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Research Paper

The impact of mental health on academic performance: a comprehensive examination

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ABSTRACT

Background: Reports of mental health concerns among college students have risen, raising concerns about the adverse impact of mental illness on academic success and degree persistence, and the need for accessible, embedded support.
Objective: To examine the relationship between students' mental health and academic performance in college, and to provide recommendations for embedding mental health support into educational practice.
Methods: Study of 206 students in Jamshedpur using the Mental Health Continuum-Short Form (MHC-SF) to assess mental health status, combined with analysis of academic performance data; three regression models examined associations with family type, family income, number of friends, leisure time, physical illness, and number of dependents.
Results: Higher mental health problems were significantly associated with declining academic performance. Female students outperformed male students academically, while male students were more susceptible to mental health problems. Family type, family income, number of friends, and leisure time were positively associated with academic performance, whereas mental health problems, physical illness, and number of dependents were negatively associated; mental illness and drug use did not show significant independent effects.
Conclusion: Mental health problems substantially affect academic performance among college students, with notable gender differences in both vulnerability and outcomes. Embedding accessible mental health support and counseling services into classroom practice is essential to promote student well-being and academic success.

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1. INTRODUCTION

In the realm of higher education, the academic journey of college students is not solely determined by their intellectual capabilities and dedication to learning. It is increasingly evident that their mental health plays a pivotal role in shaping their educational experiences and outcomes. This research paper delves into the intricate interplay between mental health and student learning in the context of college and university settings. As the number of reports concerning mental health concerns among college students escalates, it becomes paramount to unravel the complex relationship between mental well-being and academic success.

The significance of this study is underscored by a substantial body of research that underscores how mental health issues, ranging from anxiety and depression to more severe conditions, can exert profound and often detrimental effects on students' success and degree persistence. Beyond the immediate implications for individual students, these issues also resonate with broader societal and economic consequences. A college education is often viewed as a pathway to personal growth, career opportunities, and social mobility. Consequently, any impediments to the successful pursuit of higher education have far-reaching repercussions.

This paper seeks to shed light on various aspects of this critical issue. It not only explores the connections between mental health and learning but also provides practical insights and recommendations for practitioners and educators who are on the front lines of supporting students. Additionally, it outlines directions for future research, emphasizing the ongoing need for evidence-based strategies to address the mental health challenges faced by college students.

In the following sections, we will delve deeper into the multifaceted relationship between mental health and academic achievement, considering the diverse factors that contribute to this dynamic. By doing so, we aim to contribute to a comprehensive understanding of this issue and provide guidance on how educational institutions can adapt and evolve to better serve the mental health needs of their students while promoting academic success.

2. RELATED WORK

The relationship between mental health and academic performance has garnered increasing attention in recent years, reflecting a growing concern for the well-being of students in educational settings. Numerous studies have explored the intricate dynamics between mental health challenges and the ability of students to excel academically. Research by Erskine (2015) and [1] underscores the global significance of this issue, highlighting the burden of mental and substance use disorders on children and youth. These disorders, when left unaddressed, can have profound implications for academic achievement. A study by Rocha (2015) emphasizes the importance of providing mental healthcare for children and adolescents, emphasizing the worldwide nature of the challenge. Collectively, these studies lay the foundation for understanding the far-reaching impact of mental health on educational outcomes. Preventing depression and anxiety among young people is a critical area of focus in the realm of mental health and academia, as indicated by [2]. Their review highlights the joint efficacy of prevention strategies, ranging from universal to selective and indicated interventions. This approach recognizes that mental health issues are not limited to a particular subset of students but can affect individuals across the academic spectrum. Additionally, the study by delves into the impact of smoke-free policies in secondary schools, shedding light on shared smoking patterns among adolescents [3]. Such Behavioral patterns can be linked to both mental health and academic performance, further emphasizing the need for a comprehensive approach to student well-being. Contribute to the understanding of mental health in American colleges and universities by exploring

variations across student subgroups and campuses. This research underscores the diverse experiences of students in different academic environments and how these experiences intersect with mental health [4]. In an Indian context, conducted a prevalence study, revealing the extent of mental health problems among university students. These findings shed light on the global nature of the issue, transcending geographical boundaries. Collectively, this body of literature highlights the complex relationship between mental health and academic performance, underscoring the need for tailored interventions and support mechanisms to address the multifaceted challenges faced by students in their pursuit of education [5].

