Original Article

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Academic Stress among Adolescents of Rural Nepal: A Community-based Cross-Sectional Study

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ABSTRACT

Background: Adolescents are in the transition phase between childhood and adulthood. Their mental health influences many aspects in their life as they go through many physical and emotional changes. Adolescent mental health is harmed by changes in emotional and physical state, as well as increased academic pressure. This study aimed to assess academic stress and its associated factors among adolescents in rural Nepal.

Methods: A community-based cross-sectional survey was conducted among 424 adolescents residing in Karnali Province, Nepal. Academic stress was measured using Student Assessing Academic Stress. Multivariate logistic regression analysis was used to examine associated factors at the significance level of 0.05.

Results: Of the total students, 19.8% had moderate academic stress and 2.4% of them had high academic stress. Female students had thrice higher odds of having academic stress as compared to male students (Adjusted Odds Ratio:3.47; 95% Confidence Interval:1.91to 6.31, *p*-value:<0.001). Grade 10 students had higher odds of having academic stress as compared to grade 9 (Adjusted Odds Ratio:2.02; 95% Confidence Interval:1.13 to 3.61, *p*-value:0.017). Students of literate mothers were more likely to experience academic stress than those with illiterate mothers (Adjusted Odds Ratio:0.53; 95% Confidence Interval:0.29 to 0.96, *p*-value:0.036). Students with unsatisfactory academic performance had thrice higher odds of having academic stress as compared to students with satisfactory academic performance (Adjusted Odds Ratio:3.12; 95% Confidence Interval:1.46 to 6.67, *p*-value:<0.003).

Conclusions: The findings of the study showed that high school students have academic stress, which is related to many factors at home and school. Understanding academic stress and parents and teachers providing the best support to the students could help lessen the burden.

Keywords: Academic stress; adolescents; Nepal; prevalence

INTRODUCTION

Academic stress is the result of social and self-imposed pressure in the classroom, which affects students' psychological well-being.[1,2] It arises from various academic demands such as exams, classroom participation, and academic progress. Both Western and Asian countries experience academic stress as a primary cause of ongoing and intermittent stress among young people.[2] Previous research has linked academic stress to issues like Mobile Phone Addiction, poor sleep quality, and depression.[3-5]

Nepali adolescents face challenging transitions to adulthood amidst unfavorable social, political, and economic circumstances and with limited resources.[6] While some level of academic stress can be beneficial, excessive stress can lead to negative consequences such as anxiety, depression, and even suicidal thoughts.[7,8]

Limited research has been conducted in Nepal on academic stress among adolescents. This study aimed to determine the prevalence of academic stress in Karnali Province, Nepal. The findings will provide valuable insights for students, parents, college administrators,

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and policymakers, enabling them to identify gaps and work towards effective solutions in the field of adolescent mental health in Nepal.

METHODS

A community-based cross-sectional study was conducted among adolescents in selected schools of Karnali Province, Nepal. This study was conducted in the four public schools of Karnali Province which was selected using a simple random sampling technique. Karnali Province, located in western Nepal, is one of seven provinces of the country. In the Karnali province of Nepal, there are a total of 1,769,788 people living in ten districts (Humla, Jumla, Kalikot, Mugu, Surkhet, Dailekh, Salyan, Dolpa, Rukum West, and Jajarkot). These areas have a high poverty rate and a poor human development index, which is a summary indicator of the state of human development that includes per capita gross national income, life expectancy, and level of education. Four schools were selected from four districts- Mugu, Dailekh, Kalikot and Humla.

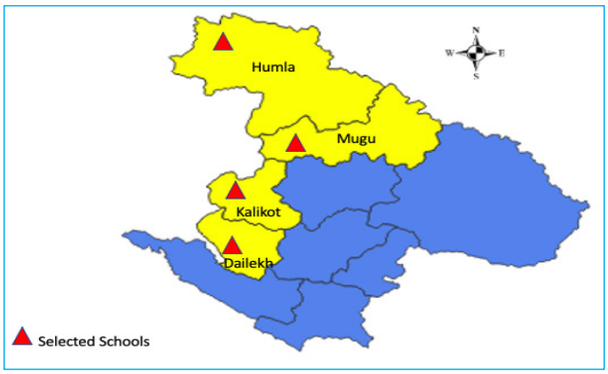

Figure 1. Selected schools from selected districts.

The study population was adolescents from selected schools in Karnali province. Students of grade 9,10,11 and 12 were selected conveniently. Those students willing to participate and who get the written informed consent form signed by their parents or teachers were eligible for this study. Verbal consent was taken from the students.

