

To Assess Severity of Depression among Males and Females Due To Covid-19 Pandemic

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Abstract

The study investigates the impact of COVID-19 on the mental health status of students and the severity of depression among them. Evidences suggest that COVID-19 has generally increased levels of stress, depression and the pandemic has specific worries, lack of interaction, lack of emotional support and physical isolation has put negative impact on mental health of public. In 2020, Most of the times the universities and colleges were closed due to lockdown imposed in response to COVID-19. In India, after June things seem to get normal again. Unlocking phases started and finally universities and colleges were open again. In April 2021, COVID-19 numbers in India surge to record high. India was hit by the second wave of deadly COVID-19. Again the educational institutes were closed leading a negative impact on mental health of students.

AIM:The aim of this study is to assess the effect of covid-19 on the mental health of students at JAMIA HAMDARD University, NEW DELHI. This study investigates the severity level of depression among males and females and this study also focuses on the awareness level regarding covid-19 among participants.

METHOD: An online survey was conducted among diploma, undergraduate and postgraduate students from JAMIA HAMDARD University, via email and personalized links. The survey consisted of self-structured questionnaire regarding stressors specific to covid-19 and standardized scale – PHQ-9 scale for depression.

RESULT: Among 212 participants, 57 showed “minimal depression”, 72 showed “mild depression”, 28 showed “moderate depression”, 26 showed “moderately severe depression” and 9 showed “severe depression”. Among 118 males, majority showed “minimal depression” while out of 94 females, majority shows mild depression. 210 participants know how to protect themselves from covid-19 and 75% of participants have great deal of interest on information regarding covid-19 from WHO.

CONCLUSION: Respondents reported academic, health and life-related concerns caused by the pandemic. Some of the participants were experiencing depression and suicidal thoughts. The severity of the pandemic and concerns related to different aspects of life need to be further understood and addressed.

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I. Introduction

STUDENTS AND IMPORTANCE OF MENTAL HEALTH

Health is not simply an absence of physical illness; it also includes healthy personality and mental conditions. According to the World Health Organization, however, mental health is “a state of well-being in which every individual realises his or her own potential, can cope with the normal stresses of life, can work productively, more pro-social behaviour and positive social relationships, and with improved physical health and life expectancy. Positive mental health focuses on developing environments where you can thrive and reach your optimal potential of work, study and in life. ¹ Stress can cause disruption and confusion in our lives.

Mental health problems can affect many areas of students’ lives, reducing their quality of life, academic achievement, physical health, and satisfaction with the college experience, and negatively impacting relationships with friends and family members. These issues can also have long-term consequences for students, affecting their future employment, earning potential, and overall health.² Mental health includes our emotional, physiological, and social well-being. It affects how we think, feel and act. It also helps determine how we handle stress, relate to others, and make choices. Mental health is important at every stage of life, from childhood and adolescence through adulthood.³ College time is important for every student as it is the future deciding period for students. There is clear connection between mental health and academic performance.⁴ Students struggling with depression or mental illnesses have a harder time feeling motivated, learning, concentrating, taking tests, etc.³ Research suggests that depression is associated with lower grade point averages, and that co-occurring depression and anxiety can increase this association.⁵ Depression has also been linked to dropping out of school.⁵ When an individual has mental health problems, most of its mental ability is consumed

in generating and processing unsettled thoughts. This cause difficulty in concentrating on positive thoughts, reducing the ability to focus on college work.

Mental health problems are very common among college students.⁶ This may be due to the fact that attending college corresponds to a challenging time for many students. Mental health problems in students lead to social and behavioural problems, poor performance and low self-esteem.

As per the results of a large scale survey conducted across India in 2019, young adults between age of 20-29 years of both genders were the most depressed in the country.⁷ Mental health is an important element in overall health and wellbeing, which encompasses intellectual health, spiritual health and emotional health.⁸ According to the World Health Organization, mental health of college students involves a stable mood, coordinated interpersonal relation, objective self-judgement, and psychological adaptation.⁹ By contrast highlevel of physical activities is associated with better mental well-being.¹⁰

Student mental health services are not only needed to support the psychological well-being of students, they are also an important part of academic success and retention.¹¹ Students are at very sensitive and impressionable age in college. This is why they must navigate this phase of their lives carefully to keep their sanity and stature. They must also be encouraged to ask for professional care if needed. The mental health of students is in general quite fragile and even the smallest hint of any mental disorder should not be overlooked under any circumstances.

COVID-19

The first case of Corona virus disease 2019 also called as COVID-19 which is caused by severe acute respiratory syndrome corona virus 2 (SARS-CoV-2) was identified in China (Wuhan) in December 2019. It has since spread worldwide, leading to an unprecedented panic across the world. The rapid spread of this virus made the World Health Organization (WHO) to declare this as the public health emergency of international concern and called it as global pandemic.¹² COVID-19 affects different people in different ways. Most infected people will develop mild to moderate illness and recover without hospitalization. At the time of writing, 3.2Cr covid-19 cases happen in India.

