The Relationship between Interpersonal Psychological Theory of Suicide Constructs (Loneliness, Perceived Social Support, Thwarted Belongingness and Burdensomeness) and Suicidal Behavior among Iranian Students

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Abstract

Aim: This research has tried to study the relationship of loneliness, perceived social support, thwarted belongingness and burdensomeness with suicide among Iranian university students.

Methods: The participants of the study included a pool of 315 Iranian university students who were randomly chosen from the students studying in 2015-2016. The study design was correlational and cross-sectional. Data were collected through using four instruments: Interpersonal Needs Questionnaire (INQ), Suicidal Behavior Questionnaire-Revised (SBQ-R), Revised UCLA Loneliness Scale (UCLA), and Perceived Social Support Questionnaire (PSSQ). In order to analyze the data, Pearson's correlation and step-wise regression were conducted.

Findings: The findings revealed that while the males scored higher in both factors of thwarted belongingness and burdensomeness, the females possessed greater amount of loneliness and higher rate of perceived social support as compared to their male counterparts. Moreover, although no significant difference was found between marital status and suicide, single people showed more burdensomeness whereas married people felt higher amount of loneliness as well as higher perceived social support.

Conclusion: Finally, based on the results, we can conclude that interpersonal psychological theory of suicide is moderately helpful in predicting and explaining suicidal behaviors in students.

Keywords: Loneliness, Perceived social support, Thwarted belongingness, Burdensomeness, Interpersonal psychological theory

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Introduction

Suicide has been defined as an intentional act of finishing one's own life [1]. In addition to the complete suicide, there are three other important types of suicidal thoughts and behaviors including 1) suicidal ideation (having recurrent and serious thoughts about killings oneself), 2) suicidal plans (planning out the way or style of suicide), and 3) suicidal attempts (self-injury behaviors with death intentions). Also gesture (self-injury behaviors in the form of suicide but without an intention or plan for killing oneself) and self-injury should be differentiated from an attempt for suicide [1, 2]. Evidence shows that these three non-fatal suicidal behaviors and thoughts are the most important predicators of subsequent suicidal attempts in individuals [3, 4]. Different risk factors including mental disorders, especially major depression disorder [3, 5], family background [6], personal suicidal background [7], hopelessness [8], biological factors (low level of serotonin) [9], and stressful life style [10] play a determining role in the emergence of these thoughts and behaviors. In addition, factors like substance abuse, alcohol and tobacco [11], distressful life incidents, despair [12], risky behaviors [13], and low social support and affective deregulation [14] play role in the emergence of these ideations and behaviors.

It has been estimated that approximately one million people each year die as the result of suicide, which makes suicide the 11th death factor globally between all ages, and the second mortality reason among adolescents and students in the age range of 15-29 years. It has also been reported that each year, 1100 students in the U.S commit suicide [7, 14, 15]. Also researchers have shown that 12% of students have thought seriously about suicide in their previous year while a lower percentage, approximately 10%, of those who thought about suicide actually have committed suicide [16, 17]. Very few empirical and rule governed studies, however, have been conducted on the issue of suicide mainly due to lack of a structured model for this behavior [18]. Intending to fill this gap, Junior (2005) has introduced the Interpersonal Psychological Theory of Suicide (IPTS). Based on IPTS, the intention of suicide initiates first via the two risk factors of thwarted belongingness and perceived burdensomeness. Thwarted belongingness refers to the feeling and belief of a person of a low level of belongingness so that he/she is isolated from the other people and does not belong to any family, group of friends, or specific groups; this basically emerges from two reasons: 1) loneliness, and 2) lack of reciprocal care. Perceived belongingness, on the other hand, is the person's perspective that his/her existence is a burden for the family, friends and the society,

