

Psychological Impact on Mental Health and Lifestyle of Medical and Para-Medical Students Due to Covid-19 Pandemic

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Submitted: 15-05-2022

Revised: 25-05-2022

Accepted: 28-05-2022

ABSTRACT

INTRODUCTION: A Pandemic is the worldwide spread of new diseases and COVID-19 is currently one of the greatest disasters. Coronaviruses are a large family of viruses that can cause a wide range of illnesses from the common cold to more severe disease. The novel coronavirus disease (COVID-19) is a serious global health problem that has negatively impacted the mental health of students. Transitioning from secondary to university level education causes significant changes in young adult's lives, including common nighttime sleep disturbances and reduced sleep quality caused by stress and anxiety. Additionally, dietary habits may change drastically.

OBJECTIVES:

- To assess the knowledge about COVID-19 in medical and para-medical students.
- To assess the psychological conditions in medical and para-medical students due to COVID-19.
- To assess the significantly altered routine and lifestyle of students due to COVID-19.

MATERIALS AND METHODS: A community-based prospective observational study was conducted on a total of 250 Medical, Dental, Pharmacy, and Nursing students for 6 months, and an Online-based questionnaire was distributed among participants.

RESULTS: Among the 250 (n=250) participants 58 were Medical, 45 were Dental, 72 were Nursing, and 75 among them were pharmacy students. Most of the participants in the survey were females (65.2%). This study shows that 85 (34%) participants have good knowledge, 154 (61.6%) participants have average knowledge and 11 (4.4%) among them have poor knowledge about COVID-

19 Pandemic. And in the assessment of psychological conditions, the students experience a largely negative impact. Elevated levels of depression (52.0%), anxiety (44.8%), lack of concentration (50.8%), insomnia (34.4%), and stress (42.4%) were found, it also proved that females were affected more than males. This study also shows that most of the participant's routines and lifestyles changed during this COVID-19 Pandemic.

CONCLUSION: The study concludes that knowledge regarding the COVID-19 pandemic among medical and para-medical students was found to be above average. The COVID-19 appears to have a negative impact on the mental health of participants, with an increase in depression, anxiety, stress, and lack of concentration. This result also shows that a drastic change in student's routines and lifestyles.

KEYWORD: COVID-19, Knowledge, Psychological condition, Lifestyle.

I. INTRODUCTION

A Pandemic is the worldwide spread of new diseases and COVID-19 is currently one of the greatest disasters. A pandemic is defined as "an epidemic occurring worldwide, or over a very wide area, crossing international boundaries and usually affecting a large number of people".⁽¹⁾

Coronavirus has been a part of the world for nearly 60 years, ever since its discovery in the late 1960s. Coronaviruses belong to the Coronaviridae family in the Nidovirales order.⁽²⁾

Coronavirus is enclosed, positive single-stranded large RNA viruses that infect humans as well as a variety of other species. Coronavirus was named from their morphology, which consisted of spherical virions with a core-shell and surface

projections resembling a solar corona. Coronavirus is divided into four subfamilies, namely alpha, beta, gamma, and delta coronaviruses. Among the seven subtypes of coronaviruses that can infect humans, the beta coronaviruses may cause serious sickness and death, whereas alpha coronavirus induces asymptomatic or slightly symptomatic infections. SARS CoV-2 is a beta-coronavirus that belongs to the B lineage and is closely related to the SARS-CoV virus.

The percentage of people infected with SARS-CoV-2 who are asymptomatic during their infection. In symptomatic patients, the clinical features of the disease usually start after less than a week, which includes fever, cough, nasal congestion, fatigue, and other indications of upper respiratory tract infections. The infections can progress to severe disease with dyspnoea and severe chest symptoms corresponding to pneumonia in approximately 75% of patients. Pneumonia mostly occurs in the second or third week of symptomatic infection.⁽³⁾

The novel coronavirus (COVID-19) outbreak, which was first detected in Wuhan, China, in December 2019, has been rapidly evolving. The current outbreak was designated a public health emergency of worldwide concern by the WHO Director-general on 30 January 2020, and the outbreak was declared a pandemic by the COVID-19 on 12 March 2020.⁽⁴⁾