LOCKDOWN

In India the first case of the COVID-19 pandemic was reported on January 30, 2020. On 24th of March, a complete lockdown was announced in India which went on extending till 31st of May. From 1st of June, phase-wise unlock was commenced in the nation.

All educational institutes were shut down. All social, political, sports, entertainment, academic, cultural, and gathering were barred. Due to sudden lockdown, some students who were studying away from their homes and were residing in hostels, flats or as paying guests got stuck there and faced a lot of problems as compared to the students who got stuck with their families. They were struggling each day to reach their homes. Many students were found stranded at airports and bus stands waiting for the providence of any conveyance to reach their homes. As restrictions were imposed for stepping out of one's residing place, many students found themselves running out of basic necessities. Some faced financial problems too. Other daily issues faced include unavailability of fresh drinking water, problems in disposal of garbage, etc. Students who were locked all alone in their rooms went through various psychological and behaviour changes. They were already apart from families but after this lockdown they were also separated from their friends and in this way they lost their face to face communication with their friends they were confined to virtual interactions to people. The times that have been never dreamt of. Travel restrictions was devastating both for humans as well as the economy

In 2021, India was hit by the second wave of COVID-19 like a wildfire. Every day in last weeks of April 2021 and starting May 2021, more than three lakh cases have been recorded in the country and making India one of the worst hit countries in the world. The government have been adopting several ways to control the spread of the virus and protect the people from this deadly virus. The country got once again drifted in the situation where the need of life saving oxygen cylinders became important. Even a huge quantity of oxygen cylinders was brought from other countries by IAF. A complete lockdown was once again imposed in Delhi from 19 April 2021 for one week but later on this was extended in the wake of rising coronavirus cases. In view of the huge rise in COVID cases, JAMIA HAMDARD issued a notice vide number JH/RO/OO/2021/18 dated April 18, 2021 about closing of university for one week which later got extended. Schools and universities were again closed and the normal routine of students was again disturbed. The COVID-19 pandemic has irrevocably changed all our lives since 2020. Among those lives has gone topsy-turvy are students from school to university level. Schools and colleges had to close, exams were not conducted on time due to rise in COVID -19 case

PANDEMIC AND THE LOCKDOWN

This pandemic and lockdown gave rise to a sense of panic and anxiety among the people. From higher class to lower class, everyone has suffered during COVID-19 pandemic. For the people, whose living is based

on daily earning, the lockdown had devastating effect on them. Due to closure of everything, they had no work to do and hence no money to feed their family at the end of the day. While affecting other sectors the pandemic also led to psychosocial and mental health implications on students. In young students specially, the pandemic and lockdown had a greater impact on their emotional and social development. Also, the nationwide closure of schools and colleges have negatively impacted over 91% of the world's student population¹³. For not being able to go and play outdoors, not meeting friends and not getting involved in the team activities, the children became more cranky, attention seeking and more dependent on their parents. For the students stuck at home, the closure of schools and colleges for such a long period resulted in disturbance in daily routine, disorganization, boredom and lack of innovative ideas for engaging in various academic and extracurricular activities. The home confinement of children reduced their physical activities and opportunities for outdoor socialization. They became more reliable on social media and electronic gadgets. Apart from disturbing the social life and mental health, the pandemic also affects the economy. The economy of a country and an individual suffer severe damage in situations like these. A reduction in the supply chain creates scarcity of food, resources, and personal protective equipment.¹⁴

COVID-19 AND MENTAL HEALTH

The pandemic times which blow around the globe, leaving no space untouched. Quarantine and self-isolation can most likely cause negative impact on one's mental health. Having no face to face interactions with friends and not able to go outside is quite depressive. They certainly have left a very memorable impact in the field of education.¹⁵ Due to disturbance of overall biological cycle; they became more prone and vulnerable to mental health issues. Mental health problems can affect a student's energy level, concentration, dependability, mental ability, optimism and hindering performance.¹⁶ As the coronavirus pandemic rapidly sweeps across the world, it is including a considerable degree of worries, fears and concerns among students. As a result of schools\colleges being closed many unexpected changes added to student lives. They were not able to had face to face interactions with friends, outdoor activities were restricted. Many fears were developed among them related to their academic progression, completing of syllabus, higher education and class work.

SHIFTING OF CLASSROOMS FROM TRADITIONAL TO DIGITAL PLATFORMS

Due to shutting down of universities the traditional classrooms were shifted to digital platforms. Online learning has been observed as a possible alternate to conventional learning.¹⁷ The transition to online mode has raised questions for the faculty about their capability to deal with the existing technology.¹⁸ Many schools and colleges offered online courses to cope up with the loss of studies but this opportunity is not available to poor children who have no access to gadgets like laptop or mobile phones and also students belonging to areas where internet services are not available, as a result of which they are not able to attend online classes.

