



Prevalence and Associated Factors of Anxiety, Depression, and Stress Among Grade 9–10 Students in a Government School, Ward 10, Kathmandu, Nepal

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ABSTRACT

Publishing Process

Received, June 5 2026

Finalized to publish: 5th July , 2026

Open Access 4.0

Published date: 30 August 2026



Background: Mental health is one of the most important aspects of human life. Mental disorders like sadness, worry, and tension are the leading causes of disability and low quality of life in young people. In Nepal, adolescents in 9th and 10th Grades face heavier school demands, which can eventually lead to mental

health issues. The objective of the study was to assess the prevalence of anxiety, depression, stress, and their associated factors among the students of classes 9 and 10 of the government school of ward number 10, Kathmandu Metropolitan City, Kathmandu, Nepal.

Methods: An analytical cross-sectional study was conducted among 330 students of Grades 9 and 10 using systematic random sampling. Data were collected using the self-administered semi-structured questionnaire, including standard tools Depression, Anxiety, and Stress Scale - Youth Version (DASS-Y) and Rosenberg Self-Esteem Scale (RSES), and analyzed using descriptive and inferential statistics.

Results: The survey participants showcased a significant degree of emotional suffering. The occurrence of depression, anxiety, and stress was 40%, 48.8%, and 29.7%, respectively. Depression, Anxiety, and Stress (DAS) symptoms were seen mainly in the female students and Class 9 students. Low self-esteem was strongly related to stress, while academic pressure and dissatisfaction with grades were major contributing factors for DAS.

Conclusion: In conclusion, the research indicates that the symptoms of depression, anxiety, and stress were highly prevalent among the students of grades 9 and 10. The significant predictors of emotional distress were low self-esteem, educational pressure, female gender, and transitional academic challenges.

Keywords: Anxiety, Depression, Impact, Mental health, Stress

Declaration: There is no conflict of interest, and Research ethics were followed during the process.



INTRODUCTION

Mental health constitutes a significant factor in general health; however, the prevalence of conditions like depression, anxiety, and stress (DAS) among adolescents around the globe is still on the rise. These emotional disorders usually manifest in the early and middle stages of adolescence- a critical period characterized by the physical, psychological, and social changes that occur from ages 10 to 19 years.¹ Depression and anxiety worldwide are the major factors leading to loss of disability-adjusted life years (DALYs) in the case of adolescents, with depressive disorders being one of the top three causes of years lost to disability and anxiety being among the top five causes for girls.² The WHO states that one out of every seven adolescents experiences a mental disorder, the most frequent being anxiety and depression.³ Evidence from multiple countries, including South Asia, Ethiopia, India, and Greece, consistently shows substantial levels of DAS among school-going adolescents, largely driven by academic pressure, psychosocial challenges, and post-pandemic stressors.⁴⁻⁸

In Nepal, a parallel pattern has been noticed, as studies conducted in schools reported high emotional distress levels among adolescents. Several studies conducted in the Kathmandu valley and other regions have revealed that the incidence of depression varies from 32.6% to 56.5%, that of anxiety from 37.9% to 56.9%, and that of stress from 3.2% to 32.9%, respectively.⁹⁻¹¹ Studies further suggest that Class 9 and 10 students may be particularly vulnerable, given the increasing academic expectations, examination pressure, and transition into higher secondary education. Studies carried out in Pokhara and other regions indicate that among adolescents, self-esteem, social support, gender, school type, and grade level conditions are the major contributors to the development of DAS symptoms.^{12,13}

Considering these issues, it is very important to study DAS in early-to-middle adolescence for the detection of the problem and intervention to be done in a timely manner. The absence of grade-specific data, along with the increasing academic pressure and continuous psychosocial stressors, makes it necessary to do dedicated research on this group. The present study, hence, is directed towards evaluating the prevalence rates of depression, anxiety, and stress among Class 9 and 10 students of a government school situated in Ward No. 10, Kathmandu Metropolitan City, and finding out the factors contributing to these disorders. This research, through considering the psychological factors and academic pressures, aims at providing reliable evidence that has the potential to support the implementation of school-based mental health interventions targeting specific groups and eventually lead to improved adolescent well-being in Nepal.



MATERIALS AND METHODS

Study Design

Analytical cross-sectional study design was done in this research to assess the prevalence of anxiety, depression and stress and its associated factors among class 9 and 10 students.

Study Site

The study was conducted in the government school of ward number-10, Kathmandu Metropolitan City, Nepal.

Study Population

The population of the study was class 9 and 10 students of government school of ward number-10, Kathmandu Metropolitan City, Nepal.

Selection Criteria

Inclusion

All the students of class 9 and 10 who were present during the survey.

Exclusion

Those students who were absent during the data collection period and those who preferred not to give informed consent or disagreed to participate in the study.

