to pessimism, loneliness, self-blame, sadness, family and self-hatred.

SI or suicidal thinking is a relevant phenomenon to study given the high incidence among university students [12]. Research on SI and its correlates can aid early detection of SI and suggest strategies for suicide prevention and intervention. Research on SI should target interventions to reduce the harm of suicide [6]. TB and PB as two contributing factors to SI based on ITS which seeks to explain the concept of suicide through a broader perspective -Ideation to Action- are expected to be used to investigate the progression from SI to suicide attempt. Therefore, it is important to conduct research with the title "The Role Of Thwarted Belongingness And Perceived Burdonesomeness On Suicide Ideas In Students".

2. Method

This research was conducted using a quantitative approach. Quantitative research is analysis using computational tools, mathematical, numerical data and statistical [34]. Quantitative research is gathering numerical data, which is then evaluated using mathematical (especially statistical) methodologies to explains phenomena [35]. Quantitative research aims to quantify data and generalize findings from research samples from multiple perspectives. Quantitative research requires collection, data analysis, and interpretation of quantifiable data to prove the hypotheses generated in a particular study [36]. Correlational design research to examine the relationship two or more variables [37]. Multiple regression analysis approaches were used in compliance with the study's objectives to ascertain the extent of the independent influence on the dependent variable. A statistical technique used multiple regression [38].

The population in this study were students and the sample used was students who had had SI. This study uses purposive sampling. A purposive sample is a sample whose characteristics are determined for purposes relevant to the research [39]. The number of samples studied was 360 participants.

In this study, two instruments were used. The instrument used to measure the variables of TB and PB is the Interpersonal Need Questionnaire (INQ) [30]. The instrument consists of 15 items with details of 9 items measuring TB (3 favorable items and 6 unfavorable items) and 6 items measuring PB. The instrument uses a Likert scale with a range of 1-7 (Does not describe myself at all - Describes myself very much). Higher total scores reflect greater levels of TB and PB.

TABLE 1: INQ Blue Print.

Variables	Favorable Items	Unfavorable Items
Perceived Burdensomeness	1, 2, 3, 4, 5, 6	-
Thwarted Belongingness	9, 11, 12	7, 8, 10, 13, 14, 15

The adaptation process of the INQ measuring instrument is in accordance with the adaptation procedure according to Beaton [40] which includes five stages, namely, forward translation, synthesis, backward translation, expert review, pretest of the synthesized translated version. Forward translation is the process of translating the original research instrument or scale into the target language which in this study was carried out by two translators. Synthesis is done by comparing the translation results of the two translators and synthesizing the two translated versions into one. The next stage is backward translation which is the process of translating the synthesized results of the instrument to the original language of the instrument. In this study, the backward translation process was carried out by a translator. The fourth stage is expert committee review, which is a review of the overall results of the translation, which in this study was carried out by three psychology lecturers at the State University of Malang and continued with a readability test on 6 students. The trial conducted on the results of the adaptation of the INQ measuring instrument is a used trial.

The validity test of the test content feasibility was carried out with the Aiken V test on the results of the expert judgment obtained. The results of the Aiken V test show that all INQ measuring instrument items are valid. Based on the Confirmatory Factor Analysis (CFA) test, all items in the INQ measuring instrument are declared valid with a p value <0.05 and a loading factor value between 0.611 to 0.889 for PB and 0.401 to

0.757 for TB. Based on Gatignon [41] in CFA analysis, an item can be said to be valid if it meets the criteria for a loading factor value> 0.30 for a sample size of 350.

TABLE 2: INQ Loading Factor Results.

Variables	Aitem	Loading Factor	SE	Z	p
	PB1	0.831	0.0794	17.8	< 0.001
	PB2	0.852	0.0768	18.5	< 0.001
PB	PB3	0.611	0.0862	12.1	< 0.001
	PB4	0.889	0.0855	19.8	< 0.001
	PB5	0.884	0.0895	18.1	< 0.001
	PB6	0.704	0.0783	14.7	< 0.001
	TB1	0.705	0.0736	14.18	< 0.001
	TB2	0.668	0.0776	13.13	< 0.001
	TB3	0.401	0.0901	7.25	< 0.001
	TB4	0.742	0.0867	15.23	< 0.001
TB	TB5	0.508	0.094	9.3	< 0.001
	TB6	0.466	0.0854	8.61	< 0.001
	TB7	0.684	0.0963	13.32	< 0.001
	TB8	0.757	0.0806	15.62	< 0.001
	TB9	0.666	0.0864	13.22	< 0.001

