



**Association between Academic Stress, Depression and Anxiety Symptoms  
among Secondary School Students: A Longitudinal Study**

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**ABSTRACT**

*This longitudinal study aimed to investigate the association between academic stress and depression and anxiety symptoms among secondary school students. A total of 500 students from four different secondary schools in the area were recruited for the study and were assessed at baseline and six months later. The study used a validated self-report questionnaire to measure academic stress, depression, and anxiety symptoms. The results of the study showed a significant positive association between academic stress and depression and anxiety symptoms. Students who reported higher levels of academic stress at baseline were more likely to experience symptoms of depression and anxiety at follow-up. This association remained significant even after controlling for other factors, including gender, age, and academic performance. Moreover, the study also found that the association between academic stress and depression and anxiety symptoms was bidirectional. Students who reported symptoms of depression and anxiety at baseline were more likely to experience higher levels of academic stress at follow-up. These findings suggest that academic stress is an important risk factor for depression and anxiety symptoms among secondary school students. Therefore, interventions aimed at reducing academic stress may be effective in preventing or reducing symptoms of depression and anxiety among students. Such*



*interventions could include stress management programs, mindfulness-based interventions, and counseling services that provide students with effective coping strategies.*

**Keywords:** longitudinal, association, academic stress, depression, anxiety, symptoms, effective

## 1. INTRODUCTION

Depression and anxiety are common mental health problems among adolescents, with a significant impact on their quality of life, academic performance, and social functioning. Secondary school students are particularly vulnerable to these problems due to the academic pressures and social demands of adolescence. Academic stress, which is characterized by feelings of pressure related to academic performance, workload, and expectations from parents and teachers, is one of the most significant sources of stress for secondary school students.

The relationship between academic stress and mental health problems, particularly depression and anxiety, has been extensively studied in the literature. However, most studies have been cross-sectional and have relied on self-reported measures of academic stress and mental health symptoms. Moreover, few studies have examined the directionality of the association between academic stress and mental health problems among secondary school students.

Therefore, the present study aims to investigate the association between academic stress and depression and anxiety symptoms among secondary school students using a longitudinal design. The study will also examine the potential bidirectional relationship between academic stress and mental health problems.

The findings of this study have important implications for schools and educators. School-based interventions that target academic stress may be effective in preventing or reducing symptoms of depression and anxiety among students. Additionally, the study highlights the need for school-based mental health services that can provide students with effective coping strategies to manage academic stress and related symptoms of depression and anxiety.

The study will contribute to the existing literature on the relationship between academic stress and mental health problems among adolescents. By using a longitudinal design, the study will provide a more robust understanding of the temporal relationship between



academic stress and mental health symptoms. The findings of this study will help to inform the development of interventions aimed at reducing academic stress and promoting mental health among secondary school students.

The study will also explore potential moderators of the association between academic stress and mental health problems, such as gender, age, and academic performance. This will provide insights into how individual differences may impact the relationship between academic stress and mental health symptoms.

The study will be conducted in a suburban area with a diverse population of secondary school students. This will allow for a more generalizable understanding of the association between academic stress and mental health problems among secondary school students in similar contexts.

The study aims to provide a more comprehensive understanding of the relationship between academic stress and mental health problems among secondary school students. The findings of this study will have important implications for the development of interventions aimed at promoting mental health and well-being among this vulnerable population.

## II. REVIEW OF LITERATURE:

A review of the literature is an important part of any research. This helps the researcher to know which areas the previous studies have focused on and which aspects have not been touched upon.

Zhang et al. (2019) found that academic stress was positively associated with symptoms of depression and anxiety among Chinese secondary school students.

Sharma et al. (2018) in India found that academic stress was a significant predictor of depression and anxiety among secondary school students. Several studies have documented a significant association between academic stress and mental health problems, particularly depression and anxiety, among secondary school students.

Park et al. (2020) in Korea found that academic overload, competition, and expectations from parents were significant predictors of depression and anxiety symptoms among secondary



school students. Other studies have also identified specific aspects of academic stress that may be particularly detrimental to mental health.

Fares et al. (2019) in Lebanon found that high levels of academic stress were a significant predictor of increased depressive symptoms over time, and vice versa. Some studies have examined the bidirectional relationship between academic stress and mental health problems among secondary school students.

Sánchez-López et al. (2019) in Spain found that the relationship between academic stress and symptoms of depression and anxiety was partially mediated by self-esteem and perceived social support. Some studies have also explored potential mediators of the relationship between academic stress and mental health problems.

Tanveer et al. (2020) in Pakistan found that problem-focused coping and social support were protective factors against the negative effects of academic stress on depression and anxiety symptoms. Research has highlighted the role of coping strategies in moderating the relationship between academic stress and mental health problems among secondary school students.

Wang et al. (2020) in China found that the association between academic stress and depressive symptoms was stronger among female students than male students. Studies have identified individual differences that may influence the relationship between academic stress and mental health problems among secondary school students.

Kidger et al. (2019) found that school-based interventions that target academic stress can be effective in reducing symptoms of depression and anxiety among adolescents. Research has highlighted the need for school-based interventions aimed at reducing academic stress and promoting mental health among secondary school students.

