

ORYGINAL PAPER

ORYGINALNY ARTYKUŁ NAUKOWY

**ACADEMIC STRESS AND DEPRESSION AMONG COLLEGE STUDENTS:
THE MEDIATING EFFECT OF PARENTAL ATTACHMENT**

**STRES AKADEMICKI I DEPRESJA WŚRÓD STUDENTÓW:
POŚREDNICZĄCY WPŁYW PRZYWIĄZANIA DO RODZICÓW**

Smarika Dalal^{1(A,B,C,D,E,F)}

¹Department of Applied Psychology, Guru Jambheshwar University of Science and Technology,
Hisar Haryana, India

Dalal S. Academic stress and depression among college students: the mediating effect of parental attachment. Health Prob Civil. <https://doi.org/10.5114/hpc.2024.134275>

Tables: 5

Figures: 2

References: 24

Submitted: 2023 Dec 12

Accepted: 2024 Jan 8

Address for correspondence / Adres korespondencyjny: Smarika Dalal, Department of Applied Psychology, Guru Jambheshwar University of Science and Technology, Hisar-Delhi Bypass Rd, Hisar-125001, Haryana, India, e-mail: smarika.dalal1@gmail.com, phone: +911662263104, <https://orcid.org/0000-0003-1432-2740>

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Summary

Background. The current study aimed to understand the mediating role of parental attachment in the relationship between academic stress and depression. Academic and parental attachment have both been studied for their strong correlation with depression and also as a predictor of depression. This study focused on the path mechanism that exists between academic stress and depression and whether parental attachment can be a protective factor that shields an individual from mental health deterioration due to academic stress. The author hypothesized that parental attachment has a significant mediating role to play in the relationship existing between academic stress and depression.

Material and methods. A sample of 120 college students (60 males, 60 females) was collected from colleges over Northern India. Academic Stress scale, parental attachment scale and Beck Depression Inventory was used to measure the variables.

Results. The results of the study indicated that parental attachment plays role of a partial and significant mediator between academic stress and depression.

Conclusions. The findings imply the importance of parental attachment for an individual during young adulthood. They also suggest to the practitioners, policy makers, health care specialists that the significance of parent-child relationship needs to be understood and exploited to alleviate the effect of mental health issues among the college students.

Keywords: academic stress, mediation analysis, parental attachment, depression, stress

Streszczenie

Wprowadzenie. Celem niniejszego badania było zrozumienie pośredniczącej roli przywiązania do rodziców w związku między stresem akademickim a depresją. Zarówno przywiązanie akademickie, jak i do rodziców badano pod kątem ich silnej korelacji z depresją, a także jako predyktor depresji. Badanie koncentrowało się na istniejącym mechanizmie ścieżki między stresem akademickim a depresją oraz na tym, czy przywiązanie do rodziców może być czynnikiem ochronnym, który chroni jednostkę przed pogorszeniem zdrowia psychicznego spowodowanym stresem akademickim. Autor postawił hipotezę, że przywiązanie do rodziców odgrywa znaczącą rolę pośredniczącą w związku między stresem akademickim a depresją.

Material i metody. Zebrano próbę 120 studentów (60 mężczyzn, 60 kobiet) uczelni w północnych Indiach. Do pomiaru zmiennych zastosowano skalę stresu akademickiego, skalę przywiązania do rodziców oraz skalę depresji Becka.

Wyniki. Wyniki badania wskazują, że przywiązanie do rodziców odgrywa rolę częściowego i znaczącego mediatora między stresem akademickim a depresją.

Wnioski. Ustalenia implikują znaczenie przywiązania do rodziców dla młodych ludzi wkraczających w dorosłe życie. Sugerują również praktykom, decydom politycznym i specjalistom opieki zdrowotnej, że znaczenie relacji rodzic-dziecko musi być zrozumiane i wykorzystane w celu złagodzenia skutków problemów ze zdrowiem psychicznym wśród studentów.

Słowa kluczowe: stres akademicki, analiza mediacji, przywiązanie do rodziców, depresja, stres

Introduction

Stress, according to Luthans [1], is “an adaptive response to an external situation that results in physical, psychological, and/or behavioral deviations for organizational participants”. Hans Selye [2] defined stress as a “non-specific response of the body to any demand”. Stress is not about the presence of a factor that either exists in the individual or exists in the environment. It is the process of transaction that happens between the person and the environment. Academic stress has been talked about for a very long time. Academic stress is defined as “the body’s response to academic-related demands that exceed the adaptive capabilities of students” [3].

