From Aspiration to Anxiety: A Sociological Investigation of Mental Stress in Pre-Medical Students of Muzaffargarh, Pakistan

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Abstract: This research paper explores the sociological factors contributing to mental stress among pre-medical students in Pakistan. The objectives are to identify these factors, assess the influence of family, peer, and community dynamics on students' mental health, and examine gendered patterns in mental health experiences. The study employed a cross-sectional quantitative research methodology, initially selecting two public and two private colleges through simple random sampling. A total of 150 participants, aged 17 to 25, were purposively sampled to ensure active student status and knowledge ability. Data collection utilized a self-administered structured questionnaire validated through expert evaluation and piloted for reliability. Statistical analyses including Cronbach's alpha, frequencies, percentages, independent sample t-tests, and multiple linear regressions were conducted using SPSS. The findings highlight significant influences of societal expectations, familial pressures, and peer dynamics on pre-medical students' anxiety levels, with notable gender disparities observed. These insights underscore the importance of targeted interventions and support systems in educational settings to mitigate academic-related anxiety and promote students' overall well-being.

Keywords: Academic stress, Medical Students, Anxiety and aspiration, Mental health

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1. Introduction

From early childhood, many individuals envision their future careers, imagining the impact they could have on society Turner [1]. These aspirations are strong driving forces in life Ashby and Schoon [2]. In countries like Pakistan, the medical profession is highly esteemed, symbolizing

success, stability, and social prestige Hafeez and Shah [3]. Consequently, families and communities often steer or pressure students towards pursuing medicine, viewing it as a pathway to personal fulfillment, family honor, and financial security. For students in FSc Pre-Medical programs, the societal expectation to become a doctor casts a looming shadow of anxiety about their future Bilal and Riaz [4]. While they haven't yet faced the Medical and Dental College Admission Test (MDCAT), they already feel the weight of these expectations. The pressure to excel in upcoming exams induces significant psychological anxiety Fatima, et.al [5].

Beyond their ambitions, these students carry the hopes and expectations of their families, peers, and communities, intensifying their anxiety Archbell and Coplan [6]. The appeal of a medical career lies in its esteemed status and the promise of a secure and respected position in society Freidson [7]. However, this ambition often takes a toll on students' mental and physical well-being as they push themselves academically. One of the most common mental illnesses among pre-medical students is anxiety, which consists of chronic worry and fear Bhakta [8]. Moreover, this dreadful feeling is not only associated with individual merit but also with the fear of having to fulfill the standards of society, the expectations of family, and the expectations of a career in medicine. This complicated relationship between personal desires and societal expectations is at the root of the pressures faced by these teenagers and a big part of what makes their anxiety so acute. Between a rigorous course schedule and the pressure of the pre-med path, pre-meds face an uphill battle in terms of mental health Sims et al [9]. These difficulties only emphasize the necessity of well-rounded support systems within our educational institutions and communities.

Although there is a lot of literature written on the psychological aspects of exam stress, there is a lack of understanding of the broader socio-cultural context of the issue. Previously conducted research such as Bilal and Riaz [4] and Fatima et al [5] so far, have mainly focused on the psychological consequences - depression or suicidal ideation of mental health deficiency, are falling behind in adequately exploring the contributory sociocultural and socio-psychological factors. This study aims to fill this void, by analyzing the Sociological nature of mental stress in pre-medical students in the context of south Punjab Pakistan, to expose the complex nature of the relationship between the macro-structures, meso-cultures, and mental health of medical students.

This study is important because it may provide new knowledge about the sociological factors affecting mental stress in premedical students. Putting attention on social structures, cultural context, gender relations, community part, and policy implication. The study will underline the

interconnectedness of these factors with mental health. Such factors are important to understand as interventions and support systems can be implemented to reduce this stress and improve their overall well-being. In addition, this study will advance the conversation on mental health in academia to perspectives of sociology, which have remained underrepresented in the landscape of pre-medical education stress These discoveries could also influence educational policies and practices, and this could help assist students in the future. This study will generate data that can be used to assess and improve mental health resources and support services for pre-medical students in Muzaffargarh, as well as for similar populations in Pakistan more broadly.

1.1 Objectives

1. To Identify the Sociological Factors Contributing to Mental Stress Among Pre-Medical Students
2. To Assess the Impact of Family, Peer, and Community Influences on the Mental Health of Pre-Medical Students
3. To Explore Gendered Dynamics of Mental Health among Pre-Medical Students.

