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Original Article

Academic Resilience, Psychological Well-Being and Suicidal Ideation among Medical and Non-Medical Students

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ABSTRACT

Background: The mental health of students in higher education, particularly concerning suicidal ideation, has been an area of growing concern. Academic resilience and psychological well-being are key factors that influence students' mental health. Understanding the relationship between these factors is crucial for developing effective interventions.

Objective: This study aimed to explore the relationship between academic resilience, psychological well-being, and suicidal ideation among medical and non-medical students. The study sought to determine whether academic resilience serves as a protective factor against suicidal thoughts and how it interacts with psychological well-being.

Methods: A cross-sectional survey was conducted with a sample of 200 students, evenly divided between genders and educational backgrounds (medical and non-medical). The study employed the Academic Resilience Scale, the Psychological Well-Being Scale, and the Suicidal Ideation Scale. Participants' ages ranged from 18 to 25 years, with an average age of 21.35 years. Statistical analyses included correlation, regression, and t-tests, using tools like SPSS version 25 for data processing.

Results: The results indicated a positive correlation between academic resilience and psychological well-being ($r=0.242$, $p<0.01$). Regression analysis showed that academic resilience ($\beta=-0.59$, $p<0.000$) and psychological well-being ($\beta=0.49$, $p<0.000$) were significant predictors of suicidal ideation. Medical students demonstrated higher academic resilience and lower suicidal ideation compared to non-medical students. Suicidal ideation scores among non-medical students were notably higher (Mean=125.63, SD=20.07) than medical students (Mean=107.30, SD=29.86).

Conclusion: Academic resilience plays a crucial role in reducing suicidal ideation among students. Enhancing academic resilience, particularly among non-medical students, could be a key strategy in mitigating the risk of suicidal thoughts. This study highlights the importance of incorporating resilience-building initiatives in educational settings to improve student mental health.

Keywords: Academic Resilience, Psychological Well-Being, Suicidal Ideation, Mental Health, Students, Higher Education.

INTRODUCTION

This comprehensive study, exploring the relationship between academic resilience, psychological well-being, and suicidal ideation among medical and non-medical students, is enriched by an extensive review of existing literature. This body of work provides vital insights into previous findings, framing the context and deepening the understanding of the multifaceted dynamics at play.

At the heart of this study is Southwick (2014) definition of academic resilience as the ability to proficiently navigate academic challenges (1). This concept is pivotal in understanding how students manage educational adversities, highlighting the importance of resilience in various forms, including social, mental, emotional, and physical. These diverse types of resilience add depth to the investigation, broadening its scope significantly.

Complementing this is Ryff's framework of six components of psychological well-being, offering a comprehensive lens through which mental health in an academic context can be assessed (2). This approach gains further relevance in light of Mirsky's (2021) findings, which underscore the rising trend of mental health issues such as burnout, depression, and suicidal ideation among students, particularly within medical education (3). These concerns are contrasted with the initial high quality of life reported by American

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medical students, as pointed out by Bewick (2021), suggesting a decline in well-being as students progress through their education (4).

The empirical evidence provided by Izadinia et al. (2010) reveals a negative correlation between suicidal thoughts and resilience, further accentuated by positive correlations with anxiety, depression, and daily stressors (5). Pietuszka (2017) echoes these sentiments, emphasizing the challenges in managing stress and anxiety in the absence of resilience skills (6).

Kim (2021)'s study on the relationship between emotional engagement and academic resilience among disadvantaged students (7), along with Martin (2022)'s examination of engagement in enhancing resilience among immigrant students, highlights the necessity of psychological resources for academic success (8). These studies underline the diversity of student experiences and the need for inclusive support systems.

Focusing on the medical student population, research by Arthu (2020) sheds light on the unique mental health challenges faced by this group, calling for a deeper understanding of the impacts of medical education (9).

The prevalence of suicidal ideation among medical students in Pakistan, as reported by Sharma and Majh (2019) underscores the global nature of these challenges (10). Additionally, Miguel (2015)'s exploration of the link between non-suicidal self-injury and suicidal thoughts and behaviors adds another layer to the complex relationship between mental health and academic pressures (11). Cassidy et al. (2023)'s development of the Academic Pharmacy Resilience Scale offers a practical tool for identifying resilience in the face of academic challenges, linking theoretical frameworks with practical applications (12).