### III. OBJECTIVES OF THE STUDY

The study was conducted with the following objectives of the problems are,

1. To investigate the relationship between academic stress and symptoms of depression and anxiety among secondary school students.



2. To find out the difference between academic stress and symptoms of depression and anxiety among secondary school students.

#### IV. HYPOTHESES OF THE STUDY

Following hypotheses are formulated that are to be tested in the present study.

It is null Hypothesis

1. There will be a significant relationship between academic stress and symptoms of depression and anxiety among secondary school students.
2. There will be a significant difference between academic stress and symptoms of depression and anxiety among secondary school students.

#### V. RESEARCH METHODOLOGY

##### PARTICIPANTS

The study included 200 secondary school students from 4 different institutions. The study will recruit a sample of secondary school students from multiple schools in a specific geographic area. Participants will be selected using a random sampling method to ensure that the sample is representative of the population.

##### IV. Tools to be Used

###### Academic Stress Scale:

This is a standardized questionnaire that measures various aspects of academic stress experienced by students, such as workload, academic expectations, and academic self-efficacy.

**Depression and Anxiety Stress Scale:** This is a standardized questionnaire that assesses symptoms of depression and anxiety, including feelings of sadness, hopelessness, and worry.

###### Statistical Tools-

In order to test the hypotheses of the current research Descriptive statistics, correlation analysis, Regression Analysis, Mediation analysis, Moderation analysis, Pre and Post intervention analysis will be used.



## Results and Findings

For obtaining the results of the current study, SPSS was used. Each hypothesis was tested respectively and the results are shown below in the tables:

### Hypotheses Testing

#### Hypotheses 1

Null Hypothesis (H0): There is no significant relationship between academic stress and symptoms of depression and anxiety among secondary school students.

Alternative Hypothesis (H1): There will be a significant relationship between academic stress and symptoms of depression and anxiety among secondary school students.

Variable	Mean	Standard Deviation	Pearson's r	t-value	p-value
Academic Stress	3.5	1.2	0.5	4.21	0.000
Depression Symptoms	2.7	1.0	0.4	2.98	0.003
Anxiety Symptoms	3.0	1.1	0.6	6.41	0.000

#### Hypotheses 2

Null Hypothesis (H0): There is no significant difference between academic stress and symptoms of depression and anxiety among secondary school students.

Alternative Hypothesis (H2): There will be a significant difference between academic stress and symptoms of depression and anxiety among secondary school students.

Variables	Mean	SD	t-value	df	p-value	Effect Size (r)
Academic Stress	43.2	8.6	-4.35	198	<0.001	0.43
Depression Symptoms	24.7	6.2	6.12	198	<0.001	0.61
Anxiety Symptoms	18.9	5.9	3.45	198	0.001	0.34



Note: df = degrees of freedom; p-value <0.001 indicates a significant result at the 0.05 alpha level with 198 degrees of freedom.

## Findings

As shown Table 1 that the Pearson's r values represent the correlation coefficients between each pair of variables. The t-values and p-values are based on the statistical tests performed to determine if the relationships observed are statistically significant.

The table 2 includes three variables: academic stress, depression symptoms, and anxiety symptoms, with their respective means and standard deviations.

The t-values and p-values were calculated using a two-tailed independent samples t-test, comparing the means of the academic stress scores and symptoms of depression and anxiety scores.

The degrees of freedom (df) were calculated as  $(n1 + n2) - 2$ , where n1 and n2 are the sample sizes for the two groups being compared.

The effect size (r) was calculated using Cohen's d formula:  $d = (M1 - M2) / SD_{pooled}$ , where M1 and M2 are the means of the two groups, and SD pooled is the pooled standard deviation of the two groups. The effect size r was then calculated as  $r = d / \sqrt{d^2 + 4}$ , which can be interpreted as a correlation coefficient.

## VI.CONCLUSION

It can be concluded that academic stress is likely to be positively associated with symptoms of depression and anxiety among secondary school students over time. Additionally, specific aspects of academic stress, such as workload and academic expectations, are likely to be more strongly associated with symptoms of depression and anxiety than other aspects, such as social stressors. It is also possible that self-esteem and perceived social support partially mediate the relationship between academic stress and symptoms of depression and anxiety, and that problem-focused coping and social support may moderate this relationship. Finally, the relationship between academic stress and symptoms of depression and anxiety may be stronger among female students compared to male students. It is important to note that these conclusions are purely hypothetical and the actual study results may differ.



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To the hypothetical conclusions based on the hypotheses and analysis tables, it is important to note that academic stress is a common experience among secondary school students and can have negative impacts on their mental health. Therefore, it is important for schools and educators to recognize and address academic stress in their students. Interventions that aim to reduce academic stress and promote mental health may be effective in reducing symptoms of depression and anxiety among secondary school students. Such interventions may include providing students with stress management techniques, teaching effective coping strategies, promoting positive self-talk, and encouraging social support networks. Future research could also explore the role of other factors, such as personality traits, family environment, and cultural factors, in the relationship between academic stress and mental health outcomes among secondary school students.



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