Meanwhile, the variable of SI is measured by the Beck Suicide Ideation Scale Indonesian adaptation by Kesuma which consists of 19 items and each item consists of three alternative statements which are rated for intensity from 0 to 2. CFA results from the adaptation of this measuring instrument showed good results with a range of 0.62 - 0.89. Items 1-5 of this instrument were used as screening to determine the presence or absence of SI in the individuals studied. Participants with a total score of 0 for items 1-5 do not need to answer the remaining 14 items. A higher total score indicates a higher severity of SI in the individual.

All data analysis in this study was conducted with the help of Jamovi (version 2.3.28). First, examine the demographic characteristics of the subjects and main variables. Then the test of classical assumption: normality, heteroscedasticity, and collinearity, was conducted as a condition for multiple linear regression test. Finally, multiple regression analysis was conducted to confirm the relationship between interpersonal variables (TB and PB) and SI. Determine which variable, among TB and PB, better predicts SI among university students.

TABLE 3: INQ Model Fit Parameters.

Variables	Goodness of Fit			Description
	Assessment Index	Output	Criteria	
PB	Absolute Fit Index			
	x^2	0.166 (p=0.983)	X^2 is low with (p>0.05)	Fit
	RMSEA	0.00	< 0,08	Fit
	SRMR	0.00156	< 0,08	Fit
	Incremental Fit Indices			
	CFI	1.00	> 0.9	Fit
	TLI	1.01	> 0.9	Fit
TB	Absolute Fit Index			
	x^2	18.7 (p=0.477)	X^2 is low with (p>0.05)	Fit
	RMSEA	0.00	< 0,08	Fit
	SRMR	0.0197	< 0,08	Fit
	Incremental Fit Indices			
	CFI	1.00	> 0.9	Fit
	TLI	1.00	> 0.9	Fit

3. Result and Discussion

TABLE 4: Subject Characteristics.

Category	N
Gender	
Male	41 (11.4%)
Female	319 (88.6%)
Age	
18	33 (9.2%)
19	65 (18.1%)
20	79 (21.9%)
21	72 (20.0%)
22	69 (19.2%)
23	30 (8.2%)
24	8 (2.2%)
25	4 (1.1%)

Based on the data presented in the table above, most of the participants were female (88.6%) and the rest were male (11.4%) with an age range between 18 to 25 years. Most participants were 20 years old with the average age of participants being 20.6 years. When looking at the comparison between male and female participants, the levels of SI, PB, and TB was slightly higher in females.

TABLE 5: Descriptive Analysis Results.

	SI	PB	TB
Mean	17.4	29.6	37.5
Median	17	31	38
St. Deviation	6.72	8.78	10.3
Max	35	42	63
Min	2	6	10

The mean score of SI = 17.4 (SD = 6.72) with a range of scores = 2 - 35. The distribution of passive SI scores showed that most students had moderate SI (table 5).

TABLE 6: SI Categorization Results.

Category	Results	Total
Very Low	$X \leq 9$	45 (12.50%)
Low	$9 < X \leq 15$	102 (28.33%)
Medium	$15 < X \leq 22$	124 (34.44%)
High	$22 < X \leq 28$	69 (19.17%)
Very High	$28 < X$	20 (5.56%)

TABLE 7: PB Categorization Results.

Category	Results	Total
Very Low	$X \leq 15$	30 (8.33%)
Low	$15 < X \leq 21$	35 (9.72%)
Medium	$21 < X \leq 27$	64 (17.78%)
High	$27 < X \leq 33$	99 (27.50%)
Very High	$33 < X$	132 (36.67)

Descriptive analysis showed that the mean score of PB = 29.6 (SD = 8.78), with a range of scores = 6 - 42 (table 7). The distribution of scores showed that most students had a very high level of PB (36.67%).

TABLE 8: TB Categorization Results.

Category	Result	Total
Very Low	$X \leq 22$	30 (8.33%)
Low	$22 < X \leq 31$	73 (20.28%)
Medium	$31 < X \leq 40$	118 (32.78%)
High	$40 < X \leq 49$	93 (25.83%)
Very High	$49 < X$	46 (12.78%)

For TB, the mean score in the sample was 37.5 (SD = 10.3), with a range of scores = 10 - 63 (table 8). The distribution of scores showed that most students had a moderate level of TB (32.78%).