Sample Size

The sample size was calculated using the population proportion formula, considering 50% prevalence, 95% confidence interval, 5% margin of error, and a design effect (DEFF) of 1.5. The initial calculated sample size was 576.

Since the total study population was finite ($N = 627$), the finite population correction was applied, resulting in a reduced sample size of 300. After adding 10% for non-response, the final sample size was 330.

Hence, the estimated sample size was 330.

Sampling Technique

The number of sample students from each s was determined using probability proportionate to size (PPS) (Error! Reference source not found.).


Table 1: Sampling Technique

S.N	Name of School	Number of students	Percentage	PPS
1.	Ratna Rajya Secondary School Ward No 10 Kathmandu Metropolitan City , Nepal	Class 9= 326		
		Section A = 65	19.94	34
		Section B = 70	21.47	37
		Section C = 65	19.94	34
		Section D = 60	18.40	32
		Section E = 66	20.25	35
		Percent and Nos PPS	52.76	172
		Class 10 = 301		
		Section A = 71	23.59	37
		Section B = 36	11.96	19
		Section C = 60	19.93	32
		Section D = 63	20.93	33
		Section E = 71	23.59	37
		Percent and Nos PPS	52.49	158

Source: Primary Data

Total Sample size $172+158=330$, 52.63%

Data Collection Tools

The research was conducted using semi-structured, self-administered, and also standard questionnaires in both English and Nepali languages. The standard data collection tools; Depression, Anxiety and Stress Scale - Youth Version (DASS-Y) and Rosenberg Self-Esteem Scale (RSES) were used.

Data Collection Technique

Data were collected using semi-structured, self-administered and also standard questionnaire. Students were selected using systematic random sampling based on their existing roll numbers.

Pretesting of Tools

Pretesting was done in 10% of sample size in class 9 and 10 students of ward number 29, Kathmandu Metropolitan City, Kathmandu, Nepal.



Data Collection Procedure

Data were collected from 330 students of class 9 and 10 of government school of ward number-10, Kathmandu Metropolitan City using a semi-structured, self-administered questionnaire. School permission and written consent were obtained, and students completed the questionnaire in classroom settings.

Data Processing and Analysis

Data were checked, entered, and analyzed using SPSS v27. Chi-square tests assessed associations, and odds ratios with 95% CI measured strength and direction of associations.

Ethical Consideration

Permission was obtained from the ward and schools, and an approval letter was collected from Kathmandu Multiple College Pvt. Ltd. Guardian assent was obtained from school principal prior to data collection. The purpose and objectives of the study was clearly explained to the respondents. Participation was entirely voluntary, and respondents had the right to withdraw at any time without any pressure. Confidentiality was maintained.

RESULTS

1. Socio-demographic characteristics

Among the 330 students, most were below 15 years of age (67.6%) with a mean age of 15.13 years, and 58.8% were male. Over half (52.1%) were in Class 9 and 47.9% in Class 10. The major ethnic groups were Hill Chhetri (19.4%), Hill Brahmin (18.2%), and Terai Brahmin/Chhetri (17.9%), and most students were Hindu (89.4%). Fathers commonly had secondary education (36.1%) and were self-employed (33.9%), while mothers were mainly homemakers (55.8%). Only 13.3% of the students fell below the Middle 20 equity quantile, whereas the remaining 86.7% were at or above it (**Table 2**).

Table 2: Socio-demographic characteristics

Variables/Characteristics (n=330)	Frequency	Percent
Age		
<15	223	67.6
≥15	107	32.4
Mean±Std.Deviation:15.13±1.181		Minimum/Maximum:13/19
Gender		
Male	194	58.8
Female	136	41.2
Grade		



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Class 9	172	52.1
Class 10	158	47.9
Ethnicity		
Hill Chhettri	64	19.4
Hill Brahmin	60	18.2
Terai Brahmin / Chhettri	59	17.9
Other Terai Caste	36	10.9
Hill Dalit	14	4.2
Terai Dalit	7	2.1
Newar	13	3.9
Hill Janajati	48	14.5
Terai Janajati	24	7.3
Muslim	4	1.2
Others	1	0.3
Religion		
Hindu	295	89.4
Buddhist	11	3.3
Muslim	9	2.7
Christian	9	2.7
Others	6	1.8

Variables/Characteristics (n=330)	Frequency	Percent
Father's Education		
Illiterate (Can't read and write)	28	8.5
Literate (Can read and write)	32	9.7
Basic level (1-8)	97	29.4
Secondary level (8-12)	119	36.1
Bachelors and above	53	16.1
Father deceased	1	0.3
Mother's Education		
Illiterate (Can't read and write)	68	20.6
Literate (Can read and write)	46	13.9
Basic level (1-8)	92	27.9
Secondary level (8-12)	87	26.4
Bachelors and above	37	11.2
Father's Occupation		
Self-employed	112	33.9
Non-government employee	82	24.8
Government employee	60	18.2
Non-paid	1	.3