The students who do not assess to laptops and internet facilities at home were not able to take the online classes properly. It was not possible to teach practical's, lab courses and some other courses online. The quality of online issue education is a critical issue that needs proper attention.¹⁹ Many students were not adapting the online learning mode and this caused stress in them. Mental illness can effect student's motivation, concentration, and social interactions are crucial factors for students to succeed in higher education.²⁰ Due to all this, students couldn't study properly. Most of the learning switched to online mode; suddenly, the lives of students were disturbed and filled with uncertainty.²¹ Education system continues with the help of online mode that was significant in this pandemic situation. But many students were out of online classes. Face to face interaction with friends got again limited. As soon as students were trying to recover themselves from the fear caused by COVID last year (2020), again they were facing the same fears and worries in 2021. During online classes students have to sit before their laptop or mobile screens for long period of time. The classes take 3-4 hours or may be more than that which is quite tiring for students. Long exposure to screens can cause eye sight problems and headache in some students. Sometimes students also develop bad posture and other physical problems due to learning towards their screens. Network breakdown and other technology issues are the most common and the biggest disadvantage of online learning. Though the India has worked far better for developing a good internet system, a consistent connection with decent speed is still a problem in many cities and villages. Breakdown of internet connection or a poor range of internet can break the continuity in learning for the child. This may discourage students from attending classes regularly and learning their curriculum. In traditional classrooms, students get to learn a lot from their peers. While being with friends, they learn to be patient, get rid of disappointment and compete as well. There are many students who are habitual of enhancing their learning by participating in group studies and lively group discussions. However, in an online class, there are minimum or no physical interactions between students and teachers. This may result in a sense of isolation for the students that can affect their studies quite badly.

In comparison with the boys, girls' education in India has become more challenging due to the COVID effect. The pattern is the same in higher education sector too. Indian education system had already been plagued with too many issues even before the lockdown, such as school dropouts, learning deficiencies, absenteeism or unavailability of teachers, unacceptable level of low teacher-student ratio, gender disparity, lack of educational infrastructure and material etc. Introduction of digital education have added the new issue of digital divide, between the urban and rural, and between the boy and girl students.²²

PREVALENCE

In the current wake of the pandemic, WHO states that India is the most depressed country in the world. One in six children and teenagers aged between 10-19 years of age suffer depressions. As we speak there is one suicide attempt in every three seconds and one death by suicide every forty seconds by our youth. A systematic review and meta-analysis on different corona viruses (SARS, MERS, and SARS-Cov2) showed that 14 to 61% of infected individuals face serious psychiatric and neuropsychiatric problems (such as depression, impaired memory, insomnia and sleep disorders, anxiety, and PTSD, etc.) during the illness, and 14.8 to 76.9% afterwards. Estimates of the pooled prevalence were 23.20% for anxiety, 22.8% for depression, and 34.32% for insomnia. These results can be explained by the stressors and anxieties faced by HCW in their work environment, including the fear of being infected and of infecting their loved ones or colleagues, the rapid deaths of patients, as well as emotional and physical fatigue. It also showed the need for systematic reviews on the general population to develop and implement both prevention and intervention mental health programs based on initial evidence. Another systematic review showed that relative high rate of anxiety, depression, posttraumatic stress disorder and psychological distress symptoms among population affected by COVID-19 in multiple countries. Conducted in a global mental health perspective, the main objective of this systematic review and meta-analysis is to analyse the impacts of the COVID-19 pandemic on the mental health of affected populations to help develop and implement mental health programs based on initial evidence. Specifically, it aims to (1) analyse the pooled prevalence of depression, anxiety, insomnia, PTSD, and psychological distress (PD) in the general population; (2) examine Covid-19 and Mental Health Problems 6 differences in the pooled prevalence of these problems among HCW compared to the general population; (3) analyse gender-based differences in the pooled prevalence of investigated mental health problems; and (4) as the pandemic has disproportionately affected different parts of the world, this systematic review also aims to analyse differences in mental health problems according to the geographical regions in which the studies were conducted.²³

METHOD

The semi structured questionnaire was prepared, it was shared with the participants. The study was conducted among paramedical students at JAMIA HAMADRAD University, Delhi. The survey was online based and the questionnaire was send to participants via mail and SMS. After collecting their responses, responses were recorded and analyzed by descriptive statics.

STUDY DESIGN

A survey was conducted online using Google form software. The study was conducted about one month after closing of university. The students were invited by email and SMS with personalized links. The survey was designed with the purpose of assessing the mental health status of students. The survey consisted of the following six sections.

Demographics

This section included basic information of participants. Participants need to provide the information about their gender, age, educational qualification, program of study, marital status and family type.

Patient health questionnaire

The PHQ-9 is a 9 item based standard scale given to the patient in a primary care setting to screen for the presence of depression and to monitor the severity of depression. Total score ranges from 0 to 27. Based on the score the scale is divided into minimal, mild, moderate, moderately severe and severe depression. The categories of severity range are minimal (0-4), mild (5-9), moderate (10-14), moderately severe (15-19) and severe (20-27).²⁴

Health related stress

This section consisted of multiple choice questions and aimed at identifying various stresses related to health due to COVID-19. Participants were asked about changes in their eating habits, difficulty in sleeping. How often they experienced fear and worries about their own health and the health of their loved ones? They were also asked about the fear of getting infected by the virus and how often they felt stress?