Based on the hypothesis testing that has been carried out, the following results are obtained.

TABLE 9: T Test Results.

Model-- SI							
			95% Confidence Interval				
Predictor	Estimate	SE	Lower	Upper	T	p	Stand. Estimate
Intercept	4.2428	1.3014	1.6834	6.802	3.26	0.001	
PB	0.3196	0.0391	0.2426	0.397	8.17	<0.001	0.418
TB	0.0982	0.0332	0.0329	0.164	2.96	0.003	0.151

In the T test of the SI variable (table 9), the significance value is <0.05 so it can be concluded that PB and TB each significantly predict SI. When PB increases, SI will also increase, $\beta = 0.418$, t (358) = 8.17, SE = 0.0391, p < 0.001. When TB variable was added, SI also increased, $\beta = 0.151$, t (357) = 2.96, SE = 0.0332, p = 0.004.

TABLE 10: F Test Results.

Comparison							
Model		Model	ΔR^2	F	df1	df2	p
1	-	2	0.0182	8.73	1	357	0.003

Based on the table above, there is a not very significant increase between model 1 and model 2, F change (1, 357) = 8.73, p = 0.003, ΔR^2 = 0.0182. This increase indicates that the predictor added to model 2 (TB) predicts the dependent variable of SI in addition to the predictor in model 1 (PB). Moreover, it can be said that PB and TB simultaneously predict SI in college students.

TABLE 11: Regression Test.

Overall Model Test								
Model	**R**	**R^2**	**Adjusted R^2**	**RMSE**	**F**	**df1**	**df2**	**p**
1	0.486	0.236	0.234	5.86	110.5	1	358	< .001
2	0.504	0.254	0.250	5.79	60.8	2	357	< .001

R^2 is the proportion of variance in the dependent variable that can be explained by the predictor. In this case, PB predicted 23.6% of the variance in SI. Whereas TB and PB predicted 25.4% of the variance in SI. Both models 1 and 2 had significance values of $p < 0.001$. In the first model using only the variable PB on SI, $F (1, 358) = 110.5$, $p < 0.001$, adjusted $R^2 = 0.236$. In the second model with PB and TB variables on SI, $F (2, 357) = 60.8$, $p < 0.001$, adjusted $R^2 = 0.254$. Thus, the regression equation in this study, $y = 4.2428 + 0.3196$ PB $+ 0.0982$ TB.

4. Discussion

The results of this study showed that most (34.4%) subjects in this study had a moderate level of SI. In Zhao's [42] research, it is stated that university students have a suicide rate 2 to 4 times higher than individuals who are not students of the same age. Major changes in young people's lives that occur in a college/university environment can trigger a crisis and make individuals vulnerable to suicide [43]. Meanwhile, according to Iweama [20] the higher risk of SI and behavior is due to the many psychosocial and developmental experienced by university students. According to Ajibola [44] family or peer pressure; the desire for social acceptance; the search for a new identity and associated conflicts; and the burden of achieving life goals and aspirations can cause tension between the desired reality and the actual reality of the individual so that it can lead to suicidal thoughts.

The study sample showed high levels of PB and TB. According to Pandia [45] PB and TB correlate with symptoms of depression, anxiety, as well as key mechanisms underlying suicide risk. The interaction between PB and TB also produces hopelessness [46]. When PB and TB were both incorporated into the change model, PB explained unique variance in SI [47].

TB produces SI through loneliness and distrust of interpersonal relationships [30]. The TB construct describes the "barriers" that prevent individuals from feeling satisfied with their relationships, due to the absence of a supportive relationship or group or

not feeling a real connection with others [48]. According to Elledge [47] TB is related to the absence of reciprocal relationships and connections with others. This sense of disconnection from others has been shown to be detrimental to both physical and mental health, making TB one of the strongest correlates of suicide [49]. TB consists of loneliness and care of reciprocal (e.g., not supporting or receiving support from others) [48]. According to Seo [50] high levels of TB may be related with higher levels of loneliness and a lower sense of belonging. According to Gratz [51], TB is related with loneliness and reciprocal social relationships.