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Homemaker	17	5.2
Retired	6	1.8
Unemployed (able to work)	11	3.3
Unemployed (unable to work)	2	.6
Others	38	11.5
Father deceased	1	0.3
Mother's Occupation		
Homemaker	184	55.8
Government employee	46	13.9
Non-government employee	38	11.5
Self-employed	38	11.5
Non-paid	5	1.5
Retired	2	0.6
Unemployed (able to work)	8	2.4
Unemployed (unable to work)	5	1.5
Others	4	1.2
Equity Quantiles		
<middle 20	44	13.3
≥middle 20	286	86.7

Source: primary data

2. Prevalence of Depression, Anxiety, and Stress

The findings revealed that 40.0% of the students experienced depressive symptoms, while 60.0% fell within the normal range. For severity levels, 8.8% had mild, 19.1% moderate, 7.0% severe, and 5.2% extremely severe depression (**Table 3**).

Anxiety was present in 48.8% of the respondents, whereas 51.2% had normal anxiety scores. Among those with symptoms, 17.0% were mild, 21.5% moderate, 6.4% severe and 3.9% extremely severe (**Table 3**).

Stress symptoms were observed in 29.7% of the students, with 70.3% classified as normal. The severity distribution showed 10.3% mild stress, 10.9% moderate, 7.3% severe, and 1.2% extremely severe (**Table 3**).

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Table 3: Prevalence of Depression, Anxiety, and Stress

Variables (n=330)	Frequency	Percentage
Depression Status		
Normal	198	60.0
Depressed	132	40.0
Depression Level		
Normal (0-6)	198	60.0



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Mild (7-8)	29	8.8
Moderate (9-13)	63	19.1
Severe (14-16)	23	7.0
Extremely Severe (17+)	17	5.2
Anxiety Status		
Normal	169	51.2
Anxious	161	48.8
Anxiety Level		
Normal (0-5)	169	51.2
Mild (6-7)	56	17.0
Moderate (8-12)	71	21.5
Severe (13-15)	21	6.4
Extremely Severe (16+)	13	3.9
Stress Status		
Normal	232	70.3
Stressed	98	29.7
Stress Level		
Normal (0-11)	232	70.3
Mild (12-13)	34	10.3
Moderate (14-16)	36	10.9
Severe (17-18)	24	7.3
Extremely Severe (19+)	4	1.2

**3. Association between socio-demographic factors and depression**

The analysis showed a significant association between gender and depression, with 35.1% of males and 47.1% of females reporting depressive symptoms ($\chi^2=4.803$, $p=0.028$). Grade level is also significantly associated, as 47.7% of Class 9 students and 31.6% of Class 10 students were depressed ($\chi^2=8.816$, $p=0.003$). No significant associations were observed with age, ethnicity, or religion and other variables. ($p > 0.05$) (Table 4).

Table 4: Association between socio-demographic factors and depression

Variables (n=300)	Depression		Chi-square (df)	p-value
	Normal n(%)	Depressed n(%)		
Age (Years)				
<15	139 (62.3)	84 (37.7)	1.558 (1)	0.212
≥15	59 (55.1)	48 (44.9)		
Gender				
Male	126 (64.5)	68 (35.1)	4.803 (1)	0.028
Female	72 (52.9)	64 (47.1)		
Grade				
Class 9	90 (52.3)	82 (47.7)	8.816 (1)	0.003
Class 10	180 (68.4)	50 (31.6)		
Ethnicity				
Hill Brahmin/Chhetri	69 (55.5)	55 (44.4)	5.225 (3)	0.156
Terai Brahmin/Chhetri	61 (64.2)	34 (35.8)		
Janajati/Indigenous	48 (56.5)	37 (43.5)		
Others	20 (76.9)	6 (23.1)		
Religion				
Hindu	180 (61.0)	115 (39.0)	1.199 (1)	0.274
Others (Buddhist, Muslim and Christian)	18 (51.4)	17 (48.6)		
Father's Education				
Below basic level (1-8)	95 (60.5)	62 (39.5)	0.050 (1)	0.823
Above basic level (1-8)	102 (59.3)	70 (40.7)		
Mother's Education				
Below basic level (1-8)	125 (60.7)	81 (39.3)	0.106 (1)	0.745
Above basic level (1-8)	73 (58.9)	51 (41.1)		
Father's Occupation				
Government employee	35 (58.3)	25 (41.7)	1.612 (4)	0.807
Non-government employee	48 (58.5)	34 (41.5)		
Self employed	72 (64.3)	40 (35.7)		
Unemployed	18 (60.0)	12 (40.0)		
Others	25 (54.3)	21 (45.7)		