Some aspects of the pandemic impact the population more than others, such as separation from loved ones, loss of freedom, uncertainty about disease progression, and a sense of helplessness. These factors may have drastic effects, such as an increase in suicides. Suicidal behaviors are often related to the feeling of anger associated with the stressful condition widely spread among affected areas.⁽⁵⁾

One of the biggest challenges faced by people is maintaining mental health. People frequently overlook mind statics, which is an important indicator of mental health. Many suicides have been recorded in the COVID-19 period due to depression. As a result, early detection and care may help to avoid these occurrences. It was unsurprising that lockdown during the COVID-19 outbreak would adversely affect the mental health of the medical and paramedical students. Mental health is the degree of mental prosperity or nonattendance of dysfunctional behavior. As indicated by the World Health Organization (WHO), psychological well-being incorporates "abstract prosperity, saw self-viability, self-governance, ability, between generational reliance,

and self-completion of one's scholarly and passionate potential, among others".⁽⁶⁾

This new situation, combined with the general sense of ambiguity, caused significant discomfort, negatively impacting psychological well-being, with an increased report of depression and anxiety symptoms. Transitioning from secondary to university level education causes significant changes in young adult's lives, including common night time sleep disturbances and reduced sleep quality caused by stress and anxiety. Additionally, dietary habits may change drastically, with common barriers to healthy eating, primarily due to lack of time, unhealthy snacking, increased stress, higher prices of healthy food, and easy access to junk food.

COVID-19 pandemic has dramatically altered students' lifestyles and educational landscapes at all levels of education, resulting in unforeseen effects such as increased or decreased study time, graduation delays, work losses, and reduced job offer acceptances, as well as internship interruptions. International students have had an even harder time during COVID-19 lockdown than domestic students, as they have been isolated from their families, friends, and familiar environments due to travel bans and border restrictions.⁽⁷⁾ Online learning has been identified as a possible alternative to conventional learning.⁽⁸⁾

In this study, we aimed to assess the knowledge, psychopathological conditions, and altered routine lifestyle of medical and paramedical students.

II. MATERIALS AND METHODOLOGY

Study Design:

This was a questionnaire based Prospective Observational Study.

Study Site:

This study was conducted among Medical, Dental, Pharmacy, and Nursing students in Chitradurga.

Study Duration:

The study was conducted for a period of six months.

Study Subject:

Medical, Dental, Pharmacy, and Nursing students in Chitradurga meet the following criteria.

Inclusion Criteria:

- Students of Medical, Dental, Pharmacy, and Nursing colleges in Chitradurga.
- Both UG and PG students of age group between 18-30 years.

Exclusion Criteria:

- Students with severe mental illness and hearing difficulties are excluded.
- Students discontinued or drop out from the college.

Ethical Approval:

The study received ethical approval from the **Institutional Ethics Committee** of SJM College of Pharmacy, Chitradurga, bearing number **SJMCP/693/2021-22**.

Sources of Data:

- Online-based questionnaire distributed among Medical, Dental, Pharmacy, and Nursing students in Chitradurga.

Study Procedure:

- The study was carried out among Medical and Paramedical students after obtaining the permission from Institutional Ethical Committee (IEC). Since receiving informed consent, the online-based questionnaire was distributed through social media apps.
- An online-based questionnaire on mental health and lifestyle regarding COVID-19 pandemic has been provided. It consists of the following:
 - a) Socio-demographic details of participants.
 - b) Basic perceptions about the impact of COVID-19.
 - c) The altered lifestyle of participants.
 - d) The psychological impact of students toward COVID-19.
- Data was collected from the participants and confidentiality will be maintained.
- For each correct answer of Knowledge questionnaire was scored '1' and for each wrong answer '0' in the survey.
- The altered lifestyles and psychological impact-based questionnaire were assessed

based on the frequency of options selected by the participants.

Statistical Evaluation of Data:

Descriptive statistical analysis has been carried out in the present study. Data are presented as mean \pm standard deviation (SD), frequency distribution, and comparison of gender in the assessment of psychological impact. A chi-square test was conducted to examine the association for categorical variables. The statistical analysis was performed using the IBM SPSS Data Analysis Version 22.0 for Windows (Armonk, NY: IBM Corp) and Microsoft PowerPoint is used to generate tables and Microsoft Excel for graphs.