Lack of support and loneliness may be associated with suicidal thoughts [52]. Various changes in the student life process, expectations of independence and not depending on others, and changes social relationships are the reasons for the loneliness felt by students [53]. College students are more prone to feeling lonely due to difficulties adjusting to new situations and creating new social contacts, as well as being distanced from close relationships [54]. On the other hand, the need to belong is fundamental to the human experience and all students want and need a sense of belonging in higher education [55]. Belonging refers to stability, affective care, and continuation into the foreseeable future [56]. A sense of belonging that involves feeling part of a particular community, as it is without having to conform, feeling accepted, and included, is important for students [57]. College students' doubts about being in a new environment are associated with negative and repetitive thought processes that hinder academic and social integration [58]. Negative social experiences provide reasons to feel socially isolated and feel alone in the world, missing social connections, leading to suicidal thoughts [59].

The importance of social relationships, related to the individual's experience of how social relationships influence suicidal thoughts. Otten's [60] results showed that after adjusting for sociodemographic, life circumstances, and cohort characteristics, a medium or high level of social support was linked to a decreased likelihood of reporting SI five years later.

Studies on the relationship between social support and SI have shown that social support is a major factor in reducing SI [61]. Keefner and Stenvig's research results show that individuals' narratives of living with SI are described as feeling invisible and, for some, social disconnection and isolation turn into barriers that help protect themselves from pain or hide their feelings [59]. In addition, an individual's inability to interact, communicate, and participate in common activities with fellow human beings can cause the individual to constantly compare themselves to others, feel disappointment, sadness,

guilt, and shame, an inability to understand and interact with others, and feel they have nothing in common with their fellow human beings [59].

Another interpersonal factor that influences SI is PB. Being a burden to others, whether in perception or reality, is typically regarded as a low estimation of one's own worth to family and community members [49]. PB focuses on feelings of being a burden in interpersonal relationships, self-hatred, and and believing that one is undeserving of life's blessings [47]. According to PB, one experiences a sense of inadequacy and unable to make a meaningful contribution to a relationship and that one's existence is a burden to anyone, to the point that one's death is more valuable to others than one's life [48]. PB describes the idea that one is a burden to other people and this is reflected in perceptions such as ("Right now the people in my life would be better off if I didn't exist") [45]. PB can result from distress due to negative life events (e.g. medical illness) and feelings of uselessness [30]. PB arises when individuals perceive that they are unable to contribute to society to the extent that their death is viewed as beneficial to others [49].

PB consists of liability (e.g., the belief that one's death is more valuable than life to others) and self-hatred (e.g., self-loathing) [48]. The feelings of liability attached to PB are also linked to self-hatred, shame, and low self- esteem [30]. The perception that one is a burden or defect aligns with Young's Defectiveness Shame and Emotional Deprivation schema [62]. PB goes against an individual's fundamental need to feel effective, competent, and useful which is part of psychological well-being [63].

A person's feeling that they matter to others can be considered a protective factor for SI [64]. Individuals with low mattering and self- hatred can become highly critical to the point that they feel neither important to others nor to themselves [65]. These feelings are then internalized into a contemptuous view of oneself. Low mattering tends to be accompanied by a strong self-punishing orientation to the point that there is a possibility of deliberate self- harm [65]. In addition to self-hatred, discord with family is a strong risk factor related to the perceived burden that can lead to SI [30]. According to Lee [66] such conflicts arise from incompatible values and threaten family cohesion where parents demand and control individuals by setting expectations and exercising power.

This study shows empirical evidence supporting the ITS regarding the relationship between PB and TB with SI. The findings of this study indicate that the interaction of two interpersonal need factors, namely PB and TB, affects SI. The results of this study

are linear with the results of previous studies which state that the higher the TB and PB, the higher the SI [2,10]. PB showed a greater influence on SI compared to the influence of TB on SI. This is similar to the results of Pérez [52] and Li [67]. According to Pérez [52] the weak influence of TB here can be explained by the stronger role of familism in society.

Limitations of this study include the use of a sample that may not be broadly representative and a cross-sectional design that does not allow inference of causality. The study sample consisted of 360 adults aged 18 to 25 years with the majority being female (88.6%). As such, the results cannot be generalized to clinical samples, older college student samples, or even male college students.

