

Anger, Impulsivity, Academic Stress and Suicidal Risk in suicide Ideators and Normal Cohorts

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The present study investigated the systematic differences in suicide ideators and non-ideators on dimensions of anger, impulsivity, and academic stress in Pakistani adolescents. It was hypothesized that there are systematic differences in anger, impulsivity and academic stress in adolescents with and without suicide ideation. Through Cross sectional research design, a sample of 200 adolescents including 100 boys and 100 girls of 13 to 17 years age range, was recruited from private schools of Lahore. Participants with suicidal risk ($n=100$) were identified using Suicidal Risk Scale (Yao et. al., 2007). Translated versions of Spielberg State Trait Anger Expression Inventory (Spielberg, 1996), Barratt's Impulsivity Scale (1994) and Educational Stress Scale for Adolescents (ESSA; Sun, 2011) were used for data collection. Results revealed significant differences between suicide ideation based group from non-suicide ideators on anger, impulsivity and perceived academic stress. The regression analysis revealed that anger, educational stress and impulsivity were significant positive predictors of suicidal ideation among adolescents. The findings implicate the role of school counselor and parents in addressing this grave issue among adolescents.

Keywords. Suicide ideation, anger, impulsivity, adolescents, academic stress

Suicide has emerged as very crucial issue in Pakistani society in the past few decades. The recent news line reports that an alarming

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increase on suicide rate exist each year in adolescents (Khan & Hyder, 2006). This research has been undertaken with this pivotal concern that adequate attention of health care professionals' especially developmental psychologists and researchers, being veteran in dealing with transitions in lifetime events may help in identifying this grave issue at a budding level where this could be controlled much more efficaciously (WHO, 2000). In Pakistan, suicidal rate is 2.86 per total rate 100000 and there is accruing trend rate (in terms of age) in suicide, threateningly increasing among youngsters (Khan & Hyder, 2006). Suicide risk can only be assessed authentically for clinical management through screening of suicide ideation. Sometimes in spite of pronounced expressed suicidal tendencies, parents do not pay heed and this grave matter remains ignored by caretakers, in form of parents and educators. There have been various researches, conducted worldwide on the possible risk factors for suicidal ideation and that have revealed that adolescents' vulnerability to suicidal tendencies typically lie in factors as depression, anxiety, helplessness, anger, aggression and impulsivity (Fennig et al., 2005; Park et al, 2006). However, empirical investigations on academic strains, anger and impulsivity dimensions are too few and far between. This gap in research provided the impetus for the current research venture.

The current study was designed to investigate social, environmental and familial aspects that may influence risk of suicide. Among all such social and environmental factors, the dispositional elements of impulsivity and anger appear to have detrimental role (De Gioannis & De Leo, 2012; Mazza & Reynolds, 2008). Suicide ideation could be defined as an idea or thought of self-harming behavior whether or not death is intended (De Leo & Krysinska, 2008; Samm et al., 2010).

An adolescent confronts numerous challenges and sometimes due to poorer social support or due to limited skills in his or her repertoire to cope with such challenges, he or she suffers from significant psychological distressing states of depression, anger, anxiety, impulsivity etc. (Louw & Louw, 2007; Myers, 2008). Likewise, this has been observed that adolescence is a phase of rapid transition, usually represented as a bridge between childhood and adulthood e.g. emotional irregularity and erraticism is much more evident in this phase. This makes them more vulnerable to self-harming behaviors though sometimes lying as patterns of disseminated suicide ideation (Louw & Louw, 2007). Some researchers have also found that the family characteristics such as parental hostility or physical punishment (Bensley, Van Eenwyk, Spieker, & Schoder, 1999) and low socioeconomic status

(Dubow, Kausch, Reed, Blum, & Bush, 1989) contribute in triggering suicide ideation patterns while some have stressed on states of anger and hostility or phases of impulsivity for being the root cause of suicide ideation among adolescents (Sohaib, 2009).