2. Methodology

The study employed a cross-sectional quantitative research methodology. Initially, a multi-stage sampling technique was used: in the first stage, two public and two private colleges were selected through simple random sampling in district Muzaffargarh. In the second stage, 150 participants were chosen, consisting of both male and female students aged 17 to 25. Purposive sampling was employed to ensure that the selected respondents were active students and knowledgeable, thereby providing valuable insights. The sampling distribution was proportional to each institution. This method combined the benefits of both random and non-random sampling techniques to enhance representativeness and relevance while adhering to practical constraints. Data collection was conducted using a self-administered structured questionnaire. Theoretical constructs such as Family Pressure, Peer Influence, Cultural Expectations, and Academic-related anxiety were identified from a literature review. Items related to each construct were grouped. Experts evaluated each construct using the Content Validity Index (CVI). A pilot study was conducted to gather feedback, and revisions were made accordingly. Cronbach's alpha demonstrated that each questionnaire construct had a reliability score above 0.7, indicating good

reliability. Participants' responses were recorded using a 5-point Likert scale to assess their level of agreement with statements, ranging from strongly agree to strongly disagree. Anxiety-related questions were measured using a 5-point Likert scale of frequency, ranging from never to always. SPSS was used to calculate frequencies and percentages for univariate analysis. A bivariate analysis of gender differences in academic-related anxiety was performed using an independent sample t-test. Multiple linear regression was used to examine the impact of various social factors, such as Family Pressure, Peer Influence, and Cultural Expectations, on students' academic-related anxiety.

Table 1 Demographic Information of the Students

Sr. No.	Variables	Categories	Frequency	Percentage
01	Gender	Male	75	50.0
		Female	75	50.0
02	Age	15-17 years	33	22.0
		18-20 years	74	49.3
		20 years or above	43	28.7
03	College Type	Private College	81	54.0
		Government College	69	46.0
04	Socio-Economic status	Lower Class	47	31.3
		Middle Class	69	46.0
		Upper Class	34	22.7
05	Locality	Urban	67	44.7
		Rural	83	55.3

Table 1 presents the demographic information of the 150 student participants in the study. The sample is evenly split between genders, with 75 males (50.0%) and 75 females (50.0%). The age distribution shows that 22.0% of the participants are between 15-17 years old, 49.3% are between 18-20 years old, and 28.7% are 20 years or older. Regarding the type of college, 54.0% of the students are from private colleges, while 46.0% are from government colleges. Socio-economic status is categorized into three groups: 31.3% of the students belong to the lower class, 46.0% to the middle class, and 22.7% to the upper class. In terms of locality, 44.7% of the students are from urban areas, whereas 55.3% are from rural areas.

Table 2 Anxiety and Stress Levels Due to Academic Pressure

Sr. No.	Statement	N %	R %	S %	O %	A %
01	How often do you feel overwhelmed by the amount of studying required for F.Sc. pre-medical?	12.0	15.3	21.3	28.0	23.3
02	How frequently do you experience difficulty sleeping due to worries about your academic performance?	4.0	20.0	40.0	28.0	8.0
03	How often do you find it hard to concentrate on your studies because of stress related to your future career?	8.0	22.7	26.7	33.3	9.3
04	How regularly do you feel anxious about meeting the expectations of your family or peers regarding your medical career?	9.3	18.0	8.0	29.3	35.3
05	How often do you experience physical symptoms (such as headaches or stomach-aches) due to stress from your pre-medical studies?	5.3	19.3	33.3	23.3	18.7
06	How frequently do you find yourself procrastinating because of anxiety about not performing well academically?	4.7	15.3	46.7	26.0	7.3
07	How often do you feel that the pressure to succeed in your pre-medical studies affects your mental health negatively?	12.0	15.3	28.0	21.3	23.3
08	How regularly do you feel that you do not have enough time for relaxation or hobbies because of your academic commitments?	33.3	22.3	8.0	26.7	9.7
09	How frequently do you doubt your ability to succeed in the medical field because of the stress you experience now?	4.7	6.0	21.3	24.7	43.3
10	How often do you feel isolated from friends or family due to the demands of your pre-medical studies?	8.7	22.3	33.7	26.3	9.0
N: Never, R: Rarely, S: Sometimes, O: Often, A: Always						

Table 2 illustrates the anxiety and stress levels experienced by students due to academic pressure in their F.Sc. pre-medical studies. The table comprises ten statements evaluating different stress factors and their frequencies, categorized into five response options: Never (N), Rarely (R), Sometimes (S), Often (O), and Always (A). For the statement "How often do you feel overwhelmed by the amount of studying required for F.Sc. pre-medical?", 12.0% of students responded "Never", while 23.3% indicated "Always", showing a significant portion experiencing high levels of overwhelm. Regarding sleep difficulties due to academic worries, 4.0% never experience this, but 40.0% sometimes do, highlighting sleep issues as a common problem.