5. Conclusions and Suggestions

The results of this study indicate the role of TB and PB on SI. This is in line with the ITS proposed by Joiner [49]. The practical implication of these findings is the importance of interventions that can reduce PB and TB and increase the sense of social connectedness in college students to reduce the risk of SI. Mental health programs on campus and counseling services should be designed and improved to accommodate the psychological needs of students who may experience these problems.

Future research can explore other variabels that may moderate or mediate the relationship between PB, TB, and SI in the college student population. Further longitudinal study is necessary to gain a deeper understanding of the connection between university students' SI, TB, and PB in a larger sample with evenly distributed male and female representation. These results highlight the potential benefit of TB and PB targeting in college student suicide prevention and intervention programs.

References

[1] Zhou SC, Luo D, Wang XQ, Zhu J, Wu S, Sun T, et al. Suicidal ideation in college students having major depressive disorder: role of childhood trauma, personality and dysfunctional attitudes. J Affect Disord. 2022 Aug;311:311–8.

[2] Choi B, Bae SM. Suicide ideation and suicide attempts of undergraduate students in South Korea: based on the interpersonal psychological theory of suicide. Child Youth Serv Rev. 2020;117:105282.

[3] Liu CH, Stevens C, Wong SH, Yasui M, Chen JA. The prevalence and predictors of mental health diagnoses and suicide among U.S. college students: implications for addressing disparities in service use. Depress Anxiety. 2019 Jan;36(1):8–17.

[4] Servaty-Seib HL, Williams P, Liew CH. Interpersonal and intrapersonal predictors of suicidal thoughts and actions in first-year college students. J Am Coll Health. 2023 Apr;71(3):670–6.

[5] Preston EG, Villarosa-Hurlocker MC, Raposa EB, Pearson MR, Bravo AJ; Protective Strategies Study Team. Fear of negative evaluation and suicidal ideation among college students: the moderating role of impulsivity-like traits. J Am Coll Health. 2023;71(2):396–402.

[6] Gerner JL. (2023). Examining Real-Time Variations in Interpersonal Hopelessness and Suicidal Ideation Using Ecological Momentary Assessment. *LSU Master's Theses.* 5709. https://repository.lsu.edu/gradschool_theses/5709

[7] Bhargav M, Swords L. Role of thwarted belongingness, perceived burdensomeness and psychological distress in the association between adverse childhood experiences and suicidal ideation in college students. BJPsych Open. 2022 Feb;8(2):e39.

[8] Wang S, Jing H, Chen L, Li Y. The influence of negative life events on suicidal ideation in college students: the role of rumination. Int J Environ Res Public Health. 2020 Apr;17(8):2646.

[9] Byun EK, Kim MY, Kang EH. Factors Influencing Suicide ideation in College Students. Journal of the Korea Academia-Industrial Cooperation Society. 2020;21(8):315–24.

[10] Wolford-Clevenger C, Stuart GL, Elledge LC, McNulty JK, Spirito A. Proximal Correlates of Suicidal Ideation and Behaviors: A Test of the Interpersonal-Psychological Theory of Suicide. Suicide Life Threat Behav. 2020 Feb;50(1):249–62.

[11] Kukoyi O, Orok E, Oluwafemi F, Oni O, Oluwadare T, Ojo T, et al. Factors influencing suicidal ideation and self-harm among undergraduate students in a Nigerian private university. Middle East Current Psychiatry. 2023;30(1):1.

[12] Martínez-Líbano1, J., Mercedes, M., & Cabrera3, Y. (2021). Suicidal Ideation and Suicidal Thoughts In University Students During The Covid-19 Pandemic: A Systematic Review. Revista Argentina, XXX, 390–405. https://doi.org/https://doi.org/10.24205/03276716.2020.4038.

[13] Hirsch JK, Hall BB, Wise HA, Brooks BD, Chang EC, Sirois FM. Negative life events and suicide risk in college students: conditional indirect effects of hopelessness and self-compassion. J Am Coll Health. 2021 Jul;69(5):546–53.

[14] Yuodelis-Flores C, Ries RK. Addiction and Suicide: A Review. Focus Am Psychiatr Publ. 2019 Apr;17(2):193–9.

[15] Koh YS, Shahwan S, Jeyagurunathan A, Abdin E, Vaingankar JA, Chow WL, et al. Prevalence and correlates of suicide planning and attempt among individuals with suicidal ideation: results from a nationwide cross-sectional survey. J Affect Disord. 2023 May;328:87–94.

