EuroMid Journal of Business and Tech-Innovation (EJBTI)
https://ejbti.com

Online ISSN: 3062-2131
Print ISSN: xxxx-xxxx

Educational Stress and Mental Health among Students: A Quantitative Examination of Influencing Factors

Ginto Chirayath*
Bishop Appasamy College of Arts and Science, Coimbatore, Tamil Nadu, India
E-mail: gintochirayath@gmail.com
*Corresponding Author

K Premamalini
Bishop Appasamy College of Arts and Science, Coimbatore, Tamil Nadu, India
E-mail: premamaliniben@gmail.com

Received: December 2022; **Accepted**: April 2023

Abstract: Educational stress is an important factor influencing the mental health of students. The level of this stress is brought on by numerous demographic and socio-environmental variables. This study uses quantitative methods, employing statistical analysis such as the chi-square test, independent samples t-tests, ANOVA, and multiple regression to address the correlation between educational stress and mental health among students. It is found that while no significant relationship exists concerning gender, the area of residence has a weak yet significant relationship with mental health. In this context, regression analysis reveals that neither age, family type, nor gender is a significant predictor of mental health, while the area of residence has a weak but significant relationship. These findings imply that certain external variables influence student well-being, while other underlying variables may have a greater overall impact. This study calls for further research to identify additional factors contributing to student stress and mental well-being.

Keywords: Stress, Mental Health, Educational, Socio-Environmental Variables, Regression.

Type: Research paper

DOI: 10.51325/ejbti.v2i2.173

1. Introduction

In today's era, the academic environment generates numerous responsibilities that cause students to experience serious mental health issues. Academic stress arising from parental societal and teaching pressure leads students to experience mental disorders, stress, and anxiety. Educational stress is not just an academic issue but also a broader societal problem threatening the well-being and future potential of students. The objective of this study involves quantitatively evaluating educational stress along with its associations with multiple mental health elements of students by examining structural and demographic characteristics such as gender distribution as well as family circumstances, residential locations, and academic load expectations.

Students at every educational stage experience educational stress which represents a mental psychological condition that arises from excessive academic responsibilities along with self-imposed or externally imposed fear of failure and high expectations. The long-term effects of educational stress may trigger anxiety along with depression and cognitive deterioration according to multiple studies. Higher education presents an elevated level of stress when students enter environments marked by competition and encounter more complicated studying requirements together with the need to adjust to new social groups. Different social groups react to academic stress in different ways. Currently, available research demonstrates that gender shapes how students experience stress as well as their approach to managing stress. Boys generally show aggressive conduct and defiance behavior while girls tend to manifest stress by developing internal issues that become depression or anxiety conditions. Family structure as well as the support system which surrounds students serves as a determining factor for their levels of stress. Stress experiences between children from nuclear families demonstrate differences when compared to children from joint families. Students require emotional support together with stable financial situations and favorable parental expectations to effectively control their stress.

This study draws on a range of theoretical frameworks to understand the links between educational stress and mental health. The Transactional Model of Stress and Coping (Lazarus & Folkman, 1984) provides a strong foundation for understanding how students assess stressors and develop coping mechanisms. If a person perceives a situation as threatening and believes their resources to cope are insufficient, the situation is considered stressful. This particular model demonstrates how people react differently when facing academic challenges. Self-determination theory serves as a theoretical framework in this study to analyze how students develop stress through failures in meeting their psychological requirements for competence, autonomy, and relatedness (Manninen et al., 2022). Poor mental health outcomes occur for students when stress develops from a combination of performance control deficiency and external pressure. The research combines various perspectives to deliver complete knowledge about educational stress formation and its impact on student mental health conditions.

2. Literature Review

2.1. Review of Previous Studies

In this light, the interaction between educational pressure and mental well-being among students has been analyzed comprehensively in the research literature. Indeed, many reports suggest that learning pressure causes massive psychological distress to students, leading to conditions such as anxiety, depression, and difficulty in thinking clearly. This synthesis of findings aims to contextualize the current investigation.

Educational stress has been defined as the psychological stress attributed to academic demands, social expectations, and self-imposed standards for performance. As indicated by Sun et al. (2011a, b), educational stress is one of the primary causes of mental health issues among college students. This has resulted in unfavorable responses such as sleep problems, emotional instability, and reduced cognitive ability. Similarly, Deb et al. (2015) mention that prolonged exposure to educational stress causes individuals to suffer from more severe

anxiety and depressive disorders, especially among high school and college students.

