Preliminary Study on the Prevalence of Anxiety and Depression Among Secondary School Students in Lower Chitral, Northern Pakistan

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ABSTRACT

The number of middle and high school students suffering from depression and anxiety has soared over the years, affecting students' academic life and mental and physical health. Prevalence of anxiety and depression among students of the Lower Chitral, Pakistan was investigated in the present research. A total 374 (169 science and 105 humanities) students were assessed using the Beck Depression Inventory (BDI) and the Generalised Anxiety Disorder 7-item (GAD-7) scale. According to descriptive statistics, the prevalence of severe and moderate anxiety were 27.3% and 39.8% respectively. Severe depression was reported in 18.9% of the students and mild depression in 48.6% of the students. The severity of anxiety was highest in subjects who had background in science in comparison to those students who had a background in social sciences. Nonetheless, the difference between students from science and humanities in terms of anxiety or depression levels was not statistically significant. These results highlight the need for specific mental-health interventions that take into consideration the disciplinary-specific needs of each programme of study.

INTRODUCTION

Adolescence is one of the most sensitive and developmental periods in someone's life. It is a phase when young people undergo profound emotional, psychological and social changes (Agarwal et al. 2020). For many students, especially those in secondary and tertiary institutions, this is a daunting time (Pascoe et al. 2020). The task of balancing aspirations for academic achievement and worries about identity, social interactions, and future career paths can be psychologically demanding (Chemagosi 2024). As a result, adolescents become more and more prone to mental-health disturbances, such as anxiety and depression (Blakemore 2019).

Anxiety is a pervasive worldwide condition and is the most common psychiatric diagnosis in adolescents (Racine et al. 2021). This is not just about how a child feels, but can directly affect academic functioning and social relationships, and usually limits children's ability to reach their full potential (Polanczyk et al. 2015). There is an increasing concern about the mental health of school and college students in Pakistan. Around 15 million individuals are affected with mental health issues in Pakistan as per studies (Javed et al. 2020). Anxieties and depressions among students reveal deeper levels of social and structural inequalities (Khalid et al. 2019).

Academic stress is a major factor in determining mental health issues (Subramani and Kadhiravan 2017). There is empirical evidence that students of scientific streams are more stressed and depressed than their counterparts in the humanities (Sharma et al. 2021). This phenomenon may be attributed to the increased academic pressure and employment opportunities due to science disciplines (Hammad 2016). As a result, the field of study seems to influence student mental health trajectories.

Chitral District of Khyber Pakhtunkhwa is a good example of this dynamic. Located in mountainous terrain and far from many of the amenities of day-to-day life, students in this region face many challenges beyond merely academic performance. Mental health services are limited, and social restrictions discourage emotional disclosure, especially for female students (Mir et al. 2012). Societal expectations and traditional gender roles often silently contribute to the emotional load teens already carry (Sanauddin et al. 2022).

This study, therefore, set out to explore how widespread anxiety and depression are among secondary school students in Lower Chitral, particularly comparing

science and humanities stream students. Understanding their mental health situation can offer a much-needed starting point for creating relevant interventions—such as school-based counselling, mental health awareness sessions, and support systems that are both accessible and culturally appropriate.

MATERIALS AND METHODS
Study Design and Participants
From March to April 2023, a cross-sectional survey was conducted in four secondary schools of the Lower District of Chitral. A total of 374 students from grades 9 and 10 were included in this study through cluster sampling. Out of these, 169 were from science background and 105 humanities.

Participants completed two self-report scales, the Beck Depression Inventory (BDI) and the 7-item Generalized Anxiety Disorder (GAD-7) scale. The BDI to evaluate severity of depressive symptoms and GAD-7 to determine frequency of anxiety symptoms within the last two weeks. Both scales have also been validated with adolescents. A trained research assistant administered the measure in the classroom. The aims of the study was presented to the subjects who were willing to participate, and confidentiality/ anonymity was insured. Verbal informed consent was obtained from both students and their teachers.

Data Analysis
The frequency of anxiety and depression was estimated using descriptive statistics. To compare science versus humanities students, the chi-square test was utilized using p value of less than 0.05 to represent statistical significance.

RESULTS
Prevalence of Anxiety
Of 374 patients, 27.3% (n=102) were experiencing severe anxiety, while 39.8% (n=149) had mild anxiety level and no anxiety was found in 32.9% (n=123) students. In the science group, 38.6% had severe anxiety and 46.1% had mild anxiety. The findings also revealed that in the humanities, 41.9% of subjects had severe anxiety, and 38.1% had mild anxiety. These findings suggest that science students experience more anxiety.

Table 1
Distribution of Anxiety among Science and Art Students

Academic Group	Severe Anxiety	Mild Anxiety	Normal	Total
Science	72	105	92	269
Humanities	30	44	31	105
Total	102	149	123	374
Chi-square (χ^2)	-	-	-	0.75
Df	-	-	-	2
p-value	-	-	-	.69

Note. There was no significant association between academic group and anxiety levels, $\chi^2(2, N = 374) = 0.75$, $p = .69$.