Academic related stress

This section consisted of multiple choice questions based on the impact of COVID19 on the academic life of students. Participants were asked about how often they experience worry about their academic progression, not able to join the online classes worry about higher education and jobs, difficulty in concentration and Increased tension because practical courses can't be learned online?

Lifestyle related stress

This section aimed at the highlight the changes in lifestyle due to COVID-19. Multiple choice questions were asked to participants about how often they experience feeling isolated, dull and lazy? Were they happy or not with the changes in their living environment? Were they depressed as they were not able to have face to face interaction with their friends? Were they depressed due to their financial situation?

Awareness

This section is awareness based. Multiple choice questions were asked to participants about how to protect yourself from Covid-19? What to do and to not do in COVID19? And questions over wearing masks, washing hands and social distance were also included to know how aware the participants were about the deadly COVID-19 virus.

Participants

The participants were the paramedical students of JAMIA HAMDARD University, Delhi. The survey was published online using Google form software and the data collection remained open until no additional responses were received for four days.

The participants were invited through mail and SMS.

Data analysis

Descriptive statics were performed to describe demographics (age, gender, educational qualification, marital status and family type) of participants. For PHQ-9 the mean scores were calculated and recorded for different gender and different classification groups. Based on the mean score the percentage of the participants falling under different category were recorded. For the multiple choice questions related to COVID-19 stress the response given by each participant was recorded and the percentage of severity level was recorded. For awareness based section, the response was recorded from each participant and the percentage of awareness among them was recorded. Scoring 90-100% will consider as having great awareness, 60% to below 90% will fall under having moderate awareness category, below 60% will considered as having little awareness.

II. Results

TABLE 1. DEMOGRAPHICS

Variable	Participants (N=212)	Percentage
Gender		
Male	118	53.7%
Female	94	44.3%
Age		
18-20	70	33%
21-23	108	50.9%
24-26	27	12.7%
26-28	7	3.3%
Educational qualification		
Diploma	19	9%
Undergraduate	163	76.9%
Postgraduate	30	14.2%
Program of study MLT		
Physiotherapy	17	8%
MIT	12	5.7%
Optometry	117	55.2% 0.9%
Dialysis	2	11.3% 0%
BCLT	24	18.9%
Other	40	
Marital status		
Married	5	2.4%

Unmarried	207	97.6%
Family type		
Nuclear family	113	53.3%
Extended family	61	28.8%
Single parent family	38	17.9%

More males participated in the study than females, out of 212 participants, 118 participants were male. Maximum participants were falling under the age group of 21-23. Out of 212 participants, 108 participants were from the age group of 21-23. 70 participants were falling under the age group of 18-20. Only 7 participants were from the age group of 26-28. Out of 212 participants, 163 (76.9) were undergraduate students, 30 (14.2%) were postgraduate students and only 19 (9%) were diploma students. The most participants were from MIT (medical imaging technology) department, 117 students out of 212. The least participated department was optometry, only 2 students participated. From BCLT, no response was collected. Out of 212 participants, only 5 (2.4%) were married and rest of the population 207 (97.6%) was unmarried. Out of 212 participants, 113 (53.3%) were from nuclear family, 61 (28.8%) were coming from extended family and 38 (17.9) were coming from single parent family.

PHQ

The PHQ-9 is a 9 item based standard scale given to the patient in a primary care setting to screen for the presence of depression and to monitor the severity of depression. Total score ranges from 0 to 27. Based on the score the scale is divided into minimal, mild, moderate, moderately severe and severe depression. The categories of severity range are minimal (0-4), mild (5-9), moderate (10-14), moderately severe (15-19) and severe (20-27).²⁴

Out of 212 participants, 27(12.7%) participants were experiencing little feeling or pleasure in doing things nearly every day, 75(35.4%) were experiencing it on several days, 28(13.2%) were experiencing it on more than half of the days and 82(38.7%) were not experiencing it and all. Response of rest of the 8 questions was recorded and it was found that 17 participants were having the thoughts that you would be better off dead, or hurting yourself. On the basis of this scale severity of depression was recorded among the participants.

On the basis of response that was collected from participants on giving them questions from PHQ-9 scale, participants were classified into mini, mild, moderate, moderately severe and severe depression. It was found that out of 212, 57 participants were having minimal depression, 72 were having mild depression, 28 were having moderate depression, 26 were having moderate severe depression and 9 were falling under having severe depression. Only 19 participants among 212 were having no depression at all.