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and in his/her absence, they could have better performance; this feeling consists of two factors: 1) self-hate, and 2) feeling of liability. These two constructs then lead to the creation of passive intention of suicide, which, in the presence of hopelessness (this will never change), would direct the individual from passive suicidal ideation to active suicidal desire, which is not, however, enough for suicidal attempt until the person possesses another construct, named *acquired capability for suicide* (or the person's ability in overcoming the inherent drive for self-preservation and committing self-harm behaviors with the intention of death) [15, 18, 19]. Ma et al. [15] just recently reported that 12 studies examined the relationship between thwarted belongingness and perceived burdensomeness; however, only 8 studies found a significant relationship between thwarted belongingness and perceived burdensomeness and 4 studies (which just two of them used an acceptable rate of sample) revealed no meaningful relationship between these two variables. Also they found that out of 21 studies conducted on the relationship between acquired capability for suicide and suicide ideation, only 12 studies showed significant relationship between these two constructs while 9 studies turned out to reveal no significant relationship in this regard. However, they claimed that like thwarted belongingness and perceived burdensomeness, acquired capability for suicide could be a predicator of suicidal ideation, suicide risk, suicide factors, suicide potential, and identification of the probability of suicide in ordinary people, students and clinical patients. Although the existing literature supports this theory, other studies are necessary to fill the previous gaps.

Different studies (including [20-25]) have investigated the IPTS among students. The results of all these studies confirm the impact of perceived burdensomeness on suicidal behavior among students. This is while no strong results have gained support for the relationship between thwarted belongingness and suicidal behavior and ideations among these students. In addition, feeling of loneliness as a pre-construct of thwarted belongingness has been reported to have a significant relationship with suicidal ideation [26]. This includes the lack of necessary social relationships and also lack of affection in the present social relationship of the person [27]. Also the rate of perceived social support has a significant relationship with the physical and mental health [28] reduction of stress and the increase in resisting against stressful life incidents [29], as well as the amount of the occurrence of suicidal ideations and behaviors in college students [30]. This could be one of the determining factors of suicidal ideation

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among the students. Therefore, this study investigated the possible relationship of loneliness, perceived social support, thwarted belongingness and perceived burdensomeness with suicide ideation and behaviour in a sample of students to understand the validity of Interpersonal-Psychological model of suicide in Iranian samples. Moreover, we investigated the demographic characteristics of samples and the difference between suicidal and non-suicidal groups based on the study variables.

Research Methodology

The study design was correlational and cross-sectional. The participants were 315 Iranian university students who were randomly chosen from all students studying in Mohaghegh Ardabili University during 2015-2016. After ensuring the consent of participation, the participants were assured about the confidentiality of the results. They were then asked to fill in the questionnaires. The questionnaires were collected, and the gained data were analyzed through t-test, Pearson's correlation, and stepwise regression model.

Instruments

Interpersonal Needs Questionnaire (INQ)

This questionnaire comprises of several versions (including 10, 12, 15, 18, and 20 questions), which according to the literature [31], the versions of 10 and 15 questions have the highest rate of reliability and much more suitability with the explorative-inferential models. The version of 15 questions consists of self-report items, which require the participants to choose the best choices based on their beliefs. The participants are asked to mark the extent of their beliefs on a 7 Likert-scale, to which they are related to others (belongingness) and to which they think they are obtrusive to others (burdensomeness). Achieving higher score denotes higher rate of perceived burdensomeness and thwarted belongingness. High reliability rate (α=90%) and high validity have been reported for this scale [32, 33]. In this research, high Cronbach's alpha rate (83.5%) was obtained too.

Suicidal Behavior Questionnaire-Revised (SBQ-R)

This is the most commonly used scale comprising of four questions, each seeking for different personal capacity for suicide. The first item elicits the suicidal ideation and attempt, the second one measures the frequency of suicidal ideation in previous year, the third one seeks to discuss the communication of intent, and the fourth item reveals the probability of committing suicide in the future. The general cut-off point for this test is 7 for ordinary people and 8 for clinical patients. The lowest score in this scale is 3 and

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the highest score is 18. Higher scores denote the higher risk for suicidal behaviors. SBQ-R has been reported to have a high internal reliability, validity, and discrimination ability for the scale [34]. In this current research, 80.5% Cronbach's alpha rate was obtained for this scale.