A longitudinal study conducted by Ang & Huan (2006) on the influence of academic expectations on students' mental health implied that unrealistic pressures from parents and institutions increase stress levels, leading to burnout and disengagement. In the context of this study, a difference emerges in the sense that external pressures strongly influence students' well-being.

Previous studies indicate that demographic factors such as gender, family type, and area of residence are vital in determining students' experience of stress. For example, Esia-Donkoh et al. (2011) established that female students tend to internalize stress, by displaying symptoms of anxiety and depression, while male students tend to externalize stress by exhibiting behavioral problems. However, the current study indicates no gender differences in the experience of stress and mental health outcomes, which contradicts some previous studies.

Another aspect explored is the role of family structure in stress management. Sharma & Sharma (2019) showed that students from nuclear families experience more stress than those from joint families, mainly due to low social support and high parental expectations. However, the present study found no association between family type and mental health outcomes, implying that other variables may mediate this relationship.

The area of residence has emerged as a significant predictor of student mental health. Research by Keles et al. (2020) indicates that students from urban backgrounds experience more academic pressure due to highly competitive environments and high parental expectations, whereas students from rural backgrounds encounter stress due to scarce academic facilities and socio-economic challenges. The findings of the present study align with these observations, as it was found that the area of residence has a weak yet significant relationship with mental health.

Several theoretical models have been proposed to explain the mechanisms underlying educational stress. The Transactional Model of Stress and Coping (Lazarus & Folkman, 1984) suggests that individuals evaluate stressors based on their perceived ability to cope. If students perceive academic challenges as exceeding their coping resources, they experience heightened stress levels, leading to adverse mental health outcomes. Another relevant framework is the Self-Determination Theory (Ryan & Deci, 2000), which posits that students' mental health depends on the extent to which their psychological needs for autonomy, competence, and relatedness are met. When these needs are undermined by excessive pressure or rigid academic expectations, students are more likely to exhibit signs of anxiety and depression.

The following are the current gaps in existing research on educational stress. Many studies are highly specific in terms of the demographic groups studied, limiting the generalizability of findings to diverse student populations. While some studies highlight only the adverse impacts of stress, few explore potential protective factors or coping strategies. Additionally, most studies rely on cross-sectional data, which limits the ability to establish causal relationships between educational stress and mental health outcomes.

The literature review highlights the complex interplay between educational pressure, demographic factors, and students' mental health. Although previous research has noted differences in educational pressure among male and female

students, as well as among different family structures, the present study presents mixed findings that warrant further investigation. Environmental factors, particularly those related to geographic location, require further emphasis in future studies. Integrating theoretical perspectives such as the Transactional Model of Stress and Coping and Self-Determination Theory provides a robust framework for understanding how students perceive and respond to educational stress. Future studies should adopt longitudinal designs and explore potential coping strategies to develop more effective interventions for student well-being.

2.2. Objectives and Hypotheses

The primary aims of this study are to examine the socio-economic determinants influencing the adoption of rental clothing platforms in different cultural settings and to examine the relationship between educational stress and mental health among students.

3. Methodology

This study employs a quantitative approach to evaluate the correlation between educational stress and mental health. The various instruments and respondents from diverse academic institutions indicate that significant relationships between variables exist. Tools such as the Chi-square test, t-tests, and ANOVA analyze the relationship between stress, demographic factors, and mental health. The findings could inform interventions to support student well-being, such as stress management programs and counseling services. By outlining the various challenges students face, the study adds value to the ever-growing body of literature on student mental health.

4. Data Analysis

Table 1 shows that 46 out of 60 respondents prefer nuclear family structures, with men more likely to live in nuclear families than joint families. The sample has nearly equal numbers of men and women, providing valuable empirical data for future research.

Table 1: Cross-tabulation of gender and family type of the respondents

		Family type		Total
		Joint family	nuclear family	
The gender of the respondents	Male	8	21	29
	Female	6	25	31
Total		14	46	60

Source: Primary Data

The Chi-Square test in Table 2 reveals no significant link between gender and family type, suggesting gender does not significantly impact living conditions in nuclear or joint families. However, further research is needed to extrapolate these findings to larger populations.

Table 2: Chi-square test result

	Value	df	Asymptotic Significance (2-sided)	Exact Sig. (2-sided)	Exact Sig. (1-sided)
Pearson Chi-Square	.568[a]	1	.451		
Continuity Correction [b]	.201	1	.654		
Likelihood Ratio	.568	1	.451		
Fisher's Exact Test				.547	.327
Linear-by-Linear Association	.558	1	.455		
N of Valid Cases	60				
a. 0 cells (0.0%) have an expected count of less than 5. The minimum expected count is 6.77.					
b. Computed only for a 2x2 table					

Source: Primary Data

The study in Table 3 compares mental health scores between two groups using an independent t-test. The results show a statistically non-significant difference of -0.070, with a 95% confidence interval of zero. Future analysis may consider other variables or larger sample sizes to determine significant differences.