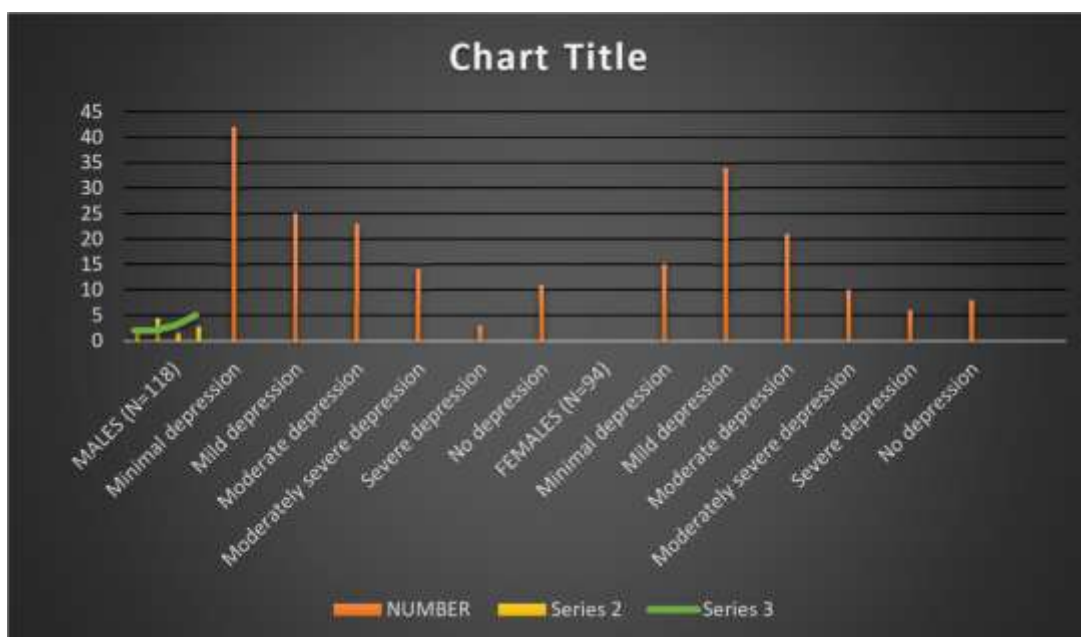


FIGURE 1: SHOWING SEVERITY OF DEPRESSION AMONG MALES AND FEMALES

HEALTH RELATED STRESS

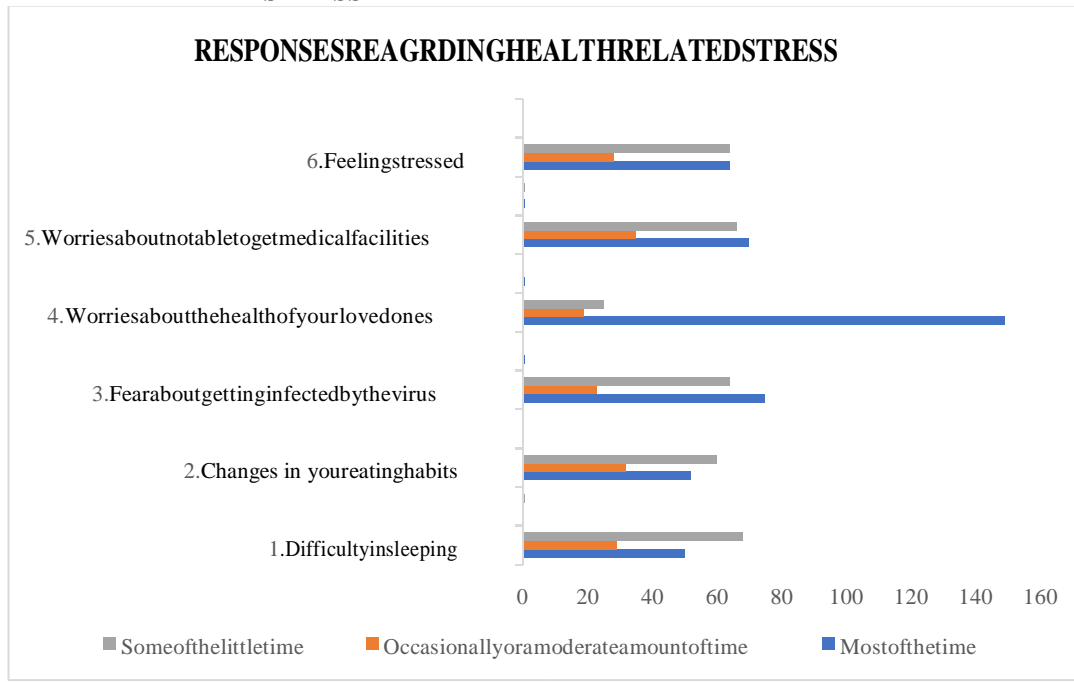


FIGURE 2: RESPONSE OF PARTICIPANTS ABOUT HEALTH RELATED STRESS.