A rough estimation suggests that around of 10-30% students face academic stress at some or the other point in their student life [4]. It has been associated with a host of psychological disorders. In a study, anxiety associated with COVID-19 and academic stress had an impact on the quality of life of Filipino nursing students [5]. Results from a different study including 858 students showed that academic stress was a poor predictor of sleep quality [6]. A lot of studies have been conducted on the association between academic stress and depression or anxiety [7-9]. We have enough empirical evidence to safely conclude that high levels of academic stress lead to depression and anxiety among students. What remains inconclusive in these studies is the definition of academic stress. The terms “academic stress” and “examination stress” are used interchangeably. Also, there is no distinction between the stress caused by a particular situation that causes stress or the perceived academic stress which might be a subjective experience.

Along similar lines, parental attachment is one of the most important aspects of a child’s life. The researches have concluded that a strong parent-child bond can control

psychiatric illness [10-15]. Beginning in the neo-natal stages and continuing throughout the life of a child, the parental attachment is deemed to be important while studying depression among students. A study on 210 parents with children between the ages of 6 and 15 that included a sample of parents ranging in age from 25 to 60 years revealed that the relationship between psychological maltreatment in childhood and internalizing and externalizing issues in young people was mediated by the secure and anxious attachment style of the parents. These results suggested that the relationship between parents' negative childhood experiences and their children's mental health is significantly influenced by their attachment styles [11]. Adolescents with high-quality parent-child attachment have been shown to have better mental health outcomes, whereas those with low-quality attachment were more likely to internalize psychological disorders and externalize behavioral problems [12,13]. Another study involving 633 early adolescents found that the psychological quality partially moderated the association between parent-child attachment and adolescents' mental health, and that parent-child attachment significantly and positively predicted adolescents' mental health [14]. Many studies have focused on parental attachment and the course of development of depressive symptoms among adolescents [15].

The present study is based on the gaps that were found in the literature review. Academic stress has been correlated with depression and the same is true for parental attachment but there have not been many studies that have looked into the path mechanism of the relationship between academic stress and depression. It is of utmost significance to understand the various variables that work as mediators and moderators while studying the relationship between these two variables. To the best of the author's knowledge, the path mechanism studied in the present study has not been studied in any previous research. If the strength of parental attachment as a mediator between academic stress and depression can be

established, then policymakers, health care specialists, and practitioners can get leverage by strengthening the bond between parent and child to curb the ill effects of academic stress.

The present study can be broken down into two parts: 1) to study the correlation between academic stress, parental attachment and depression and 2) to study the mediating role of parental attachment between academic stress and depression. In previous studies the relationship between academic stress and depression has been studied but the action mechanism between the two has not been examined in as much detail. Few studies have investigated the mediating and moderating variables. Parental attachment is significantly associated with depressive symptoms [16]. This study focuses on finding one of the many possible action pathways between academic stress and depression via parental attachment. Stress among students is increasing [17]. This makes it more important to have a secure parent-child attachment that can prevent academic stress from taking over a child's mental health.

The objectives of the study are: firstly, to empirically prove whether a relationship exists between the three variables under consideration. Secondly, it will also study whether parental attachment has a mediating role between academic stress and depression.

The following hypothesis have been framed for the study:

- Hypothesis 1: There shall be a significant and positive correlation between academic stress and depression.
- Hypothesis 2: There shall be a significant and negative correlation between academic stress and parental attachment.
- Hypothesis 3: There shall be a significant and negative correlation between parental attachment and depression.

- Hypothesis 4: Parental attachment mediates the relationship between academic stress and depression.

The implications of the study are multi-fold. If the above two hypotheses are proven to be true, more emphasis could be laid on how to improve parental attachment to reduce the episodes of depression. At the level of policy-making, changes can be introduced in the educational policies to reduce academic stress. In the interventions designed to treat depression among college students, parental attachment can play a very important role, thereby enhancing the well-being of the students.

Material and methods

Sample

Participants included college students from Northern India. The age group of the participants was between 18-23 years. All the students came from urban areas and were students pursuing their graduation. The convenience sampling method was used to collect the data. In total, 60 men and 60 women participated in the study.

Inclusion criteria for the participants:

1. The participants had to be aged 18-23.
2. The participants had to be currently pursuing graduation.
3. The participants should be able to read, write, and speak in English.

Exclusion criteria for the participants:

1. The participants should not have any chronic physical illness or handicap.
2. The participants should have no history of psychological disorders.