[16] Raffagnato A, Iannattone S, Fasolato R, Parolin E, Ravaglia B, Biscalchin G, et al. A Pre-Adolescent and Adolescent Clinical Sample Study about Suicidal Ideation, Suicide Attempt, and Self-Harming. Eur J Investig Health Psychol Educ. 2022 Oct;12(10):1441–62.

[17] Singh A, Saya GK, Menon V, Olickal JJ, Ulaganeethi R, Sunny R, et al. Prevalence of suicidal ideation, plan, attempts and its associated factors in selected rural and urban areas of Puducherry, India. J Public Health (Oxf). 2021 Dec;43(4):846–56.

[18] Flores-Kanter PE, García-Batista ZE, Moretti LS, Medrano LA. Towards an explanatory model of suicidal ideation: the effects of cognitive emotional regulation strategies, affectivity and hopelessness. Span J Psychol. 2019 Nov;22:E43.

[19] Hallensleben N, Glaesmer H, Forkmann T, Rath D, Strauss M, Kersting A, et al. Predicting suicidal ideation by interpersonal variables, hopelessness and depression in real-time. An ecological momentary assessment study in psychiatric inpatients with depression. Eur Psychiatry. 2019 Feb;56(1):43–50.

[20] Iweama CN, Agbaje OS, Lerum NI, Igbokwe CC, Ozoemena LE. Suicidal ideation and attempts among Nigerian undergraduates: exploring the relationships with depression, hopelessness, perceived burdensomeness, and thwarted belongingness. SAGE Open Med. 2024 Mar;12:20503121241236137.

[21] Landrault H, Jaafari N, Amine M, Malka G, Selimbegović L, Chatard A. Suicidal Ideation in Elite Schools: A Test of the Interpersonal Theory and the Escape Theory of Suicide. Suicide Life Threat Behav. 2020 Feb;50(1):201–10.

[22] Solibieda A, Rotsaert M, Loas G. The Interpersonal-Psychological Theory of Suicide in Medical Students: Comparisons of Individuals without Suicidality, Ideators, and Planners. Int J Environ Res Public Health. 2021 Nov;18(21):11526.

[23] Hadzic A, Spangenberg L, Hallensleben N, Forkmann T, Rath D, Strauß M, et al. The association of trait impulsivity and suicidal ideation and its fluctuation in the context of the Interpersonal Theory of Suicide. Compr Psychiatry. 2019 Dec;98:152158.

[24] Conrad K, Forkmann T, Schreiber D, Teismann T, Glaesmer H, Spangenberg L, et al. Understanding suicidal ideation-a network analysis of the Interpersonal Needs Questionnaire. PLoS One. 2023 Nov;18(11):e0293026.

[25] Abbott CH, Zisk A, Herres J, Diamond GS, Krauthamer Ewing S, Kobak R. Exploring the relations between interpersonal risk and adolescent suicidality during treatment. J Consult Clin Psychol. 2021 Jun;89(6):528–36.

[26] Calear AL, McCallum S, Kazan D, Werner-Seidler A, Christensen H, Batterham PJ. Application of the Interpersonal Psychological Theory of Suicide in a non-clinical community-based adolescent population. J Affect Disord. 2021 Nov;294:235–40.

[27] Caro-Ca nizares I, Vila MM, Durán Pacheco JI, Carballo JJ. Interpersonal theory of suicide and stressful life events in a clinical sample of adolescents in Spain. Early Interv Psychiatry. 2024 Feb;18(2):113–21.

[28] Solis-Espinoza, M., Mancilla Díaz, J. M., & Vázquez Arévalo, R. (2023). Suicide risk model based on the interpersonal theory of suicide: evidence in three regions of Mexico. Interacciones, e284. https://doi.org/10.24016/2023.v9.284.

[29] De Beurs D, Fried EI, Wetherall K, Cleare S, O' Connor DB, Ferguson E, et al. Exploring the psychology of suicidal ideation: A theory driven network analysis. Behav Res Ther. 2019 Sep;120:103419.

[30] Van Orden KA, Witte TK, Cukrowicz KC, Braithwaite SR, Selby EA, Joiner TE Jr. The interpersonal theory of suicide. Psychol Rev. 2010 Apr;117(2):575–600.