Source: Primary Data

Variables (n=300)	Depression		Chi-square (df)	p-value
	Normal	Depressed		



	n(%)	n(%)		
Mother's Occupation				
Government employee	35 (76.1)	11 (23.9)	7.873 (4)	0.096
Non-government employee	18 (47.4)	20 (52.6)		
Self employed	21 (55.3)	17 (44.7)		
Homemaker	110 (59.8)	74 (40.2)		
Others	14 (58.3)	10 (41.7)		
Equity Quantiles				
<Middle 20%	22 (50.0)	22 (50.0)	2.115 (1)	0.146
≥Middle 20%	176 (61.5)	110 (38.5)		

Source: Primary data

4. Socio-demographic characteristics associated with depression

The analysis showed that gender was significantly associated with depression, with female students having higher odds of being depressed than males (OR = 1.647; 95% CI: 1.053-2.577; $p = 0.029$). Grade level was also significant, with students in grade 10 having lower odds of depression than those in grade 9 (OR = 0.511; 95% CI: 0.324-0.806; $p = 0.003$) (Table 5).

Table 5: Socio-demographic characteristics associated with depression

Variables	p-value	Odds Ratio (OR)	95% CI	
			Lower	Upper
Gender				
Male	0.029	1.647	1.053	2.577
Female				
Grade				
Class 9	0.003	0.508	0.324	0.796
Class 10				

Source: Primary Data

5. Association between socio-demographic and anxiety

The association between anxiety and selected sociodemographic characteristics was examined using chi-square tests. A statistically significant association is observed for gender, with 38.7% of male students and 63.2% of female students exhibiting anxiety symptoms ($p = 0.001$), indicating a higher prevalence of anxiety among females. Grade level also demonstrated a significant relationship with anxiety, where 54.1% of Class 9 students were classified as anxious compared to 43.0% of Class 10 students ($p = 0.045$). In addition, religion showed a significant association, with 46.8% of Hindu students and 65.7% of students from other religions reporting anxiety symptoms ($p = 0.034$). No significant associations were found between anxiety and other sociodemographic variables, including age, ethnicity, parental education, parental occupation, and household equity status ($p > 0.05$) (Table 6).

Table 6: Association between socio-demographic and anxiety



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Variables (n=330)	Anxiety		Chi-square	p-value
	Normal n(%)	Anxious n(%)	(df)	
Age				
Less than 15	121(54.3)	102 (45.7)	2.557 (1)	0.110
15 and above	48 (44.9)	59 (55.1)		
Gender				
Male	119 (61.3)	75 (38.7)	19.396 (1)	0.001
Female	50 (36.8)	86 (63.2)		
Grade				
Class 9	79 (45.9)	93 (54.1)	4.011 (1)	0.045
Class 10	90 (57.0)	68 (43.0)		
Ethnicity				
Hill Brahmin /Chhetri	60 (48.4)	64 (51.6)	3.545 (3)	0.315
Terai Brahmin / Chhetri	52 (54.7)	43 (45.3)		
Janajati / Indigenous	40 (47.1)	45 (52.9)		
Others	17 (65.4)	9 (34.6)		
Religion				
Hindu	157 (53.2)	138 (46.8)	4.490 (1)	0.034
Others	12 (34.3)	23 (65.7)		
Father's Education				
Below basic level (1-8)	82 (52.2)	75 (47.8)	0.163 (1)	0.686
Above basic level (1-8)	86 (50.0)	86 (50.0)		

Source: Primary Data

Variables (n=330)	Anxiety		Chi-square (df)	p-value
	Normal n(%)	Anxious n(%)		
Mother's Education				
Below basic level (1-8)	108 (52.4)	98 (47.6)	0.324 (1)	0.569
Above basic level (1-8)	61 (49.2)	63 (50.8)		
Father's Occupation				
Government employee	27 (45.0)	33 (55.0)	3.496 (4)	0.478
Non-government employee	39 (47.6)	43 (52.4)		



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Self employed	65 (58.0)	47 (42.0)		
Unemployed	15 (50.0)	15 (50.0)		
Others	23 (50.0)	23 (50.0)		
Mother's Occupation				
Government employee	26 (56.5)	20 (43.5)	4.325 (4)	0.364
Non-government employee	17 (44.7)	21 (55.3)		
Self-employed	17 (44.7)	21 (55.3)		
Homemaker	100 (54.3)	84 (45.7)		
Others	9 (37.5)	15 (62.5)		
Equity Quantiles				
<Middle 20%	18 (40.9)	26 (59.1)	2.157 (1)	0.142
≥Middle 20%	151 (52.8)	135 (47.2)		

Source: Primary data

6. Socio-demographic characteristics associated with anxiety

The binary logistic regression analysis identified gender, grade level, and religion as significant predictors of anxiety. Male students had significantly higher odds of experiencing anxiety compared to females (OR = 2.73; 95% CI: 1.74-4.29; $p = 0.001$). Grade level was also significant, with Class 9 students showing lower odds of anxiety than Class 10 students (OR = 0.64; 95% CI: 0.42-0.99; $p = 0.046$). Religion demonstrated a significant association as well, with Hindu students showing higher odds of anxiety compared to those of other religions (OR = 2.18; 95% CI: 1.05-4.55; $p = 0.037$) (Table 7).