3. The participants should not be on any medication for psychological or physical disorders.

Materials used/tools of the study

The following tools were used for the various variables:

- 1. Academic Stress Scale:** The Academic Stress Scale was adapted to the Indian population by Rajendran & Kaliappan [18] and Rao [19]. It consists of 40 items that describe stressful situations. It has a 5-point Likert scale and a scoring ranges from “No stress” to “Extreme stress”. The scale measures stress in five areas, *viz.*, “personal inadequacy”, “fear of failure”, “interpersonal difficulties with teachers”, “teacher-pupil relationships/teaching methods”, and “inadequate study facilities”. The questionnaire is in English. The maximum possible score was 160. The test-retest reliability was 0.82.
- 2. Parental Attachment Scale (PAS):** The PAS was developed by Constance Chappel [20]. It is a 6-item scale that measures parental attachment as a measure of parental control. The scores can range from 0-24. Higher scores indicate greater attachment to parents. The PAS has an internal consistency with an alpha value of 0.74.
- 3. Beck Depression Inventory (BDI):** The BDI was developed by A. Beck [21]. It is a 21-item inventory. A shorter form of the inventory is also available. The scores can range from 0 to 63. The items have to be rated on a four-point scale concerning experiences during the past week.

Procedure

The study was conducted in two parts. The first part emphasized the correlational studies between the three variables. Pearson's correlation was employed to study the relationship between academic stress and depression, academic stress, and parental attachment and parental attachment and depression. In the second part, the mediating role of parental attachment between academic stress and depression was studied. The role of parental attachment was evaluated using mediation analysis.

The data was collected from colleges in Northern India. The participants were informed about the purpose of the study and how the research data collected would be used in aggregate. They were assured of the confidentiality of the individual data. A few volunteers among the students were chosen for this purpose. The participants were given the questionnaires which they had to fill out as per the guidelines stipulated by the volunteers.

The software used was PSPP v1.6.2.

Results

In light of the evidence presented, the present study aims to find the mediating role of parental attachment between academic stress and depression among college students. Table 1 provides the descriptive statistics for all the variables mentioned.

Table 1. Mean, SD, SE (Mean) and variance of the male and female students

Variables	n	Mean	SE mean	Std deviation	Variance
Academic stress	120	78.87	1.35	14.75	217.58
Parental attachment	120	15.73	0.33	3.63	13.16
Depression	120	13.89	0.45	4.89	23.93

Hypothesis 1: There shall be a significant and positive correlation between academic stress and depression

To test the correlation between academic stress and depression, Pearson's correlation was applied. Table 2 shows the inter-correlation between academic stress and depression. The correlation between academic stress and depression is significant and positive ($r=0.845$) at 0.05 level. The proposed hypothesis was accepted.

Table 2. Intercorrelation matrix of academic stress, parental attachment and depression

Variables	Academic stress	Parental attachment	Depression
Academic stress	1.000	-0.570*	0.845*
Parental attachment	-0.570*	1.000	-0.772*
Depression	0.845*	-0.772*	1.000

Notes: * significant at 0.05.

Hypothesis 2: There shall be a significant and negative correlation between academic stress and parental attachment

To test the correlation between academic stress and parental attachment, Pearson's correlation was applied. Table 2 shows the inter-correlation between academic stress and parental attachment. The correlation between academic stress and parental attachment is significant and negative ($r=-0.570$) at 0.05 level. The proposed hypothesis was accepted.

Hypothesis 3: There shall be a significant and negative correlation between parental attachment and depression

To test the correlation between parental attachment and depression, Pearson's correlation was applied. Table 2 shows the inter-correlation between parental attachment and depression. The correlation between parental attachment and depression is significant and negative ($r= -0.772$) at 0.05 level. The proposed hypothesis was accepted.

Hypothesis 4: Parental attachment mediates the relationship between academic stress and depression

Linear regression was carried out to test the hypothesis. The hypothesized mediated model is shown in Figure 1.