The expected proportion of academic stress among adolescents was taken as 50% and the sample size was calculated using the formula; n = z2 pq/d2, where p = 0.5, q = 0.1, z = 1.96 at 95% confidence interval, and d = 0.05 is 379. After assuming 10% as the non-response rate, the final calculated sample size was 424.

Written consent was taken from the parents. The teachers were first contacted and an orientation about the questionnaire, purpose of the study, the importance of privacy, and ensuring the confidentiality of the respondents was done. Secondly, the parents of the students were informed and asked to participate in an orientation program. The parents were then explained about the research and consent was taken from them for their children to be involved in the study. A self- administered questionnaire was used during data collection. About 15 minutes were given to students to fill up the questionnaire.

Data collection was done by using standard questionnaires for the dependent variable and independent variables. A self-structured questionnaire in Nepali language was used based on the conceptual framework and literature reviews. Questions were divided into three parts.

Part I: Student assessing academic stress(SAAS)

Part II: Socio-demographic characteristics

Part III: Academic performance

The SAAS is a self-reported scale through which individual students describe their areas of stress regarding his/her academic work, according to the extent to which he/she is willing to disclose them. It is essentially a precise and time-saving method providing information about the major concerns of an individual student or group. The SAAS is a measure of stress response developed specifically for quantifying stress on students in the stress response domains of physiological, behavioral, cognitive and affective. Respondents have the option of answering in two responses 'Yes' and 'No' and scoring '1' and '0' respectively. Higher scores indicate a greater stress response. Busari[9] validated SAAS and produced excellent reliability using Cronbach's alpha for the overall SAAS scores. And all alphas were above .80. This indicates that the SAAS is a reliable measure of academic stress response. This study uses a questionnaire with 30 items from Nepali version of the Students Assessing Academic Stress inventory questionnaire (SAAS) developed by Sinha, Nepal and Sharma[10] The scale consists of 30 items with 'yes' or 'no' alternatives. Score 1 is provided for each 'yes' response and 0 for 'no' response. Thus '30' is the maximum possible score and '0' is the minimum possible score. The set consists of 5 factors; cognitive (questions 1,3,22, 24,27, 28,29) affective (questions 4,7,10,13,14,30), physical (questions 2,6,16,20,26) social/interpersonal(questions 12,15,17,18,25) and motivational(questions 5,8,9,11,19,21,23) Higher the total score, more the level of academic stress. Scores was categorized as follow:

High stress: >80% (24 scores)

Moderate stress: 60-79% (18-24)

Low stress: <60% (18 scores)

This part includes age, gender, grade, ethnicity, family type, number of siblings, birth rank, mother's education, father`s education, mother's occupation, father's occupation and family income.

It refers to success measured by how well a student performs in subjects at school. The results of the examinations like grades, GPA, percentage and assessment of assignments affect the individual and are very important for the future perspective of the student. It was classified into three categories: satisfactory, moderately satisfactory and unsatisfactory. The academic performance level had a set of questionnaires (7 items) and uses Likert scale. The students had four options as a response; 'strongly agree',' agree', 'disagree' and 'strongly disagree'. The highest score was 3 and was given to the respondents who strongly agreed in positive questions. The students who strongly disagreed with the questions were given scores '0' in positive questions. The exact reverse scores were given in the negative questions. The questions were divided into positive and negative questions. Positive questions are in the numbers 12, 13, 16. Negative questions are in the numbers 14,15,17,18. This set of questionnaires is taken from the literature review[11-13] and modified according to the context of the research site and background. The highest score was 21 and 0 was the lowest. Scores were categorized as below

Satisfactory: ≥80% of total score (>17)

Moderate satisfactory: 60-79% (13-17)

Unsatisfactory: <60% (<13)

Questionnaire was created and revised by reference books and theoretical background. The structured questionnaires were checked by a committee, stress and adolescent health experts to verify content validity and approved by research committees before the start of data collection. Second, the questionnaire was translated to Nepali language and was sent to review the consistency and contextual meaning of the questions in both languages to the responsible organization. For reliability, data was pretested on 10% of the sample size which was the representative study population other than the sample, for the purpose of knowing about the problem related to sequence, meaning, components and understanding of the questions in a different area than the study area. Other additional editing to the questionnaire was done according to the comments and responses from the pre-test. The questionnaires were self-administered by the students in the class. If any questionnaires were incomplete then it was returned to the student and asked for completion. Cronbach's Alpha Coefficient test was carried out to ensure the reliability and final adjustment was done accordingly. The alpha coefficient of Cronbach was 0.726 for overall components. The study site was Nepal Police School, Sanga, a site in the outskirts of Kathmandu valley that reflected the population of selected schools of Karnali Province.