Table 7: Socio-demographic characteristics associated with anxiety

Variables	p-value	Odds Ratio (OR)	95% CI	
			Lower	Upper
Gender				
Male	0.001	2.729	1.735	4.292
Female (ref)				
Grade				
Class 9	0.046	0.642	0.415	0.991
Class 10 (ref)				
Religion				
Hindu	0.037	2.181	1.046	4.545
Others (ref)				



7. Association between socio-demographic and stress

Among the students, 45.6% of females and 18.6% of males were stressed, while stress was reported by 36.6% of Class 9 students and 22.2% of Class 10 students. Stress levels also differed across ethnic groups and mothers occupation. The analysis showed that gender, grade level, ethnicity and mothers occupation were significantly associated with stress ($p = 0.001$, $p = 0.004$, $p = 0.005$ and $p = 0.040$ respectively). No significant associations were found with age, religion, or parents' education and other variables. ($p > 0.05$) (**Table 8**).

Table 8: Association between socio-demographic and stress

Variables (n=330)	Stress		Chi-square (df)	p-value
	Normal n(%)	Stressed n(%)		
Age				
Less than 15	154 (69.1)	69 (30.9)	0.510 (1)	0.475
15 and above	78 (72.9)	29 (27.1)		
Gender				
Male	158 (81.4)	36 (18.6)	27.982 (1)	0.001
Female	74 (54.4)	62 (45.6)		
Grade				
Class 9	109 (63.4)	63 (36.6)	8.266 (1)	0.004
Class 10	123 (77.8)	35 (22.2)		
Ethnicity				
Hill Brahmin / Chhettri	77 (62.1)	47 (37.9)	12.860 (3)	0.005
Terai Brahmin / Chhettri	79 (83.2)	16 (16.8)		
Janajati / Indigenous	56 (65.9)	29 (34.1)		
Others	20 (76.9)	6 (23.1)		
Religion				
Hindu	210 (71.2)	85 (28.8)	1.040 (1)	0.308
Others	22 (62.9)	13 (37.1)		
Father's Education				
Below basic level (1-8)	115 (73.2)	42 (26.8)	1.323 (1)	0.250
Above basic level (1-8)	116 (67.4)	56 (32.6)		
Mother's Education				
Below basic level (1-8)	150 (72.8)	56 (27.2)	1.658 (1)	0.198
Above basic level (1-8)	82 (66.1)	42 (33.9)		



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Variables (n=330)	Stress		Chi-square (df)	p-value
	Normal n(%)	Stressed n(%)		
Father's Occupation				
Government employee	40 (66.7)	20 (33.3)	6.754 (4)	0.149
Non-government employee	51 (62.2)	31 (37.8)		
Self employed	86 (76.8)	26 (23.2)		
Unemployed	24 (80.0)	6 (20.0)		
Others	31 (67.4)	15 (32.6)		
Mother's Occupation				
Government employee	35 (76.1)	11 (23.9)	10.032 (4)	0.040
Non-government employee	21 (55.3)	17 (44.7)		
Self-employed	32 (84.2)	6 (15.8)		
Homemaker	130 (70.7)	54 (29.3)		
Others	14 (58.3)	10 (41.7)		
Equity Quantiles				
<Middle 20%	31 (70.5)	13 (29.5)	0.001 (1)	0.981
>Middle 20%	201 (70.3)	85 (29.7)		

Source: Primary Data

8. Socio-demographic characteristics associated with stress

Binary logistic regression showed that gender and grade level were significant predictors of stress. Male students had higher odds of being stressed than females (OR= 3.677; 95% CI: 2.242-6.032; p= 0.001), and Class 9 students had greater odds of stress compared to Class 10 (OR= 3.700; 95% CI: 2.240-6.111; p= 0.004). Ethnicity and mother's occupation showed no significant associations, with all confidence intervals crossing 1 and p-values exceeding 0.05 (Table 9).

Table 9: Socio-demographic characteristics associated with stress

Variables	p-value	Odds Ratio (OR)	95% CI	
			Lower	Upper
Gender				
Male	0.001	3.677	2.242	6.032
Female (ref)				
Grade				
Class 10	0.004	3.700	2.240	6.111
Class 9 (ref)				
Ethnicity				
Hill Brahmin / Chhettri (ref)				
Terai Brahmin / Chhettri	0.156	2.035	0.762	5.431
Janajati / Indigenous	0.467	0.675	0.234	1.946
Others	0.293	0.625	0.625	4.771

**Mother's Occupation**

Government employee (ref)				
Non-government employee	0.128	0.440	0.153	1.226
Self-employed	0.812	1.133	0.403	3.185
Homemaker	0.223	0.263	0.080	0.864
Others	0.416	0.714	0.243	1.390

Source: Primary data

9. Association of psychological factors with depression, anxiety and stress

9.1 Self-esteem

The (Table 10) presents the distribution of self-esteem among the students. Out of the total respondents, 7.0% (n= 23) had low self-esteem, while the majority, 93.0% (n= 307), had self-esteem within the normal range. This indicates that only a small proportion of students reported low self-esteem, whereas most students demonstrated adequate levels of self-esteem.