There are multiple theoretical perspectives, that attempt to explain the occurrence of suicidal ideation in adolescence; yet cognitive theory posits most convincing evidence and caters theoretical underpinnings about the suicide ideation among adolescents. According to this theory, negative cognitions, problem-solving deficits, cognitive rigidity, self-directed anger, negative affectivity etc. all lead towards self-harming thoughts in adolescents (Beck et al., 1974; Kashden et al., 1993). Among all the potential factors that may lead towards suicidal ideation, anger has been found to be the most crucial determining factor. Anger has more than one dimension which includes both emotional and physical aspects such as a irritable and aggravated feelings or violent behaviors. The intensity of these experiences may range from mild annoyance to severe indignation (Spielberger, 1999; Spielberger, Reheiser, & Sydeman, 1995). The manifestation of anger is usually categorized as inward and outward-directed (Martin et al., 1999; Kuppens, Mechelen, & Meulders, 2004; Spielberger, 1999). Psychological and behavioral viewpoints also exert that roots and related factors of inward and outward-directed anger are not the same. The theoretical framework that overlaps in this perspective is Escape Theory of Suicide. This theory also provides a promising premise for understanding the manner in which adolescents develop suicidal thinking. The inclusion of both stress and maladaptive perfectionism in the Escape Theory somehow justify the experiences of suicidal ideation during adolescents. There are some differences between the roots and correlates of self-harming behaviors, such as guilt-feelings that tend to be expressed in the form of outward directed anger; contrary to the feelings of guilt and shame that is associated with inward-directed anger (Lutwak, Panish, Ferrari, & Razzino, 2001; Eftekhari, Turner, & Larimer, 2004). Anger with either inward or outward aspects is found to be related with self-damaging behaviors, wherein this is being evidenced that inward-directed anger is generally associated with person's inability to express emotions openly and may lead towards developing symptoms of neuroticism which may subsequently cause anxiousness, pessimistic thoughts and self-harming tendencies (Brendgen, Vitaro, Turgeon, & Poulin, 2002).

Anger and impulsivity are found to be an important correlates of suicidal ideation such as Daniel, Goldston, Erkanli, Franklin, and

Mayfield (2009) examined that anger and anger expression increases the probability of suicide attempts in teenagers. A study examining anger and predictors for suicidal ideation across gender found that gender differences on suicidal ideation exist, evident a bit more in girls than boys. It was also found in contrary to earlier evidence, cited here that there is significant positive association between suicidal ideation and anger irrespective of gender (Lee, Choi, Kim, Park, & Shin, 2009). Horesh, Gothelf, and Apter (1999) investigated the correlation of aggression, self-injury, and suicidal behavior to impulsivity. McGirr, Renaud, Bureau, and Turecki (2008) found anger as having important role in adolescents' suicide and suicidal ideation when levels of impulsive-aggressive traits gain prominence.

Suicidal behavior comprises of ideation, attempts to suicide and completed suicides resulting in death. Pakistan lacks statistics of adolescent suicide and thereby this is hard to ascertain the prevalence of suicidal ideation and behavior. To address the issue, a study was carried out to assess the potential existence of suicidal behaviors in Pakistani students. Of the total 217 completed questionnaires, the rate of suicidal ideation appeared to be 31.4%; important here is to be reported that there was no potential difference between girls and boys (Khokkar & Khan, 2005). Khan and Mubashir (2011) investigated relationship between anger (instrumental anger, reactive anger, and anger control), emotional distress and suicidal ideation (PANSI-negative, PANSI-positive) in university students with mild psychological problems. Findings revealed noticeable positive association of anger with suicidal ideation (PANSI-negative) and significant negative correlation in anger and protective thoughts and ideations (PANSI-positive).

Another factor that has been studied as plausible correlate of suicide is academic stress. Academic stress plays a key role in suicidal ideation in adolescents. Juon, Nam, and Ensminger (1994) investigated factors related to suicidal behaviors in high school adolescents and found that students who feel more stressed due to academic demands and higher education ideals were more vulnerable to experience suicidal thoughts than those students who did not suffer from academic stress. In consistence to this, an empirical study found academic stress as predictor of suicidal ideation in adolescents (Ho, Hong, & Kua, 1999). Anger, impulsivity and lack of sleeping hours have numerous adverse consequences. These consequences include an increase in self-harm, depression, anxiety and suicidal ideation (McKnight-Eily et al., 2011; Sarchiapone et al., 2014) as well as suicidal behaviors (Liu, 2004;