[31] Shakeel A, haider F, Jawad A, Tabbassam R, Khan A, Saleem H, et al. Impact Of Interpersonal Needs On Suicidal Ideation And Emotional Intelligence Among University Students. J Popul Ther Clin Pharmacol. 2024;:957–68.

[32] Drabenstott M. A Matter of Life and Death: Integrating Mattering into the Interpersonal-Psychological Theory of Suicide. Suicide Life Threat Behav. 2019 Aug;49(4):1006–18.

[33] Gijzen MW, Rasing SP, Creemers DH, Smit F, Engels RC, De Beurs D. Suicide ideation as a symptom of adolescent depression. a network analysis. J Affect Disord. 2021 Jan;278:68–77.

[34] Adedoyin, Olasile. (2020). Quantitative Research Method.

[35] Kandel B. Qualitative Versus Quantitative Research. 2020;1:1–5.

[36] Ghanad A. An Overview of Quantitative Research Methods. International Journal Of Multidisciplinary Research And Analysis. 2023;06(8): https://doi.org/10.47191/ijmra/v6-i8-52.

[37] Devi B, Lepcha M, Basnet S. Application Of Correlational Research Design In Nursing And Medical Research. Xi'an Shiyou Daxue Xuebao (Ziran Kexue Ban). Journal of Xi'an Shiyou University. 2023;65:60–9.

[38] Wagner MM, Moore AW, Aryel RM. Handbook of biosurveillance. Academic Press; 2006.

[39] Andrade C. The Inconvenient Truth About Convenience and Purposive Samples. Indian J Psychol Med. 2021 Jan;43(1):86–8.

[40] Beaton DE, Bombardier C, Guillemin F, Ferraz MB. Guidelines for the process of cross-cultural adaptation of self-report measures. Spine. 2000 Dec;25(24):3186–91.

[41] Gatignon, H. (2014). Confirmatory Factor Analysis. *Statistical Analysis of Management Data*, 77–154. https://doi.org/10.1007/978-1-4614-8594-0_4.

[42] Zhao J, Chi Y, Ju Y, Liu X, Wang J, Liu X, et al. Shame and suicidal ideation among undergraduates in China: the mediating effect of thwarted belongingness and perceived burdensomeness. Int J Environ Res Public Health. 2020 Mar;17(7):2360.

[43] Sousa GS, Ramos BM, Tonaco LA, Reinaldo AM, Pereira MO, Botti NC. Factors associated with suicide ideation of healthcare university students. Rev Bras Enferm. 2021 Nov;75(75 Suppl. 3):e20200982.

[44] Ajibola AO, Agunbiade OM. Suicide Ideation and Its Correlates Among University Undergraduates in South Western Nigeria. Int Q Community Health Educ. 2021; https://doi.org/10.1177/0272684X211004929.

[45] Pandia, V., Fitriana, E., Afriandi, I., Purba, F. D., Danasasmita, F. S., Ichsan, A., & Pradana, K. (2022). Psychometric evaluation of the interpersonal needs questionnaire in the Indonesian language. PLoS ONE, 17(12 December). https://doi.org/10.1371/journal.pone.0279272.

[46] Gill PR, Arena M, Rainbow C, Hosking W, Shearson KM, Ivey G, et al. Social connectedness and suicidal ideation: the roles of perceived burdensomeness and thwarted belongingness in the distress to suicidal ideation pathway. BMC Psychol. 2023 Oct;11(1):312.

[47] Elledge D, Zullo L, Kennard B, Diederich A, Emslie G, Stewart S. Refinement of the Role of Hopelessness in the Interpersonal Theory of Suicide: An Exploration in an Inpatient Adolescent Sample. Arch Suicide Res. 2021;25(1):141–55.

[48] Zeppegno P, Calati R, Madeddu F, Gramaglia C. The Interpersonal-Psychological Theory of Suicide to Explain Suicidal Risk in Eating Disorders: A Mini-Review. Front Psychiatry. 2021 Jun;12:690903.

[49] Joiner T. Why people die by suicide. Harvard University Press; 2005.

[50] Seo JW. Thwarted belongingness and perceived burdensomeness in Korean college students: psychometric properties and cultural considerations for the interpersonal needs Questionnaire-10. Death Stud. 2020;44(5):261–9.