Table 10: Level of self-esteem

Variables (n=330)	Frequency	Percentage
Self-esteem		
Low self-esteem	23	7.0
Self-esteem within normal range	307	93.0

Source: Primary Data

9.2 Association between self-esteem and depression

The findings indicate a significant association between self-esteem and depression. Among students with low self-esteem, 13.0% were depressed, whereas 42.0% of those with self-esteem within the normal range were depressed. This association was statistically significant ($p = 0.007$) (Table 11).

Table 11: Association between self-esteem and depression

Variables	Depression		Fisher Exact Test p-value
	Normal	Depressed	
Self-esteem	n (%)	n(%)	
Low self-esteem	20 (87.0)	3 (13.0)	0.007
Self-esteem within normal range	178 (58.0)	129 (42.0)	



9.3 Association between self-esteem and anxiety

The (Table 12) shows the distribution of anxiety levels according to self-esteem status. Among students with low self-esteem, 69.6% had normal anxiety levels and 30.4% were anxious. Similarly, among those with self-esteem within the normal range, 49.8% were classified as normal and 50.2% as anxious. The chi-square test indicated no statistically significant association between self-esteem and anxiety ($\chi^2 = 3.333$, $df = 1$, $p = 0.068$).

Table 12: Association between self-esteem and anxiety

Variables	Anxiety		Chi-square (df)	p-value
	Normal n (%)	Anxious n (%)		
Self-esteem				
Low self-esteem	16 (69.6)	7 (30.4)	3.333 (1)	0.068
Self-esteem within normal range	153 (49.8)	154 (50.2)		

9.4 Association between self-esteem and stress

The (Table 13) presents the relationship between self-esteem and stress status. Among students with low self-esteem, 87.0% were stressed and 13.0% were not stressed. In comparison, among those with self-esteem within the normal range, 69.1% were stressed and 30.9% were not stressed. The chi-square test showed no statistically significant association between self-esteem and stress ($\chi^2 = 3.284$, $df = 1$, $p = 0.070$).

Table 13: Association between self-esteem and stress

Variables	Stress		Chi-square (df)	p-value
	Not Stressed n (%)	Stressed n (%)		
Self-esteem				
Low self-esteem	3 (13.0)	20 (87.0)	3.284 (1)	0.070
Self-esteem within normal range	95 (30.9)	212 (69.1)		

10. Association between educational factors with depression, anxiety and stress

10.1 Educational Factor

The academic performance of the students was categorized into seven grade levels ranging from A+ to E. Among the respondents, 14.5% had secured an A+, while the largest proportion,



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35.5%, had obtained a B+. Lower grade categories were less frequent, with 5.2% receiving C+, 0.3% receiving D+, 0.6% receiving D, and 0.3% receiving an E. Overall, the distribution shows that a majority of students fell within the higher academic categories, whereas only a small proportion belonged to the lower-grade groups (Table 14).

Table 14: Educational Factor

Variables (n=330)	Frequency	Percent
Grade		
A+	48	14.5
A	75	22.7
B+	117	35.5
B	64	19.4
C+	17	5.2
C	5	1.5
D+	1	0.3
D	2	0.6
E	1	0.3

10.2 Association between educational factors and depression

Among the grade categories, 14 students with A+, 32 with A, 39 with B+, 35 with B, and 12 with C+ and below were identified as depressed. The association between grades and depression was statistically significant ($\chi^2 = 10.899$, $df = 4$, $p = 0.028$). (Table 15).

Table 15: Association between educational factors and depression

Variables	Depression		Chi-square (df)	p-value
	Normal n(%)	Depressed n(%)		
Grades				
A+	34 (70.8)	14 (29.2)	10.899 (4)	0.028
A	43 (57.3)	32 (42.7)		
B+	78 (66.7)	39 (33.3)		
B	29 (45.3)	35 (54.7)		
C+ and below C+	14 (53.8)	12 (46.2)		

10.3 Educational factors associated with depression

The binary logistic regression analysis was performed using Grade A+ as the reference category. Although variations in odds were observed across grade levels, none of the grade categories demonstrated a statistically significant association with the outcome variable, as



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evidenced by p-values greater than 0.05 and confidence intervals that include 1. This suggests that academic grade did not serve as a significant predictor of the outcome in this study (Table 16).