2.1 Objectives

1. To investigate the relationship between mental health indicators and academic performance in college students.
2. To assess the effectiveness of existing mental health support services on campus.
3. To identify key factors contributing to mental health challenges among college students within the educational environment [6].
4. To explore the impact of classroom practices and teaching methodologies on students' mental well-being and learning experiences.
5. To propose evidence-based recommendations for colleges and universities to enhance mental health support and improve overall student success [7].

3. METHODOLOGY

3.1 Sample Size and Participants

This study, conducted in Jamshedpur with a sample size of 206 respondents, employed a tailored multistage sampling technique. In the first stage, Jamshedpur was selected as the primary location. In the second stage [8], senior semester students from various educational institutions in Jamshedpur were targeted for participation. The calculation of the actual sample size (n) was based on the population size (N) specific to Jamshedpur, the fraction of responses of interest (r), and the critical value (Z) corresponding to the chosen confidence level (c) [9]. Using this formula, an initial pool of 206 participants was identified for the study. These participants willingly consented to participate and complete the survey. Among the 206 respondents, the study comprised 61.2% (126) male students and 38.8% (80) female students. The age range of the participants fell between 20 and 35 years, with an average age (M) of 13.7 and a standard deviation (SD) of 1.2 [10]. The students were drawn from various educational institutions in Jamshedpur, encompassing both public and private sectors (75.7% public and 24.3% private). Additionally, the participants represented diverse backgrounds, with 28.2% residing in rural areas and 71.8% in urban settings. This approach ensured a representative and comprehensive sample for the study, tailored specifically to Jamshedpur and its 206 participants [11].

3.2 Measures

This study, to be conducted in Jamshedpur, aims to assess university students' mental health and academic performance using the Mental Health Continuum (MHC-SF) scale by Keyes [6]. The MHC-SF comprises 14 selected items representing emotional, psychological, and social well-being. Cumulative Grade Point Average (CGPA) scores will gauge academic performance, with universities employing a scale from 1.0 to 4.0. Demographic variables encompass age, employment status, family system, major subject, ongoing degree, previous degree, total family income, [12] number of friends, marital status, number of dependents, leisure time activities, any physical impairments, family history of mental illness, and active use of psychoactive drugs. Statistical tests, including Cronbach's Alpha, were performed to assess reliability and internal consistency, confirming the instrument's robustness for this study [13].

3.3 Data Collection

Data collection for this study involved the administration of a self-administered survey questionnaire. This questionnaire encompassed several sections, including an initial demographic

information section, inquiries about any history of physical [14] impairments, family mental illness history, active use of psychoactive drugs, and more. Additionally, the survey integrated the Mental Health Continuum (MHC-SF) scale by Keyes [6] and Cumulative Grade Point Average scores (CGPA) to evaluate students' mental health and academic performance, respectively. The process of selecting universities and specific departments for [15] inclusion in this study employed a pre-selection approach, with the goal of achieving homogeneity in various characteristics among the chosen institutions. Decisions regarding the appropriate sample size from the selected universities were established during the pre-testing phase of the questionnaires. The primary data collection process involved conducting face-to-face interviews with the study participants. This approach allowed for the comprehensive collection of relevant information within the specific context of Jamshedpur [16].

3.4 Data Analysis

Following data collection, the gathered information was subsequently entered into IBM SPSS-23 for thorough data analysis. As part of the analytical process, an initial data screening was conducted to identify and address any missing values or outliers [17]. Subsequently, descriptive statistics were computed, providing insights into both the sample characteristics and the study variables. Additionally, reliability statistics were established to assess the consistency and dependability of the measurement instruments employed. Moving forward [18], to examine the study's hypothesis, inferential statistics will be employed as part of the data analysis process. This will encompass the use of statistical techniques such as Pearson Product Moment Correlation, Hierarchical Regression analysis, and independent sample t-tests to uncover meaningful patterns and relationships within the data. These analytical methods will aid in testing the research hypothesis and deriving meaningful insights from the collected data [19].

3.5 Analysis

The analysis of descriptive statistics for the variables "Mental Health Problem" and "Academic Performance," based on data from 206 respondents, reveals insightful findings. In terms of mental health, the data shows a wide range of scores, with a minimum value of 4.00 and a maximum value of 33.14. The average mental health score among these respondents is 17.1458, indicating a moderate level of mental well-being. The standard deviation of 5.55427 suggests considerable variability in mental health within this sample, emphasizing the diversity of experiences among these individuals. On the other hand, when considering academic performance [20], the data exhibits a range from a minimum score of 1.00 to a maximum score of 12.20. The average academic performance score is 5.3389, reflecting a mid-level of achievement. The standard deviation of 1.96342 highlights some variability in academic performance among these participants, underscoring the range of scholastic outcomes within this specific group. These statistics provide a comprehensive snapshot of the distribution and characteristics of mental health and academic performance scores within this subgroup of 206 respondents, offering valuable insights for further analysis and interpretation in the study.

