

Student Stress and Suicidal Ideation: The Role of Social Support From Family, Friends, and Significant Others

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Abstract: To improve the prevention of student suicide, we investigated associations between stress, social support (from family, friends, and significant others support) and suicidal ideation. A sample of 200 adolescent students (100 boys and 100 girls) completed measures of demographic variable, stress, social support, and suicidal ideation. Findings of correlational analyses suggest that there is significant positive correlation between adolescents stress and suicide ideation and significant negative correlation between perceived social support (from family, friends, and significant others support) and suicide ideation. Results of hierarchical regression analyses suggest that stress and family support are important predictors of suicidal ideation for all i.e., for total sample as well as for subgroups-boys and girls. Moreover, Stress X Family Support interaction was found significant in predicting the outcome for total sample and adolescent boys. However, no significant interaction was found in predicting suicidal ideation in girls. For both total sample and boys, post hoc analyses of the significant interactions indicated a consistent pattern in which low family support exacerbated the association between stress and suicidal ideation. Findings suggest that helping adolescents and their parents to develop more supportive social relations may be helpful in alleviating stress to decreasing suicidal ideation among adolescents.

Keywords: Adolescents; Suicidal Ideation; Stress; Social Support.

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I. INTRODUCTION AND REVIEW OF THE LITERATURE

Worldwide, nearly one million deaths each year are caused by suicide (World Health Organization-WHO, 2012a). Young people are more vulnerable to suicidal behaviors (WHO, 2012b, c). The latest data in India (National Crime Records Bureau-NCRB, 2015) report that more than one lakh persons (1,33,623) in the country lost their lives by committing suicide during the year 2015, and around 32.8% suicide victims were youths in the age group of 18 to below 30 years and around 7% suicide victims were below 18 years. Among the specified causes, 'family problems' (307), 'Illness' (163), and 'failure in examination' (162) were the main causes of suicides among children (below 14 years of age). 'Family Problems' was the major causes of suicides which accounted for 27.6% of total suicides during 2015. 'Other Family Problems' (which refers to other than 'Marriage Related Issues') have driven 2139 and 12633 among below 18 years and 18 years to below 30 years age groups, respectively (NCRB, 2015). Srevestava (2002, as cited in Raghu, 2013) reported that majority of attempted suicide were among the young (15-29 years of age), more among males (53%) than females (47%) and from poor middle class, nuclear families. Suicidal ideation is a precursor for attempted suicide and logically it precedes suicidal acts (Beck, Kovacs, & Weissman, 1979). O'Carroll et al. (1996) defined suicidal ideation as self reported wishes, thoughts, or desire to take one's own life. Stress is a psychological variable that has been attracting the attention of psychologists for a long time and has been vastly studied in relation to depression, hopelessness, suicidal behavior and suicidal ideation. Sarafino (1994) said "stress is the condition that results when person/environment transaction leads the individual to perceive a discrepancy - whether real or not - between the demands of a situation and the resources of the person's biological, psychological or social system."

Beside other factors, adolescents who report higher levels of stressful negative and potentially traumatic life events (De Man, 1988; De Man, Leduc, & Labrèche-Gauthier, 1993; Dhar & Basu, 2006; Flannery, Singer, & Wester, 2001; Gupta & Pradhan, 2007; Latha, Bhat, & D'Souze, 1994; Singh & Joshi, 2008; Yang & Clum, 1996), school or academic stressors (Ayyash-Abdo, 2002; Lewinsohn, Rohde, & Seeley, 1993; Nelson & Crawford, 1990; Töero, Nagy, Sawaguchi, Sawaguchi, & Sótónyi, 2001), and academic pressure (has often to be a source of stress; Greenberger, Chen, Tally, & Dong, 2000; Ho, Hong, & Heok, 1999;

Iga, 1981; Juon, Nam, & Ensminger, 1994; Shagle & Barber, 1995) are likely to be suicidal compared to their counterparts reporting much lower levels of these exposures.

Zhang, Wang, Liu, and Jung (2012) among 671 Chinese college students found that life stress, active coping styles, and passive coping styles all had independent effect on the probability of suicide ideation. Passive coping styles, especially fantasizing, mediated the relation between life stress and suicide ideation. Zayas, Gulbas, Fedoravicius, and Cabassa (2010) conducted thematic analyses of twenty-seven qualitative interviews (collected, between July 2005 and July 2009) with teenage Latinas (aged 11-19) living in New York City who had attempted suicide. Their results showed that the pathways to the suicidal event consisted of a pattern of continuous, escalating stress (primarily at home) that created the emotionally combustible conditions for the attempt.

While past research has demonstrated the role of stress in potentially risk factor of suicidality, however, it is found that not all individuals who experience the same level of life stress are suicidal. Moreover, it is suggested that some protective variables and mechanism can protect persons from suicidality even when they are under the influence of stressful events and depression (Rubenstein, Heeren, Housman, Rubin, & Stechler, 1989). Perceived satisfaction from social support is one of the important protective factors which provide resilience against suicidal ideation. Social support refers to the perceived comfort, caring, esteem, or help a person receives from other people or groups (Cobb, 1976; Gentry & Kobasa, 1984; Wallston, Alagana, De Vellis, & De Vellis, 1983; Wills, 1984). Previous research suggests that low support is associated with greater severity of adolescents' behaviour and suicidal ideation (e.g. Arria et al., 2009; Clum et al., 1997; D'Attilio, Campbell, Lubold, Jacobson, & Richard, 1992; De Man, Leduc et al., 1993; Eskin, 1995; Esposito & Clum, 2003; Mazza & Reynolds, 1998; Paulson & Everall, 2001). Sánchez-Teruel, García-León, and Muela-Martínez (2013), among College Spanish, showed that students more likely to have suicidal ideation who have poorer social skills and less social support and are less optimistic.

