

# Impact of the COVID-19 Pandemic on the Lifestyle and Mental Health of Undergraduate Students: A Study at a Public Sector University in Rawalpindi



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## Abstract

**Background:** The COVID-19 pandemic, a pivotal global crisis, has profoundly impacted health systems, economies, and societies. Government-mandated lockdowns, particularly affecting young adults, including a substantial student population, have led to heightened anxiety, uncertainty, and loneliness due to extended university closures. These circumstances contribute to affective and behavioral problems, significantly affecting students' mental health and lifestyle. This study aims to evaluate the specific impact of the COVID-19 pandemic on the lifestyle and mental health of undergraduate students at a public sector university in Rawalpindi.

**Methods:** A descriptive cross-sectional study at the National University of Medical Sciences Rawalpindi (June-Dec 2022) involved 340 participants. An online survey, using a structured closed-ended questionnaire, collected demographic information and assessed pandemic effects on lifestyle and mental health. Five lifestyle questions, twelve mental health questions evaluating emotional impact, and five questions assessing emotions were included. Results were analyzed and presented in frequencies and percentages.

**Results:** Most students (55%) were aged 21-23, with 18% male and 82% female. Urban residency was predominant (88.23%), and many were day scholars (61.6%) with employed fathers (90%). The pandemic had pronounced negative effects on students' lifestyles, including worsened diet (44%), decreased sleep (38%), reduced physical activity (50%), and changes in exercise habits (40%). Undesirable feelings and emotions regarding mental health were elevated.

**Conclusion:** The COVID-19 pandemic has enduringly impacted students' lifestyle and mental health, emphasizing the need for resource allocation, particularly in healthcare-focused universities. Implementing improvements post-COVID is crucial for long-term student well-being benefits.

**Keywords:** COVID-19 pandemic, lifestyle and mental health, public sector university

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## Introduction

The COVID-19 pandemic is the result of SARS-CoV-2 virus that started in December 2019 (1). The pandemic was announced by the World Health Organization after four months. The pandemic resulted in 53,164,803 cases with 1,300,576 confirmed deaths worldwide by November 2020 (2,3). Among others, education and healthcare industries were the most affected resulting in a substantial damaging impact on global mental-health. In the UK, the government has implemented strict lockdowns in an effort to contain the virus (4). A study conducted in the UK (5) highlighted the adverse psychological effects of isolation, which included symptoms of post-traumatic stress disorder, confusion and anger.

A notable increase in damaging harmful emotions and lifestyle changes among medical school students have been seen across different medical schools across the UK as students have reported feeling overwhelmed and stressed (6). Similar responses were observed when course heads from other healthcare faculties, including nursing and paramedical courses, were surveyed. These findings are consistent with reports from various international research studies that highlight the adverse effects upon medical students in some parts of the world due to the pandemic (7-14).

The COVID-19 pandemic being one of the major global crises has had far reaching consequences for health systems, societies and economies. Uncountable people have died, and families and

communities have been stressed and disconnected. As people tackle with these health, economic and social impacts mental health has been widely affected. Majority of us became more apprehensive but for some COVID-19 has magnified much more serious mental health problems. A countless number of people have informed psychological distress and symptoms of depression, anxiety or post-traumatic stress heading to signs of suicidal thoughts and behaviors including among health care workers and students. Some groups of people have been affected much more than others. Faced with extended University closures young people have been left vulnerable to social isolation and disconnectedness which can fuel feelings of anxiety, uncertainty and loneliness and lead to affective and behavioral problems (15).

Healthcare students like forefront healthcare workers, are predominantly vulnerable to the ill psychological effects of the pandemic (11). With Universities closing down and the disruptions to instruction, students have experienced a loss of peer assistance links and difficulties volunteering in the hospitals during this catastrophe (12–14). While some researchers have looked into the pandemic's psychological impact on healthcare students, few have specifically examined the alterations in lifestyle and habits that have resulted from the pandemic.

COVID-19 pandemic has led several nations, including Pakistan, to implement lockdowns as a means to curb the spread of the disease. However, these government-mandated lockdowns can also have adverse psychological consequences for young adults, including students (16). The psychological influence of the COVID-19 pandemic on students' needs to be addressed and to develop effective strategies to support their mental health and well-being during these challenging times.

Ali et al (15) conducted a study using a questionnaire designed by Cellini et al, (17) to investigate the relationship between sleep patterns variations, time perception, digital media usage, and their adverse effect on the students' mental health status from diverse educational backgrounds.