ACADEMIC-RELATED STRESS

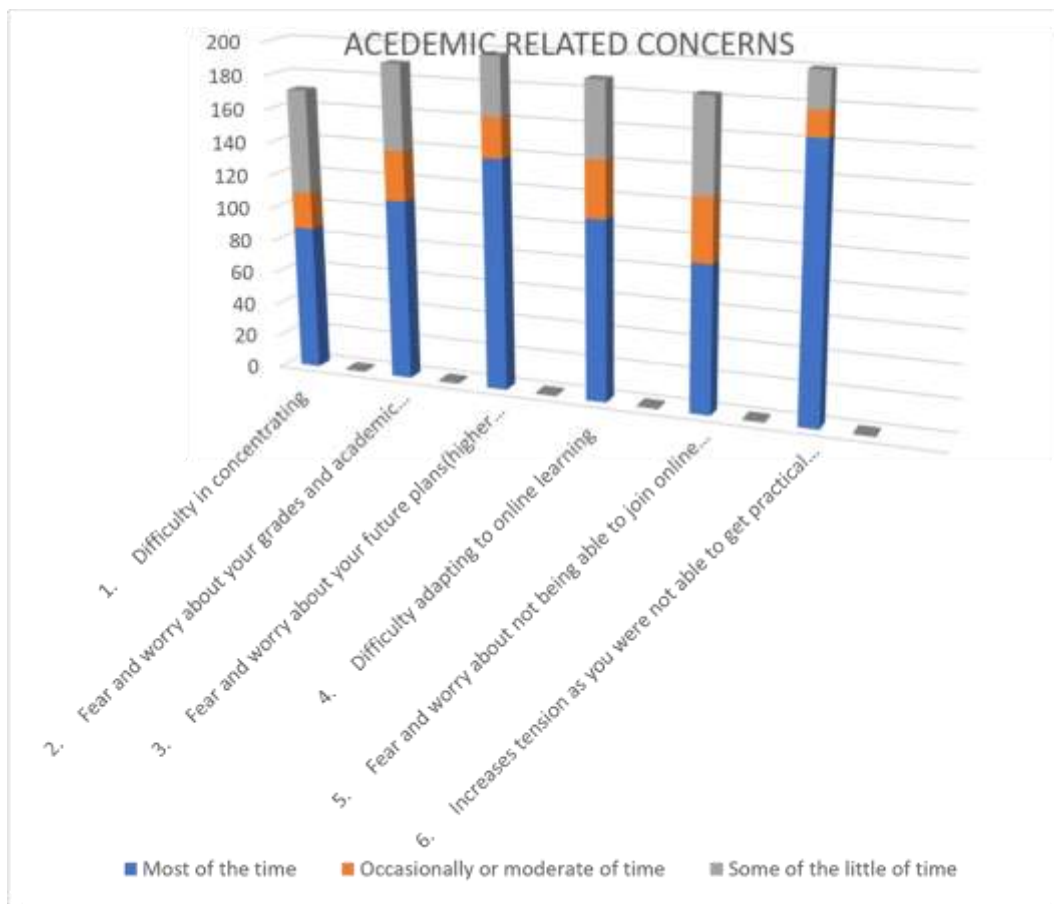


FIGURE 3: RESPONSES REGARDING ACEDAMIC RELATED STRESS

LIFESTYLE REALED STRESS

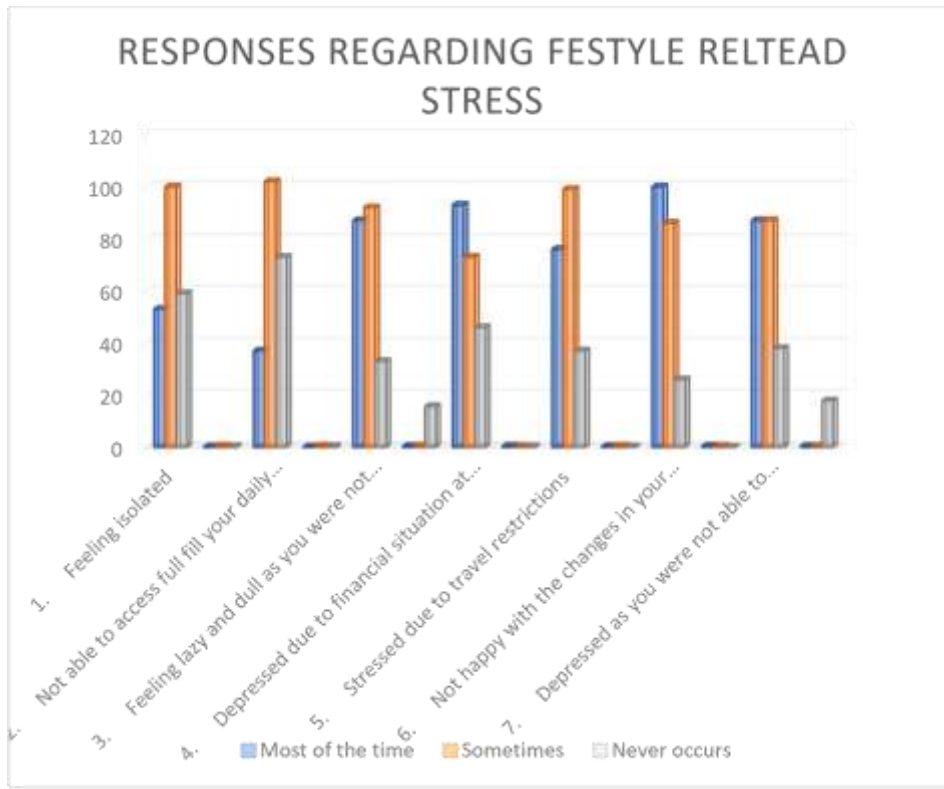
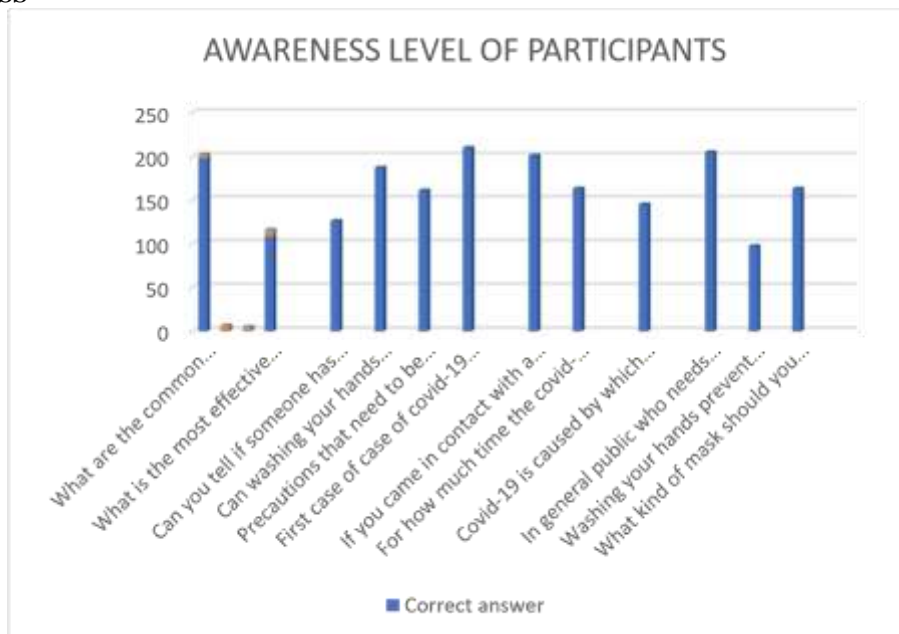