Concentration difficulties due to career-related stress are sometimes felt by 26.7% of students, with 33.3% often affected.

Anxiety about meeting family or peer expectations regarding a medical career is always felt by 35.3% of students, showing high pressure from social expectations. Physical symptoms of stress, such as headaches or stomach-aches, sometimes affect 33.3% of respondents, indicating common physical manifestations of academic stress. Procrastination due to anxiety about academic performance is sometimes an issue for 46.7% of students, suggesting a prevalent coping mechanism for stress. The negative impact of academic pressure on mental health is always felt by 23.3% of students, while 33.3% never feel they have enough time for relaxation or hobbies due to their studies. Doubts about succeeding in the medical field due to current stress levels are always present for 43.3% of respondents, showing a high level of self-doubt among students. Finally, isolation from friends or family due to academic demands is sometimes experienced by 33.7% of students, indicating that many feel socially isolated due to their studies. Overall, the data highlights significant levels of anxiety and stress among pre-medical students, affecting various aspects of their lives.

Table 3 Social Influences on Medical Students' Stress Levels

Sr. No.	Statement	SDA %	DA %	N %	A %	SA %
Section A: Family Expectations						
01	Do your family's expectations regarding your medical career contribute to your stress levels?	4.0	16.0	18.0	40.0	22.0
02	Do you feel significant pressure from your parents to succeed in the MDCAT?	5.3	10.7	26.7	49.3	8.0
03	Your family's aspirations for your future are a source of stress for you.	2.7	20.0	5.3	24.7	47.3
04	The fear of disappointing your family adds to your stress.	2.0	11.3	31.3	43.3	12.0
05	Does your family provide emotional support for your academic issues?	14.0	22.7	44.7	16.0	2.7
	Section B: Peer Influence					
06	Competition with your peers increases your stress levels.	5.3	18.0	35.3	31.3	10
07	Do you compare yourself to your peers, which contributes to your stress?	8.0	15.3	30.7	40.7	5.3
08	The success of your peers makes you feel more stressed.	14.0	20.7	10.7	28.0	26.7

09	Do you feel pressured to keep up with the academic achievements of your peers?	16.0	4.0	18.0	22.0	40.0
10	Support from your peers helps reduce your stress.	5.3	10.7	26.7	49.3	8.0
	Section C: Cultural Context					
11	Cultural beliefs about academic success increase your stress.	6.7	5.3	24	36.7	27.3
12	The high regard for the medical profession in your community adds to your stress.	12.0	11.3	2.0	31.3	43.3
13	Cultural expectations regarding education put significant pressure on you.	4.7	22.7	4.0	35.3	33.3
14	Failing to achieve academic success is viewed negatively in your culture.	6.0	11.3	6.0	33.3	43.3
15	Cultural values around hard work and success motivate you positively?	5.3	20.0	2.7	24.7	47.3
Strongly Agree=SA, Agree=A, Neutral=N, Disagree=DA, Strongly Disagree=SDA						

Table 3 examines the social influences on medical students' stress levels, categorized into three sections: Family Expectations, Peer Influence, and Cultural Context. Each statement is evaluated across five response options: Strongly Disagree (SDA), Disagree (DA), Neutral (N), Agree (A), and Strongly Agree (SA).

Section A represents the Family Expectations. The first statement, "Do your family expectations regarding your medical career contribute to your stress levels," shows that 40.0% of students agree, and 22.0% strongly agree, indicating significant stress from family expectations. Regarding pressure from parents to succeed in the MDCAT, 49.3% agree and 8.0% strongly agree, illustrating high parental pressure. Family aspirations as a source of stress are strongly agreed upon by 47.3%, and agreed upon by 24.7%, highlighting considerable stress from familial aspirations. The fear of disappointing family adds stress for 43.3% of students who agree and 12.0% who strongly agree. In contrast, family emotional support in academic issues is seen as neutral by 44.7%, with 22.7% disagreeing and 14.0% strongly disagreeing, indicating varied perceptions of family support.

Section B represents the Peer Influence. Competition with peers increases stress levels for 31.3% of students who agree and 10.0% who strongly agree. Comparing oneself to peers contributes to stress for 40.7% of students who agree and 5.3% who strongly agree. The success of peers causes stress for 28.0% who agree and 26.7% who strongly agree, showing peer success as a stress factor. The pressure to keep up with the academic achievements of peers is strongly agreed

upon by 40.0%, with 22.0% agreeing. However, support from peers helps reduce stress for 49.3% of students who agree and 8.0% who strongly agree, indicating a positive aspect of peer relationships.