Table 16: Educational factors associated with depression

Variables	p-value	Odds Ratio	95%CI	
		(OR)	Lower	Upper
Grades				
A+(ref)				
A	0.147	0.480	0.178	1.294
B+	0.757	0.868	0.354	2.128
B	0.220	0.583	0.246	1.381
C+and below C+	0.463	1.408	0.564	3.515

10.4 Association between educational factor and anxiety

The (Table 17) indicates a statistically significant association between academic grades and anxiety ($\chi^2 = 13.135$, $df = 4$, $p = 0.011$). Students with lower academic performance exhibited higher levels of anxiety, with 53 students with grade B+ and 39 students with grade B being anxious. In contrast, only 15 students with an A+ grade reported anxiety, demonstrating a clear trend of increasing anxiety with declining academic achievement.

Table 17: Association between educational factor and anxiety

Variables	Anxiety		Chi-square (df)	p-value
	Normal n(%)	Anxious n(%)		
Grades				
A+	33 (68.8)	15 (31.3)	13.135 (4)	0.011
A	38 (50.7)	37 (49.3)		
B+	64 (54.7)	53 (45.3)		
B	25 (39.1)	39 (60.9)		
C+ and below C+	9 (34.6)	17 (65.4)		

10.5 Educational factors associated with anxiety

Binary logistic regression using Grade A+ as the reference showed that only Grade A had a significant association, indicating lower odds of the outcome. Grades B+, B, and C+ & below did not show significant associations, as their p-values were above 0.05 and confidence intervals included 1 (Table 18).



Table 18: Educational factors associated with anxiety

Variables	p-value	Odds Ratio (OR)	95%CI	
			Lower	Upper
Grades				
A+ (ref)				
A	0.006	0.241	0.087	0.662
B+	0.161	0.515	0.204	1.301
B	0.068	0.438	0.181	1.064
C+ and below C+	0.123	0.826	0.319	2.138

10.6 Association between educational factor and stress

A higher proportion of stressed students was observed among those with B+, followed by A, A+, B, and C+ and below. The Chi-square test indicated a significant association between academic grades and stress status ($\chi^2 = 20.221$, $df = 4$, $p = 0.001$), suggesting that stress levels varied meaningfully across different grade categories (Table 19).

Table 19: Association between educational factor and stress

Variables	Stress		Chi-square (df)	p-value
	Stressed n(%)	Not stressed n(%)		
Grades				
A+	42 (87.5)	6 (12.5)	20.221 (4)	0.001
A	44 (58.7)	31 (41.3)		
B+	92 (78.6)	25 (21.4)		
B	39 (60.9)	25 (39.1)		
C+ and below C+	15 (57.7)	11 (42.3)		

10.7 Educational factor associated with stress

The logistic regression model demonstrated that academic grades were not significantly associated with anxiety, as indicated by non-significant p-values across all categories when compared with the reference group (A+). Although students with grades A (OR = 0.48; 95% CI: 0.178-1.294), B+ (OR = 0.87; 95% CI: 0.354-2.128), and B (OR = 0.58; 95% CI: 0.246-1.381) had lower odds of anxiety relative to those with A+, these associations were not statistically significant ($p > 0.05$). Similarly, students with C+ and below (OR = 1.41; 95% CI: 0.564-3.515) showed higher odds of anxiety, but the association remained non-significant.



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Since all confidence intervals crossed 1.0, the findings suggest that academic grade did not serve as an independent predictor of anxiety in this study (**Table 20**).

Table 20: Association between educational factor and stress

Variables	p-value	Odds Ratio (OR)	95% CI	
			Lower	Upper
Grades				
A+ (ref)				
A	0.147	0.480	0.178	1.294
B+	0.757	0.868	0.354	2.128
B	0.220	0.583	0.246	1.381
C+ and below C+	0.463	1.408	0.564	3.515

DISCUSSION

The current research revealed the prevalence of depression, anxiety, and stress in the Class 9 and 10 students of the government schools in Ward No. 10, Kathmandu Metropolitan City. The students reported feeling depressed (40.0%), anxious (48.8%), and stressed (29.7%), which is a clear indication of a significant psychological distress level. According to the WHO Adolescent Mental Health Fact Sheet, worldwide, 1 in every 7 adolescents (14%) has a mental health problem, and the most frequent disorders in this group are depressive and anxiety disorders.³ Similarly, various international school-based studies have reported the occurrence of depressive symptoms in the range of 20-41%, anxiety 25-49%, and stress 15-35%, which are almost the same as the proportions found in the present study.^{14,15}

The results of the current research also correspond to the national evidence of Nepal. National Mental Health Survey of Nepal (2020) indicates the rising trend of emotional disorders among adolescents, as the symptoms of sadness, anxiety, and irritability have been on the increase.¹⁶ The local studies among school adolescents in Nepal have also documented similar findings. A study conducted in public schools of Kathmandu documented even higher proportions, 56.5%depression, 55.6% anxiety, and 32.9%stress, thus indicating that emotional distress is

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highly prevalent among urban school adolescents.¹¹ Likewise, another research conducted among adolescents from public schools in Kathmandu indicated that about 41.6% felt depressed, 56.9% anxious, and 27.5% stressed, thus showing a huge emotional pressure on students living in the city.¹⁰ These results fall within a similar range with the present study and suggest that psychological distress among adolescents is a significant concern in Nepal.