Statistical analysis was performed using IBM SPSS Statistics for Windows, Version 26 (IBM SPSS Statistics for Windows, IBM Corporation, Armonk, NY). Descriptive analysis of the variables was done in terms of frequency and percentage. Multivariate logistics regression analysis was conducted to examine associated factors of moderate and high academic stress. The adjusted odds ratio was calculated at a 95% confidence interval (CI), and a p-value less than 0.05 was considered statistically significant.

Ethical approval was obtained from the Ethical Review Board of Nepal Health Research Council, (Reference number: 1900). All the students and their parents were informed about the aims and objectives of the study by including the written consent form in the questionnaire itself. Written consent was taken from the parents of study participants prior to completing the survey form. No personal identities were collected during the study to ensure their confidentiality.

RESULTS

As shown in Table 1 the average age of the participants was 15.9 (1.09) years. Among the participants, the number of females (57.8 %) was higher than the number of males. Regarding ethnicity, the majority were Brahmin/Chettri (56.8%) who are considered the upper caste, followed by the Janajati (26.4%) the indigenous people, and then the Dalits (16.7%) who comprise the lower caste. Over half of the participants were from grade 9 (50%). More than half of the participants (64%) were from Nuclear families which consist of parents and children. The number of siblings among the participants above two siblings was the highest (57.1%), In the case of birth order, most of the participants were middle born among their siblings (46.9%). More than half of the participants' mothers (66.7%) were illiterate, whereas, more than half of the participants` fathers were literate (66.7%). Agriculture was the major occupation for both participants` mother (77.1%) and father (44.6%). The

students with a family income enough with no debt were 36.6%.

Table 1. Socio-demographic Characteristics (n=424).	
Characteristics	n(%)
Gender	
Male	179(42.2)
Female	245(57.8)
Age (Mean, SD)	15.9(1.09)
Ethnicity	
Brahmin/Chhetri	241(56.8)
Janajati	112(26.5)
Dalit	71(16.7)
Grade	
Class 9	212(50.0)
Class 10	139(32.8)
Class 11	17(3.8)
Class 12	56(13.2)
Types of family	
Nuclear	271(64.4)
Joint	153(35.6)
Siblings	
Zero(0)	29(6.8)
One(1)	34(8.0)
Two(2)	119(28.1)
Above Two(>2)	242(57.1)
Birth order	
Eldest	111(26.2)
Middle Child	199(46.9)
youngest	114(26.9)
Mother's education	
Illiterate	283(66.7)
Literate	141(33.3)
Father's education	
Illiterate	141(33.3)
Literate	283 (66.7)
Mother's occupation	
Housewife	46(10.8)
Agriculture	327(77.1)
Labor	10(2.4)
Private Service	13(3.1)
Small Business	15(3.5)
Government Service	3(0.7)
others	10(2.4)
Father's occupation	
Unemployment	62(14.6)
Agriculture	189(44.6)
Labor	30(7.1)
Private Service	47(11.1)
Small Business	36(8.5)
Government Service	41(9.7)
others	19(4.5)
Family income	
Adequate Saving	102(24.1)
No Adequate Saving	74(17.5)
No Adequate saving and No Loan	155(36.6)
No Adequate Saving But in Loan	93(21.9)

Table 2 shows the percentage of students' responses to academic performance. Academic performance is the individual's own perception of his/her own academic performance. About 18 (4.2%) students were unsatisfied with their academic performance

Table 2. Academic Performance level (n=424).	
Academic performance	n(%)
Unsatisfactory	18 (4.2)
Moderate	310 (73.1)
Satisfactory	96(22.6)

About 20% of students had moderate stress and 2.4% had high academic stress (Table 3).

Table 3. Prevalence of Academic Stress (SAAS) (n=424).	
Stress	n(%)
Low Stress	330(77.8)
Moderate Stress	84(19.8)
High Stress	10(2.4)

Table 4 presents an association between academic stress and socio-demographic characteristics. In multivariate logistic regression, gender, ethnicity, grade, birth order and mother`s education were significantly associated with the presence of moderate and high academic stress after adjusting other socio-demographic characteristics. Female students had thrice higher odds of having

academic stress as compared to male students (AOR: 3.47; 95% CI: 1.91to 6.31, *p*-value: < 0.001). The odds of having academic stress was 56% lower among dalit ethnic group (AOR: 0.44; 95% CI: 1.97 to 0.10, *p*-value: 0.047). Grade 10 students had higher odds of having academic stress as compared to grade 9 (AOR: 2.02; 95% CI: 1.13 to 3.61, *p*-value: 0.017). Similarly, middle children had higher odds of having academic stress as compared to the youngest child (AOR: 2.57; 95% CI: 1.20 to 5.48, *p*-value: 0.015). Students of literate mothers were more likely to experience academic stress than those with illiterate mothers (AOR: 0.53; 95% CI: 0.29 to 0.96, *p*-value: 0.036)

Table 4. Association between academic stress and socio-demographic characteristics.