After declaration of COVID-19 as global pandemic, prompted many countries including Pakistan, to take precautions to reduce the spread of the virus (18). On March 21, 2020, Pakistan implemented a comprehensive lockdown, which included the closing the public places such as gyms, restaurants, parks, and cinemas (19). Sadly, observing the instructions of Government of self-isolation resulted in the mental health status of students in a negative manner. The majority of students reported an augmented threat of depressive symptoms, disorders in mood and irritability (20).

Other studies have also indicated that being enforced to stay at home all the day could cause disturbance in sleep patterns and daytime stress, which in turn could

lead to wakefulness and irritability (21). Individuals ended up going to sleep and waking up at later hours, while recording poor sleep patterns and quality inconsistently (17).

Globally, the public is being primed about SARS-CoV-2 infection physical outcomes, preventive steps and how to deal with symptoms of covid. However, the impact of this pandemic on the individuals mental health and life style has not been studied at length and are still not known. As all struggles are concentrated on understanding the epidemiology, signs and symptoms, communicability, and control of its outbreak, there has been very little concern communicated over the effects on the individuals mental health and on approaches to counteract stigmatization. People's behavior may greatly affect the dynamics of pandemic by changing the brutality, communicability, disease flow, and consequences. The present situation requires raising awareness in public, which can be valuable to deal with this disaster. This study provides a detailed overview of the impact of COVID-19 outbreak on the mental health and life style of students (22).

This study aimed to survey undergraduate students on how the pandemic has impacted their lifestyles and mental health, with the findings used to develop appropriate student support strategies that can assist in communicating awareness of the disease's impact and management. These practical recommendations can benefit students in dealing with the post-pandemic effects.

## Methodology

This Descriptive Cross-Sectional research, conducted on 340 study participants over a period of six months from June to December 2022, was to evaluate the impact of COVID-19 Pandemic on the lifestyle and mental health of undergraduate students of a Public Sector University. The Questionnaire was distributed to 346 students; however, six students did not give consent, so the remaining 340 students were included. The participating students of the study belonged to National University of Medical Sciences Rawalpindi who were enrolled under the faculty of Multidisciplinary studies and faculty of Social Sciences and Humanities. The participants completed online survey consisting of three sections: demographics, lifestyle and the mental health; which included the feelings and emotions of the students.

The structured closed ended questionnaire was used and tested after conducting a pilot study on 20 respondents. It comprised of two parts: Part A included the biodata of students; age, gender, student status (day scholar, hostelite), educational status (program enrolled), residential status (urban, rural), and parents employment status (employed, unemployed). Part B included the questions related to pandemic's impact on lifestyle and

mental health of undergraduate students. Different parameters were used as the study variables; 5 questions were asked to gauge the COVID pandemic's impact on lifestyle; change in diet, exercise habits, sleep pattern, appetite, and level of physical activity. The lifestyle section included questions constructed based on the survey carried out by Galle et al (2020) designed to gauge the knowledge and behavior regarding the COVID pandemic in undergraduate students in Italy (9).

Another set of parameters were used as the study variables; different questions were asked to evaluate the COVID pandemic's impact on the mental health which included the feelings and emotions of students. Total of 12 questions were related to the mental health (feelings); feel nervous and anxious, worrying too much, easily annoyed or irritable, trouble relaxing, feel afraid for something awful, feel detached from others, poor concentration, and indecisive attitude, deteriorating work performance, feel nervous and stressed, feel confident handling personal problems, feel unable to cope with things. Next set of 5 questions were related to mental health (emotions); sadness, irritability, fatigue, frustration, and loneliness. This section was designed to acquire descriptive data that includes assessment of character and associated symptoms found in disorders of mental health. The "DASS- 21: Depression Anxiety Stress Scales- 21" was utilized in preparation of the questions (21).

The responses of the results were noted in frequencies and percentages and the Statistical analysis was done by using SPSS-23.

**IRB Approval:** Institutional Review Board & Ethical Committee of NUMS (IRB No: O6/IRB&EC/NUMS/12 dated 29 August 2022) approved the study. Duly confirmed "informed consent" by IRB was used to get the consent from the study participants and confidentiality was assured.

## Results

In this study total participants were 340 out of which male students were (n=60;18%) and female (n=280; 82%). The age of participants was between 18-23 years of age out of which (n=153;45%) belonged to age group 18-20 years and (n=187;55%) to age group 21-23 years. Regarding the residential status (n=300;88.23%) lived in urban sector and (n=40;12%) were from rural areas. Majority were day Scholars (n=209;61.6%) and hostelites (n=131;38%). Total (n=224;66.1%) students were from the surrounding areas belonging to Islamabad, Rawalpindi, Taxila and Wah Cantt. The percentage of employed fathers was (n=306;90 %) and employed mothers (n=34;10 %).