A number of studies have found that social support from family (Harris & Molock, 2000; King, Segal, Naylor, & Evans, 1993; Matlin, Molock, & Tebes, 2011; Rudd, 1990) and especially from parent (De Man, Labreche-Gauthier, & Leduc, 1993), friends (Matlin et al., 2011; Rudd, 1990), and significant others (Portzky, De Wilde, & van Heeringen, 2008; Sun & Hui, 2007; Tang et al., 2009) exert a direct protective effect against suicidal ideation and social support functioned as a protective factor in the presence of adversity and decrease suicidal ideation (Clum & Febraro, 1994; Rudd, 1990), suggesting that risk factors are more likely to relate to poor outcomes among those with an impoverished social support network. Among high-risk adolescents in school, suicidal youth were found to have lower perceived social support from families, teachers, or friends than their nonsuicidal peers (Esposito & Clum, 2003). Similarly in a study, Borowsky, Taliaferro, and McMorris (2013) among 130,908 students (sixth, ninth, and twelfth grades) involved in verbal and social bullying, found that parent connectedness was a crosscutting protective factor for suicidal thinking and behavior, whereas stronger perceived caring by friends and by nonparental adults were additional protective factors for some groups. Recently, Savitha and Srimathi (2017) conducted a study among 240 adolescents (60 each in a group) who were selected from different colleges and different general hospitals from Urban area of Bengaluru. They found that severe suicidal ideation (SSI) adolescents perceived less social support satisfaction as well as social network compared to other groups that is low suicidal ideation (LSI), mild-moderate suicidal ideation (MSI) Attempted suicide (AS) adolescents. Moreover they also found that Low suicidal ideation adolescents differed significantly in perceiving more social support satisfaction and having more social network compared to other groups.

Objectives and Hypotheses

The present study will seek to further explore the nature of the relationship among suicidal ideation, stress, and social support (from family, friends, and significant others), focusing specifically on the role of social support as a moderator / protective factor in the relationship between stress and suicidal ideation among adolescents. In order to achieve these objectives the following hypotheses were formulated:

1. There will be positive predictive relationship between stress and suicidal ideation.
2. Social support will negatively predict suicidal ideation (2.1, 2.2, and 2.3).
 - 2.1. Family support will have negative predictive relationship with suicidal ideation.
 - 2.2. Friends support will have negative predictive relationship with suicidal ideation.
 - 2.3. Significant others support will have negative predictive relationship with suicidal ideation.
3. Social support (from family, peers and significant others) will moderate the relationship between adolescent stress and suicidal ideation. Specifically speaking, a weaker stress-suicidal ideation relationship is expected for adolescents higher in perceived social support relative to those lower in perceived social support. In other words, social support will be a buffering effect on the relationship between stress and suicidal ideation.
4. Male and female students will differ significantly on criterion and predictor variables.

II. METHOD

Participants

The sample of the present study consisted of 200 adolescent students (100 males and 100 females) randomly selected from Aligarh Muslim University (AMU), Aligarh. This was a convenience sample and participants were from Grade IX through XII students. The age of the subjects ranged from 13 to 21 years with a mean age of 15.9 years.

Measures

Apart from demographic questionnaire following measures were used:

Student Stress Scale (SSS): For measuring stress typically experienced by the students, Student Stress Scale developed by Husain, Rashid, and Jahan (2006) was used. The scale consists of 57 items with the four point rating scale ranging from “no stress at all” (scored as 0) to “extreme stress” (scored as 3). This scale is unidimensional and aims to measure the level of stress experienced by students. The Cronbach Coefficient alpha of this inventory is 0.96. Content validity of the scale is satisfactory. The validity of the SSS against Dobson’s Student Stress Inventory (Dobson & Alban Metacalfe, 1983) was determined by the present researcher. For this purpose both the scales were administered on a sample of 100 students. The coefficient of correlation between the two scales was found to be .782.

Multidimensional Scale of Perceived Social Support (MSPSS): The Multidimensional Scale of Perceived Social Support (Zimet, Dahlem, Zimet, & Farley, 1988) was used as a brief self-report measure of subjectively assessed social support. The scale consists of 12-item, with three subscale that measure the perceived adequacy of support from family, friends, and significant others. Item ratings were on a 7-point Likert-type scale ranging from Very Strongly Disagree (1) to Very Strongly Agree (7). Higher scores on each of the subscales indicate higher levels of perceived support, and a sum of three scales yields a Global satisfaction with perceived support.