III. RESULTS

A total of 250 participants were included in the study to assess the knowledge, lifestyle changes, and psychological impact on medical and para-medical students due to COVID-19. The objectives of our study were to assess the knowledge, psychological condition, and altered routine and lifestyle of students of medical and para-medical due to the COVID-19 pandemic. The questionnaire was prepared based on the objectives of our study and the results are collected according to it. Therefore, the following are the study results based on the objectives of the study.

3.1. Details of Age classification

A total of 250 participants were included in the study during the data collection period. Table 2 displays that among the 250 students, the majority of them belongs to the age group 22-25 (59.2%), followed by the age group 18-21 (29.6%) and the age group of 26-30 is (11.2%), followed by graphically as presented in Figure No 1.

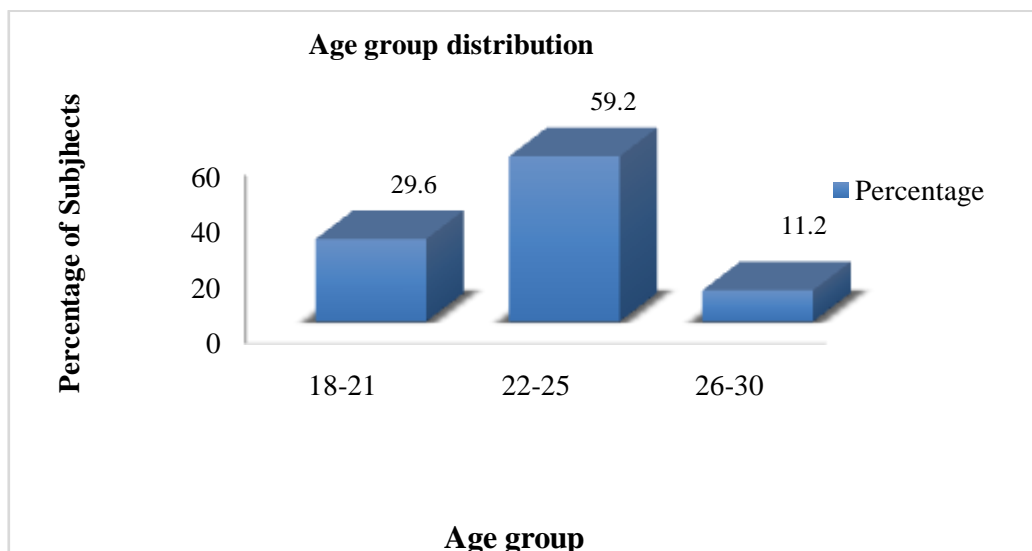


Fig No.1: Age distribution

3.2. Details of Gender classification

Out of the 250 participants, the male count was nearly half of females. 65% of participants

accounted were female and 35% were male. The results are graphically presented in Figure No 2.

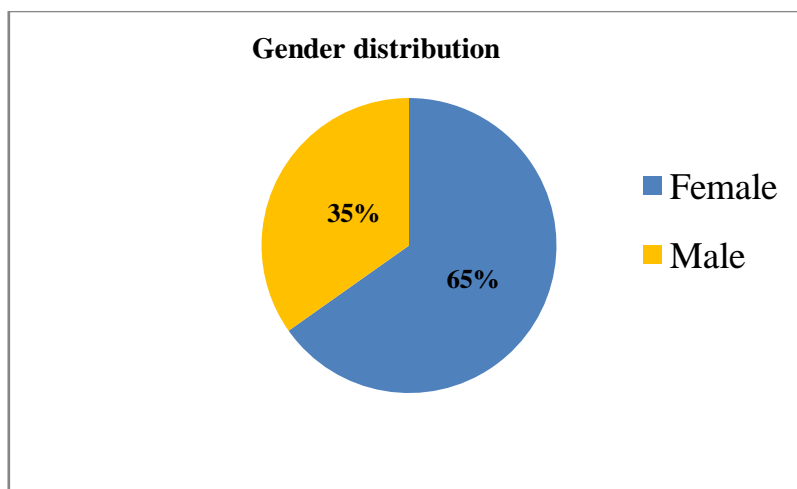


Fig. No. 2: Gender distribution

3.3. Details of Course classification

Out of 250 participants, the majority of them were Pharmacy students 75 (30%) followed

by Nursing 72 (28.0%), Medical 58 (23.2%), and Dental 45(18%). The results are shown in Table 4 and are graphically represented in Figure No.3.