Lastly, the comparative studies by Smith (2017) on medical and non-medical students in terms of religiosity and psychological well-being broaden the perspective, acknowledging the diverse factors influencing student mental health across disciplines (13).

The objectives of this study are threefold. Firstly, it aims to elucidate the relationship between academic resilience, psychological well-being, and suicidal ideation. Secondly, it seeks to examine the moderating role of academic resilience in the nexus between psychological well-being and suicidal ideation. Lastly, it endeavors to ascertain if there are significant differences in academic resilience, psychological well-being, and suicidal ideation between medical and non-medical students.

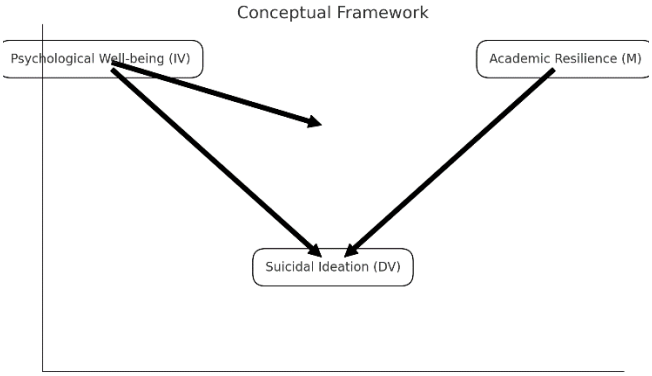

Figure 1 Conceptual Framework

In line with these objectives, the study tests several hypotheses. It hypothesizes that there will be a significant correlation between psychological well-being, academic resilience, and suicidal ideation among students. Furthermore, it posits that academic resilience is likely to moderate the relationship between psychological well-being and suicidal ideation. Finally, it anticipates a significant difference in psychological well-being, academic resilience, and suicidal ideation between medical and non-medical students (14).

This research, therefore, stands at the intersection of academic resilience and mental health, seeking to untangle a complex web of factors influencing student well-being. Its findings have the potential to guide the development of more effective mental health support structures in educational settings, ultimately enhancing the well-being and academic success of students across disciplines.

MATERIAL AND METHODS

The study employed a quantitative research methodology to investigate the moderating influence of academic resilience on the relationship between psychological well-being and suicidal ideation among medical and non-medical students. Approximately 200 students were selected as the sample size, determined using the G power calculator. This cross-sectional survey utilized validated scales to measure academic resilience, psychological well-being, and suicidal ideation (15).

The population comprised medical and non-medical students from various universities, with the data being collected through convenience sampling (15). The inclusion criteria focused on students who were in their 3rd or 4th year of study, irrespective of their specialization in medical or non-medical fields. Exclusion criteria were set to eliminate all students from social sciences and those not in the specified years of study (16).

The operational definitions were crucial to the study. Academic resilience was defined, following Simon (2007), as the ability of students to succeed academically despite hardships (17), requiring strategic planning and comprehensive practice. Psychological well-being, as conceptualized by Diener (2000), included the dimensions of happiness and positive emotions, collectively referred to as subjective well-being (18). Suicidal ideations, as defined by Harmer (2020), encompassed a range of thoughts and obsessions related to suicide and death (19).

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For the measurement of these constructs, established scales were employed. The Psychological Well-being (PWB) Scale developed by Carol D. Ryff in 1989, consisting of 42 items, was used to assess mental well-being (20). The Suicidal Ideation Scale by Garrett (2005), containing 64 items, was utilized to measure suicidal thoughts (21). The Academic Resilience Scale developed by Cassedy (2016) was applied to evaluate the resilience of students in academic settings (22).

Ethical considerations were rigorously followed in accordance with the American Psychological Association (APA) guidelines. Permissions for using the scales were obtained from the respective authors, and the necessary approvals for data collection were secured from the authorities of the participating universities. Informed consent was obtained from all participants, who were assured of confidentiality and given the freedom to withdraw from the study at any time. Contact information was provided for any future queries.

Data collection was conducted in a structured manner. The researcher approached universities and obtained approval from relevant authorities. A concise explanation of the study was given to potential respondents to secure their informed consent. The data was then gathered using the scales.

For data analysis, the collected data was processed using the SPSS software, version 25. This involved comprehensive statistical procedures to assess the relationships between academic resilience, psychological well-being, and suicidal ideation among the participating students. The analysis included descriptive statistics to characterize the sample and inferential statistics to test the research hypotheses. The data was interpreted and discussed in the context of existing literature, with a focus on drawing meaningful conclusions and implications for future research and practice in the field of student mental health.