McKnight-Eily et al., 2011; Ribeiro et al., 2012; Sarchiapone et al., 2014). Another study examined the relations of life experiences that triggered pessimism, psychopathology, and dangerous suicidal behavior in countryside teenagers of China. According to the results, girls were more prospective to report suicidal ideation than boys. On the other hand, educational stress and family problems were potential risking factors that lead to suicidal thoughts (Liu & Tein, 2005). There have been recently massive reports of suicidal ideation and behaviors among adolescents in recent times which substantiate the empirical investigation of this topic of concern so that pragmatic measures to prevent this menace can be devised. Thereby, the pivotal goal in this research is to investigate the anger, impulsivity and academic stress as predisposing elements to suicidal ideations in adolescents.

Rationale of the Study

Thus, current empirical evidence is assorted as to whether adolescents at risk for later suicide ideation differ on patterns of anger, impulsivity and educational stress. The present study contributes to the resolution of this punitive issue that is on rise among adolescents in Pakistan. Concurrent analysis of the psychosocial predisposing factors in predicting suicide ideation is likely to confirm their relative contribution in this phenomenon, which is empirically missing in indigenous research data. Thus filling in the research gaps, the findings from this investigation are likely to provide new insight about how specific domains of impulsivity, academic stress and anger may differentially increase risk for suicide ideation and attempts, specifically during adolescents. Exploratory analyses in this investigation would further enlighten its prevalence and trends. Implications for early identification and prevention of adolescents' suicide are likely to bear its greatest utility through this empirical work.

Objectives

Following objectives were targeted in the current research:

- To assess and compare adolescents (individuals with and without suicide ideation) on anger, impulsivity, and academic stress.
- to investigate the relationship among anger, impulsivity levels, academic stress and suicide ideation among adolescents
- To establish the anger, impulsivity and academic stress as predictors of suicide ideation among adolescents.

Hypotheses

- Adolescents with higher suicidal ideation are likely to differ on anger, impulsivity and academic stress from adolescents with no suicidal ideation.
- There is likely to be significant relationship in anger, impulsivity, academic stress and suicide ideation in adolescents.
- Demographic variables, anger, impulsivity and academic stress are likely to predict suicidal ideation in adolescents.

Method

Research Design

Cross sectional research design with some feature of case control was used to compare adolescents with high suicidal ideation from non-suicidal ideation adolescents’ group on anger, impulsivity and academic stress.

Sample

The sample comprised of 200 participants, age ranging between 13 to 17 years; out of this sample group, 100 were adolescents screened on suicide ideation while the remaining 100 were matched on age and income level. Non probability purposive sampling was used to recruit the sample from different public schools of Lahore.

Table 1

Demographic Characteristics of the Sample (N=200)

Variables	Suicidal ideators (n=100)		Control group (n=100)	
	M (SD)	f (%)	M (SD)	f (%)
Age	15.27(1.33)		14.81(1.32)	
Gender				
Male		50(50)		50(50)
Female		50(50)		50(50)
Class				
Grade 9		47(52)		50(50)
Grade 10		53(47)		50(50)

Table Continued

Table 1
Demographic Characteristics of the Sample (N=200)

Variables	Suicidal ideators (n=100)		Control group (n=100)	
	<i>M (SD)</i>	<i>f (%)</i>	<i>M (SD)</i>	<i>f (%)</i>
Subject				
Science		50(50)		52(57.8)
Arts		50(50)		38(42.2)
Choice of subjects				
Own		59(65)		68(75)
Father		13(14)		9(1)
Mother		15(17)		13(14)
Father's monthly income in PKR	14566.67 (10846.27)		21444.44 (16645.75)	
Family system				
Nuclear		46(51)		47(52.2)
Joint		44(49)		43(47.8)

Assessment Measures

Demographic Information Sheet. A self-constructed questionnaire was used to obtain demographics and other relevant information about the respondents i.e. age of the participant, gender, grade or class of the participants, percentage of marks obtained in last examination, family system; either joint or nuclear, number of siblings, qualification of parents and occupation of the parents.