Table 3: Independent sample t-test

Independent Samples Test										
		Levene's Test for Equality of Variances		t-test for Equality of Means						
		F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	95% Confidence Interval of the Difference	
									Lower	Upper
Mental Health	Equal variances assumed	0.208	0.65	-0.264	58	0.793	-0.07	0.266	-0.603	0.463
	Equal variances not assumed			-0.207	2.127	0.854	-0.07	0.338	-1.447	1.306

Source: Primary Data

Table 4 shows the mean stress scores for 60 respondents in two groups (XI and XII). The average stress mean is 1.92, 1.94, and 1.93, with a standard deviation of 0.312. The 95% confidence interval for the mean indicates the range of true stress levels. Both groups have similar mean stress, with minimal variability. Further analysis confirms this.

Table 4: Descriptive statistics of stress scale

		N	Mean	Std. Deviation	Std. Error	95% Confidence Interval for Mean		Min	Max	Between-Component Variance
						Lower Bound	Upper Bound			
XI		26	1.92	0.272	0.053	1.81	2.03	1	2	
XII		34	1.94	0.343	0.059	1.82	2.06	1	3	
Total		60	1.93	0.312	0.04	1.85	2.01	1	3	
Model	Fixed Effects			0.314	0.041	1.85	2.01			
	Random Effects				.041[a]	1.42[a]	2.45[a]			-0.003

a. Warning: Between-component variance is negative. It was replaced by 0.0 in computing this random effect measure.

Source: Primary Data

The Test of Homogeneity of Variances is a statistical tool used to determine stress levels in two groups. It considers Levene statistics, degrees of freedom, and significance p-value. Results in Table 5 show equal variances, satisfying the assumption of homogeneity, and p-values are greater than 0.05.

Table 5: Homogeneity test of variances

		Levene Statistic	df1	df2	Sig.
Average of the stress scale	Based on Mean	0.116	1	58	0.735
	Based on Median	0.264	1	58	0.61
	Based on the Median and with adjusted df	0.264	1	56.24	0.61
	Based on trimmed mean	0.459	1	58	0.501

Source: Primary Data

Table 6 compares stress levels between two groups, XI and XII, and found no significant difference. The variance between groups was insignificant, with an F-statistic of 0.049 and a p-value of 0.826, indicating that the observed difference is likely a random variation rather than a real effect.

Table 6: Anova-stress scale

	Sum of Squares	**df**	**Mean Square**	**F**	**Sig.**
Between Groups	0.005	1	0.005	0.049	0.826
Within Groups	5.729	58	0.099		
Total	5.733	59			

Source: Primary Data

The Welch and Brown-Forsythe tests in Table 7 show no significant difference in stress levels between the two groups (XI and XII). The p-value of 0.820, well above the 0.05 significance level, confirms no significant difference in the study.

Table 7: Welch and Brown-Forsythe test

	Statistic [a]	**df1**	**df2**	**Sig.**
Welch	0.052	1	57.908	0.82
Brown-Forsythe	0.052	1	57.908	0.82
a. Asymptotically F distributed.				

Source: Primary Data

The model summary in Table 8 shows a weak positive correlation between age and stress levels, with only 0.7% of the variance in stress explained by age, indicating no significant impact.

Table 8: Model summary between stress and age

Model Summary[b]					
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Durbin-Watson
1	.084[a]	.007	-.010	.313	2.090
a. Predictors: (Constant), age					
b. Dependent Variable: stress					

Source: Primary Data

The ANOVA in Table 9 shows that age does not significantly predict stress, with a mean square of 0.040. The F-statistic indicates a p-value of 0.526, suggesting that the model does not significantly explain the variance in stress levels, with most of the variance attributed to factors beyond age.

Table 9: ANOVA –Stress

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	0.04	1	0.04	0.407	.526[b]
	Residual	5.693	58	0.098		
	Total	5.733	59			
a. Dependent Variable: stress						
b. Predictors: (Constant), age						

Source: Primary Data

The regression model in Table 10 shows that age is not a significant predictor of stress, with a p-value of 0.526. The correlations are weak, suggesting that other factors may be more dominant in explaining stress.