FIGURE 4: RESPONSES REGARDING LIFESTYLE REALED STRESS

AWARENESS



Among 212 participants, 210 know how to protect themselves from covid-19 and only 2 participants didn't know the same. 75% participants have very great deal of trust and 25% have very little trust regarding the information about covid-19 from WHO.

III. Discussion

Principal findings

College students are considered particularly vulnerable to mental health. College students are often struggling to find balance between the life issues and mental health. The finding of this study bring into focus the effects of covid-19 on mental status of students. Our findings suggest a considerable negative impact of covid-19 on mental health, academic, lifestyle and health related outcomes. The survey has healthy representation across genders and age groups. Gender and age groups has significant classification effects on depression severity ($p < 0.001$). This study showed that as $p > .005$, which means that there is no significant difference between factors affecting Covid-19 on mental health and different gender. The ANOVA result showed that the mean of male is 1.0424 and mean of female is 1.32 and f value is 3.178 and sign value is 0.076.

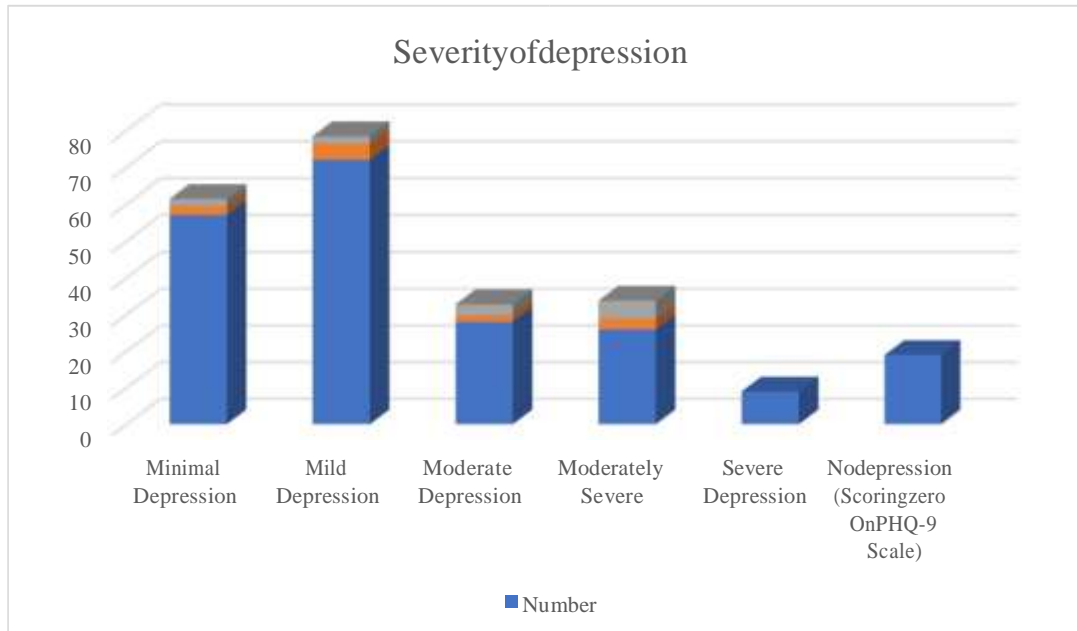


FIGURE 25: SEVERITY OF DEPRESSION AMONG PARTICIPANTS

Among 212 participants, 57 showed “minimal depression”, 72 showed “mild depression”, 28 showed “moderate depression”, 26 shows “moderately severe depression”, 9 showed “severe depression” and only 19 shows “no depression” (on the basis of PHQ-9). This study showed that most of the participants have mild level of depression $n=72$, followed by minimal depression $n=57$. Only 19 participants scored zero and was considered as having no depression. Response to item 9 of PHQ-9 (Thoughts that you would be better off dead, or of hurting yourself) showed that 17 (8%) participants had thoughts related to self-harm or suicide. 29 (13.7%) responded “several days” and 9 (4.2%) “more than half the days”.

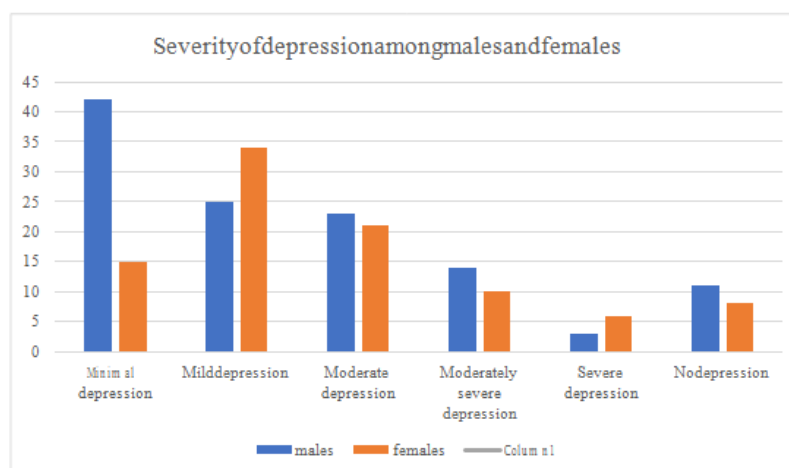


FIGURE 26: SEVERITY OF DEPRESSION AMONG MALES AND FEMALES

Out of 212 participants, 118 were males and 94 were females. It was found that out of 118 males, 42 showed “minimal depression”, 25 showed “mild depression”, 23 showed “moderate depression”, 14 showed “moderately severe depression”, 3 showed “severe depression” and only 3 showed “no depression” (according to PHQ-9 scale). Out of 94 females, 15 showed “minimal depression”, 34 showed “mild depression”, 21 showed “moderate depression”, 10 showed “moderately severe depression”, 6 showed “severe depression” and only 8 showed “no depression” (according to PHQ-9 scale). Our study showed that most of the males were experiencing minimal level of depression and most of the females were experiencing mild level of depression. Covid-19 has more effect on mental health of females than males

