Assess the mental health impact of pandemic Covid 19 on university students in Saudi Arabia and associated factors with a view to develop a self-instructional module (SIM)

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Abstract
The COVID-19 pandemic has brought into focus the mental health of various affected populations. It is known that the prevalence of epidemics accentuates or creates new stressors including fear and worry for oneself or loved ones, constraints on physical movement and social activities due to quarantine, and sudden and radical lifestyle changes. This study aimed to assess the psychological impact of COVID-19 pandemic on students from University College of Farasan, Saudi Arabia. Through quantitative survey approach and descriptive design, the 50 students from first to eight level were selected by purposive sampling method. Initially, personal information was obtained from students and then to assess the knowledge 15 item Questionnaire was used. Anxiety level was assessed using the Arabic Generalized Anxiety Disorder scale (GAD7). Depression severity was assessed by Arabic Patient Health Questionnaire 9 (PHQ9). Stress level was assessed by the Arabic Perceived Stress Scale (PSS). Need based Education about Covid 19 its coping mechanism through pamphlet. The results of the study were in awareness in awareness the total mean score was 12.74±1.192 with the mean percentage of 85. It shows that students had excellent knowledge. The total mean score for anxiety assessment scale was 8.62±5.81, with the mean percentage of 96. It shows that students had mild anxiety about impact of Covid 19 pandemic. The mean score for depression shows that 9.92±5.31 with the mean percentage of 71. It reveals that students had mild level of depression on after impact of Covid 19. Whereas in stress assessment scale the total mean score was 14.74±6.91 with the mean percentage of 57. It shows that students had moderate level of stress after Covid 19 impact. Hence it shows that students had adequate knowledge but needs to improve coping mechanism and more support. During the initial phase of the COVID-19 pandemic in Saudi Arabia, most respondent were from female gender. Our findings may enable policymakers to introduce several measures and psychological interventions that can enhance mental health during the COVID-19 pandemic.

Keywords: mental health impact, Covid 19, university students, Self-instructional module

Introduction
The coronavirus disease (COVID-19) rapidly spread to other areas in China and other countries, since its outbreak in Wuhan, China. The COVID-19 has triggered a global health crisis and is a major public health emergency of international concern (PHEIC) all over the world, which not only threatens the lives of people but also affects their mental health. During the pandemic, some people have experienced relatively higher emotional irregularities (panic, excessive anxiety, irritability, and other psychological reactions) while some people suffered from cognitive imbalances; as a result, their attention and memory may be influenced by repeated stimulation of a large amount of information. Some of them may have changed their behaviors considerably while some have expressed somatic reactions, such as insomnia, stomach pain, and diarrhea. physiological and psychological responses are normal reactions in dealing with public health emergencies, which are conducive to adapting to the environment. However, overreactions can increase the psychological burden and be hazardous to physical and mental health [1, 2].

Mental health issues are the leading impediment to academic success. Mental illness can affect students' motivation, concentration, and social interactions-crucial factors for students to succeed in higher education. Student mental health in higher education has been an increasing concern. The COVID-19 pandemic situation has brought this vulnerable population into renewed focus. Despite the increasing need for mental health care services at postsecondary institutions, alarmingly, only a small portion of students committing suicide contact their institution counseling centers, perhaps due to the stigma associated with mental health. Such negative stigma surrounding mental health diagnosis and care has been found to correlate with a reduction in adherence to treatment and even early termination of treatment [3].

The COVID-19 pandemic has brought into focus the mental health of various affected populations. It is known that the prevalence of epidemics accentuates or creates new stressors including fear and worry for oneself or

loved ones, constraints on physical movement and social activities due to quarantine, and sudden and radical lifestyle changes. A recent review of virus outbreaks and[3] pandemics documented stressors such as infection fears, frustration, boredom, inadequate supplies, inadequate information, financial loss, and stigma [4].

Significance of the Study
Since late 2019, the lives of people across the globe have been disrupted by COVID-19. Millions of people have become infected with the disease, while billions of people have been continually asked or required by local and national governments to change their behavioral patterns. Previous research on the COVID-19 pandemic suggests that it is associated with large-scale behavioral and mental health changes; however, few studies have been able to track these changes with frequent, near real-time sampling or compare these changes to previous years of data for the same individuals [8].

Mental health issues are the leading impediment to academic success. Mental illness can affect students' motivation, concentration, and social interactions-crucial factors for students to succeed in higher education. The COVID-19 pandemic has brought into focus the mental health of various affected populations. It is known that the prevalence of epidemics accentuates or creates new stressors including fear and worry for oneself or loved ones, constraints on physical movement and social activities due to quarantine, and sudden and radical lifestyle changes. Due to the long-lasting pandemic situation and onerous measures such as lockdown and stay-at-home orders, the COVID-19 pandemic brings negative impacts on higher education. The findings of our study highlight the urgent need to develop interventions and preventive strategies to address the mental health of college students [7].