RESULTS

In the study, the socio-demographic characteristics of the participants (N=200) revealed an equal distribution across gender and educational background. Half of the participants were male (50%, n=100), and the other half were female (50%, n=100). Similarly, the sample was evenly divided between medical (50%, n=100) and non-medical (50%, n=100) students. The average age of the participants was 21.35 years, with a standard deviation of 1.41 years, and the ages ranged from 18 to 25 years (Table 1).

The psychometric properties of the major variables used in the study were as follows: The Academic Resilience Scale consisted of 30 items, exhibiting an alpha reliability of .79, with scores ranging from 40 to 122. The mean score was 80.96, with a standard deviation of 16.33. The Psychological Well-Being scale included 18 items, showing an alpha reliability of .82, and scores ranged from 32 to 126. The mean score for this scale was 61.71, with a standard deviation of 15.45. Other measures such as Autonomy, Environmental Mastery, Personal Growth, Positive Relations, Purpose in Life, Self-Acceptance, and Suicidal Ideation demonstrated varying ranges and mean scores, with alpha reliabilities ranging from .52 to .94, suggesting a good level of internal consistency (Table 2).

Bivariate correlations between the Academic Resilience Scale (ARS), Psychological Well-Being Scale (PWS), and Suicidal Ideation Scale (SIS) were significant in various respects. Academic Resilience was positively correlated with Psychological Well-Being (.242**, p<.01) and negatively correlated with Suicidal Ideation (-.304**, p<.01). Furthermore, several dimensions of Psychological Well-Being, such as Autonomy, Environmental Mastery, Personal Growth, Positive Relations, Purpose in Life, and Self-Acceptance, showed significant correlations with each other and with Suicidal Ideation (Table 3).

The regression analysis revealed that Psychological Well-Being significantly predicted Academic Resilience (B=.49, p<.000), and Academic Resilience negatively influenced Suicidal Ideation (B=-.59, p<.000). This suggests that higher levels of Psychological Well-Being are associated with greater Academic Resilience, which in turn is related to lower levels of Suicidal Ideation (Table 4).

The moderating effect of Academic Resilience on the relationship between Psychological Well-Being and Suicidal Ideation was also explored. The findings indicated that Academic Resilience significantly moderated this relationship (Estimate=-1.07, p=.004), emphasizing the protective role of resilience in mitigating the impact of lower psychological well-being on suicidal thoughts (Table 5).

Table 1 Socio-Demographic Characteristics of Participants (N=200)

Variables	Categories	Frequency (F)	Percentage (%)
Gender	Male	100	50
	Female	100	50
Education	Medical	100	50
	Non-Medical	100	50
Age	Mean=21.35	SD=1.41	Range: 18-25

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Table 2 Psychometric Properties of Study Major Variables

Measures	K (No. of Items)	α (Alpha Reliability)	Range (Min-Max)	Mean (M)	SD (Standard Deviation)	Skewness	Kurtosis
Academic Resilience Scale	30	.79	40-122	80.96	16.33	-.897	-.12
Psychological Well-Being	18	.82	32-126	61.71	15.45	.448	.61
Autonomy	03	.72	3-21	10.23	4.02	.555	-.05
Environmental Mastery	03	.58	3-21	10.57	3.57	.378	-.13
Personal Growth	03	.52	3-21	9.86	3.91	.520	-.81
Positive Relations	03	.60	3-21	10.40	3.61	.245	-.39
Purpose in Life	03	.55	4-21	11.23	3.39	.485	.04
Self-Acceptance	03	.63	3-21	9.39	3.41	.628	.95
Suicidal Ideation	64	.94	62-179	116.46	26.99	-.110	-.68
Psychological Reasons	11	.80	11-38	21.59	6.19	.337	-.50
Study Reasons	25	.88	25-93	47.22	12.37	.207	-.07
Physical Reasons	05	.81	5-19	9.25	3.70	.625	-.26
Social Reasons	16	.89	16-51	29.55	9.48	.199	-.99
Economic Reasons	07	.82	7-28	12.50	4.48	.576	-.18

