

ORIGINAL ARTICLE

Fear of Failure Among Medical and Non- Medical Students in Rawalpindi and Islamabad: A Cross-Sectional Study

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ABSTRACT

Objective: To compare the level of atychiphobia in medical and non-medical students and to find an association between year of study, gender, and field of study of students with atychiphobia.

Study Design: A cross-sectional study.

Place and Duration of Study: The study was conducted at the Department of Community Medicine, Foundation University Islamabad (FUMC), and the Rawalpindi campus Pakistan from April 2024 to July 2024.

Methods: A total of 331 students compared to 165 medical students from FUMC (Foundation University Medical College) and 166 non-medical students from FURC (Foundation University Rawalpindi Campus) using a self-administered questionnaire. All consenting MBBS students from 1st to 5th year at FUMC were included, excluding those with psychological issues. The study found a *P*-value of 0.05 when comparing medical and non-medical students, using the Performance Failure Appraisal Inventory (PFAI) Scale and t-tests to identify associations with atychiphobia.

Results: The study included 331 students, with 136 (56 medical and 80 non-medical) showing the low fear of failure, 167 (91 medical and 76 non-medical) showing moderate fear, and 28 (18 medical and 10 non-medical) showing the high fear of failure. The mean age of medical students was 22.13 ± 1.99 , and of non-medical students it was 21.58 ± 0.18 . The atychiphobia in medical students turned out to be 37.2242 ± 7.36865 , and in non-medical students it was 33.3554 ± 8.33904 with a t-value of 4.472. The Performance Failure Appraisal Inventory (PFAI) test found no significant difference in atychiphobia between medical and non-medical students ($P=0.057$). ANOVA results supported this with an F-value of 1.917 and $P=0.107$. An independent t-test also showed no significant difference in atychiphobia between male and female students ($P=0.062$). The analysis was conducted using SPSS 26.

Conclusion: The analysis shows that atychiphobia is not significantly influenced by gender, year of study, or academic field.

Keywords: *Academic Stress, Fear of Failure, Mental Health, Performance Anxiety, Students.*

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Introduction

A phobia is a form of anxiety disorder characterized by an intense fear of a specific object, situation, or event.¹ Phobias can affect academic, behavioral, and social well-being.² This fear can be particularly

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pronounced in high-stakes environments, such as medical education, where the pressure to succeed is immense.

Atychiphobia in students is not limited to fear of failing exams; it also encompasses anxiety about not achieving personal, academic, or social goals. While exams are a common source of fear, students may also fear failing in other areas, such as not meeting personal expectations, facing consequences, disappointing others, social rejection, and a loss of self-worth. This study focuses on atychiphobia and its comparison between medical and non-medical students.

Atychiphobia is prevalent among students, with prevalence rates varying by country and field of study. According to research, individuals with a high atychiphobia tend to avoid tasks where they believe failure is likely, leading to lower overall academic performance and self-esteem.³ A study on undergraduate students at The Hashemite University, Jordan, in 2014-2015 found an overall mean atychiphobia score to be 0.34.⁴ Due to increased academic stress and reduced time for recreational and social activities, medical students are expected to experience greater psychological and emotional distress compared to non-medical students, contributing to their fear of failure.⁵

Research indicates that psychological issues are more prevalent among medical students, which can significantly contribute to their atychiphobia.⁶ Those grappling with atychiphobia may perceive themselves as worthless, anticipate negative evaluations from others, and experience self-doubt, diminished self-confidence, and low self-esteem, which can adversely affect academic performance.⁷

Atychiphobia can impact mental health by causing school absences, reduced concentration, and learning difficulties.⁸ Global studies have shown that medical students experience higher levels of depressive and anxiety symptoms compared to their peers.⁹ However, some studies suggest otherwise. For example, a 2019–2020 study at King Saud University found that while overall fear was low among medical students, third-year students experienced higher levels compared to other years.¹⁰ Findings revealed that Indian dental students experienced significant academic stress, which contributed to a heightened fear of failure. In Srivastava K et al. study.¹¹ Similarly a study done in Pakistan indicated that medical students experience significant levels of stress and fear of failure, primarily due to academic pressures and a heavy workload.¹²

Although previous studies have examined the impact of academic stress on medical students, there is limited research directly comparing their fear of failure with that of students in other disciplines. Few studies have explored whether atychiphobia differs between medical and non-medical students, leaving a gap in understanding the broader academic and psychological factors influencing this fear. This study

aims to address this gap by comparing the levels of atychiphobia between medical and non-medical students and by examining the association of gender and year of study with fear of failure. The objectives are to determine whether significant differences exist between these groups and to provide insights that may inform strategies for reducing the psychological burden associated with atychiphobia.