Section C represents the Cultural Context. Cultural beliefs about academic success increase stress for 36.7% who agree and 27.3% who strongly agree. The high regard for the medical profession in the community adds stress for 31.3% who agree and 43.3% who strongly agree, highlighting the pressure from societal expectations. Cultural expectations regarding education put significant pressure on 35.3% who agree and 33.3% who strongly agree.

The negative view of academic failure in culture is agreed upon by 33.3% and strongly agreed upon by 43.3%, emphasizing the cultural stigma associated with failure. However, cultural values around hard work and success motivate 47.3% who strongly agree and 24.7% who agree, suggesting that cultural context also provides positive motivation for some students. Overall, Table 3 highlights that family expectations, peer influence, and cultural context significantly impact medical students' stress levels, with varying degrees of pressure and support affecting their academic experience.

Table 3 Independent Samples t-test contrasting academic-related anxiety between male and female students

Variable	Gender	N	Mean	S.D	T	P	Finding
Academics Related Anxiety	Male Students	75	23.12	5.631	15.316	0.000	Significant Difference
	Female Students	75	38.97	8.179			
(*p<0.01)							

Table 3 presents the results of an Independent Samples t-test, comparing academic-related anxiety between male and female students. The analysis involves 75 male students and 75 female students, with the mean anxiety scores and standard deviations (S.D.) provided for each group. For male students, the mean anxiety score is 23.12 with a standard deviation of 5.631. Female students have much higher mean levels of anxiety as opposed to male students, with a mean and standard deviation of 38.97 and 8.179 respectively. The t-test showed a two-tail probability of 0.000 and a t value of 15.316, meaning that there is a significant difference between the level of academic-related anxiety among male and female students. These results reveal that females are prone to more anxiety regarding academics than males since the difference between the mean

scores was significant and supported by the t-test result. The study also is supported by Pelch, (2018).

Table 4 Multiple Linear Regression on Effects of Social Factors at Academics-Related Anxiety

D.V	I.V/ Predictor	B	Std. Error	β	T	P	R^2	Finding
Academics Related Anxiety	(Constant)	0.736	3.739		0.198	0.841	0.464	Significant Impact
	Family Pressure	1.584	0.321	0.439	6.547	0.000		
	Peer Influence	0.501	0.294	0.131	3.009	0.026		
	Cultural Expectations	1.371	0.273	0.321	4.827	0.000		
D.V: Dependent Variable, I.V: Independent variable, (*p<0.05)								

Table 4 presents the results of a multiple linear regression analysis, which serves to determine the effects of social factors on academic-related anxiety. D.V.= Academic anxiety I.V.s/Predictors= family pressure, peer influence, cultural expectation The regression model shows an intercept with a B value of 0.736 and standard error of 3.739 which yields a t value of 0.198, and p-value0.841 (note that higher p-values represent that the intercept is not s significant). Results: Significant effects on academic Anxiety are found to be due to Family Pressure ($B = 1.584$, $\beta = 0.439$, $p < 0.001$), Cultural Expectations ($B = 1.371$, $\beta = 0.321$, $p < 0.001$), and Peer Influence ($B = 0.501$, $\beta = 0.131$, $p = 0.026$). Such findings indicate that these social structures have a significant influence on the anxiety levels associated with the academic performance of the current study participants. The model thus has an R-squared (R2) value of 0.464 suggesting that 46.4% of the variance in Academics Related Anxiety can be explained by the joint action of all independent variables. Overall, Table 4 articulates how certain social variables can develop academic Anxiety among students, which in turn may deepen the intricate plot of academic stress performance, affected by familial, peer, and cultural rhetoric aimed at academic pressure.

3. Discussion

The current study adds to this evidence base surrounding academic stress and mental health among students, supporting the transactional model of stress and coping as proposed by Lazarus and wherein stress arises from a discrepancy between demands and resources. Our model can explain why so many of the students we polled in our study answered that they are starting to feel buried under the weight of material they need to learn. The reported sleeping problems and

concentration problems fit with Selye's [10] General Adaptation Syndrome, as under chronic stress a system can become exhausted and cease to function optimally. We suggest that our findings extend this model by highlighting the powerful effects on these appraisals of social/cultural expectations, thus making it clear that stress is not simply an individual experience but one deeply enmeshed within familial and peer-based pressures. The data on high levels of anxiety about meeting family or peer expectations provided by our study chimed with Bandura's [11] social cognitive theory, which has stressed the influence of observational learning and social experiences and reciprocal effects on behavior. This offers a valuable theory similar to how stress experienced by students is directly pressurized by their social surroundings and the expectation from family and peer competition focus have reported high stress. These results advance the theory of Bandura by linking the social influences to more cultural factors as well, indicating that much of students' use when stressed is linked to cultural gender expectations.