Educational Stress Scale for Adolescents (ESSA). The Educational Stress Scale for Adolescents (ESSA) was developed by Sun et al (2011). This contains 30-items and five latent variables including Pressure from study, Workload, Worry about grades, Self-expectation, and Despondency. Permission from author of the scale was formally taken to use and translated into Urdu in an earlier study, validation executed in earlier research work (Masood, 2016). In present study this scale reported $\alpha = .81$ reliability.

Barratt's Impulsivity Scale (BIS). Barratt's Impulsivity Scale Chinese version, specified for Asian population was developed by Yao et al. (2007) and adapted/translated for this research. It was modified from the original 30-item BIS-11 by excluding five items presentation poor item-total relations. It therefore consists of 25 self-report items, each of which is rated on a four-point Likert scale; the BIS-11 is purported to

measure stable, long-standing, impulsive-behavior patterns. The BIS-11-CH's internal consistency value is .80. In order to use in present study it was translated into Urdu in some earlier research dissertation with the help of a Chinese student carrying bilingual proficiency of Chinese and Urdu. The predetermined psychometric properties of the scale were sound and Cronbach's alpha reliability in some earlier research project has been .85, significant enough to utilize this in current research venture. The computer reliability coefficient for present study was .83.

Spielberg State Trait Anger Expression Inventory (SSTAI).

To measure via self-report, the presence and severity of current symptoms of anxiety and generalized propensity to be anxious. Versions of this measure are available for both adults and children. The STAI has 40 items, 20 items allocated to each of the S-Anxiety and T-Anxiety subscales. First, the State Anxiety Scale (S-Anxiety) evaluates the current state of anxiety, asking how respondents feel "right now," using items that measure subjective feelings of apprehension, tension, nervousness, worry, and activation/arousal of the autonomic nervous system. The Trait Anxiety Scale (T-Anxiety) evaluates relatively stable aspects of "anxiety proneness," including general states of calmness, confidence, and security. There is also a STAI for children (STAIC) with the same number of items. Short versions of the scales have been developed independently. Responses for the S-Anxiety scale assess intensity of current feelings "at this moment": 1) not at all, 2) somewhat, 3) moderately so, and 4) very much so. Responses for the T-Anxiety scale assess frequency of feelings "in general": 1) almost never, 2) sometimes, 3) often, and 4) almost always. This instrument was forward and backward translated and after pilot study and determining adequate psychometric analysis, it was employed in the current research. The computed coefficient for this scale in current research was .76.

Suicidal Ideation Questionnaire (SIQ). This scale was developed by Yao et al. (2007) and used to assess frequency of suicidal thoughts and at risk adolescents. It consists of 15 items. Responses are recorded on a 7-point Likert Scale (ranging from "almost every day" to "I never had this thought"). In present study, the device yielded good reliability coefficient of .75.

Procedure

First of all, permission for the use and translation of the scales was taken from the respective authors. Standardized translation procedure was

adopted. All scales were translated into Urdu. It included the following steps: forward translation, backward translation and pilot testing. After backward translations, the researcher reviewed and comparison was made between original and backward translation. The panel experts i.e., two bilingual experts (in English and the Urdu language), two subject experts (for conceptual equivalence) and researcher finalized the scales for pilot study. After establishing face validity and Cronbach's alpha reliability, the measures were further used for data collection. Participants were screened with the help of scale on suicidal ideation and were approached for further assessment. Only those meeting the suicidal ideation and at risk for suicide criterion were categorized as suicide ideators. The remaining respondents fell in non-suicide ideators group. The researcher assured the participants about the anonymity and confidentiality of the information obtained from them during data collection. The purpose of the research was explained to them. Their parental consent was taken in black and white and their assent was obtained and voluntary participation was briefed out to them. Then questionnaires were administered. Later on the data was entered using SPSS and results were reported honestly.

Results

Independent sample t-test was carried out to find the differences between suicidal ideators and control group on anger, impulsivity, and academic stress in adolescents.