Part B of the questionnaire was concerned with the impact of COVID-19 pandemic on the students in regards of Life style and mental health. Table 1: tabulates the results of COVID-19 pandemic's impact on lifestyle. Table 2: Results of COVID-19 pandemic's impact on mental health (Feelings) and Impact of COVID-19 on mental health (Emotions) are given in Table 3.

**Table 1. Impact of Covid-19 pandemic on the Lifestyle of Undergraduate students (n=340)**

S No.	Study Variables	Freq.	%
1.	Has your diet changed		
	• Worse than before	149	44%
	• Better than before	82	24%
2.	Has your Exercise habits changed		
	• Same as before (active)	88	26%
	• Decreased	136	40%
3.	Has your sleep pattern changed		
	• Same as before/ no change	116	34%
	• Decreased	129	38%
4.	Has your appetite changed		
	• Same as before/no change	75	22%
	• Decreased	68	20%
5.	Has your level of physical activity changed		
	• Active as before	197	58%
	• Increased	82	24%
	• Decreased	88	26%
		170	50%

**Table 2. Impact of Covid- 19 Pandemic on the Mental Health (Feelings) of Undergraduate Students (n=340)**

S No.	Study Variables	Freq.	%
1.	Feel nervous and anxious or on edge		
	• Nearly every day	81	24%
	• More than half	41	12%
	• Several days	200	59%
2.	Worrying too much about different things		
	• Nearly every day	18	5%
	• More than half	40	12%
	• Several days	140	41%
3.	Trouble relaxing		
	• Nearly every day	160	47%
	• More than half	40	12%
	• Several days	140	41%
4.	Easily annoyed or irritable		
	• Nearly every day	0	0%
	• More than half	55	16%
	• Several days	190	56%
5.	Feeling afraid, as if something awful might happens		
	• Nearly every day	109	32%
	• More than half	27	8%
	• Several days	61	18%
6.	Not being able to control or stop worrying		
	• Nearly every day	143	42%
	• More than half	105	31%
	• Several days	59	17%
	• Not at all	151	44%
		25	7%

S No.	Study Variables	Freq.	%
7.	Feeling detached from others		
	• Very often	116	34%
	• Sometimes	136	40%
	• Almost never	68	20%
8.	Poor concentration and indecisive		
	• Very often	112	33%
	• Sometimes	118	35%
	• Almost never	91	27%
9.	Deteriorating work performance		
	• Very often	68	20%
	• Sometimes	190	56%
	• Almost never	61	18%
10.	Feeling nervous and stressed		
	• Very often	122	36%
	• Fairly often	157	46%
	• Sometimes	48	14%
11.	Feel confident handling personal problems		
	• Very often	127	37%
	• Fairly often	175	52%
	• Sometimes	27	8%
12.	Felt unable to cope with things you had to do		
	• Very often	7	2%
	• Fairly often	4	1%
	• Sometimes	127	37%
	Never	175	52%
	• Very often	184	54%
	• Fairly often	50	15%
	• Sometimes	19	6%
	Almost never	5	2%
	• Never	82	24%

**Table 3: Impact of Covid- 19 Pandemic on the Mental Health (Emotions) of Undergraduate Students (n=340)**

S No.	Study Variables	Freq.	%
1.	Sadness		
	• Can't say	34	10%
	• Decreased	145	43%
	• Increased	155	46%
2.	Irritability		
	• Can't say	7	2%
	• Decrease	177	52%
	• Increased	146	43%
3.	Fatigue		
	• Can't say	10	3%
	• Decrease	41	12%
	• Increased	210	62%
4.	Frustration		
	• Can't say	81	24%
	• Decrease	123	36%
	• Increased	190	56%
5.	Loneliness		
	• Can't say	8	2%
	• Decrease	41	12%
	• Increased	210	62%
	No change	8	2%
	• Can't say	27	8%
	• Decrease	123	36%
	• Increased	190	56%
	No change	0	0%
	• Can't say	34	10%
	• Decrease	136	40%
	• Increased	166	49%
	No change	4	1%

## Discussion

This study illustrates how the students at our university have been affected by the COVID-19 pandemic. There were many negative as well as positive effects due to the pandemic. However, it was found that more frequent negative effects were prominent and resulted in worsened diet, reduced sleep, decreased physical activities, and elevation of undesirable feelings and emotions.

In the systematic review (23) by Rotenstein et al. (2016), the prevalence and symptoms of depression and suicidal thoughts were found to be higher among medical students even before the pandemic (24). Our study found that during the pandemic, these disorders have further increased among the medical students. The mental health findings in a study by Gadi et al. (2022) are consistent with our study and other studies conducted internationally (24)

In a study by Salari (2020), surge in the incidence and prevalence of issues related to mental health such as depression, anxiety, and stress because of pandemic lockdown and quarantine has also been reported (25). Scientific evidence also suggests changes in time perception, increased use of digital media, and alterations in sleep habits (7). In our study majority (n=129;38%) experienced decrease in sleep pattern whereas (n=116;34%) experienced no change in it.