This is consistent with the research conducted by Pomerantz, Altermatt, and Saxon [12] which suggested that high levels of parent-imposed stress could induce in students both physical symptoms of anxiety like headaches or stomachaches and psychological symptoms such as procrastination. The t-test results regarding the high levels of academic anxiety female students exhibit are also in line with existing literature e.g., Pelch [13] which interprets such findings to mean females could most likely face more academic distress as a result of gendered stress by society. Furthermore, the regression analysis of family pressure, cultural expectations, and peer influence closely manifests the framework of Bronfenbrenner's ecological systems theory [14] which explains how an individual's development is influenced by these numerous systems that are interrelated. This research contributes to the literature by presenting novel empirical evidence on how these systems affect students in particular, and further by shedding light on intersections between various systems that co-create organizational perceptions of stress among students. We depict this overarching role of cultural expectations and societal norms on individual stress experiences in a modification by Greenspan and Sroufe [14] of Bronfenbrenner's model.

To address stress, there needs to be an analysis not only of the psychological dynamics but also of the larger social and cultural conditions that structure student experiences. The study highlights the need for looking at societal expectations and family dynamics, and how cultures have an impact on student stress. This reflects Durkheim's [15] theory of social integration and regulation; students belong to a social network and a set of cultural norms that play a powerful

role in shaping their stress. Among these is the pressure to conform to family and societal expectations around academic success, which is a significant stressor but cannot be comprehended without consideration of broader social structures. From a Sociological viewpoint, the data hint at how Pakistani society's perception of medicine as a profession in 'high esteem' not only structures their career aspirations but places significant pressure on students striving to achieve these expectations. This directly follows the idea of "role strain" in sociology, where individuals suffer mental tensions and anxieties in certain roles which results in conflict between a desired role and an actual role.

This study provides evidence of the nuanced effect of academic stress on mental health and also further defines how social experiences are associated with student anxiety. These insights are brought together into the broader context of existing psychological and sociological theory to reveal a rich understanding of the multiplicity of issues at play. This study suggests an integrative stress model combining the psychological, social, and cultural perspectives, novel constructs of cultural stress perception as well as social expectation pressure. By bridging the micro-macro divide, research that adopts this approach not only complements established theories but also achieves a holistic perspective on academic stress processes and opens up new potential for interventions to improve student well-being by targeting individual level as well as structural precursors of stress.

4. Conclusion

The study identifies a landscape of academic-related anxiety in the context of Pakistan and demonstrates the effects of societal expectations on students' mental well-being. The prestige of the medical profession adds extreme social pressure on students at a young age, which creates a culture of unending academic superiority. It is this general influence of a family and the accompanying pressure from peers to fulfill that potential in a career in medicine that is surfacing in the concerns of falling short. Families work both sides of the equation, as a source of comfort and as an engine of expectations that shapes stress. Similarly, the effect of peers brings rivalry and support, a contrast that can escalate anxiety, but competition can alleviate the stress for some. Adding gender disparities to the mix further complicates the picture as girls continue to report higher levels of anxiety than boys - suggesting it is vital to investigate the role that

society's expectations have on mental health within education. The regression analysis reveals how family pressure, peer influence, and cultural purposes work collectively to account for the variance in levels of anxiety, thus highlighting the interplay among different socio-cultural factors affecting the students.

5. Limitations

It is difficult to establish any causal relationships between variables as the study adopted a cross-sectional design; therefore, a longitudinal study might provide a better context for understanding the dynamics of these variables. In addition, the regional and educational focus of the sample may limit the generalizability to wider student cohorts. This is important because avoidance of self-reported data obscures or mitigates tendencies for response bias and therefore, potentially distorts the accuracy of results. To develop adequately targeted interventions against academic-related anxiety in future studies, this limitation must be overcome.

6. Suggestions

The research suggests that:

1. Provide counseling, stress management workshops, and peer support groups.
2. Offer workshops to help families to help students better understand and assist with their difficulties.
3. Create Peer Mentorship Programs for Additional Support During Academic Stressors
4. Innovate around high-stakes examinations through continuous assessment.
5. Be sensitive to the cultural and gender dimensions of mental health in the formulation of educational policies and practices.
6. Establish wellness programs that include physical fitness, stress management, and healthy eating to improve the health of students.
7. Design more scalable learning paths especially with the flexibility to balance academic commitments with personal interests to get enough sleep, thus reducing general stress levels.

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