Gender differences are directly evidenced in this research since the higher levels of stress, anxiety and depression were reported among the female students. There is agreement with global evidence that biological changes, emotional sensitivity, and sociocultural expectations make emotional disorders more common among adolescent girls. Nepalese studies have also revealed a similar trend; there has been a consistent pattern wherein girls have always shown more stress and anxiety compared to boys.^{10,17} These trends pinpoint gender as an important determinant for emotional well-being.

There was also a marked difference according to grade level: students in 9th grade exhibited more anxiety and stress than students in 10th grade. Entry into Grade 9 is marked by the introduction of new school subjects, a greater study load, and, perhaps most importantly, initial exposure to demanding secondary school standards, which may explain the higher psychological symptoms. A study from Kathmandu also reported that academic transitions are associated with higher emotional distress among younger students.¹⁰

The present research revealed that the anxiety level of the non-Hindu students was higher as compared to the anxiety level of the Hindu students. However, there are no specific studies in Nepal that deal with the subject matter of religion and mental health but findings from other cultures with different religions suggest that the adolescent minors in the minority may experience added stress related to their identity, cultural adaptation, or differences in peer groups.

Several psychological factors were clearly linked to emotional outcome and the students with low self-esteem displayed much higher rates of stress compared with those with high self-esteem, which is consistent with literature that identifies low self-esteem as a predisposing factor to both negative emotions and poor coping mechanisms.¹⁸ Anxiety failed to achieve statistical significance in the context of self-esteem in the present study, although the trend was still clinically relevant.



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Another important factor was that of academic performance: the lower the grades a student had, the higher the degree of depression, anxiety, and stress. Subsequent studies from Nepal and South Asia have all indicated that unsatisfactory academic achievement and examination stress are the most predominant contributors to psychological distress among adolescents.^{10,19} It is reasonable to suggest that in social contexts where academic success is strongly related to expectations of family and teachers, struggling students could face higher emotional strain.

Summing up, the results of this study indicated that demographic, academic, and psychological factors were the major determinants of adolescent mental health. Schools should ensure mental health support because a high proportion of students manifested emotional disorders. The early identification and intervention still remain critical for the protection of adolescent mental health and the promotion of academic and personal growth.

CONCLUSION

The results of the research showed that depression, anxiety, and stress were very common among Class 9 and 10 students in government schools located in Ward No. 10 of the Kathmandu Metropolitan City. The reported rates were not only vastly higher than the national figures but also similar to other urban school-based studies conducted within the Kathmandu Valley, thus indicating that the issue of adolescent mental health has not yet been solved in Nepal. According to the study, 40% of the students were found to have depressive symptoms, 48.8% anxious symptoms, and 29.7% stress symptoms, which points to a heavy mental health burden among the adolescent population that goes to school.

It was observed that the emotional suffering was greatly affected by a number of factors, one of which was the socio-demographic traits such as gender and grade were the ones exhibiting the largest number of symptoms of depression, anxiety, and stress. The educational factors, mainly lower grades, were predominant contributors. Psychological issues, mainly low self-worth, were connected strongly with stress, meaning that less confident students might be more prone to emotional difficulties. Moreover, mothers' occupation was also the significant factor that determined higher level of stress.

The outcomes of this research are in line with a considerable spectrum of national and international studies, yet at the same time, some inconsistencies can be due to the factors such

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as cultural context, educational settings, and socio-economic status being different in the countries. Overall, the results point to the complicated interaction of learning, psychological factors, age and gender as the main cause of mental health problems in teenagers. The research ends up with the statement that the trio of depression, anxiety, and stress are still the major public health issues among the youth in Nepal and thus, calls for multi-pronged approaches such as school-based comprehensive mental health, friendly peer environments, and early identification strategies to help students with healthier emotional well-being.

Acknowledgments

I would like to express my sincere gratitude to my supervisor, Associate Professor Sushhama Neupane, for her guidance throughout this research. I am also thankful to Assistant Professor Ashok Pandey and Assistant Professor Kiran Acharya for their valuable mentorship. I am equally grateful to Ward No. 10 Office, the school administration, coordinators, and all participants for their cooperation during data collection. Lastly, I am deeply grateful to my family and friends for their constant support and motivation.

Funding Statement

This research did not receive any funding.

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