Variables	cOR (95% CI)	p-value	aOR (95% CI)*	p-value
Gender (first)				
Male	1		1	
Female	3.19 (1.88-5.43)	<0.001	3.47 (1.91-6.31)	**<0.001***
Age (Mean, SD)	0.933(0.76-1.15)	0.51	1.09 (0.82-1.44)	0.552
Ethnicity				
Brahmin/ Chhetri	1		1	
Janajati	0.38(0.21-0.71)	0.002	0.55 (0.27-1.12)	0.098
Dalit	0.40 (0.19-0.84)	0.016	0.44 (1.97-0.10)	**0.047***
Grade				
Class 9	1		1	
Class 10	2.14(1.31-3.51)	0.003	2.02 (1.13-3.61)	**0.017***
Class 11	0.10 (0.27-3.67)	0.998	1.19 (0.26-5.39)	0.823
Class 12	0.42(0.16-1.13)	0.086	0.53 (0.16-1.71)	0.290
Types of family				
Joint	1		1	
Nuclear	0.91(0.56-1.48)	0.72	0.83 (0.47-1.47)	0.529
Siblings				
Zero(0)	1		1	
One(1)	1.80(0.30-10.6)	0.516	1.47 (0.22-9.62)	0.686
Two(2)	3.59(0.80-16.13)	0.095	3.19 (0.64-15.73)	0.155
Above Two(>2)	4.75(1.09-20.55	0.037	3.21 (0.66-15.52)	0.147
Birth order (last)				
Youngest	1		**1**	
Middle Child	2.21(1.17-4.17)	0.015	**2.57 (1.20-5.48)**	**0.015***
Eldest	1.30(0.71-2.36)	0.395	1.23 (0.61-2.47)	0.559
Mother's education				
Literate	1		1	
Illiterate	0.53(0.33-0.85)	0.008	0.53 (0.29-0.96)	**0.036***
Father's education				
Literate	1		1	
Illiterate	1.04(0.64-1.67)	0.854	1.79 (0.93-3.43)	0.081
Mother's occupation				

Others	1		1	
Agriculture	0.68 (2.52-1.86)	0.457	0.55 (0.16-1.83)	0.328
Housewife	0.95(0.47-1.91)	0.887	0.73 (0.30-1.75)	0.480
Father's occupation				
Other	1		1	
Agriculture	0.81(0.36-1.82)	0.61	0.68 (0.27-1.70)	0.412
Unemployment	1.96 (1.18-3.24)	0.009	1.40 (0.74-2.67)	0.299
Family income				
Adequate Saving	1		1	
No Adequate Saving	1.20(0.60-2.39)	0.60	1.28 (0.58-2.82)	0.538
No Adequate saving and No Loan	0.59 (0.32-1.12)	0.19	0.70 (0.34-1.44)	0.331
No Adequate Saving But in Loan	1.26 (0.66-2.40)	0.48	1.36 (0.62-2.98)	0.435

*Adjusted variables: Socio-demographic characteristics, *p value: <0.05*

Table 5 presents the association between academic stress and academic performance. In multivariate logistic regression, academic performance was significantly associated with academic stress after adjusting socio-demographic characteristics. Students with unsatisfactory academic performance had thrice higher odds of having academic stress as compared to students with satisfactory academic performance (AOR:3.12; 95% CI:1.46 to 6.67, *p*-value:<0.003).