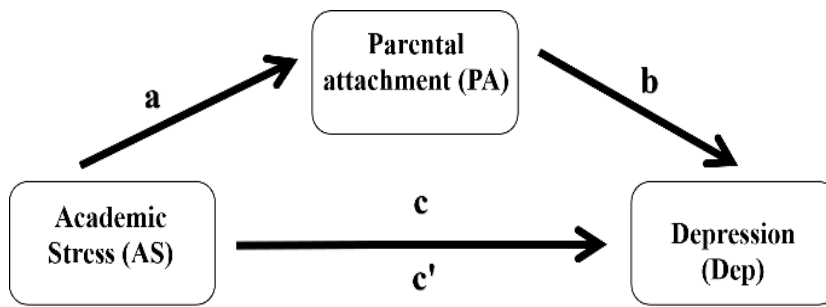


Figure 1. Hypothesized mediation model showing the mediating role of parental attachment between academic stress and depression

Firstly, path *c*, the total effect of independent variable (academic stress) on dependent variable (depression), was analyzed. The regression coefficient is depicted in Table 3. The path *c* from academic stress to depression is statistically significant ($b=0.28$, $s.e=0.02$, $t=17.19$, $p=0.000$).

Table 3. Standardized and unstandardized coefficients for Path *c* in the mediation model

Coefficients (DEP)					
Variable	Unstandardized coefficients		Standardized coefficients	t	Sig.
	B	Std. error	Beta		
(Constant)	-8.22	1.31	0.00	-6.28	0.000
AS	0.28	0.02	0.85	17.19	0.000

Notes: DEP – depression, AS – academic stress.

Then, path *a*, the effect of independent variable (academic stress) on mediator variable (parental attachment), is analyzed. The regression coefficient is depicted in Table

4. The path *a* from academic stress to parental attachment is statistically significant ($b=-0.14, s.e.=0.02, t=-7.54, p=0.000$).

Table 4. Standardized and unstandardized coefficients for Path *a* in the mediation model

Coefficients (PA)					
Variable	Unstandardized coefficients		Standardized coefficients	t	Sig.
	B	Std. error	Beta		
(Constant)	26.79	1.49	0.00	17.96	0.000
AS	-0.14	0.02	0.57	-7.54	0.000

Notes: PA – parental attachment; AS – academic stress.

Then, path *b* and *c-prime* (*c'*), i.e., the effect of the mediator variable (parental attachment) on the dependent variable (depression) and the direct effect of the independent variable (academic stress) on the dependent variable (depression) after controlling for the mediator variable (parental attachment) were analyzed respectively. The regression coefficient is depicted in Table 5. The path *b* from parental attachment to depression is statistically significant ($b=-0.58, s.e.=0.06, t=-9.51, p=0.000$) and the path *c'* from academic stress to depression after controlling for parental attachment is also statistically significant ($b=0.20, s.e.=0.01, t=13.31, p=0.000$).

Table 5. Standardized and unstandardized coefficients for Path *b* and *c'* in the mediation model

Coefficients (DEP)					
Variable	Unstandardized coefficients		Standardized coefficients	t	Sig.
	B	Std. error	Beta		
(Constant)	7.29	1.91	0.00	3.82	0.000
PA	-0.58	0.06	-0.43	-9.51	0.000
AS	0.20	0.01	0.60	13.31	0.000

Notes: DEP – depression, PA –parental attachment, AS – academic stress.

The value of beta coefficient in path *c'* is statistically significant even though the mediating variable was controlled for but at the same the time the beta coefficient value of path *c'* is less than beta coefficient value of path *c*. This suggests a partial mediating role of parental attachment between academic stress and depression.

SOBEL test by KJ Preacher [22] was employed to determine whether the decrease in the effect of the independent variable on the dependent variable after the mediator variable was controlled for is a significant reduction or not. If significant, then the mediation effect is statistically significant; otherwise, not. The SOBEL test statistic was found to be statistically significant ($t=5.67$; $s.e.=0.014$; $p=1e-8$) (Figure 2).

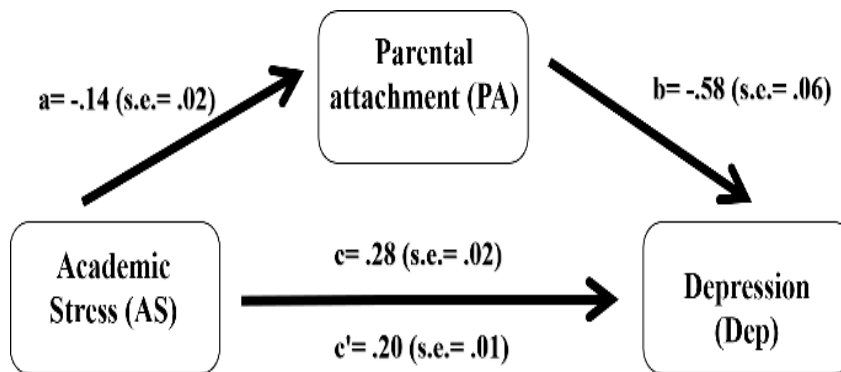


Figure 2. Unstandardized path coefficients for the relationship among academic stress, parental attachment and depression in the hypothesized mediation model