Cronbach’s coefficient alpha was obtained from a sample of Duke University undergraduate students, and the values found were .87, .85, and .91 for the Family, Friends, and Significant Other subscales, respectively. The reliability of the total scale was .88. The test-retest reliability (temporal stability over 2 to 3 months) for the Family, Friends, and Significant Other subscales were .85, .75, and .72, respectively. For the whole scale the value obtained was .85 (Zimet et al., 1988). Canty-Mitchell and Zimet (2000) among adolescent student showed adequate internal consistency of the MSPSS. Zimet et al. (1988) also found that the MSPSS has adequate construct validity. Moreover, in a number of studies across different samples, the reliability, validity, and factor structure of the MSPSS have shown (e.g., Dahlem, Zimet, & Walker, 1991).

The Scale for Suicidal Ideation (SSI): Suicidal ideation among the students was assessed with the help of 19 item self-report Scale for Suicidal Ideation, developed by Beck et al. (1979). The SSI was designed to quantify the intensity of current conscious suicidal intent by scaling various dimensions of self-destructive thoughts or wishes. The items assess the extent of suicidal thoughts and their characteristics as well as the respondent’s attitude towards them; the extent of the wish to die, the desire to make an actual suicide attempt, and details of plans, if any; internal deterrents to an active attempt; and subjective feeling of control / or “courage” regarding a proposed attempt. Each item consists of three alternative statements graded in intensity from 0 to 2. The instrument’s total score is the sum of the individual item scores and may range from 0 (low ideation) to 38 (high ideation). In other words, a positive rating (>1) on any of the ideation scale’s 19 items is considered as a potential indicator of suicide ideation. Out of 19 items, 16 have positive and significant item-total correlations and a Cronbach alpha was .89, which indicate high reliability of SSI and also support the validity of this scale (Beck et al., 1979). Validity of SSI was also indicated by the moderate correlations with clinical ratings of suicidal risk and self-harm (Beck et al., 1979).

Procedure of Data Collection

Prior to the data collection, the authorities of the educational institutes were approached for their permission and cooperation to collect data from their students. The data were collected in class room situations. After getting the willingness of subjects a congenial rapport was established to make them comfortable. Then the author distributed the copies of questionnaires (which contained Personal data sheet and 3 scales) to students. This was done with the help of the teacher concerned. Subjects were instructed to go through the instructions written in the questionnaires before answering each questionnaire. The instructions were also read to them loudly by the investigator, so that all students may follow them correctly. Examinees were asked not to leave any item unanswered. They were also asked to be free to ask if they had any queries. There was no time limit fixed for filling up the questionnaires. However, they were asked not to take unnecessarily long time. Most students completed the questionnaires within approximately 35 to 40 minutes i.e. time allotted for one period. The general testing conditions were satisfactory and the procedure was uniform throughout the data collection.

The same procedure was repeated in each class. After data collection, scoring of the responses was done according to the scoring procedure prescribed for each scale.

Data Analysis

SPSS 16.0 of Windows software was used for the statistical analyses. To determine sample characteristics descriptive statistics, independent sample t-tests, and Pearson correlation coefficient were used. In order to test main and moderator effects, a four-step hierarchical linear regression analysis predicting suicidal ideation was used.

III. RESULTS

Results of the Descriptive Statistics

Means, Standard Deviations, Standard Error of Mean and obtained range of scores with possible score of the major variables are displayed in Table 1.

Table 1 Descriptive Statistics of Study Variables (N = 200)

Variables	Suicidal Ideation	Stress	Family Support	Friends Support	Sign. others Support	Total Support (MSPSS)
Mean	9.375	75.94	23.985	21.120	21.375	64.48
SD	5.276	21.749	3.709	3.944	4.689	9.912
SEM	.373	1.538	.262	.279	.332	.701
Obtained Range	0-28	11-125	7-28	8-28	9-28	30-84
Possible Score	0-38	0-171	4-28	4-28	4-28	12-84

Note: Sign. others Support = Significant others Support

Gender differences on the major study variables were explored through independent samples t-test.

Table 2 Gender Differences in the Study Variables

	Gender				t-value (df=198)	95% CI	
	Boys (N=100)		Girls (N=100)			Lower	Upper
	M	SD	M	SD			
Suicidal Ideation	10.780	5.104	7.970	5.090	3.898***	1.388,	4.231
Stress	75.260	20.420	76.620	23.085	.441	-7.438	4.718
Family Support	23.690	4.119	24.280	3.244	1.125	-1.624	.444
Friends Support	20.730	4.007	21.510	3.859	1.402	-1.877	.317
Sig. Others Support	20.910	5.160	21.840	4.138	1.406	-2.234	.374
Global Support	65.330	10.551	67.630	9.136	1.648	-5.052	.452

Note. ****p* < .001, two tailed.

Table 2 reflects the results of the t-test for examining the difference between male and female adolescents with regard to suicidal ideation, stress, and perceived social support (i.e. support from family, friends, significant others, and total/global support). The results shown in Table 2 indicate that there were no significant gender differences in major study variables except on suicidal ideation. The mean score of suicidal ideation for boys (Mean = 10.780) was significantly higher as compared to girls (Mean = 7.970, t-value = 3.898, *p* < .001).