Revised UCLA loneliness scale (UCLA)

This scale is a 20-item self-report scale that assesses a person's rate of feelings of loneliness, companionship, isolation, and closeness to others on a 4-point Likert scale. The range of the participants score is 20 to 80, and the average score is 50. Scores greater than 50 denote higher rates of loneliness and isolation feelings. Acceptable rates of internal consistency (alpha = 90%) and validity have been reported. This scale has also illustrated a good internal consistency and validity for the Iranian context [35].

Perceived Social Support Questionnaire (PSSQ

This is a 12-item questionnaire, which measures the participants' opinion towards the rate of perceived social support from family, friends, and other important people. This scale comprises of three sub-scales of social support gained from family, from friends, and from others. While the internal consistencies of 90% and 86% have been reported for the sub-scales and the main scale respectively, the Cronbach's alpha ranging from 82 to 89% has been estimated in the context of Iran [36, 37].

Findings

According to the demographic distribution, most of the participants were men (60/6%), single (89/2%), jobless (84/8%) and bachelor students (84/9%). Also the majority of the participants' age was in the range of 17 - 24 (83/8%).

Moreover, the independent samples t-test showed that females revealed higher rates of loneliness and perceived social support comparing to males. On the other hand, males significantly differed from females in the two general scales of interpersonal needs and burdensomeness.

According to Table 1, 86 (27.3%) participants out of the total of 315 participants were in danger of suicidal ideation and behavior. This means that these participants gained a score of 7 or higher in the suicidal behavior questionnaire-revised test.

Table 1: Investigating the frequency of the participants with suicidal ideation and behaviors

	Frequency	Percent	Valid percent
Cut-off point<7	229	72/7	72/7
Cut-off point>=7	86	27/3	27/3

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Since there were different proportions of the participants in the two groups, the Mann-Whitney's U test was conducted to study the variables regarding the existence or lack of suicidal ideation and behaviors. As it can be seen in Table 2, there are significant differences between the two groups in all study variables. Accordingly, the group with suicidal ideation and behavior, compared to the group without suicidal ideation and behavior, had higher rate of loneliness, burdensomeness, and thwarted belongingness. The group without the suicidal ideation and behaviors illustrated a greater rate of perceived social support from friends and family, while the group with suicidal ideation and behaviors had a greater rate of perceived social support from others. Even though there is a significant difference in the two groups regarding the perceived social support, the observed difference is not very strong

Table 2: The Mann-Whitney's U test, compering two groups with and without suicidal ideation regarding the study variables

	Loneliness	Interpersonal needs factor	Burdensomeness	Belongness	Perceived social support	Perceived social support from family	Perceived social support from friends	Perceived social support from others
Z	-2.39	-7.47	-6.61	-6.02	-5.82	-4.29	-3.85	-1.97
Asymp. Sig. (2-tailed)	.017	.000	.000	.000	.000	.000	.000	.048
Cut.P<7	150.4	134.5	137.5	139.0	176.3	171.4	170.6	151.8
Mean Ranks								
Cut. P>=7	178.0	220.5	212.3	208.3	109.2	122.2	125.8	174.4
Cut.P<7	229	229	229	229	229	229	229	229
N								
Cut. P>=7	76	76	76	76	76	76	76	76

As shown in Table 3, there is a positive and meaningful relationship between suicidal ideation and behaviors and general factor of interpersonal needs and the two factors of burdensomeness and thwarted belongingness. On the other hand, while there is a negative significant relationship between suicide and perceived social support and the sub-scales of perceived social support from family and friends, there is no meaningful relationship between suicidal ideation and behaviors and perceived social support from others. The other important point is the lack of relationship between perceived loneliness and suicidal

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ideation and behaviors. Loneliness, on the other hand, has a weak negative relationship with perceived social support and perceived social support from family. It also has a strong positive relationship with perceived social support from others. Moreover, there is a moderate relationship between perceived social support and general factors of interpersonal needs, perceived burdensomeness, and thwarted belongingness.