Methods

This is a cross-sectional study conducted at the Department of Community Medicine, Foundation University Islamabad (FUMC), and the Rawalpindi campus from April 2024 to July 2024. The tool used is a self-structured questionnaire based on the PFAI scale. It is a validated tool. A pilot study on 70 students at the same university was conducted (35 medical and 35 non-medical students). (These students were not included in the analysis of the current study) 1 = least fear and 5 = most fear. Higher scores indicate greater fear of failure. Criteria: 1–2: Low fear of failure, 3: Moderate fear of failure, 4–5: High fear of failure. Questionnaires consist of two parts, the first section contains socio-demographic characteristics, i.e., age, gender, and year of study. And the second part consists of PFAI Scale-based questions, which were scored (1 to 5) individually based on the options chosen by the participants. A sample of 331 students was calculated by Raosoft calculator, which calculates the minimum number of study participants to meet statistical requirements, equally divided between medical and non-medical students, and an equal proportion of male and female students from each year, was selected using a simple random sampling technique to achieve a 95% confidence interval. All consenting MBBS students from 1st to 5th year at FUMC were included, while students with pre-existing psychological conditions were excluded. Data was collected over 1 month and 9 days (7th April to 16th May 2024) via an online Google Forms questionnaire with follow-up reminders. Although the questionnaire was distributed via Google Forms, participants were selected using simple random sampling from a predefined list of eligible students, ensuring an equal probability of selection. The study was conducted after approval from the University's Ethical Committee vide letter no. FF/FUMC/215-433-1-Phy/24, dated 05th March 2024, with informed

consent obtained from all participants, ensuring their confidentiality and anonymity. SPSS 26 was used for analysis, including t-tests, ANOVA (for quantitative variables), and Chi-Square tests (for qualitative variables). Levene's test checked the homogeneity of variances. t-tests compared medical and non-medical students, and ANOVA assessed atychiphobia between the groups.

Results

A t-test was applied on PFAI scores between medical

and non-medical students. The calculated P-value was 0.057 indicating that the association between, indicating that the association between the PFAI scores of medical and non-medical students was not significant. The P-value of 0.057 indicates that there is no significant relationship between PFAI scores among medical and non-medical students. The mean scores were 37.33 for medical students, and for non-medical students, it was 33.5.

Male vs. Female Students: The group statistics for

Table 1: Medical and Non-Medical Group Comparison

Variable	Medical students (mean ±SD)	Non-medical Students (mean± SD)	t-test value	P- value
Atychiphobia score PFAI	37.22±7.3	33.35±8.33	4.4	0.057

Table 2: Independent samples t-test between the male and female subgroups

Performance Failure Appraisal Inventory (PFAI) SCORE	F	Significance	t-test value	df	Mean difference	Standard error difference
Equal variances assumed	3.510	0.062	-4.169	329	-3.64367	0.87
Equal variances not assumed	-	-	-4.242	327.43	-3.64367	0.85

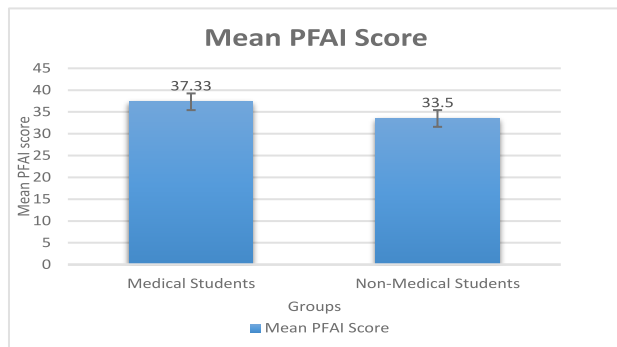


Fig.1: Mean Performance Failure Appraisal Inventory (PFAI) scores of medical and non-medical students

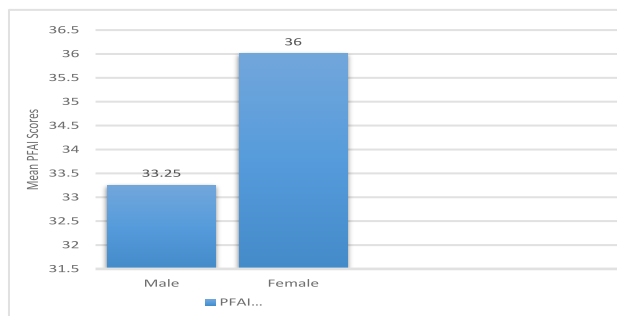


Fig.2: Sub group performance failure appraisal inventory (PFAI) scores by gender

male vs female indicated a P-value of 0.062, which is also insignificant, meaning that atychiphobia is the same in both genders.