Table 2

Independent Sample t-test Comparing Suicidal Ideators and Control Group on Anger, Impulsivity, and Academic Stress in Adolescents (N=200)

Variable	Suicidal ideators (n=100)		Control group (n=100)		<i>t</i> (198)	<i>p</i>	95 % CI		Cohen's <i>d</i>
	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>			<i>LL</i>	<i>UL</i>	
SRS	18.68	7.46	14.70	5.48	4.30	.001	1.25	6.83	.61
BIS	54.93	18.76	43.12	15.30	4.88	.001	3.57	20.05	.69
SSTAI	24.88	6.23	19.88	7.53	5.12	.001	1.01	5.01	.72
ESS	36.61	9.28	30.56	7.10	5.17	.001	7.51	.38	.73

Note. SRS= Suicidal Risk Scale; SSTAI= Spielberg State Trait Anger; BIS= Bartlett's Impulsivity Scale; ESS= Educational Stress Scale.

****p*<.001.

After matching the respondents on age, gender and income level, the results showed significant differences between suicidal ideators and control group on study variables. Suicidal ideators significantly

experienced more academic stress that included stress on such dimensions as pressure of study, worry about grades, despondency, self-expectation and work load, in comparison to control group. Findings also indicated that impulsivity level and state trait anger was higher in suicidal ideators. But results indicated that adolescents that are without suicidal ideation seek significantly more attention than suicide ideators group.

In order to investigate the relationship between anger, impulsivity and academic stress in adolescents, the Pearson Product Moment correlation analysis was carried out (See Table 3).

Table 3

Relationship Between Anger, Impulsivity and Academic Stress in Adolescents with Suicide Ideation (N=200)

Variables	2	3	4	5
1. Age	.13	.46**	-.07	-.15*
2. gender		.39**	-.50**	.07
3. Educational Stress			-.30**	.56**
4. State Trait Anger				-.65***
5. Impulsivity				

* $p < .05$. ** $p < .01$. *** $p < .001$.

Results depicted that age had significant positive relationship with educational stress and negative link with impulsivity, while gender indicated positive relation with educational stress but negative relation with anger. Education stress had negative association with anger but significant positive link with impulsivity, whereas anger had significant negative relation with impulsivity.

To scrutinize the relationship of suicidal ideation with educational stress and its domains, Pearson Product Moment correlation analysis was executed (See Table 4).

Table 4

Relationship Between Educational Stress and Suicidal Ideation in Adolescents (N=200)

Variables	2	3	4	5	6	7
1.Educational Stress	.50**	.42**	.20**	.44**	.34**	.41**
2. Suicidal ideation		.52**	.29**	.63**	.48**	.48**
3. Pressure of study			.49**	.62**	.65**	.66**
4. Worry about grades				.35**	.65**	.47**
5. Despondency					.58**	.68**
6. Self-Expectation						.62**
7. Work load						

** $p < .01$.

Results indicated that educational stress had significantly positive relationship with suicidal ideation and with other domains of the educational stress that include pressure of study, worry about grades, despondency, self-expectation, work load. Suicidal ideation also reflected significant positive relation with pressure of study, worry about grades, despondency, self-expectation, work load. Findings also highlighted that pressure of study, worry about grades, despondency, self-expectation, work load had significant positive relationship with each other. It means that increase in anyone of these factors leads to increase in the other factor of educational stress.

To find the predictors of suicidal ideation, demographic variables (age, class percentage marks, father's education, father's monthly income, mother's education, no. of siblings), anger and educational stress (Pressure of study, worry about grades, despondency, self-expectation, work load) were entered and hierarchical regression was performed (See Table 5).

Table 5
Hierarchical Regression Analysis Predicting Suicidal Ideation from Demographic Variables and Study Variables (N=200)

Predictors	Suicidal Ideation	
	ΔR^2	β
Step 1	.16 ^{***}	
Age of participants		.04
Class percentage marks		-.07
Father's education		.09
Father's monthly income		-.14 ^{**}
Mother's education		.00
No. of siblings		.05
Step 2	.23 ^{***}	
Anger		.04
Pressure of study		.03
Worry about grades		.12 [*]
Despondency		.12
Self-expectation		.07
Work load		.02
Total R²	.39 ^{***}	

* $p < .05$. ** $p < .01$.

Overall model 1 explained 16 % of the variance in suicidal ideation $F(9,170)=3.48, p<.001$. Model 1 included demographic variables age, class percentage marks, father's education, father's monthly income, mother's education, no. of siblings. In this model class percentage marks and father's monthly income was a significantly predictor of suicidal ideation. In block 2 anger, educational stress (pressure from study, worry about grades, despondency, self-expectation, work load were added after controlling the demographic variables. The results showed that model 2 explained 23% variance in suicidal ideation $F(44,135) =10.81, p<.001$. In model 2 worry about grades was significant predictor of suicidal ideation; thus highlighting the role of educational stressors in predicting suicidal ideation.