Table 3: Pearson's correlation matrix between the study variables

	Loneliness	Interpersonal needs factor	Burdensomeness	Belongness	Perceived social support	Perceived social support from family	Perceived social support from friends	Perceived social support from others	Suicide
Loneliness	1								
Interpersonal needs factor	.025	1							
Burdensomeness	-.052	.815**	1						
Belongingness	.083	.886**	.417**	1					
Perceived social support	-.141*	-.536**	-.378**	-.514**	1				
Perceived social support from familly	-.143*	-.420**	-.354**	-.355**	.757**	1			
Perceived social support from friends	-.055	-.414**	-.277**	-.412**	.792**	.367**	1		
Perceived social support from others	.875**	.022	-.042	.071	-.127*	-.142*	-.043	1	
Suicide	.077	.492**	.497**	.343**	-.317**	-.297**	-.200**	.068	1

Also partial correlation proved that controlling the interpersonal needs would dissolve the previous relationship between perceived social support and suicidal ideation and behaviors. There is a positive and significant relationship between the factors of interpersonal needs and suicidal behaviors and ideation even when the factor of perceived social support is controlled. Based on the Table 4, the results of Regression analysis (Enter method) confirmed that only the factor of interpersonal needs could be the predicator of suicidal ideation and behaviors. This variable could explain approximately 25% of suicidal thoughts and behaviours.

Table 4: Brief results of Regression analysis (Enter method) for predicting suicidal ideation and behavior based on the interpersonal needs and perceived social support variables

	Beta	Sig.	*Statistic model*
Interpersonal needs factor	.451	.000	R=.496
Perceived social support	-.075	.196	R2=.246
			ADR2=.241
			Sig(ANOVA)=.000
			F(ANOVA)=50.8

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As Table 5 shows, the variable of burdensomeness has been first entered into the Regression analysis. Burdensomeness as a single factor predicts as much as 24% of the dispersion in the scores of suicide scale (R^2=0/247). At the second step, the perceived thwarted belongingness increased the rate of the predicted frequency up to 22%. In the third part of the analysis, the perceived social support from family added 0.01% to the predicted rate. Perceived burdensomeness, thwarted belongingness, and perceived social support from family can, generally, explain the dispersion in the scores of suicide scale for about 28%. However, due to the low effect of perceived social support and thwarted belongingness, they could be eliminated from the equation, and the first analysis could be used as the optimal equation.

Table 5: Brief results for Regression analysis (Stepwise method) for predicting suicidal behaviours based on the perceived burdensomeness, thwarted belongingness, and perceived social support from family and friends

Model	Beta	Sig.	R	R^2	ADR^2	Sig. (ANOVA)	F (ANOVA)	Excluded variables
1. Burdensomeness	.497	.000	.497	.247	.245	.000	102.6	1- belongness 2- Perceived social support from family
2. Burdensomeness **-belongingness**	.428 .165	.000 .002	.519	.269	.245	.000	57.5	1- Perceived social support from family
3. Burdensomeness **-belongingness** **-Perceived social support from family**	.402 .138 -.106	.000 .012 .047	.528	.279	.272	.000	40.0	-

Discussion

The purpose of this research was to investigate the relationship between perceived loneliness, perceived social support, thwarted belongingness, and perceived burdensomeness with suicidal ideation and behaviors among university students. Moreover, we examined the contributing demographic factors, the difference between the two groups; one with suicidal ideation and behavior and the other without such behaviors, and also the best predicator of suicidal ideation and behaviors. In contrast to the longitudinal studies conducted by Donker et al. [38] who found no significant difference between the two genders regarding burdensomeness but reported a higher score for females in thwarted belongingness, this study revealed that, compared to females, males had higher scores in both factors of perceived burdensomeness and thwarted belongingness; however, they differ significantly from females only in perceived burdensomeness. The findings of this study are also against the findings of

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studies by [39, 40] since this study revealed a higher amount of loneliness perceived by females compared to males. The findings are in line with other studies in that there is a higher perceived social support in females than in males. Yet even if no significant relationship between marital status and suicide was detected, married participants perceived greater loneliness and social support compared to the single participants who, in turn, perceived a higher amount of burdensomeness. This is also congruent with the previous studies, which revealed a greater perceived social support and especially perceived social support from others, and reported no difference between the two single and married groups in the amount of perceived social support [39].