Table 5. Association between academic stress and academic performance

Variables	cOR (95% CI)	p-value	OR (95%CI)*	p-value
Academic performance				
Satisfactory	1		1	
Moderate	2.46(0.68-8.92)	0.172	3.25(0.80-13.25)	0.101
Unsatisfactory	2.10(1.48-6.04)	0.002	3.12(1.46-6.67)	0.003*

*Adjusted variables: Socio-demographic characteristics, *p value: <0.05*

DISCUSSION

The prevalence of academic stress among high school students in Karnali were categorized into three levels- low, moderate and high. The prevalence of low academic stress was 77.8% , moderate academic stress was 19.8% and high academic stress was 2.4%. In contrast to our findings, a research from India found that 66% of students felt stressed out by academic pressure.[14] The majority of adolescents in the Taipei Area (Taiwan) considered their depression(56.7%) to be problems at school, followed by problems with friends and family (50.9%), and academic tests (45.6%). The survey also revealed that those with depression were eight times more likely to take their own lives than the general population.[15]

It was seen that females in comparison to males had three times more academic stress. It was because there is a huge gender disparity in the context of Nepal. Girls are deprived of education and stay at home helping the family with chores. Now with the change in times, girls attend school along with their male counterparts, but they still have to help the family from cooking, to looking after the cattle, fetching water, and grass for the cattle, and collecting wood for fire in the kitchen. The burden of academic stress and household chores falls mainly on the shoulders of girls. Similar results were seen in a study in America where significant gender-based differences were obtained on eight of the 35 questions of the scale. In each case, girls reported greater stress than boys.[16] The study by Sulaiman et al. indicated that female students, who tend to be more emotional and sensitive to what is occurring around them, have encountered different forms of stress than male students.[17] On the other hand, Walton found no significant difference in the perceived stress between male and female students when the researcher made a comparison of perceived stress levels and coping styles of junior and senior students in Nursing and Social Work programs.[18] Another study in the same age group in Kathmandu showed overall stress (75%) as well as the level of severe stress (25%) higher in males than in females.[19]

This study shows the Brahmin caste had more academic stress. The caste system in Nepal is very strict and evident in day-to-day life. The Brahmins also comprise a

larger population in this area hence the academic stress can be seen more among this caste. The lower castes (Dalit) category is considered to be the untouchables and are treated very differently than the higher castes (Brahmin/Chettri). There is no literature on the caste system which shows an impact on academic stress. Further study is recommended in this area.

This study showed no significant association between academic stress and family type. In contrast to our study, a research in Bangladesh, showed that family relation was a stronger predictor to create variations in secondary school students academic performance.[20] Similarly, another study in Kenya showed that nuclear family background positively influenced academic performance of students and it significantly accounted for 16.7% variance in student performance.[21] This study showed a significant association between academic stress and birth order. Middle children were highly stressed in comparison with the youngest born. It might be due to the fact that the middle child feels left out as the eldest child is given early responsibilities, and the youngest are more loved and pampered in the family. But there is no literature that shows or proves that the eldest born have high levels of academic stress. Further study is highly recommended.

This study showed an association between academic stress and literate mothers. This might be because illiterate mothers are usually submissive and don't intervene much in anything outside the household in rural areas of Nepal. A study in Kenya showed that a mother's education does play an important role in the adolescents' lives.[22]

Similarly, other studies show how a mother's high level of education has an impact on high expectations from children, more pressure on academics and academic achievement.[23,24]

A significant association between academic stress and academic performance. The students who were unsatisfied with their academic performance had high academic stress nearly three times more. It was similar to other studies where students had stress related to their academic performance. [8,25,26] In Nigeria, a study examined the relationship between academic stress and academic performance. It found that the overwhelming majority of the students affirmed that academic stress affected their academic performance.[27] The findings were in agreement with Linn and Zeppa who claimed that academic Stress can inhibit and suppress learning.[28]

To the best of our knowledge, this is one of the early papers assessing the actual frequency of academic stress and its associated factors in rural Nepal. Despite its significant importance in evidence, our study had several limitations that should be considered when interpreting the data. All the measurements in this study were based on self-reports, which may have been prone to response and information bias. This study is cross-sectional and has predictive limitations as exposure and outcome were assessed at once. We are unable to discriminate between pre-existing psychological distress from newly emerging symptoms, and also, we are unable to assess the secondary stressors such as personal and relationships, which may have an impact on outcome variables, which were not measured.

CONCLUSIONS

In conclusion, this study sheds light on the prevalence of academic stress among adolescents in rural Nepal. The findings indicate that a significant proportion of students experience moderate to high levels of academic stress. Several factors were identified as being associated with academic stress, including gender, grade level, maternal literacy, and academic performance. Female students were found to have higher odds of experiencing academic stress compared to male students, and grade 10 students were more likely to experience stress than grade 9 students. Additionally, students with literate mothers and unsatisfactory academic performance were also at higher risk of academic stress. These findings emphasize the need for targeted interventions and support systems to address the mental health challenges faced by adolescents in rural Nepal, particularly regarding academic stress. By understanding these factors, stakeholders can implement strategies to promote mental well-being and academic success among adolescents in this population.

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CONFLICT OF INTEREST

The authors declare no conflict of interest

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