Discussion

The present study aimed to analyze the role of parental attachment as a mediator between the relationship between academic stress and depression. Correlational studies indicate that academic stress and parental attachment are significantly correlated with depression among college students. This research is strongly supported by the research evidence to date. This implies that academic stress is related to elevated symptoms of depression among students. Adolescents who had academic stress were more at risk of depression than those without stress [8]. In another study, it was found that the relationship between academic stress and suicidal thoughts is partially mediated by depression [23]. Also, parental attachment is significantly and negatively correlated with both, academic stress and depression. Many studies have pointed out similar results. Insecure attachment relationships with both parents were associated with the course of depression [16]. Deb et al. [24] also suggested that in the Indian context, academic stress and parental pressure is a significant predictor of psychiatric conditions. Thus, it can be safely said that parental

attachment is one of the important factors for students who are facing academic stress. If the parental attachment is strong, the symptoms of depression can be significantly alleviated even in the presence of academic stress. However, the effect of academic stress compounds if the parental attachment is weak or poor. An individual depends on his/her parents during childhood, adolescence, and young adulthood. If the parental attachment in these developmental phases is strong, the chances of symptoms of depression affecting an individual severely will be significantly reduced.

Conclusions

The overarching goal of mediation analysis is to establish causal relations. Once the causal relationship is established, the results can be used in several ways. In the present study, the partially mediating role of parental attachment makes it clear that when creating interventions for clients with symptoms of depression due to academic stress, it is imperative to understand the significant role that the relationship with parents plays in the life of an individual. The intervention should be designed such that the parents are actively involved while also focusing on strengthening the bond between the parent and the child. The education system around the world should also share the responsibility for designing their curriculum in ways that reduce academic stress and not add to the already existing burden. Lastly, parents should be guided to create a strong, warm, and loving bond with their children since childhood as the repercussions of not doing so can be severe and fatal in certain cases.

The study had various limitations. Firstly, the study conducted was based on a small and limited sample. The study can be expanded by increasing the sample size and also the data can be obtained from samples of various regions, nationalities, and ethnicities. Secondly,

the study did not control for various demographic variables. Though the study was conducted in urban areas of Northern India, a lot of other factors could have confounded the results. Thirdly, self-reporting tools were employed to obtain the data which can lead to bias. Fourthly, the data collected is from a specific section of the society. The role of stress in later life can also lead to depression and the mediating role of parental attachment in middle and older adulthood also needs to be studied in detail.

Despite the limitations, it is of considerable importance to understand that parents are the first people that a child becomes attached to and this is why the important role of this relationship at every developmental stage cannot be doubted. Parental attachment does not just have theoretical but vast clinical and social implications and affects the individual's personality in all walks of life.

There is a great deal of scope for horizontal and vertical expansion in the present study. More research needs to be conducted across various sections of society while also controlling for confounding variables to establish strong evidence for causal and mediating relationships. Also, other mediating and moderating variables need to be studied while controlling for confounding variables to establish a robust path mechanism and possible route of action of academic stress on depression.

Disclosures and acknowledgements

The author declares no potential conflicts of interest with respect to the research, authorship, and/or publication of this article. This research received no specific grant from any funding agency in the public, commercial, or not-for-profit sectors. Artificial intelligence (AI) was not used in the creation of the manuscript.

References:

1. Luthans F. Organizational behavior: an evidence-based approach. 12th edition. NY: The McGraw Hill Co; 2011.
2. Selye H. Stress and disease. *Science*. 1955; 122(3171): 625-31.
<https://doi.org/10.1126/science.122.3171.625>
3. Wilks SE, Spivey CA. Resilience in undergraduate social work students: Social support and adjustment to academic stress. *Social Work Education*. 2010; 29(3): 276-288.
4. Johnson SB. Children's fears in the classroom setting. *School Psychology Review*. 1979; 8(4): 382-396.
5. Berdida DJ, Grande RA. Academic stress, COVID-19 anxiety, and quality of life among nursing students: the mediating role of resilience. *International Nursing Review*. 2023; 70(1): 34-42. <https://doi.org/10.1111/inr.12774>
6. Deng J, Zhang L, Cao G, Yin H. Effects of adolescent academic stress on sleep quality: Mediating effect of negative affect and moderating role of peer relationships. *Current Psychology*. 2023; 42(6): 4381-4390.
7. Bhujade VM. Depression, anxiety and academic stress among college students: a brief review. *Indian Journal of Health and Wellbeing*. 2017; 8(7): 748-51.
<https://doi.org/10.1007/s12144-021-01803-7>
8. Jayanthi P, Thirunavukarasu M, Rajkumar R. Academic stress and depression among adolescents: a cross-sectional study. *Indian Pediatrics*. 2015; 52: 217-219.
<https://doi.org/10.1007/s13312-015-0609-y>