Among the health related stress, most of the participants were worried about the health of loved ones n=142, most of the times, followed by fear about getting infected by the virus n=75. 50 participants found difficulty in sleeping “most of the times” and 65 never experienced such thing. 60 participants were feeling stressed and 56 participants never felt stressed. Although majority of participants were experienced fear, worries and stress related to health but 65 participants found difficulty in sleeping ‘none of the times”, 68 found changes in eating habits “none of the times”, fear about getting infected “none of the time”,

Responses regarding academic related stress shows that majority of participants experienced “fear and worry about future plans (higher studies, job)” most of the times” n=139, 24 “occasionally or moderate of the time”, 35 “some of the little time” and 14 “none of the time”. 109 participants experienced difficulty adapting to online learning “most of the time” and majority of the participants expressed concerns about grades and academic progress. Only some of the little participants were easily able to adapt online learning. Many participants found difficulty in concentrating. The most common reason of increased tension among participants was not able to get practical knowledge due to online mode of learning.

Among the lifestyle related stress, the response to (not happy with the changes in your living environment) was “most of the times” by 100 participants. 53 were feeling isolated “most of the times”. 76 were stressed due to travel restrictions “most of the times”. Many students were feeling lazy and dull as they were not able to do outdoor activities. About 102 participants were feeling stressed sometimes as they were not able to access their daily needs. Travel restrictions were the another reason for the stress of the students. Majority of the students were depressed as they were not able to have face to face interactions with their friends. Covid-19 effects the financial status of many families and most of the students were depressed due to financial crises created by this pandemic.

Among the awareness based responses, majority of the participants have a good level of awareness regarding covid-19. Most of the participants knows the origin of virus and the ways to protect themselves from the deadly virus. 210 out of 212 participants knows how to protect themselves from covid-19. 75 % have a great deal of trust regarding information about covid-19 from WHO and 25% have very little trust. Majority of participants trusts the information from WHO.

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