Results of Hierarchical Regression Analyses

Hierarchical regression analyses were performed to examine the predictive utility of stress, perceived social support from family, friends and significant others in predicting suicidal ideation. Consistent with Cohen and Cohen (1983), all variables within a given set were entered simultaneously. For the first step, demographic variables (viz., gender, percentage of marks in preceding grade examination, father’s education, and mother’s education) were entered into the regression equation. The inclusion of the main-effect of stress was involved in the second step, and in the Step three were included jointly the three main-effect variables—viz., perceived social support from Family, Friends, and Significant others. As all the dimensions of social support were considered separately and Global/total support score was skipped from the analyses. The last and final step involved the interactions of Stress X Family support, Stress X Friends support, and Stress X Significant others support. This procedure allowed the separate analyses of the independent contributions of demographic variables, stress, social support from family, friends and significant others and the interactions between stress and the moderating variables. Results of these analyses are presented in Tables 3 through 5. The results of the hierarchical regression analysis for the total sample are set in Table 3. In the first step the block of demographic variables (i.e. gender, percentage of marks in preceding grade examination, father’s education, and mother’s education) was entered. These variables accounted for a significant 19.5% ($R^2 = .195$, $F = 11.818$, *p* < .001) of the variance in suicidal ideation. The effect of these variables was, thus, controlled for further analysis.

After controlling for demographic variables Stress was entered at step 2. The main effect of stress was found to be significant beyond 0.1% level ($\beta = .524$, t -value = 9.841, $p < .001$). There was a substantial increase of .268 in R^2 (F -change = 96.840, $p < .001$), indicating the unique contribution of stress (after controlling for demographic variables) in explaining variance in suicidal ideation to be as much as 26.8%. The entry of the third block of variables (social support from family, friends, and significant others) in step 3, added significantly ($\Delta R^2 = .17$, F -change = 29.405, $p < .001$) to the variance accounted for in the severity of suicidal ideation bringing the total proportion of explained variance to 63.3%. However, it is noteworthy that the main effect of only family support was significant ($\beta = -.390$, t -value = -7.160, $p = .000$) with lower family support predicting high suicidal ideation (Table 3). Friends and significant others support did not contribute significantly to the prediction of suicidal ideation.

The prediction of suicidal ideation was also significantly enhanced with addition of the interaction terms of Stress X Family support, Stress X Friends support, and Stress X Significant others support ($\Delta R^2 = .027$, F -change = 4.989, $p < .01$), indicating that the nature of relationship between stress and suicidal ideation varied as a function of the family support, friend support, and significant others support scores. As can be seen from β values in Table 3, only the Stress X Family support interaction made a significant contribution to the prediction of suicidal ideation ($\beta = -.161$, t -value = -3.061, $p = .003$). The significant interactions support the moderating role of social support in the relationship between stress and suicidal ideation.

Table 3 Hierarchical Multiple Regression analysis for Total sample (N = 200).

Variables	Step1	Step2	Step3	Step4
	β	β	β	β
Gender ^a	-.242***	-.265***	-.225***	-.223***
PPGE	-.270***	-.211***	-.099*	-.099*
Father's Education ^b	-.167*	-.134*	-.047	-.053
Mother's Education ^c	-.033	-.016	-.026	-.036
Stress		.524***	.415***	.435***
Family Support			-.390***	-.369***
Friends Support			-.070	-.044
Sign. others Sup.			-.060	-.069
Stress X Family Sup.				-.161**
Stress X Friends Sup.				.030
Stress X Sign. others Sup.				-.040
Constant	26.424***	14.229***	26.698***	25.026***
R	.442	.681	.795	.812
R²	.195	.463	.633	.660
ΔR^2	.195	.268	.170	.027
F change	11.818 ***	96.840***	29.405***	4.989**
F	11.818 ***	33.469***	41.133***	33.150***

Note. β = Standardized regression coefficient. *** $p < .001$, ** $p < .01$, * $p < .05$; ^aGender (1 = Male, 2 = female), ^bFather's Education (1 = Uneducated/Below High School, 2 = High School, 3 = Graduate, 4 = PG & Non Professional, 5 = PG & Professional), ^cMother's Education (1 = Uneducated/Below High School, 2 = High School, 3 = Graduate, 4 = PG & Non Professional, 5 = PG & Professional); PPGE = Percentage of marks in preceding Grade examination, Family Sup. = Family Support, Friends Sup. = Friends Support, Sign. others Sup. = Significant others Support.

Significant moderating effects were probed and plotted through simple slopes by using Aiken and West (1991) and Holmbeck's (2002) approach. Post hoc regressions were run to compute simple slopes of stress on suicidal ideation for each level of moderator variable i.e. at one standard deviation above the mean (+1SD) and one standard deviation below the mean (-1SD; e.g., high social support, low social support). Regression lines were calculated at plus-and-minus one standard deviation of the stress, and then plotted to examine the slope of the association between stress and suicidal ideation within each level of moderator variable i.e. high and low levels.

Figure 1 shows the interaction between Family Support and Stress in the prediction of Suicidal Ideation scores. Results of post hoc probing revealed that both the regression lines i.e. for high family support ($b = .064$, $t = 3.923$, $p < .001$) and the low family support ($b = .155$, $t = 8.448$, $p < .001$) were significantly different from zero. The figure shows, there was a significant positive relation between stress and suicidal ideation at both high and low levels of family support. The figure also shows the predicted values of suicidal ideation for low and high family support groups at low (-1SD) and high (+1SD) levels of stress. These values are 8.29 and 5.22 for low family support and high family support groups, respectively at low stress level and 15.04 and 8 at high stress level. In addition, using procedures outlined by Aiken and West (1991) for determining differences between simple slopes, the slope for low family support was found to be significantly sharper than the slope for high family support, $t(196) = -3.511$, $p < .001$. In other words, low family support group as compared to high family support group had higher increase in suicidal ideation under high stress condition.