9. Kumaraswamy N. Academic stress, anxiety and depression among college students: a brief review. *International Review of Social Sciences and Humanities*. 2013; 5(1): 135-43.
10. Kidd KN, Prasad D, Cunningham JE, de Azevedo Cardoso T, Frey BN. The relationship between parental bonding and mood, anxiety and related disorders in adulthood: a systematic review and meta-analysis. *Journal of Affective Disorders*. 2022; 307: 221-236.
11. Genc E, Arslan G. Parents' childhood psychological maltreatment and youth mental health: Exploring the role of attachment styles. *Current Psychology*. 2023; 42(30): 26783-26792. <https://doi.org/10.1007/s12144-022-03765-w>
12. Yıldız MA. Serial multiple mediation of general belongingness and life satisfaction in the relationship between attachment and loneliness in adolescents. *Educ Sci Theory Pract*. 2016; 16(2): 553-578. <http://doi.org/10.12738/estp.2016.2.0380>
13. Laporta-Herrero I, Jáuregui-Lobera I, Barajas-Iglesias B, Serrano-Troncoso E, Garcia-Argibay M, Santed-Germán MÁ. Attachment to parents and friends and body dissatisfaction in adolescents with eating disorders. *Clinical Child Psychology and Psychiatry*. 2021; 26(1): 154-66. <https://doi.org/10.1177/1359104520962155>
14. Tan R, Yang Y, Huang T, Lin X, Gao H. Parent-child attachment and mental health in young adolescents: a moderated mediation analysis. *Frontiers in Psychology*. 2023; 14: 1298485. <https://doi.org/10.3389/fpsyg.2023.1298485>
15. Chen H, Meza JI, Yan Y, Wu Q, Lin X. Parental attachment and depression in adolescents: Moderation mediation model of empathy and gender. *Current Psychology*. 2023; 42(7): 5898-909. <https://doi.org/10.1007/s12144-021-01698-4>

16. Agerup T, Lydersen S, Wallander J, Sund AM. Associations between parental attachment and course of depression between adolescence and young adulthood. *Child Psychiatry & Human Development*. 2015; 46: 632-642. <https://doi.org/10.1007/s10578-014-0506-y>
17. Reisberg L. Student stress is rising, especially among women. *The Chronicle of Higher Education*. 2000; 46(21): A49.
18. Rajendran R, Kaliappan KV. Efficacy of behavioural programme in managing the academic stress and improving academic performance. *Journal of Personality and Clinical Studies*. 1990; 6(2):193-196.
19. Rao RB. A study of academic stress and adjustment styles of teacher trainees. *Scale Acad Stress*. 2012; 43: 83-237.
20. Chapple C. Parental Attachment Scale (PAS). In: Fischer J, Corcoran KJ., editors. *Measures for clinical practice and research: a sourcebook*. 4th edition. NY: Oxford University Press; 2007. p. 388-389.
21. Beck AT, Ward C, Mendelson M, Mock J, Erbaugh JJ. Beck depression inventory (BDI). *Arch Gen Psychiatry*. 1961; 4(6): 561-571. <https://doi.org/10.1001/archpsyc.1961.01710120031004>
22. Preacher KJ, Hayes AF. SPSS and SAS procedures for estimating indirect effects in simple mediation models. *Behavior Research Methods, Instruments & Computers*. 2004; 36: 717-731. <https://doi.org/10.3758/BF03206553>
23. Ang RP, Huan VS. Relationship between academic stress and suicidal ideation: testing for depression as a mediator using multiple regression. *Child Psychiatry and Human Development*. 2006; 37: 133-143. <https://doi.org/10.1007/s10578-006-0023-8>

24. Deb S, Strodl E, Sun H. Academic stress, parental pressure, anxiety and mental health among Indian high school students. *International Journal of Psychology and Behavioral Science*. 2015; 5(1): 26-34.

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