Mental health instruments used by the institutes in COVID-19 related research were different, and the results varied therein; meanwhile, the reported prevalence in different nations and periods varied as well. A systematic analysis of the impact of COVID-19 on mental health of college students can obtain a more validated conclusion to assist psychological health education and mental rehabilitation of students during the pandemic [5]. This study aimed to Assess the mental health impact of pandemic COVID 19 on university students in Saudi Arabia and associated factors with a view to develop A Self-Instructional Module (SIM).

Objectives
1. To assess the anxiety, depression, and stress level of students.
2. Assess the knowledge of Covid 19 among nursing students.
3. Associate the mental health score with selected demographic variables.
4. Need based education given through Self-Instructional Module on Covid 19.

Assumption
Students may have increase of anxiety, depression, and stress level about COVID 19 crisis.

Materials and Methods
- **Research approach:** This is a quantitative based cross-sectional study
- **Research design:** Descriptive Survey design
- **Research setting:** The study was carried out in university college of Farasan, Jazan university, KSA.
- **Population:** The population for the present study were students from university college of Farasan, Jazan university, KSA.
- **Sample size:** Students from nursing department studying from 1- 8 level. The sample size was 50.
- **Sample techniques:** Non probability Purposive Sampling technique was used for this study.

Criteria for sampling technique: Inclusion Criteria
- Nursing students from 1-8 level.
- Willing to participate for the study.

Tool for data collection
- Semi structured interview schedule on demographic variables of parents such as age, Academic level, previous knowledge about Covid 19, Covid 19 vaccination, doses, side effects, mental health been impacted since COVID-19 and any support from mental health services.
- Questionnaire about knowledge on Covid 19. It has 15 questions, with the response of true, false and don't know. Total score is 15.
- Anxiety level was assessed using the Arabic Generalized Anxiety Disorder scale (GAD7). It is a self-filled scale consisting of seven items rated on a four-point Likert scale ranging from 0 (not at all) to 3 (almost every day) with a total score ranging between 0 and 21. Higher scores indicate a higher level of anxiety. Depression severity was assessed by Arabic Patient Health Questionnaire 9 (PHQ9). It is a self-filled scale containing nine items with a four-point Likert scale ranging from 0 (not at all) to 3 (almost every day) with a total score ranging between 0 and 27. Higher scores indicate greater depression severity. Stress level was assessed by the Arabic Perceived Stress Scale (PSS). The PSS is a self-filled scale with ten items on a five-point Likert scale (0 = never, 1 = almost never, 2 = sometimes, 3 = fairly often, 4 = very often). Higher scores indicate higher perceived stress levels.

▪ Need based Education about Covid 19 its coping mechanism through pamphlet.

Data collection procedure
1. Permission was obtained from Dean of university college of Farasan.
2. Through questionnaire to assess the students' knowledge on Covid 19. Anxiety level was assessed using the Arabic Generalized Anxiety Disorder scale. Depression severity was assessed by Arabic Patient Health Questionnaire. Stress level was assessed by the Arabic Perceived Stress Scale. After assessing all the tools, the need-based education about Covid 19 and coping mechanism was taught to the students and also distributed the educational pamphlet.

Plan for data analysis
1. Both descriptive and inferential statistics was used.
2. Mean, standard deviation and mean percentage was used to assess the knowledge and psychological impact questionnaire related to Covid 19.
3. Inferential statistics like Chi square used to assess the association between students' scores with selected Demographic variables.

Findings and Results
The Percentage wise distribution of demographic variable shows that, most of the students (54%) were at the age group of 22-23 years, The maximum percentage (46%) of students were of the level 6 & 7 academic level. The highest percentage of the students were aware about Covid-19 (70%) and Covid 19 Vaccination (70%) respectively. 82% of students taken the Covid 19 vaccination in this 61% of students have completed their 2nd dose of Covid vaccination. Maximum (76%) of the students had side effects of Covid 19 vaccination and Majority (85%) of them understand that Covid 19 vaccination will reduce the risk of COVID virus. 67 % of student's mental health has not been impacted with COVID-19 and 55% of them were not receiving support for a mental health condition before COVID-19.

Table 1: Frequency and percentage wise distribution of knowledge questions on Covid 19