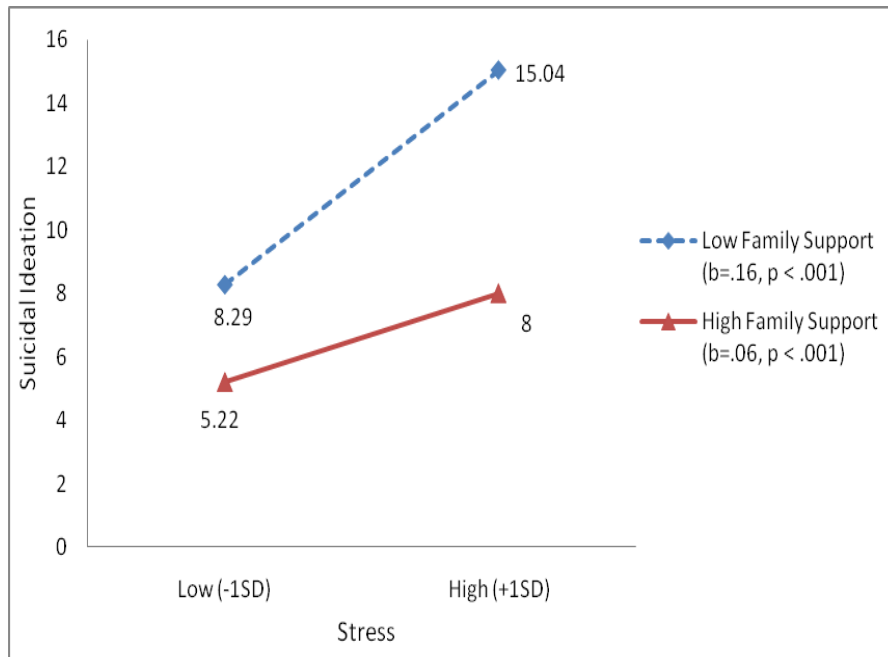


Figure 1. Plot of significant moderating effect in analysis of Stress X Perceived Social Support (Family) predicting suicidal ideation for total sample.

Similarly, hierarchical regression analysis was also performed for boys and girls samples, separately. The results of the analysis for boys sample are set in Table 4. In the first step the block of demographic variables (i.e. percentage of marks in preceding grade examination, father’s education, and mother’s education) was entered. Demographic variables accounted for a significant 18.3% ($R^2 = .183$, $F = 7.176$, $p < .001$) of the variance in suicidal ideation. The effect of these variables was, thus, controlled for further analysis. After controlling for demographic variables Stress was entered at step 2. The main effect of stress was found to be significant beyond 0.1% level ($\beta = .496$, t -value = 6.214, $p < .001$). There was a substantial increase of .236 in R^2 (F -change = 38.608, $p < .001$), indicating the unique contribution of stress in explaining variance in suicidal ideation to be as much as 23.6%. The entry of the third block of variables (i.e. social support from family, friends, and significant others) in step 3, added 13.8% of the total proportion of explained variance ($\Delta R^2 = .138$, F -change = 9.530, $p < .001$) accounted for in the severity of suicidal ideation. It is noteworthy that the family support was a strong negative predictor of suicidal ideation in boys ($\beta = -.319$, t -value = -3.651, $p < .001$) with lower family support predicting higher suicidal ideation. However, the main effect of friends and significant others support did not contribute significantly to the prediction of suicidal ideation in boys (Table 4).

Table 4 Hierarchical Multiple Regression analysis for Boys (N = 100).

Variables	Step1 β	Step2 β	Step3 β	Step4 β
PPGE	-.213*	-.172*	-.092	-.117
Father’s Education ^a	-.257*	-.175	-.121	-.135
Mother’s Education ^b	-.100	-.103	-.044	-.059
Stress		.496***	.398***	.455***
Family Support			-.319***	-.266**
Friends Support			-.082	-.045
Sign. others Sup.			-.092	-.130
Stress X Family Sup.				-.198*
Stress X Friends Sup.				-.040
Stress X Sign. others Sup.				-.016
Constant	23.118***	11.025***	22.270***	20.210***
R	.428	.647	.746	.775
R²	.183	.419	.557	.601
ΔR^2	.183	.236	.138	.044
F change	7.176***	38.608***	9.530***	3.271*
F	7.176***	17.143***	16.519***	13.401***

Note. β = Standardized regression coefficient. *** $p < .001$, ** $p < .01$, * $p < .05$; ^aFather’s Education (1 = Uneducated/Below High School, 2 = High School, 3 = Graduate, 4 = PG & Non Professional, 5 = PG & Professional), ^bMother’s Education (1 = Uneducated/Below High School, 2 = High School, 3 = Graduate, 4 = PG & Non Professional, 5 = PG & Professional); PPGE = Percentage of marks in preceding Grade examination, Family Sup. = Family Support, Friends Sup. = Friends Support, Sign. others Sup. = Significant others Support.