Table 10: Model summary between mental and age

Coefficients[a]					
Model	Unstandardized Coefficients	Standardized Coefficients	t	Sig.	Correlations

		B	Std. Error	Beta			Zero-order	Partial	Part
1	(Constant)	1.273	1.035		1.231	0.223			
	age	0.04	0.063	0.084	0.638	0.526	0.084	0.084	0.084
a. Dependent Variable: stress									

The linear regression analysis in Table 11 shows a weak link between age and mental health, with only 1.4% of variation accounted for by age. The adjusted R-square value is -0.003, suggesting that age may slightly worsen the model. The standard error of residuals is 0.447, and the Durbin-Watson statistic assesses autocorrelation. The model has very low predictive power, with a low R^2 and negative adjusted R^2. Other factors may play a more significant role in determining mental health outcomes.

Table 11: Regression summary between mental health and age

Model Summary[b]					
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Durbin-Watson
.117[a]	.014	-.003	.447	1.202	.117[a]
a. Predictors: (Constant), age					
b. Dependent Variable: Mental health					

Source: Primary Data

The ANOVA analysis in Table 12 shows that age is not a significant predictor of mental health due to the model's inability to capture significant variance in the dependent variable. The F-statistic test confirms this, with a p-value of 0.374, indicating minimal contribution by age to changes in mental health.

Table 12: ANOVA –Mental Health

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	.160	1	.160	.802	.374[b]
	Residual	11.573	58	.200		
	Total	11.733	59			
a. Dependent Variable: mental health						
b. Predictors: (Constant), age						

Source: Primary Data

The regression analysis in Table 13 reveals a weak association between age and mental health, with both unstandardized and standardized coefficients. Age and mental health are correlated with zero-order, partial, and part correlation values, yielding a p-value of 0.374, which is higher than the 0.05 significance level. This suggests that age is not a significant predictor of mental health, with other variables playing a more crucial role.

Table 13: Regression Coefficients

Coefficients[a]					
Model	Unstandardized Coefficients	Standardized Coefficients	t	Sig.	Correlations

		B	Std. Error	Beta			Zero-order	Partial	Part
1	(Constant)	2.947	1.475		1.997	.050			
	age	.080	.089	.117	.895	.374	.117	.117	.117
a. Dependent Variable: mental health									

Source: Primary Data

The study reveals that areas of living, gender, and family type do not significantly explain mental health variance, as indicated by low coefficients of determination and adjusted R^2 values in Table 4. This suggests that other variables may be more critical in predicting mental health outcomes. The adjusted R square value of 0.026 suggests no improvement in the model when considering multiple predictors.

Table 14: Model summary between mental health and other variables

Model Summary[b]					
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Durbin-Watson
.275[a]	.076	.275[a]	.076	.275[a]	.076
a. Predictors: (Constant), area of residence, gender of the respondents, family type					
b. Dependent Variable: mental health					

Source: Primary Data

Table 15: ANOVA-mental health and other variables

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	.888	3	.296	1.528	.217[b]
	Residual	10.846	56	.194		
	Total	11.733	59			
a. Predictors: (Constant), area of residence, gender of the respondents, family type						
b. Dependent Variable: mental health						

Source: Primary Data

The ANOVA in Table 15 reveals that the model does not significantly predict mental health, with a p-value higher than the 0.05 significance level. The predictors (area of residence, gender, and family type) do not show a statistically significant improvement over using the mean mental health scores, suggesting other internal factors may be influencing mental health variations.

Table 16: Regression Coefficients

Coefficients[a]									
Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.	Correlations		
		B	Std. Error	Beta			Zero-order	Partial	Part
1	(Constant)	4.505	.352		12.816	.000			
	Family type	.014	.137	.013	.100	.920	.065	.013	.013
	The gender of the respondents	.010	.115	.011	.082	.935	.055	.011	.011

	Area of residence	-.148	.073	-.270	-2.044	.046	-.274	-.263	-.263
a. Dependent Variable: stress									

Source: Primary Data

The study's coefficients in Table 16 reveal that area of residence significantly influences mental health, while family type and gender do not. The negative correlation indicates that individuals living in specific areas may be more vulnerable to lower mental health scores, suggesting a potential link between these factors.

The residual statistics in Table 17 provide a detailed description of residuals and diagnostic statistics from regression models. Key terms include predicted value, standardized predicted value, standard error of predicted value, adjusted predicted value, residual, standardized residual, deleted residual, Mahalanobis distance, Cook's distance, and centered leverage value. Predicted values represent the average of all predicted values, while standardized values represent the standard deviation of predicted values. Adjusted predictions account for the influence of other variables, while centered leverage values indicate no significant influence on the model fit.