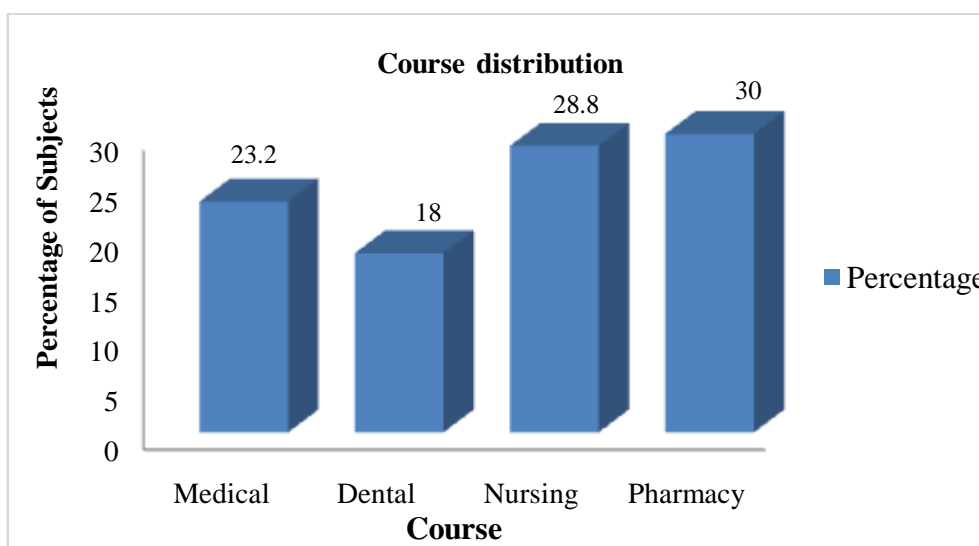


Fig No. 3: Course Distribution

3.4. Questionnaire Assessment

3.4.1 Knowledge Based Questions

To assess the knowledge of the participants a self designed questionnaire containing 9 questions were given. Totally 2250

responses were recorded for 9 questions, out of which only 1510 responses were correct and rest 740 responses were incorrect. The results are depicted in Table no.1.

SL NO.	Questions	No. of correct responses	No. of incorrect responses
1	The virus causing COVID-19 infection	92	158
2	Which of the following is considered as close contact ?	112	138
3	The main mode of transmission of the virus from person to person	95	155
4	What are the symptoms of COVID-19?	233	17
5	Which are the following measures used to stop the COVID-19 Pandemic?	138	112
6	In which age group the disease is more dangerous?	223	27
7	Where is the first case of novel coronavirus got identified?	221	29
8	From where coronavirus got its name?	178	72
9	What happens to a person having COVID-19?	218	32
	Total	1510	740

Table No. 1: Responses for Knowledge Based Questions

Knowledge score of individual participants on COVID-19

The knowledge of participants was graded as (0-3) poor, (4-6) average, (7-9) good. Of 250 participants 11 (4.4%) had poor knowledge, 154 (61.6%) participants had average knowledge and 85(34%) participants had good knowledge of the COVID-19. Surprisingly, most of the participants

(i.e., 52.8%) were unaware of another name 2019-nCoV for COVID-19 causing virus, and very few respondents (38%) said respiratory droplet is the main mode of transmission of the virus from person to person. The mean is 6.06 and the standard deviation for knowledge score is 1.653 and it is detailed in Table No.2.

Knowledge score			Total	Mean	SD
Poor	Average	Good			
11	154	85	250	6.06	1.653

Table No.2: Knowledge score of individual participants on COVID-19 (N=250)

3.4.2 Altered Routine and Lifestyle Based Questions

To assess altered routine and lifestyle of the participants a self designed questionnaire

containing 5 questions were given and the responses were recorded. The results are shown in Table No.3.