Lastly, at step 4, the prediction of suicidal ideation was also enhanced with addition of the interaction terms of Stress X Family support, Stress X Friends support, and Stress X Significant others support ($\Delta R^2 = .044$, F -change = 3.271, $p < .05$), indicating that the nature of relationship between stress and suicidal ideation varied as a function of the family support, friend support, and significant others support scores. As can be seen from β values in Table 4, only the Stress X Family support interaction made a significant contribution to the prediction of suicidal ideation ($\beta = -.198$, t - value = -2.414, $p = .018$). The significant interaction supports the moderating role of Family support in the relationship between stress and suicidal ideation in boys. The results of the post hoc analyses are depicted in Figure 2.

To examine the nature of above significant interaction, post hoc statistical testing was conducted and simple slopes were plotted using the same procedures as used for total sample. Figure 2 reveals that the slope for boys with lower family support ($b = .177$, $t = 5.486$, $p < .001$) and higher family support ($b = .062$, $t = 2.377$, $p < .05$) significantly differed from zero. The figure 2 also shows that the predicted values of suicidal ideation for low and high family support groups at low stress level are 9.07 and 6.99, respectively. The predicted values for low family support and high family support groups at high level of stress are 16.3 and 9.52, respectively. Overall, the significant interaction terms signify that the regression of suicidal ideation on stress vary across the range of family support ($t = -2.537$, $p < .05$). More specifically, the predicted values of suicidal ideation in the graph show that at low level of stress, individuals with low family support have an increased likelihood of suicidal ideation as compared to individuals with high family support. As stress increases risk for suicidal thoughts also increases for individuals at both levels of family support, although the low family support group is at the greatest risk.

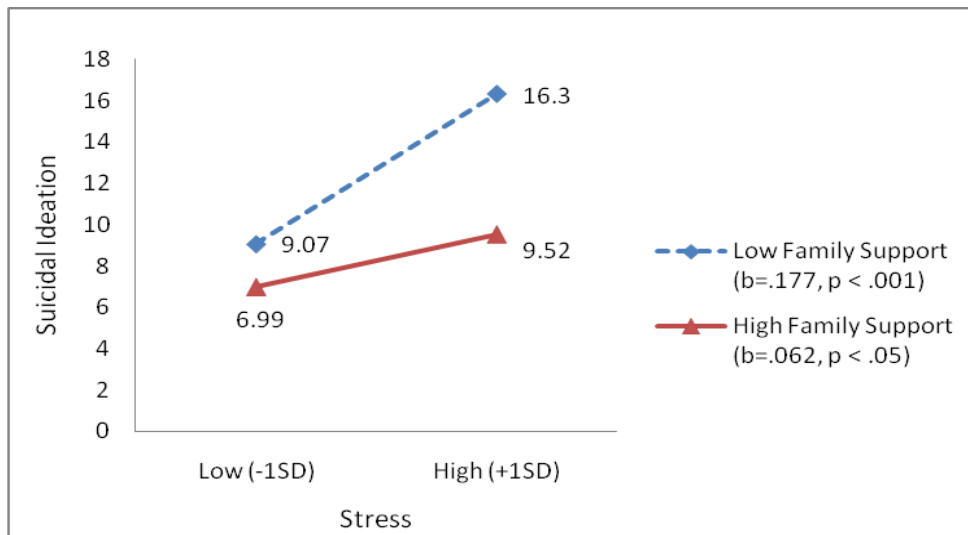


Figure 2. Plot of significant moderating effect in analysis of Stress X Perceived Social Support (Family) predicting suicidal ideation for boys.

The results of the hierarchical regression analysis for girls sample are set in Table 5.

Table 5 Hierarchical Multiple Regression analysis for Girls (N = 100).

Variables	Step1 β	Step2 β	Step3 β	Step4 β
PPGE	-.320***	-.245**	-.096	-.086
Father's Education ^a	-.077	-.107	.047	.047
Mother's Education ^b	.006	.061	-.053	-.061
Stress		.584***	.457***	.468***
Family Support			-.527***	-.513***
Friends Support			-.034	-.025
Sign. others Sup.			-.025	-.011
Stress X Family Sup.				-.093
Stress X Friends Sup.				.065
Stress X Sign. others Sup.				-.104
Constant	21.097***	8.622*	24.916***	23.089***
R	.331	.666	.832	.845
R²	.110	.443	.693	.714
ΔR^2	.110	.333	.250	.021
F change	3.943*	56.847***	24.962***	2.185
F	3.943*	18.889***	29.659***	22.219***

Note. β = Standardized regression coefficient. *** $p < .001$, ** $p < .01$, * $p < .05$; ^aFather's Education (1 = Uneducated/Below High School, 2 = High School, 3 = Graduate, 4 = PG & Non Professional, 5 = PG & Professional), ^bMother's Education (1 = Uneducated/Below High School, 2 = High School, 3 = Graduate, 4 = PG & Non Professional, 5 = PG & Professional); PPGE = Percentage of marks in preceding Grade examination, Family Sup. = Family Support, Friends Sup. = Friends Support, Sign. others Sup. = Significant others Support.

Again, in the first step the block of demographic variables (i.e. percentage of marks in preceding grade examination, father's education, and mother's education) was entered. Demographic variables accounted for an 11% ($R^2 = .110$, $F = 3.943$, $p = 0.011$) of the variance in suicidal ideation. Thus, the effect of these demographic variables was controlled for the analysis. After controlling for demographic variables, Stress was entered at step 2. The main effect of stress was found to be significant beyond 0.1% level ($\beta = .584$, t -value = 7.540, $p < .001$). There was a substantial increase of .333 in R^2 (F -change = 56.847, $p < .001$), indicating the unique contribution of stress in explaining variance in suicidal ideation to be as much as 33.3%.