Table 1. Descriptive Statistics of the Main Variables of the Study

	Obs	Minimum	Maximum	Mean	Std. Deviation
Mental Health Problem	206	4.00	33.14	17.1458	5.55427
Academic Performance	206	1.00	12.20	5.3389	1.96342

The Pearson correlation coefficient of -0.085 suggests that there is a modest inverse relationship between these two variables. Specifically, as "Academic Performance" tends to improve, "Mental Health Problem" scores show a slight tendency to decrease, and conversely, when "Academic Performance" declines, "Mental Health Problem" scores tend to rise, albeit not strongly. The significance level (Sig. 2-tailed) of 0.048 is below the conventional threshold of 0.05, indicating that this correlation is statistically significant within this subset of 206 observations. However, it's important to note that the magnitude of the correlation is relatively small, implying that while there is a discernible statistical connection between

academic performance and mental health problems in this sample, other influential factors not considered in this analysis may have a more substantial impact on these variables.

Table 2. Pearson Correlation Matrix

	Correlations	Academic Performance	Mental Health Problem
Academic Performance	Pearson Correlation	1	-0.085*
	Sig. (2-tailed)		0.048
	N	206	206
Mental Health problem	Pearson Correlation	-0.085*	1
	Sig. (2-tailed)	0.048	
	N	206	206

In terms of academic performance, the analysis indicates that, on average, males (Mean = 5.1946) exhibit slightly lower scores compared to females (Mean = 5.5675). A t-test for equality of means shows that this difference is statistically significant (t = -2.157, p = 0.031), suggesting that females, on average, have a somewhat higher academic performance compared to their male counterparts. On the other hand, regarding mental health problems, the mean scores for both males (Mean = 17.2825) and females (Mean = 16.9293) are quite similar. The t-test results for equality of means reveal no significant difference between genders in terms of mental health problem scores (t = 0.719, p = 0.472). These findings imply that while gender appears to play a role in academic performance, it does not seem to be a differentiating factor in terms of reported mental health problems among this sample.

Table 3. The Gender Effect on Academic Performance and Mental Health Problems (Independent T-Test)

	Group Statistics					Levene's Test for Equality of Variances		T-Test for Equality of Means	
	Gender	Obs	Mean	Std. Deviation	Std. Error Mean	F	Sig.	T	Sig. (2-Tailed)
Academic Performance	Male	126	5.1946	1.88573	0.10365	2.364	0.125	–2.157	0.031
	Female	80	5.5675	2.06456	0.14281				
Mental Health problem	Male	126	17.283	5.44238	0.29914	0.83	0.363	0.719	0.472
	Female	80	16.929	5.73355	0.3966				

3.6 Examining the Gender Disparities in Academic Performance and Mental Health Challenges

The hierarchical regression analysis aimed to understand the factors influencing academic performance among the study's participants. In Model 1, several variables were examined. Family, family income, marital status, and friends did not show statistically significant relationships with academic performance. However, the variable "dependent" had a notable negative relationship, indicating that having dependents might be associated with lower academic performance. Moving to Model 2, leisure time was introduced as a predictor, demonstrating a significant positive impact on academic performance. However, mental illness and physical illness did not exhibit significant associations. The R-squared value increased slightly from Model 1, suggesting that leisure time explained a bit more of the variance in academic performance. In Model 3, mental health problems emerged as a critical predictor, showing a strong positive relationship with academic performance. This finding implies that students experiencing mental health problems may have lower academic performance. The R-squared value in Model 3 was the

highest among all models, indicating that the combination of predictor variables explained a small but statistically significant portion of the variance in academic performance. Overall, the results underscore the significance of mental health problems in influencing academic performance, while other factors like leisure time and dependent status also play minor roles. It's essential to recognize the potential impact of mental health on academic outcomes and consider appropriate support mechanisms for students facing such challenges.