Figure 1
Percentage Distribution of Anxiety among Science and Art Students
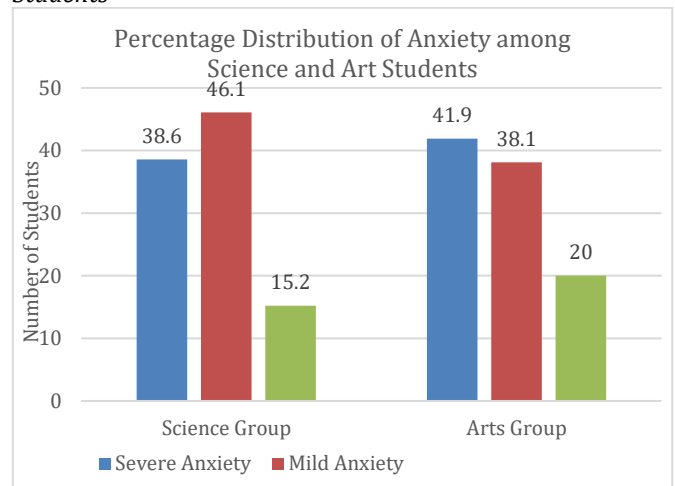
Prevalence of Depression
Beck's Depression inventory was used to estimate level of depression among students. For depressive symptoms, 18.9% (n=71) of students displayed severe symptoms, 48.6% (n=182) mild and the depression score of 32.3% (n=121) students was normal. Among the students of science stream 17.5% (n=47) were experiencing severe depression and 49.1% (n= 132) reported mild depression. The prevalence of severe depression was 22.9% in the humanities group, and that of mild depression was 47.6%. The frequency of depression was also parallel in both groups.

Table 2. Percentage Distribution of Beck's Depression Scores Among Science and Humanities Students in Secondary Schools of Lower Chitral District

Table 2
Depression Levels by Academic Group

Academic Group	Severe Depression	Mild Depression	Normal	Total
Science	47	132	90	269
Humanities	24	50	31	105
Total	71	182	121	374
Chi-square (χ^2)	-	-	-	1.55
Df	-	-	-	2
p-value	-	-	-	0.46

There was no significant association between academic group and depression levels, $\chi^2(2, N = 374) = 1.55$, $p = .46$. Figure 2

Figure 2
Percentage Distribution of Beck's Depression Scores
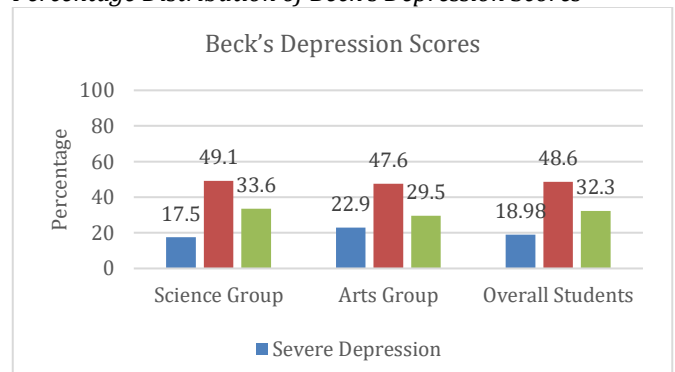
DISCUSSION

This survey reports high rates of anxiety and depression among lower secondary school students in Lower Chitral District, with noticeable differences depending on their academic streams. Science students reported higher levels of anxiety, likely due to the demanding nature of their coursework and the pressure to perform well in a competitive academic environment. However, the results were not significantly different at 0.05 level of significance. These findings are consistent with the findings of other studies where students studying science were found to be more stressed and depressed than students studying the humanities (Sharma et al. 2021). High workload, frequent evaluation and high demands for entrance examination preparation have been reported to drain the psychological resources of science students (George 2024). In areas like Chitral, where academic performance is closely tied to family honour and future prospects, this pressure can have a profound effect on young minds (Shah 2015). Importantly, depression scores did not show a marked difference between academic streams indicating that extramural factors like family dynamics, communal stressors, or cultural expectations may have a greater impact on students' emotional well-being. Researchers have also reported that chaotic home environments, financial difficulties, or discord between parents and children are also clear risk factors for depression in adolescents (Reiss et al. 2019).

In a conservative region such as Chitral, where young people have few recreational facilities and social pressures are often stringent, it is not surprising if some of them feel emotionally restricted or unsupported, whether they study in humanities or science faculty. With such high levels of anxiety and depression, it suggests that schools must be about more than covering the syllabus. The introduction of routine counselling services, stress management workshops and open dialogues on mental health can help students in their mental health issues. Evidence suggests that school based mental health programmes are effective in strengthening student help in dealing with stress and emotional problems.

CONCLUSION

The study has revealed the high prevalence of anxiety and depression among secondary schools' students in Lower Chitral District with science stream students exhibiting a notably higher level of anxiety. These findings highlight the importance of developing specialized mental health interventions that are informed by the specific challenges of various academic streams. Educators and policymakers should consider incorporating school-based mental health services as one of the key ways to promote student well-being and school functioning. Collaborative efforts on the part of teachers, parents and community stakeholders are necessary to create an environment where students feel secure to express their concerns and seek assistance.

Limitations

As this is a cross-sectional study, it is impossible to infer cause and effect of academic stream in relation to mental health outcomes. In addition, the use of self-reports creates potential bias. Future prospective studies should include other factors such as socioeconomic status, family context and access to mental health resources to paint a more comprehensive picture of the determinants of adolescent health.

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