Entering social support (from family, friends, and significant others) in step 3, added 25% of the total proportion of explained variance ($\Delta R^2 = .250$, F -change = 24.962, $p < .001$) accounted for in the severity of suicidal ideation. It is noteworthy that the family support was a strong negative predictor of suicidal ideation in girls ($\beta = -.527$, t -value = -7.384, $p < .001$) with lower family support predicting higher suicidal ideation. However, the main effect of friends and significant others support did not contribute significantly to the prediction of suicidal ideation in girls (Table 5). In fourth and final block, the prediction of suicidal ideation was marginally enhanced with addition of the interaction terms of Stress X Family support, Stress X Friends support, and Stress X Significant others support and did not add significantly to the amount of variance accounted for in suicidal ideation ($\Delta R^2 = .021$, F -change = 2.185, $p = .095$). As can be seen from β values in Table 5, none of the interactions (Stress X Family support, Stress X Friends support, and Stress X Significant others support) made a significant contribution to the prediction of suicidal ideation among girls (Table 5). The insignificant interactions did not support the moderating role of social support in the relationship between stress and suicidal ideation among girls.

IV. DISCUSSION

As we recall the present study was conducted with the aim of exploring the predictive role of stress (risk factor) and social support (protective factor) in suicidal ideation of adolescents. Furthermore, the role of social support as buffering variable was also assessed. This study expands on previous research and theory on role of stress, social support in adolescent's suicidal ideation by examining the relations between stress, social support (from family, friends, and significant others), and suicidal ideation outcomes, and by testing the generalizability of these relations among boys and girls.

One of the psychosocial predictors explored in this study was stress. Stress has emerged as potentially significant predictor of suicidal ideation among adolescents even after controlling for the effect of demographic variables and has accounted for as large as 26.8% of the variance. The present finding is according to our expectations (hypothesis 1) and consistent with earlier researches. Bonner and Rich (1987) found that suicidal students had experienced more recent stress than non-suicidal students including stress over exams. Studies conducted on suicidal ideation have indicated that recent stressful life events are associated with poor mental health outcomes including thoughts of suicide (Flannery et al., 2001; Yang & Clum, 1996) and that recency and degree of stress are significant in the prediction of degree and recency of suicidal ideation in students (Huff, 1999). Cluster of life events and life styles (Hintikka et al., 2009) and daily stresses (Izadinia, Amiri, Jahromi, & Hamidi, 2010) also have a positive relationship with suicidal ideation. Stress predicted suicidal ideation for both boys and girls, suggesting that stress is a risk factor for adolescents' suicidal ideation.

Perceived social support is another factor that was examined in relation to suicidal ideation. Perceived support from family has a direct as well as moderating effect on suicidal ideation (supported hypotheses 2.1 & 3). Previous studies have identified social support and its dimensions (i.e. perceived support from family, friends and significant others) as protective factors for suicidal ideation among adolescents. The results of correlational analyses shows that perceived social support from family, friends, significant others, and overall global support are significantly negatively associated with suicidal ideation. These findings are supported by earlier findings which indicate that suicidal individuals lack supportive relationship with others (e.g., D'Attilio et al., 1992; De Man, Leduc, et al., 1993; Howard-Pitney, LaFromboise, Basil, September, & Johnson, 1992; Paulson & Everall, 2001; Rudd, 1990; Savitha & Srimathi, 2017). The results of hierarchical regression analyses of the present study shows that level of perceived support from family predicted adolescent suicidal ideation suggesting an increased likelihood of suicidal ideation in the absence of support from the family. The results are consistent with findings of other research studies that have identified family support as protective factor for suicidal ideation among adolescents (Harris & Molock, 2000; Morion & Range, 2003) and hopelessness about parental support related directly to depression and suicide ideation (Harter, Marold, & Whitesell, 1992). Morano, Cisler, and Lemerond (1993) also found loss and low family support as the best predictors of an adolescent's suicide attempt. De Man, Labreche-Gauthier, et al. (1993) in their study also found suicidal ideation in adolescents to be

associated with lack of sufficient parental support. Rubenstein et al. (1989) also found that high school aged adolescents who reported an attempt to hurt themselves in the previous year had stress scores 33% higher than those of nonsuicidal adolescents. Moreover family cohesion was found to offset the effect of stress.

It is also observed that those who perceive high family support are at lowest risk under both low and high stress conditions. Earlier research show that meaningful and supportive interpersonal relationships that foster a positive future orientation may be important for preventing suicide (Barber & DeRubeis, 2001; Gillham & Reivich, 2004). This is understandable, as when adolescents are under stress, support and assistance from the family members is more valuable and buffers them from its adverse effect, thus lowering the chance of developing severe level of suicidal ideation. Separate analyses for boys and girls also revealed that family support predicted suicidal ideation for both and had an independent effect on suicidal ideation.