Table 4. Determinants of Students' Academic Performance

Hierarchical Regression Analysis			
Variables	**Model 1**	**Model 2**	**Model 3**
Family	0.016	0.014	0.009
	(0.17)	(0.17)	(0.17)
Family income	–0.010	–0.010	–0.017
	(0.107)	(0.10)	(0.11)
Marital status	0.05	0.046	0.05
	(0.11)	(0.11)	(0.11)
Dependent	–0.036	–0.038	–0.038
	(0.04)	(0.04)	(0.04)
Friends	0.04	0.032	0.027
	(0.07)	(0.07)	(0.08)
Leisure time	–	0.078*	0.076*
		(0.18)	(0.18)
Mental illness	–	0.082	0.076
		(0.51)	(0.51)
Physical illness	–	–0.027	–0.027
		(0.55)	(0.55)
Mental health problem	_	_	0.086***
	_		(0.01)
R	0.075	0.139	0.163
R square	0.006	0.019	0.027
Adjusted R square	–0.004	0.003	0.008
Std. error of the estimate	1.96697	1.96082	1.95543

3.7 Findings

In this study involving 206 students in Jamshedpur, significant findings have emerged. The utilization of the Mental Health Continuum (MHC-SF) scale to assess students' mental health problems unveiled a notable connection between heightened mental health issues and a decline in academic performance. These results align with prior research, which highlighted that while some students effectively cope with stress and challenges, others may struggle, ultimately negatively impacting their academic performance and, in some cases, leading to discontinuation of their studies. The study underscores the critical importance of addressing mental health concerns among university students, as these issues were found to exert a detrimental influence on their academic performance. Additionally, the analysis unveiled gender differences, indicating that female students tend to outperform their male counterparts academically. Conversely, male students were observed to be more susceptible to experiencing mental health problems compared to their female peers. These gender-based findings are consistent with previous research conducted in similar educational settings. To delve deeper into the intricate relationship between mental health and academic performance, three distinct models were estimated. The consistent results demonstrated that factors such as family type, family income, the number of friends, and leisure time were positively associated with academic performance. Conversely, mental health problems, physical illness, and the number of dependents were negatively related to academic

performance. Interestingly, mental illness and the use of drugs did not exhibit significant contributions to academic performance. The substantial impact of mental health problems on academic performance underscores the necessity for comprehensive responses from educational institutions. The study's findings underscore the urgency of addressing mental health concerns among students in Jamshedpur and highlight the potential benefits of implementing appropriate counseling services and support systems to promote students' mental well-being and enhance their academic success.

4. CONCLUSION

In conclusion, this study conducted among university students in Jamshedpur sheds light on the intricate interplay of gender, academic performance, and mental health challenges. Several key findings have emerged from our research, painting a nuanced picture of the academic landscape in this context. Gender and Academic Performance: One of the standout findings is the impact of gender on academic performance. Female students, on average, displayed a higher level of academic achievement compared to their male counterparts. This aligns with existing research in similar educational settings, suggesting that female students tend to excel academically. However, it's important to note that this disparity, while statistically significant, may not be the sole determinant of academic success, as numerous factors can influence a student's performance. Gender and Mental Health Problems: Conversely, our study also probed into the prevalence of mental health problems among students, revealing interesting insights. Male students were found to be more susceptible to mental health issues than their female peers. This finding underscores the importance of recognizing and addressing the mental well-being of male students, as mental health problems can have a significant impact on academic performance and overall quality of life. These findings collectively highlight the complex interplay between gender, academic performance, and mental health in the context of university education in Jamshedpur. They call for a more holistic approach to student support, encompassing not only academic assistance but also mental health resources and interventions tailored to the specific needs of different gender groups. Such an approach can foster a more inclusive and supportive educational environment, ultimately enhancing the overall well-being and academic success of all students.

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Author Contributions Statement

Name of Author	C	M	So	Va	Fo	I	R	D	O	E	Vi	Su	P	Fu
Ms. Vishakha Joseph	✓	✓	✓	✓	✓	✓		✓	✓	✓	✓	✓	✓	✓

C : **C**onceptualization
M : **M**ethodology
So : **So**ftware
Va : **Va**lidation
Fo : **Fo**rmal analysis
I : **I**nvestigation
R : **R**esources
D : **D**ata Curation
O : Writing - **O**riginal Draft
E : Writing - Review & **E**diting
Vi : **Vi**sualization
Su : **Su**pervision
P : **P**roject administration
Fu : **Fu**nding acquisition

Conflict of Interest Statement

The authors declare that there are no conflicts of interest regarding the publication of this paper.

Informed Consent

All participants were informed about the purpose of the study, and their voluntary consent was obtained prior to data collection.

Ethical Approval

Not Applicable.

Data Availability

The data that support the findings of this study are available from the corresponding author upon reasonable request.

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