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COVID-19, DEPRESSİON AND ANXİETY: A STUDY AMONG ADOLOSCENTES

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Abstract. Objective: Our aim in this study was to compare the anxiety students who were studying for national exams and who were not studying for these exams. In addition, it was evaluated whether the exam anxiety of patients who had Covid and those who did not have Covid increased during this period. **Materials and Methods:** The study was conducted in 2022. A total of 100 students were included to our study. Group 1: COVID-19 positive group, group 2: COVID-19 negative control group. School score, BAI and BDI scores were evaluated. **Results:** No significant demographic differences were found between COVID-19-positive and control groups in age, gender, or socio-economic status (p>0.05). The COVID-19 group exhibited higher anxiety levels with a mean BAI score of 24.7±11.4 compared to the control's 15.5±8.80 (p<0.001). Their academic performance was also lower (mean school score: 66.2±20.8) than controls (79.3±18.65, p=0.001). Negative correlations between BAI (r=-0.335, p<0.001) and BDI (r=-0.223, p=0.026) with school scores suggest that higher anxiety and depression are associated with poorer academic outcomes. **Conclusions:** Our study highlights the significant impact of exam stress and COVID-19 on students' anxiety levels and academic performance.

Keywords: Adoloscentes, COVID-19, depression, anxiety, school scores

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Introduction

Adolescence, a phase transitioning from childhood to maturity, often encapsulated between the ages of 10 and 18, represents a period of profound growth and transformation. It is a time marked by deepening peer relationships, burgeoning autonomy in decision-making, and a quest for intellectual and social belonging. This developmental stage, housing over 350 million individuals in the Southeast Asia Region alone, is pivotal in shaping future adults. However, it is also a time laden with challenges, particularly in the academic sphere[1,2].

In countries like India, the pressure on senior secondary and pre-university students is immense, especially for those aspiring to enter competitive fields like medicine. The pursuit of academic success in this context is not just an educational endeavor but a battle against intense competition, with limited seats available in prestigious institutions[3]. This scenario creates a breeding ground for high levels of stress and anxiety, often leading to severe mental health issues, including depression and anxiety, which have been predicted to rise significantly in adolescents[4].

The challenge is further compounded in the context of university education, perceived as one of the most stressful academic pathways. Students face a myriad of stressors including academic burden, peer pressure, high parental expectations, and the physical toll of inadequate sleep. The stress experienced can manifest in various physical symptoms like headaches, fatigue, and emotional disturbances such as anxiety and depression. Alarmingly, the rate of psychological distress and suicide among medical students is notably high, underlining the urgency of addressing these issues[5,6].

Moreover, the advent of the COVID-19 pandemic has exacerbated these challenges. The abrupt shift to online learning, coupled with reduced clinical exposure, has disrupted the traditional educational framework, adding to the stress and anxiety experienced by students. This situation calls for a reevaluation of educational strategies, emphasizing the need for a more holistic approach to address the mental health of students[7].

Our aim in this study was to compare the anxiety students who were studying for national exams and who were not studying for these exams. In addition, it was evaluated whether the exam anxiety of patients who had Covid and those who did not have Covid increased during this period.

Materials and methods

Participants were selected from various high schools, ensuring a balanced representation in terms of age, gender, and socio-economic background. Anxiety and depression levels were assessed using Beck depression inventroy (BDI) and Beck anxiety inventory (BAI). The school score was noted and evaluated. The data collection

was conducted over three months, with assessments done in a controlled environment. The study was conducted in 2022. A total of 100 students were included to our study. Group 1: COVID-19 positive group, group 2: COVID-19 negative control group. For statistical analysis the continues variables were compared using t-test model and the categoric variables with chi-square test via SPSS v27. p<0.05 was considered statistically significant.

Results

A total of 100 students were included to this study. The demographic analysis revealed no significant differences in age between the COVID-19 group (mean age = 15.2±3.1 years) and the control group (mean age = 14.9±3.3 years), with a p-value greater than 0.05. Gender distribution was also similar between the COVID-19 group (60% male and 40% female) and the control group (64% male and 36% female), with no significant differences (p>0.05). Socio-economic status across low, middle, and high categories showed no significant difference between the two groups (p>0.05), with 20% of the COVID-19 group and 18% of the control group being from a low socio-economic status, 64% and 60% from a middle status, and 16% and 22% from a high status, respectively.

When comparing psychological well-being, the mean Beck Depression Inventory (BDI) score for the COVID-19 group was 21.1±10.8, while the control group had a slightly lower mean score of 19.2±10.30, which did not represent a statistically significant difference (p=0.390). However, the Beck Anxiety Inventory (BAI) scores were significantly higher in the COVID-19 group (24.7±11.4) compared to the control group (15.5±8.80), with a p-value of less than 0.001, indicating a significantly greater anxiety level among those who had COVID-19.