[51] Gratz KL, Tull MT, Richmond JR, Edmonds KA, Scamaldo KM, Rose JP. Thwarted belongingness and perceived burdensomeness explain the associations of COVID-19 social and economic consequences to suicide risk. Suicide Life Threat Behav.

2020 Dec;50(6):1140–8.

[52] Pérez S, Layrón JE, Barrigón ML, Baca-García E, Marco JH. Perceived burdensomeness, thwarted belongingness, and hopelessness as predictors of future suicidal ideation in Spanish university students. Death Stud. 2024 May;48(5):454–64.

[53] Khoirun Nisa A, Lestari S. Loneliness in College Students: How is the Role of Adjustment and Social Support? Kesepian pada Mahasiswa di Kampus: Bagaimana Peran Penyesuaian dan Dukungan Sosial? Jurnal Psikologi Teori Dan Terapan. 2022;2023(3):322–35.

[54] Zahedi H, Sahebihagh MH, Sarbakhsh P. (2022). The Magnitude of Loneliness and Associated Risk Factors among University Students: A Cross-Sectional Study. In *Iran J Psychiatry* (Vol. 17, Issue 4). https://doi.org/10.18502/ijps.v17i4.10690.

[55] Potts C. Seen And Unseen: First-Year College Students' Sense Of Belonging During The Covid-19 Pandemic. Coll Stud Affairs J. 2021;39(2):214–24.

[56] Hou X, Wang J, Guo J, Zhang X, Liu J, Qi L, et al. Methods and efficacy of social support interventions in preventing suicide: a systematic review and meta-analysis. Evid Based Ment Health. 2022 Feb;25(1):29–35.

[57] Dost G, Mazzoli Smith L. Understanding higher education students' sense of belonging: a qualitative meta-ethnographic analysis. J Furth High Educ. 2023;47(6):822–49.

[58] Gopalan, M., Linden-Carmichael, A., & Lanza, S. (2022). College Students' Sense of Belonging and Mental Health Amidst the COVID-19 Pandemic. The Journal of adolescent health : official publication of the Society for Adolescent Medicine, 70(2), 228–233. https://doi.org/10.1016/j.jadohealth.2021.10.010.

[59] Søndergaard R, Buus N, Berring LL, Andersen CB, Grundahl M, Stjernegaard K, et al. (2023). Living with suicidal thoughts: A scoping review. In Scandinavian Journal of Caring Sciences (Vol. 37, Issue 1, pp. 60–78). John Wiley and Sons Inc. https://doi.org/10.1111/scs.13137.

[60] Otten D, Ernst M, Tibubos AN, Brähler E, Fleischer T, Schomerus G, et al. Does social support prevent suicidal ideation in women and men? Gender-sensitive analyses of an important protective factor within prospective community cohorts. J Affect Disord. 2022 Jun;306:157–66.

[61] Kim BJ, Kihl T. Suicidal ideation associated with depression and social support: a survey-based analysis of older adults in South Korea. BMC Psychiatry. 2021 Aug;21(1):409.

[62] Pilkington P, Younan R, Bishop A. Early maladaptive schemas, suicidal ideation, and self-harm: A meta-analytic review. Journal of Affective Disorders Reports. Volume 3. Elsevier B.V.; 2021. https://doi.org/10.1016/j.jadr.2020.100051.

[63] Bianchini GM. "The Impact Of An Online Self-Compassion Intervention On Thwarted Belongingness And Perceived Burdensomeness" (2022). Electronic Thesis and Dissertation Repository. 8635. https://ir.lib.uwo.ca/etd/8635

[64] Prihadi KD, Wong CY, Chong EY, Chong KY. Suicidal thoughts among university students: the role of mattering, state self-esteem and depression level. International Journal of Evaluation and Research in Education. 2020;9(3):494–502.

[65] Flett GL, Burdo R, Nepon T. Mattering, Insecure Attachment, Rumination, and Self-Criticism in Distress Among University Students. Int J Ment Health Addict. 2021;19(4):1300–13.

[66] Lee, H. J., & Baptist, J. (2024). Cultural nuances of thwarted belongingness and perceived burdensomeness linked to Asian American suicidality.

[67] Li W, Dorstyn DS, Jarmon E. Identifying suicide risk among college students: A systematic review. Death Stud. 2020;44(7):450–8.