As far as friends' support is concerned it is observed that perceived support from friends did not significantly contribute to the prediction of suicidal ideation for the total sample as well as for the subgroups. The results of the present study are corroborated by the research studies which show that perceived family support is a more powerful protective factor against adolescent suicidality than friends' support (Eskin, 1995; Marks & Haller, 1977; Rubenstein et al., 1989; Rudd, 1990). O'Donnell, O'Donnell, Wardlaw, and Stueve (2004) also did not find peer support as a significant correlate of suicidal ideation or attempts, while family closeness came to be a strong resiliency factor. Perceived support from significant others also did not significantly contribute to the prediction of suicidal ideation. The results of this study does not support our hypothesis and stands against the findings of previous research (De Wilde, Kienhorst, Diekstra, & Wolters, 1994) which found that high risk suicidal ideation group reported less support and understanding from siblings and relations outside the family. Thus, hypothesis 2 was partially confirmed, as only hypothesis 2.1 was proved to be true and hypothesis 2.2 and 2.3 were not confirmed.

The results of the study partially supported the moderational / stress buffering models of social support (hypothesis 3), as only one out of the three dimensions of social support i.e. family support emerged as a significant moderator of the relationship between adolescent stress and suicidal ideation. The role of perceived support from family as a buffering effect model was proved to be true only for the total sample and boys and it was not clear for girls (also supported hypothesis 4). This study expands previous research, specifically parental support was found to be an effective protective factor against the negative effects of developmental stress on adolescent depression (Petersen, Sarigiani, & Kennedy, 1991) and suicidal ideation (Rudd, 1990). Studies suggested that inadequate family support is most deleterious to adolescent functioning. For example, the negative appraisals that outpatient adolescents make about unsupportive family environment appeared to be more strongly related to depression than their subjective evaluations of other relationships (Cumsille & Epstein, 1994). Two theoretical models were constructed and tested in a study by Cheng and Chan (2007); they found that family and friends support lowered the effect of stressful events on suicidality partly through reducing stress and death acceptance. The effect (direct and indirect combined) of family support was much stronger than that of friends support.

Apart from these psychosocial factors some of the demographic variables are also important in the understanding of adolescents suicidal ideation. Our fourth hypothesis stated that boys and girls will be differ significantly, which was partially confirmed. This study show that there is alarmingly high level of suicidal ideation among adolescents boys, and they are at very high risk as compared to girls. This result contradicted previous research demonstrating higher level and prevalence of suicidal ideation among girls (Allison, Roeger, Martin, & Keeves, 2001, De Man, Leduc et al., 1993; Laghi, Baiocco, D'Alessio, & Gurrieri, 2009; Pronovost, Côté, & Ross, 1990; Sharma, Grover, & Chaturvedi, 2008; Sidhartha & Jena, 2006; Ulusoy & Demir, 2005; Waldrop et al., 2007; Yoder, Whitbeck, Hoyt, & LaFromboise, 2006) while completed suicides to be high among boys. Interestingly, however, our result was consistent with the recent finding of Ibrahim, Amit, Din, and Ong (2017), who conducted a cross-sectional study among 232 youths (aged 15 to 25 years) selected from urban areas in Malaysia, and found that suicidal ideation was higher among males as compared to females and age was the predictor of suicidal ideation for males, while depression and loss of motivation, as components of hopelessness, were the predictors of suicidal ideation among females. Similarly, Mackenzie et al. (2011), among college students, found that the frequency of depression was similar for men and women but thought of suicide was higher for men than women. Stewart, Donaghey, Deary, and Ebmeier (2008) also found that men scored slightly higher than women on suicidal thoughts.

It is clearly revealed from the study that low performance in the preceding grade examination may lead to negative ideas about life. This finding is consistent with some previous studies conducted by Dubow, Kausch, Blum, Reed, and Bush (1989) and Hesketh, Ding, and Jenkins (2002). Similarly, Petzel and Riddle (1981) maintained that a poor or an overachieved academic performance can serve as a precursor to stress, subsequent depression, and suicidality. Additionally, a study performed on adolescents found that failing academic performance (compared to above average) was associated with a fivefold increased likelihood of a suicide attempt, controlling for self-esteem, locus of control and depressive symptoms (Richardson, Bergen, Martin,

Roeger, & Allison, 2005). Results of the hierarchical regression analyses showed that father's education has negative impact on suicidal ideation for total sample and boys, indicating high risk for those whose father's educational level is low. However, for girls father's education did not significantly contribute to suicidal ideation (supported hypothesis 4).

V. COCLUSIONS

In conclusion, the results of the study support the role of stress as a risk factor for adolescents' suicidal ideation irrespective of gender. It is also observed that perceived support from family protect them from suicidal ideation supporting the direct effect hypothesis. As far as buffering effect mechanism is concerned, family support were found to mitigate the deleterious effect of stress. When gender was taken into consideration the role of perceived support from family was potentially significant moderator of stress only for boys. One peculiar finding that is obtained in the present study is that though stress accounted for the largest variance in suicidal ideation for girls and that perceived support from family emerged as protective factors for them, the stress buffering mechanism of this variable was not supported by the results. There might be some other factors that would have helped them in coping with their stress and protecting them from being trapped in negative thinking about life. Further research may give an insight into these factors.

The results suggest that students perceiving higher levels of social support effectively manage their stress and report lower level of suicidal ideation. Such findings suggest that helping adolescents and their parents to develop more supportive social networks for effectively managing stress may help in eliminating or alleviating the negative stress outcome in the form of suicidal ideation.

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