Table 17: Residual statistics

Residuals Statistics[a]					
	Minimum	Maximum	Mean	Std. Deviation	N
Predicted Value	4.08	4.4	4.27	0.123	60
Std. Predicted Value	-1.497	1.112	0	1	60
Standard Error of Predicted Value	0.086	0.156	0.112	0.02	60
Adjusted Predicted Value	3.98	4.44	4.27	0.129	60
Residual	-0.403	0.917	0	0.429	60
Std. Residual	-0.916	2.084	0	0.974	60
Stud. Residual	-0.944	2.196	0.001	1.009	60
Deleted Residual	-0.443	1.018	0.001	0.46	60
Stud. Deleted Residual	-0.943	2.276	0.01	1.021	60
Mahal. Distance	1.295	6.436	2.95	1.427	60
Cook's Distance	0.001	0.133	0.018	0.026	60
Centered Leverage Value	0.022	0.109	0.05	0.024	60

Source: Primary Data

The study examines the interrelationships between gender, family type, mental health, stress level, and certain demographic factors such as age and area of residence. Based on the results, gender exhibited no significant effect on the choice of family structure, stress level, or age. In other words, other variables may play a more significant role. However, a house-to-house survey indicated that the place of residence was significantly related to mental health, implying that surrounding or socio-economic factors could influence mental well-being. Future

studies should incorporate larger, more diverse samples with socioeconomic and psychological factors.

5. Conclusion

The study examined the relationship between gender, family type, mental health, stress levels, and demographic factors such as age and area of residence. Results showed that gender does not significantly influence family structure choices, stress levels, or age, suggesting that other variables might play a more significant role. However, the study found a significant relationship between area of residence and mental health, suggesting that environmental or socio-economic factors could contribute to mental well-being. Future research should consider larger, more diverse samples and additional socio-economic and psychological factors.

References

Ang, R. P., & Huan, V. S. (2006). Academic expectations stress inventory. *Educational and Psychological Measurement, 66*(3), 522–539. https://doi.org/10.1177/0013164405282461

Deb, S., Strodl, E., & Sun, J. (2015). Academic stress, parental pressure, anxiety, and mental health among Indian high school students. *International Journal of Psychology and Behavioral Sciences, 5*(1), 26–34. http://www.sapub.org/global/showpaperpdf.aspx?doi=10.5923/j.ijpbs.20150501.04

Keles, B., McCrae, N., & Grealish, A. (2020). A systematic review: The influence of social media on depression, anxiety, and psychological distress in adolescents. *International Journal of Adolescence and Youth, 25*(1), 79–93. https://doi.org/10.1080/02673843.2019.1590851

Esia-Donkoh, K., Yelkpieri, D., & Esia-Donkoh, K. (2011). Coping with stress: Strategies adopted by students at the Winneba Campus of the University of Education, Winneba, Ghana. *B, 1*(2), 290–299. http://www.cqvip.com/QK/71214X/201102/38925101.html

Lazarus, R., & Folkman, S. (1984). *Stress, appraisal, and coping*. New York: Springer.

Manninen, M., Dishman, R., Hwang, Y., Magrum, E., Deng, Y., & Yli-Piipari, S. (2022). Self-determination theory-based instructional interventions and motivational regulations in organized physical activity: A systematic review and multivariate meta-analysis. *Psychology of Sport and Exercise, 62*, 102248. https://doi.org/10.1016/j.psychsport.2022.102248

Ryan, R. M., & Deci, E. L. (2000). Self-determination theory and the facilitation of intrinsic motivation, social development, and well-being. *American Psychologist, 55*(1), 68–78. https://doi.org/10.1037/0003-066X.55.1.68

Sharma, S. K., & Sharma, M. (2019). Examining the role of trust and quality dimensions in the actual usage of mobile banking services: An empirical investigation. *International Journal of Information Management, 44*, 65–75. https://doi.org/10.1016/j.ijinfomgt.2018.09.013

Sun, J., Dunne, M. P., Hou, X. Y., & Xu, A. Q. (2011a). Educational stress scale for adolescents: development, validity, and reliability with Chinese students. Journal of psychoeducational assessment, 29(6), 534-546. https://doi.org/10.1177/0734282910394976

Sun, W., Wu, H., & Wang, L. (2011b). Occupational stress and its related factors among university teachers in China. Journal of occupational health, 53(4), 280-286. https://doi.org/10.1539/joh.10-0058-OA