A study found that a majority of participants experienced a decrease in sleep patterns, and women were more likely to report not exercising during quarantine (26). As compared to men, women exercising continued to carry out the exercises indoors. 36% of the men exercised outdoors in contrast to 23.9% of the women (26). In our study, habits of exercise have been decreased (n=136;40%) and the ones who said exercise habits are same as before were few (n=88;26%). Same is consistent with a study (23) where (n=106,45.5%) of participants reduced their exercise.

In a study by Gadi et al (2022), more than half of the study participants experienced a change in their dietary habits (n=120; 51.5%) and instead of improving the diet, majority of the students ended up with worsened diet (n=72;30.9%) (24). In our study (n=149;44%) experienced worsening in their diet, (n=109;32%) said their diet was same as before but (n=82;24%) experienced betterment in the diet.

In our study participants negative alterations in appetite and sleep were commonly witnessed. Moreover, the students reported experiencing stress, anxiety, fear, irritability, and problems in relaxing, with worrying too much being the most commonly reported feeling. Most of the participants also faced dilemma of relaxing in a stretch for several days or more.

In a study by Gadi et al (24) (n=155,66.5%) of the participants found reduced sleep and (n=119,51%) with reduced appetite. In our study majority (n=129;38%) experienced decrease in sleep pattern and (n=197;58%) said their appetite has been increased and (n=75;22%) stated that appetite is same as before.

A study (24) by Gadi et al (2022) indicates that more than half of the students were observed with feelings like worrying, difficulty relaxing, irritability, anxiety, fear, and stress. 196 students (84.2%) were found to be excessively worried with (n=51; 21.9%) on daily basis, and

(n=144, 61.9%) with difficulty in stopping or regulating the worrying nature. Many of the study contributors reported problems in relaxing for couple of days or more (n=166; 71.2%) (24). In our study the majority (n=160;47%) experienced worrying too much on several days and (n=184,54%) of the students had trouble relaxing for several days.

Further in a study (24) by Gadi et al (2022), most of the students (n=145; 62.2%) experienced feelings of detachment from others, reduced concentration, and indecisiveness (n=143; 61.4%), and reported worsening work performance (n=120; 51.1%). In our study, a significant proportion of students (n=136; 40%) reported feeling detached from others at times, while poor concentration and indecisiveness were reported by (n=118;35 %) of participants. Interestingly, a majority of students (n=175; 52%) felt confident handling personal problems fairly often, while most (n=184; 54%) felt incapable to cope with things they had to do fairly often.

In view of the pandemic's emotional impact, the degree of irritability, frustration, fatigue, loneliness and sadness marginally increased or remained unchanged in people (24). In our study, a majority of students reported an increase in sadness (n=155;46%), frustration (n=190; 56%), and loneliness (n=166; 49.5%), while irritability (n=177; 52%) and fatigue (n=210; 62%) were decreased.

It has been documented and the research indicates that the pandemic lockdown has directed to an exacerbation of mental health consequences. The results underline the significance of retaining physical activities and lessening sedentary screen usage to support improvement in sleeping habits and mental health (27). Our study reflects this by showing that most students reported a reduction in their diet and along with reduced physical activities, which could be associated with their augmented depression and anxiety levels. Therefore, it is crucial to design approaches for more susceptible groups, especially young adults and students, to support better sleep and mental health by retaining physical activity and reducing sedentary screen use.

Even after the termination of COVID-19 pandemic, lockdown's psychological consequences continue to exist. It is, therefore, essential to have ways and means that can help the susceptible groups the young adults, especially students. Further deliberate research is required to find ways to cope with the stress linked with educational delays, disturbed routine, and diminished social connections. New verifications established in various studies can be utilized to formulate programs to support students' mental health and life style modifications.

Despite the limitations of this research such as its small sample size and being carried out on students at a single public sector university, the results are still useful in offering a snapshot of the pandemic's impact on students. However, to make the findings more generalizable, future studies should involve students from multiple institutes and make a comparison of private with public sector university students. Further research is also needed to consider the stress that is linked with delays associated with the academics, disturbed routine, and decreased social interactions so as to prepare successful mental health support programs for the students.

## Conclusion

The COVID-19 pandemic left detrimental effects on the lifestyle and mental health of students which identified specific areas of concerns where universities offering education in healthcare can direct their resources to recuperate the well-being of their students. Long-term benefits can be achieved through implementation of improvements during the post-COVID period.

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