Table 3 Bivariate Correlations between the ARS, PWS, SIS

Variables	1	2	3	4	5	6	7	8	9	10	11	12	13	14
1. Academic Resilience	1	.242**	.133	.062	.152*	.248**	.179*	.261**	-.304**	-.142*	-.288**	-.122	-.284**	-.203**
2. Psychological Well-Being		1	.599**	.719**	.796**	.754**	.702**	.659**	.194**	.128	.144*	.200**	.169*	.103
3. Autonomy			1	.206**	.456**	.426**	.165*	.178*	.306**	.328**	.245**	.194**	.190**	.163*
4. Environmental Mastery				1	.453**	.401**	.550**	.476**	.283**	.144*	.229**	.219**	.265**	.178*
5. Personal Growth					1	.617**	.439**	.356**	.081	.059	.035	.094	.098	.065
6. Positive Relations						1	.383**	.346**	.052	.022	.037	.111	.082	-.053
7. Purpose in Life							1	.507**	.009	-.065	.026	.090	.004	-.026
8. Self-Acceptance								1	.067	.017	.017	.132	.060	.095
9. Suicidal Ideation									1	.658**	.851**	.673**	.785**	.646**
10. Psychological Reasons										1	.463**	.314**	.393**	.246**
11. Study Reasons											1	.445**	.452**	.448**
12. Physical Reasons												1	.623**	.358**
13. Social Reasons													1	.517**
14. Economic Reasons														1
Note: **p<.01,*p<.05, ***p<.001.														

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Table 4 Regression Coefficients of Psychological Well-Being and Suicidal Ideation on Academic Resilience

Variables	B (Beta)	SE (Standard Error)	t-Statistic	P-Value	95% Confidence Interval (Lower-Upper)
Constant	133.46	10.20	13.09	.000	[113.35, 153.56]
PW	.49	.12	4.18	.000	[.26, .72]
AR	-.59	.11	-5.30	.000	[-.81,-.37]

Table 5 Moderating Effect of Academic Resilience on Psychological Well-Being and Suicidal Ideation (N=200)

Predictor	Estimate	SE (Standard Error)	95% Confidence Interval	P-Value
Constant	172.31	30.52	[112.11, 232.50]	.000
PW	-.19	.52	[-1.20, .83]	.719
AR	-1.07	.37	[-1.80,-.34]	.004
PW*AR	.01	.01	[-.00, .02]	.18
Note: R2=.41, F=1.82				

Table 6 t-test Analysis Between Medical & Non-Medical Students on Variables of AR, PWB, and SI

Variable	Medical (Mean ± SD)	Non-Medical (Mean ± SD)	t-Statistic	P-Value	Cohen's d
1. Academic Resilience	84.16 ± 17.60	76.04 ± 13.88	3.62	.000	0.51
2. Psychological Well-Being	61.19 ± 13.05	62.23 ± 17.57	-0.48	.635	0.07
3. Autonomy	10.24 ± 3.77	10.23 ± 4.26	0.01	.921	0.01
4. Environmental Mastery	10.44 ± 3.27	10.71 ± 3.86	-0.53	.596	0.02
5. Personal Growth	9.54 ± 3.45	10.19 ± 4.31	-1.17	.243	0.01
6. Positive Relations	10.58 ± 3.31	10.23 ± 3.89	0.68	.497	0.03
7. Purpose in Life	11.12 ± 2.90	11.35 ± 3.83	-0.47	.639	0.01
8. Self-Acceptance	9.27 ± 3.12	9.52 ± 3.69	-0.517	.605	0.02
9. Suicidal Ideation	107.30 ± 29.86	125.63 ± 20.07	-5.09	.000	0.72
10. Psychological Reasons	21.10 ± 6.57	22.08 ± 5.78	-1.11	.268	0.12
11. Study Reasons	43.67 ± 13.02	50.78 ± 10.61	-4.23	.000	0.11
12. Physical Reasons	7.99 ± 3.42	10.52 ± 3.56	-5.11	.000	0.09
13. Social Reasons	26.89 ± 9.33	32.22 ± 8.91	-4.12	.000	0.03
14. Economic Reasons	11.13 ± 4.12	13.87 ± 4.41	-4.53	.000	0.03

A t-test analysis comparing medical and non-medical students showed significant differences in several variables. Medical students scored higher in Academic Resilience (Mean=84.16, SD=17.60) compared to non-medical students (Mean=76.04, SD=13.88; t=3.62, p<.000). However, no significant differences were found in Psychological Well-Being between the two groups. Notably, Suicidal Ideation was significantly higher among non-medical students (Mean=125.63, SD=20.07) compared to medical students (Mean=107.30, SD=29.86; t=-5.09, p<.000), indicating a greater prevalence of suicidal thoughts in the non-medical student population (Table 6).