SL NO.	Altered routine and lifestyle	Increased	Decreased	No changes	I don't know
1	Has your relationship with your professors during this period varied?	18 (7.2%)	133 (53.2%)	82 (32.8%)	17 (6.8%)
2	Has your consumption of junk food and sweets changed?	42 (16.8%)	135 (54%)	53 (21.2%)	20 (8%)
3	Has your frequency of exercising changed?	62 (24.8%)	81 (32.4%)	61 (24.4%)	46 (18.4%)
4	Has your time spent on the internet changed?	207 (82.8%)	12 (4.8%)	27 (10.8%)	4 (1.6%)
5	Has your quality of sleep changed?	126 (50.4%)	42 (16.8%)	75 (30%)	7 (2.8%)

Table No.3: Responses for Altered Routine and Lifestyle Based Questions

3.4.3 Questions Based on the psychological impact of students toward COVID-19

To assess participant's psychological impact towards COVID-19 a self designed questionnaire containing 7 questions were given and the responses were recorded. The results are shown below.

Q 1: Have you ever felt downhearted or depressed during this period?

Among 250 participants, 74.8% of female students and 9.2% of male students said that they felt depressed and downhearted, while 25.2% of female students and 90.8% of male students opted that they never felt depressed or downhearted during this period. In this study total of 52.0% of participants felt depressed and the P-value of 0.0001 shows that this study is highly significant as the value is less than 0.05. The result is presented in Table No.4.

Have you ever felt downhearted or depressed during this period?		Gender			Df	P Value, Sig
		Male	Female	Total		
	YES	8 (9.2%)	122 (74.8%)	130 (52.0%)	1	0.0001 (H.sig)
	NO	79 (90.8%)	41 (25.2%)	120 (48.0%)		

Table No. 4: Depression

Q 2: Have you experienced any unreasonable fear?

Among 250 participants, 62.6% of females and 11.5% of males said that they experience unreasonable fear, and 37.4% of females and 88.5% of males opted that they have not

experienced unreasonable fear during this period.

In this study total of 44.8% of participants experienced anxiety and the P-value of 0.0001 shows that this study is highly significant as the value is less than 0.05. The result is presented in Table No.5.

Have you experienced any unreasonable fear?		Gender			Df	P Value, Sig
		Male	Female	Total		
	YES	10 (11.5%)	102 (62.6%)	112 (44.8%)	1	0.0001 (H.sig)
	NO	77 (88.5%)	61 (37.4%)	138 (55.2%)		

Table No 5: Anxiety

Q 3: Do you lead a stressful life?

Among 250 participants, 58.9% of females and 11.5% of males said that they lead a stressful life and 41.1% of females and 88.5% of males opted that they don't lead a stressful life. In this

study total of 42.4% of participants lead a stressful life during this pandemic situation and the P-value of 0.0001 show that this study is highly significant as the value is less than 0.05. The result is presented in Table No.6.

Do you lead a stressful life?		Gender			Df	P Value, Sig
		Male	Female	Total		
	YES	10 (11.5%)	96 (58.9%)	106 (42.4%)	1	0.0001 (H.sig)
	NO	77 (88.5%)	67 (41.1%)	144 (57.6%)		

Table No. 6: Stress

Q4. Have you ever felt tiredness or inability to sleep well?		Gender			Df	P Value, Sig
		Male	Female	Total		
	YES	6 (6.9%)	80 (49.1%)	86 (34.4%)	1	0.0001 (H.sig)
	NO	81 (93.1%)	83 (50.9%)	164 (50.9%)		

Q5. Have you ever felt a lack of concentration, memory, and cluttered thinking?	YES	9 (10.3%)	118 (72.4%)	127 (50.8%)	1	0.0001 (H.sig.)
	NO	78 (89.7%)	45 (27.6%)	123 (49.2%)		
Q6. Have you been happy every time?	YES	80 (92.0%)	82 (50.3%)	162 (64.8%)	1	0.0001 (H.sig.)
	NO	7 (8.0%)	81 (49.7%)	88 (35.2%)		
Q7. Have you been felt lonely during this pandemic situation?	YES	14 (16.1%)	109 (66.9%)	123 (49.2%)	1	0.0001 (H.sig.)
	NO	73 (83.9%)	54 (33.1%)	127 (50.8%)		

Table No 7: Responses of Participants towards Psychological Impact Based Questions

IV. DISCUSSION

This study is to assess the knowledge, psychological condition, significantly altered routine and lifestyle of medical and para-medical students of Chitradurga due to the COVID-19 pandemic. As known, the world is grappling with an ongoing COVID-19 pandemic that has shaken the mankind to core and disrupted the lives of everyone.