The findings of this study also revealed a significant difference between the groups with and without suicidal ideation and behaviors in all the study variables. There is a noticeable finding showing that the group with suicidal ideation and behavior had a significant and much more perceived social support than others. In addition, perceived loneliness surprisingly correlates strongly, positively, and meaningfully only with perceived social support from others while it has a weak negative and meaningful correlation with perceived social support from family. This means that, unlike the perceived social support from family, the increase in the amount of perceived social support from others would lead to a meaningful increase in the level of the person's perceived loneliness. Generally, among the study variables, there is a strong and positive relationship between suicidal behaviors and perceived burdensomeness, thwarted belongingness, and the overall factor of interpersonal needs, in the one hand, and a negative and weak relationship between suicidal behaviors and perceived social support from family, friends and the perceived social support factor, on the other. However, no significant relationship was found between loneliness and suicidal behaviors though some previous researchers have found such a relationship in adults [41] and old people [27]. Unlike this study, some other **studies** [27] have reported a detectable relationship of perceived loneliness with perceived burdensomeness and thwarted belongingness. This is because the participants of the mentioned study were old, and as a justification, it is possible that as a person gets older, perceived loneliness may play a stronger role in the emergence of suicidal behaviors, burdensomeness, and thwarted belongingness. Along with other studies, there is a significant negative relationship between perceived social support and suicidal behaviors [42] and a positive and meaningful relationship between burdensomeness and thwarted belongingness [15, 18, 43]. However, some researchers have

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found no significant relationship between suicide and perceived burdensomeness in military soldiers and primary care samples [44, 45]. These researchers used three-way interaction equations of suicide, perceived burdensomeness and hopelessness [45] and depression, PTSD and homelessness [44]. On the other hand, most of the researchers had not been able to find any significant relationship between suicide and thwarted belongingness [15]. In this paper, there was a significant and positive relationship between suicidal thought and behaviours with thwarted belongingness; however, thwarted belongingness could not predict it in the regression model. To clarify these conflicting findings, some researchers proposed that thwarted belongingness has an indirect relationship with suicidal thought. For instance, one study [46] showed that thwarted belongingness has a significant relationship with suicidal thought, but after controlling depression as a mediator variable, the previous relationship between thwarted belongingness and suicidal thought disappeared. These results propose that thwarted belongingness has an indirect relationship with the suicidal thought at least in young adults. All in all, the two most important elements of the interpersonal-psychological model, (i.e. thwarted belongingness and perceived burdensomeness) only could explain a small percentage of suicidal thoughts' activation. Despite the mentioned model, two other suicidal models use same elements to highlight suicidal behaviour. The first one is Diathesis-stress model, which proposes that when people who have initial biological or psychological potentials confront with stressors like thwarted belongingness and perceived burdensomeness and tend to activate suicidal thoughts, which can lead to subsequent suicidal behavior [47]. Same elements again have been used more recently by O'Conner but in a different way. The Integrated Motivational-Volitional Model of Suicidal Behaviour [48] suggests that thwarted belongingness and perceived burdensomeness are moderators or, in another word, phase shifters. These two elements do not create suicidal thoughts; indeed, pre-motivational factors like diathesis and traumatic life events due to entrapment may subsequently, cause a person to think about killing himself or herself. After suicidal thought is activated, thwarted belongingness and perceived burdensomeness plus some other feathers such as access to tools and impulsivity traits enable the person to end his or her life [48]. O'Conner in his recent paper provided some solid evidence for these moderators [49]. Therefore, the Integrated Motivational-Volitional Model of Suicidal Behaviour provides reasons why thwarted belongingness and perceived burdensomeness in the interpersonal theory of suicide could

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only explain a small portion of suicidal behaviors.

Conclusion

The findings of this paper revealed that while thwarted belongingness does not play a significant role in predicting suicidal behaviors, burdensomeness has an important role to play in identification and prediction of these behaviors. However, this factor can predict and explain a small part of this domain, denoting that the interpersonal psychological theory is moderately able to predict the suicidal behaviors in students.

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