A one-way ANOVA test was applied to check the relationship between the various years of study and fear of failure. The P-value came out to be 0.107, which was insignificant, hence indicating that there is no relationship between year of study or semester with fear of failure. The mean PFAI Scores of the five years of study also lie within a narrow range, as indicated in the bar-graph below

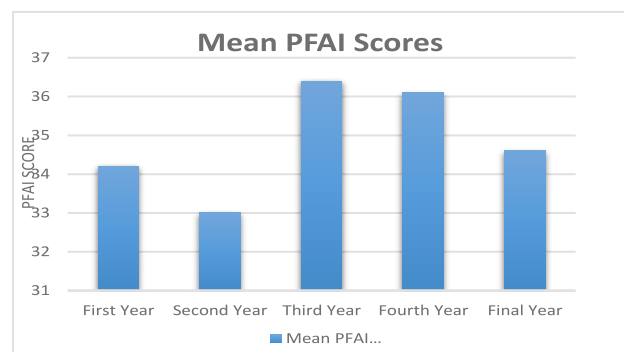


Fig 3: Mean Performance Failure Appraisal Inventory (PFAI) Scores of 5 Years of study

Discussion

Atychiphobia is prevalent among students, as the pressure to achieve academic success is often intense. This fear can vary based on several factors, such as gender, academic level, GPA, and field of study.¹³ Our study examined differences in atychiphobia based on gender and found no significant variation between male and female students, as reflected by a *P*-value of 0.062. This finding implies that fear of failure is experienced similarly by both genders. This result contrasts with previous studies, which suggest that females generally experience a higher level of fear of failure.¹⁴ Furthermore, research conducted by Thompson, Sharp, and Alexander (2008) indicated that females score higher in guilt-proneness and self-criticism, which are associated with an increased fear of failure.¹⁵ However, there is literature that supports our findings, implying that atychiphobia is less about gender and more about personal coping mechanisms and perceptions of academic challenges. In contrast, a study conducted in China on filial obligations and expectations showed that men felt a stronger obligation to provide financial assistance to their elders, further contributing to their fear of failure in fulfilling these responsibilities.¹⁶

The results indicated no significant difference between the two groups, negating the widespread belief that medical students experience more atychiphobia due to the perceived rigor of their academic workload. This finding is consistent with a study conducted at a university in Northern Ireland, which similarly found that fear of failure is comparable among medical and non-medical students.^{17,18} The consistency in these findings may reflect the comparable academic pressures faced by students across different disciplines.¹⁹

The belief that medical students experience greater fear may stem from the high expectations society places on them, given the responsibilities of their future roles. The rigorous and demanding nature of medical training can further strengthen this perception. However, students in non-medical fields also face significant challenges, including intense competition for jobs and uncertainty in career direction, which can lead to comparable levels of stress

With respect to the academic year, atychiphobia was generally consistent across students. However, prior research indicates that third-year medical students experience heightened fear of failure, particularly due to the complexity of subjects such as Pharmacology and the transition to clinical practice.²⁰

Although this study provides meaningful insight into the comparison of atychiphobia between medical and non-medical students, several limitations should be considered when interpreting the findings. The research was conducted exclusively at FUI, which restricts the generalizability of the results to a wider population. Moreover, differences in academic structures, workloads, and expectations across disciplines may influence students' levels of fear, thereby affecting the comparability of outcomes.

Data collection was carried out using an online Google Form rather than through face-to-face or interview-based methods, which may have limited the depth, clarity, and consistency of responses. This approach can also affect the overall reliability of the data, as participants may interpret questions differently or provide less thoughtful responses in the absence of direct interaction.

Furthermore, the reliance on self-reported data introduces the possibility of response bias, which may compromise the accuracy of the measured outcomes. Social and cultural factors may also have played a role in shaping participants' responses, as students from diverse backgrounds or those adjusting to new academic environments may experience and report fear differently. Additionally, limitations of the measurement tool itself may have affected the precision of the scores, further influencing the interpretation of the results.

Addressing and reducing the atychiphobia requires institutional efforts to create supportive learning environments. Encouraging students to build resilience and providing resources to help them manage academic pressures is essential. Fostering intrinsic motivation can significantly reduce fear-related anxiety and improve academic performance.²¹ These findings suggest that educational institutions should incorporate motivational strategies to help students cope, regardless of their chosen discipline.

Conclusion

Our study found no significant differences in atychiphobia between male and female students or between medical and non-medical disciplines, challenging common perceptions. The fear of failure seems to be influenced more by individual coping mechanisms than by gender or academic field. While societal expectations may contribute to perceived stress, students across disciplines experience similar pressures. Institutional support, resilience-building, and motivational strategies are crucial in addressing this fear and enhancing students' academic well-being.

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Conflict of Interest: The authors declare no conflict of interest

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AU: Conception, design of the work, and approval for final submission

AY: Data acquisition, curation, statistical analysis, and approval for final submission

AN: Validation of data, interpretation, write-up of results, and approval for final submission

TA: Revising, editing, supervising for intellectual content, and approval for final submission

AB: Manuscript writing for methodology design, investigation, and approval for final submission

NZ: Writing the original draft, proofreading, approval for final submission, and approval for final submission

AU is the nominated guarantor and takes full responsibility for the overall content and integrity of the work

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