We collected over 250 online survey responses from four colleges in Chitradurga to assess the knowledge, psychological impact, and lifestyle changes of medical and para-medical students in Chitradurga due to the COVID-19 pandemic. In this study, female participants were more than the males, because the same is the ratio of male to female among medical and para-medical college students of the college, similarly as conducted on 'The Psychological Impact of the COVID-19 Lockdown on Medical Students of a College in North India' by **Kumar A⁹ et al.**, in North India in which male participants were half of the females.

Our study results noticed that the knowledge of most people towards the COVID-19 was a bit above the average (68.3%). Although the knowledge of the people was found to be better than average and their attitude towards the disease was respectable. This is similar to a study conducted by **Modi P D¹⁰ et al.**, on the topic 'COVID-19 Awareness Among Healthcare Students and Professionals in Mumbai Metropolitan Region: A Questionnaire-Based

Survey' reported that 71% of knowledge in medical students.

The study results reveals that elevated levels of depression, anxiety, lack of concentration, insomnia, and stress were identified among 52.0%, 44.8%, 50.8%, 34.4%, and 42.4%, respectively, of the participants. Gender had a substantial impact on the student's mental health status. Our study revealed that female students had much higher levels of depression, anxiety, and stress than male students. Moreover, our findings were similar to the results were in line with the study that was conducted by **Hakami Z¹¹ et al.**, on the topic 'Psychological impact of the coronavirus disease 2019 (COVID-19) pandemic on dental students: A nationwide study'.

The most interesting findings of this study concern time spent on the internet and the sleeping habits of students during the lockdown. Around 82% of the participants time spent on the internet increased and 50% of participants sleeping habits increased. Besides, this study also assessed the relationship with the professor, consumption of junk food, and physical activities during this COVID-19 situation, it was reported that 50%, 54%, and 32%, respectively, of the participants activities during this COVID-19 situation reduced. Similarly, **Dragun R⁷ et al.**, carried out a study on 'Have Lifestyle Habits and Psychological Well-Being Changed among Adolescents and Medical Students Due to COVID-19 Lockdown in Croatia' reported that lockdown during the COVID-19 situation had a big impact on student's quality of life, happiness, and optimism.

V. CONCLUSION

With the results obtained following conclusions were made:

- Knowledge regarding the COVID-19 pandemic among students was found to be above average.
- A substantial proportion of medical and paramedical students are experiencing pandemic-related psychological effects. The COVID-19 appears to have a negative impact on the mental health of participants. Around 52.0%, 44.8% and 42.4% of students experienced depression, anxiety and stress respectively.
- The COVID-19 pandemic has brought significant psychological influence on female students as compared to male students.
- Drastic changes in student's routine and lifestyle such as decreased intake of junk foods, reduced frequency of exercise whereas internet usage and duration of sleep were increased in most of the students.

It is critical to address and mitigate the negative effects of COVID-19 on the mental health of medical and paramedical students. Therefore, colleges and health authorities should focus on addressing their psychological needs and developing effective measures to improve their mental health, particularly during this pandemic situation.

VI. ACKNOWLEDGEMENTS

At the outset, we express our utmost gratefulness to the almighty for the blessing throughout this study. We are extremely grateful to express our deep sense of thanks and gratitude to the management of SJM College of Pharmacy, Chitradurga and to our respected guide Dr. Yogananda R, Professor and HOD, Department of Pharmacy Practice and our co-guide Mr. Abhijit Kumar Dalal, Assistant Professor, Department of Pharmacy Practice.

Our acknowledgment would be incomplete without thanking the biggest source of our strength, our family members. Thank you everyone for the timely support and understanding.

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