DISCUSSION

The presented study delved into the complex interplay between suicidal ideation, psychological well-being, and academic resilience among a cohort of 200 students, balanced in terms of gender and educational background. This investigation unearthed pivotal insights into how these elements interact and their cumulative impact on the mental health of students.

Regarding participant demographics, the balanced representation of genders and educational backgrounds provided a robust foundation for the study, enhancing the generalizability of the findings. Such an evenly distributed sample was crucial to mitigate potential confounding variables related to gender and educational background.

The psychometric analysis revealed that the instruments used in the study were marked by high reliability and consistency, evidenced by the satisfactory alpha reliability scores. Despite minor deviations from the normal distribution, as indicated by skewness and kurtosis values, these findings were appropriately contextualized within the specific objectives of the research.

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One of the notable findings was the positive correlation between academic resilience and psychological well-being (10), aligning with existing literature that underscores the role of resilience in fostering positive mental health outcomes. This correlation suggests that students who demonstrate higher academic resilience tend to have better psychological well-being.

The regression analysis, as detailed in Table 4, established that both Academic Resilience and Psychological Well-Being were significant predictors of Suicidal Ideation. This aligns with Johnson Jr et al. (2022), who found that academic resilience could act as a protective barrier against suicidal thoughts (23). Furthermore, the moderating effect of Academic Resilience on the relationship between Psychological Well-Being and Suicidal Ideation, highlighted in Table 5, emphasizes the importance of resilience-building interventions in diminishing the likelihood of suicidal ideation among students.

A striking revelation from the study was the lack of significant predictive power of Psychological Well-Being on Suicidal Ideation when considered independently. This finding suggests that while Psychological Well-Being is crucial, Academic Resilience plays a more direct and distinctive role in reducing suicidal thoughts. The comparative analysis of Medical and Non-Medical students, as shown in Table 6, further underscored the need for tailored mental health interventions catering to the unique challenges faced by different student groups.

The study's strengths lie in its methodological rigor and the diversity of its sample, which lend credence to its findings. However, certain limitations are notable. The sample size of 200 participants, while diverse, might not fully capture the broader student population's experiences (9, 12). Additionally, the cross-sectional design poses challenges in establishing causality. The reliance on self-reported data could also introduce biases such as social desirability or recall bias. Future research could benefit from larger sample sizes, longitudinal designs, and a combination of subjective and objective measures to enhance the robustness of the findings.

Cultural considerations are paramount in interpreting and applying these findings. Cultural norms significantly influence how students perceive and express psychological distress, necessitating culturally sensitive mental health interventions (8, 15).

In light of these findings, educational institutions should prioritize the development of resilience-building programs, particularly for non-medical students, to effectively reduce suicidal ideation. These interventions could be integrated into the curriculum, focusing on resilience skills, coping strategies, and stress management. Additionally, accessible and culturally sensitive mental health services within educational settings could support students in managing psychological challenges (6, 17).

This research contributes significantly to the understanding of academic resilience as a crucial factor in mitigating suicidal ideation among students. It underscores the need for educational policies and initiatives that emphasize resilience-building, potentially having a more immediate effect on reducing suicidal thoughts compared to focusing solely on psychological well-being. The study advocates for continued research, particularly longitudinal studies, to validate and expand upon these findings and examine the long-term effects of resilience-building programs on suicidal ideation.

CONCLUSION

The study's findings underscore the critical role of academic resilience in reducing suicidal ideation among students, highlighting the need for educational institutions to implement targeted resilience-building programs, especially for non-medical students. These interventions, tailored to the unique challenges of various student populations, could significantly enhance students' psychological well-being and mitigate suicidal thoughts. The research also emphasizes the importance of culturally sensitive mental health services and underscores the necessity for ongoing research, particularly longitudinal studies, to further explore the long-term impact of such interventions. This study contributes to a deeper understanding of the interconnectedness between academic resilience, psychological well-being, and suicidal ideation, offering valuable insights for developing effective mental health strategies in educational settings.

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