The academic impact of COVID-19 was evident in the school scores, with the COVID-19 group having a mean score of 66.2±20.8, which was significantly lower than the control group's mean score of 79.3±18.65 (p=0.001). This suggests that adolescents who contracted COVID-19 experienced a notable decline in academic performance compared to their non-infected peers **(Table 1).**

Table-1

Compariosn of groups

	COVID-19 (n=50)	Control (n=50)	p-value
Age	15.2±3.1	14.9±3.3	>0.05
Gender			>0.05
Male	30 (60%)	32 (64%)	
Female	20 (40%)	18 (36%)	
Socio-economic status			>0.05
Low	10 (20%)	9 (18%)	
Middle	32 (64%)	30 (60%)	
High	8 (16%)	11 (22%)	
BDI score	21.1±10.8	19.2±10.30	0.390
BAI score	24.7±11.4	15.5±8.80	<0.001
School score	66.2±20.8	79.3±18.65	0.001
**** BAI: Beck anxiety inventroy score, BDI: Beck depression inventroy score***			

A negative corellation was found between BAI and school score (p<0.001, r= -0.335). A negative correlation was also found between BDI and school score (p=0.026, r=-0.223) **(Table 2 and Figure 1).**

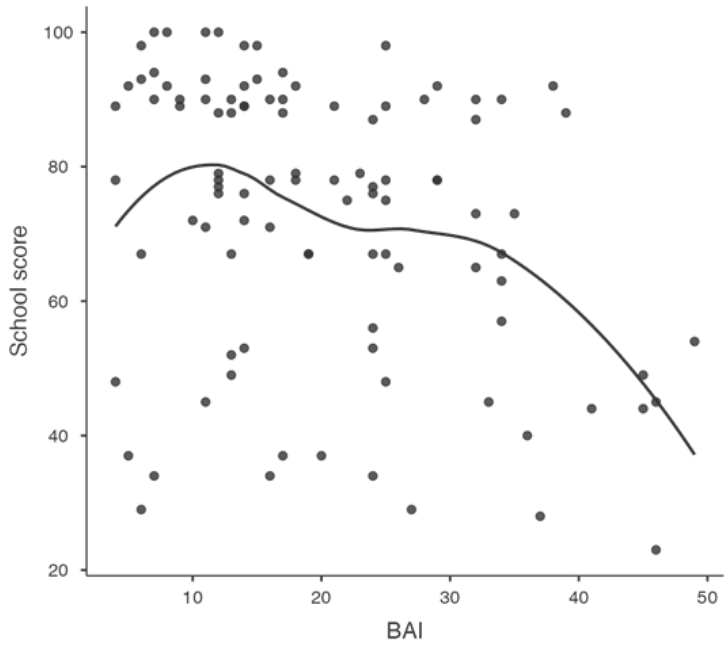
Table-2

Correlation between BAI, BDI, and school score

		BAI	BDI	School score
BAI	Pearson's r	—		
	Df	—		
	p-value	—		
BDI	Pearson's r	0.096	—	
	Df	98	—	
	p-value	0.340	—	
School score	Pearson's r	-0.335	-0.223	—
	df	98	98	—
	p-value	<.001	0.026	—
*** BAI: Beck anxiety inventroy score, BDI: Beck depression inventroy score**				

Figure-1

Negative correlattion between BAI and school score



Discussion

The findings of our study resonate with the literature indicating that adolescence is a critical period characterized by various psychological and developmental challenges. The pre-existing literature suggests that academic pressures, especially in the context of preparing for national exams, can precipitate high levels of stress and anxiety among students[8]. Our study adds to this body of evidence by demonstrating that adolescents who were preparing for national exams exhibited higher levels of anxiety, as measured by the Beck Anxiety Inventory (BAI), compared to those who were not, which is consistent with previous research findings[9].

The increased BAI scores among students who had contracted COVID-19 in our study are in line with the global observations of heightened anxiety levels during the pandemic. The shift to online learning and the uncertainty surrounding the pandemic have been shown to exacerbate stressors, especially in the educational context[10]. This disruption has likely contributed to the observed increase in anxiety levels in the COVID-19 positive group.

Interestingly, our study did not find a significant difference in Beck Depression Inventory (BDI) scores between the COVID-19 and control groups, suggesting that while anxiety levels were affected, depression may not have been significantly impacted. This could be due to various coping mechanisms or resilience factors not measured in this study but noted in the literature as protective against depression during stressful times[11].

The significant negative correlation between both BAI and BDI scores and school scores underlines the impact of psychological well-being on academic performance. Previous studies have documented the detrimental effects of high anxiety and depression levels on cognitive functions and academic achievements[12]. Our findings further support the notion that psychological distress can compromise students' academic outcomes, as those with higher BAI scores had notably lower school scores.

The decrease in school scores among students who had COVID-19 could reflect the direct impact of the illness, the associated psychological distress, or the disruption to their academic routines. This aligns with research suggesting that health-related school absenteeism can adversely affect academic performance[13].

Given the high rates of psychological distress and its correlation with academic performance, as well as the additional burden imposed by the COVID-19 pandemic, there is an urgent need to address mental health in the academic setting. Interventions such as counseling, stress management programs, and a supportive educational environment can be instrumental in mitigating the adverse effects of exam stress and pandemics on students' mental health and academic success[14–16].

The limitations of this study include the cross-sectional design, which does not allow for causal inferences, and the reliance on self-reported measures, which may be subject to bias. Future research should consider longitudinal designs to track changes over time and include objective measures of academic performance.

In conclusion, our study highlights the significant impact of exam stress and COVID-19 on students' anxiety levels and academic performance. It underscores the need for comprehensive strategies to support adolescent mental health and well-being, especially during times of global crisis.

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