Discussion

The aim of the present study was to investigate the anger, impulsivity and academic stress among adolescents with and without suicidal ideation. The main hypothesis of the research investigated that

there would be systematic differences between suicide ideators and non ideators with reference to anger, impulsivity and academic stress. The findings revealed that suicide ideators had relatively higher means in reported anger, impulsivity and academic stress than their cohorts without suicide ideation. In alignment of the current research findings, Chang, et. al. (2014) highlighted that suicide and non-suicide groups as systematically varying in their anger, impulsivity and academic stress. McGirr et al. (2008) revealed in his research results that higher levels of impulsive-aggressive traits play a greater role in suicide occurrence among younger individuals.

Further analysis was executed to establish the relationship among study variables. This was sought that there exists significant positive relationship in suicide ideation, anger, impulsivity and academic stress. Most of the participants reported burden of studies, fear of failure, self-expectation, pressure of studies and pressure of competition as major contributor in endorsing suicidal ideation in adolescents. Henry, Stephenson, Hanson, and Heirgett (1993) reported that grim suicide tries are reported in those students who experience considerable academic failures or are unable to take up their own academic decisions; just as this is evident that in Pakistan, most of adolescents must blindly comply to their parents' decisions in their academics. So many of such students report nil interest in the study domains or areas wherein their parents have got them enrolled into. Chang, et.al (2014) reports similar scenario in China wherein academic decision, taken by the parents leave their offspring in dismayed situation due to which majority of the adolescents start harboring the suicide ideation patterns.

In another empirical study in consistence with the current research findings, this was reported that less serious suicide attempts are more indicative of students who are failing at school. This study also found academic stress and failures as significant positive predictor of suicidal ideation among adolescents (Ho, Hong & Kua, 1999). Academically satisfied adolescent exhibit less suicidal ideation and behavior than those who were not satisfied (Chang, et.al. 2014). When the dimensions of educational stress were assessed for their relationship with suicide ideation, self-expectation, study pressures, work-overload and grades, expectations emerged as significantly and positively related. This findings is in unswerving with findings of Juon, Nam, and Ensminger (1994) who investigated factors related to suicidal behaviors in high school adolescents and found that students who feel more stressed related to academic achievement, had limited deadlines and possessed higher

education expectations and were more likely to predict suicidal thoughts as compared to those students who did not experience academic stress. There are widely observed patterns of despondency in Pakistani set up where this is amply clear that teachers' rejection and demotivation of the learner contribute in causing the suicide ideation among adolescents as being validated by empirical findings (Livaditis, et. al., 2002).

Conclusion. The study has provided clearer and transparent support to framework of risk factors contributing to suicidal ideation in adolescents in Pakistani context. The findings significantly substantiated and projected that reasons of suicidal ideation in Pakistani society as mainly delved deep into academic stress and trait-specific features such as anger and impulsivity.

Limitations and Suggestions. Since this happened to be a research carried out mainly through cross-sectional research design, causality between identified factors and suicidal ideation could not be established. Other longitudinal studies in this regard with better focused approaches could yield insightful results. In addition, adopting a multi method approach could help to confirm the present conclusions. Moreover, the sample was taken from fewer students in Lahore, Pakistan, thus this is suggested that the findings must be tested in other and different types of set ups in Lahore and other cities and towns. Likewise utilizing different age groups could yield broader perspectives for cross comparisons and better understandings into elements and dimensions of suicide.

Implications. The development of insight among educationists, parents, health and educational psychologists in undertaking the earliest screening of at-risk adolescents is one of the most pertinent implications of the current research. Since there is currently no provision of formal school based counselors in Pakistan, the policy suggestions can be upheld for promoting preventive approach. This could further broaden the scope of findings and could open promising avenue for future research. The adolescent suicide is a major frightening problem for students in today's high schools and even at universities. It would be helpful if high school counselors to be sensitive towards identification of possible risk factors that could ultimately help in curbing the contributory factors of suicide in adolescence.

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