S. no	Knowledge aspects of COVID 19	True	False	Don't know
1.	COVID-19 is an infectious disease caused by the most recently discovered novel coronavirus in Wuhan, China.	96%	2%	2%
2.	The time between catching the novel coronavirus and beginning to have symptoms will be 14 days.	90%	4%	6%
3.	Fever, dry cough, tiredness, and body pains are the most common symptoms in COVID 19	94%	2%	4%
4.	The person infected with novel coronavirus definitely develops symptoms.	98%	0%	2%
5.	The majority of people (about 80%) who get COVID-19 becomes seriously ill and develops breathing problem	92%	4%	4%
6.	Old age people, and those with underlying medical problems like high BP, heart problems or diabetes, are more likely to develop serious illness.	98%	0%	2%
7.	People can also catch COVID-19 if they breathe in droplets from a person with COVID-19 who coughs out or exhales droplets	98%	0%	2%
8.	Social distance means stay more than 1 m (3 feet) away from a person who is sick.	96%	0%	4%
9.	COVID-19 can be transmitted through the air.	98%	0%	2%
10.	Regular hand wash, social distancing, avoiding crowd, wearing a mask and stay at home can protect the person from getting COVID-19	98%	0%	2%
11.	The virus can infect a person more than once	84%	6%	10%
12.	Children cannot be infected with the virus that causes COVID-19	86%	4$	10%
13.	Pregnant women are more vulnerable to get the COVID-19 disease	98%	0%	2%
14.	Treatment with antibiotics can kill the virus caused COVID-19 disease	90%	6%	4%
15.	Healthy food and drinking water increase body's immunity and resistance to COVID 19.	98%	0%	2%

Frequency and Percentage wise distribution of knowledge questions on Covid-19 shows that, Maximum (>90%) number of students were more aware about knowledge on Covid-19 information in all the aspects of questionnaire.

In the area of the virus can infect a person more than once (84%) & Children cannot be infected with the virus that causes COVID-19 (86%) the students answered nearly 85 percentage only. It shows that students need education on these aspects. Only 2 to 10 percentage of students were not at all aware about the Covid 19 information.

Table 2: Frequency and percentage wise distribution of generalized anxiety disorder scale

S. no	Description	Not at all (0)	Several days (1)	Over half the days (2)	Nearly Every day (3)
1	Feeling nervous, anxious, or on edge	20 (40%)	16 (32%)	5 (10%)	10 (20%)
2	Not being able to stop or control worrying	26 (52%)	12 (24%)	6 (12%)	6 (12%)
3	Worrying too much about different things	30 (60%)	5 (10%)	10 (20%)	5 (10%)
4	Trouble relaxing	22 (44%)	20 (40%)	2 (4%)	6 (12%)
5	Being so restless that it's hard to sit still	40 (80%)	6 (12%)	2 (4%)	2 (4%)
6	Becoming easily annoyed or irritable	32 (64%)	12 (24%)	1 (2%)	5 (10%)
7	Feeling afraid as if something awful might happen	14 (28%)	28 (56%)	4 (8%)	4 (8%)

Frequency and Percentage wise distribution of Generalized Anxiety Disorder scale shows that, highest percentage of students (80%) of them expressed not at all anxious in the aspect of being so restless that its hard to sit still. Nearly 60 percentage of students were answered not at all has anxiety in the aspects of Worrying too much about different things (60%), Becoming easily annoyed or irritable (64%) and not being able to stop or control worrying (52%). More or less similar percentage of students were expressed as not at all anxious in the aspects like Feeling nervous, anxious, or on edge (40%) and Trouble relaxing (44%). Only very less percentage (28%) of the students expressed as not at all anxious in Feeling afraid as if something awful might happen, but in this aspect 56 percentage of them expressed as anxious for several days. Less than 20 percentage of students were answered as got anxious on nearly every day and over half the days in all the aspects of anxiety questionnaire.

Table 3: Frequency and percentage wise distribution of patient health questionnaire

S. No	Description	Not at all (0)	Several days (1)	Over half the days (2)	Nearly every day (3)
1	Little interest or pleasure in doing things	22 (44%)	16 (32%)	7 (14%)	10 (20%)
2	Feeling down, depressed, or hopeless	28 (56%)	12 (24%)	6 (12%)	8 (16%)
3	Trouble falling or staying asleep, or sleeping too much	25 (50%)	5 (10%)	10 (20%)	10 (20%)
4	Feeling tired or having little energy	22 (44%)	15 (30%)	2 (4%)	11 (22%)
5	Poor appetite or overeating	40 (80%)	2 (4%)	4 (8%)	4 (8%)
6	Feeling bad about yourself or that you are a failure or have let yourself or your family down	38 (76%)	7 (14%)	1 (2%)	4 (8%)
7	Trouble concentrating on things, such as reading the newspaper or watching television	34 (68%)	12 (24%)	0 (0%)	4 (8%)
8	Moving or speaking so slowly that other people could have noticed. Or the opposite being so fidgety or restless that you have been moving around a lot more than usual	44 (88%)	4 (8%)	0 (0%)	2 (4%)
9	Thoughts that you would be better off dead, or of hurting yourself	40 (80%)	8 (16%)	2 (4%)	0 (0%)

Frequency and Percentage wise distribution of Patient Health Questionnaire to assess the level of depression shows that, maximum percentage of students (88%) were expressed as not at all depressed in the aspect of Moving or speaking so slowly that other people could have noticed. Or the opposite being so fidgety or restless that you have been moving around a lot more than usual. The similar percentage of students were given not at all had depression in the aspects of Poor appetite or overeating (80%) & Thoughts that you would be better off dead, or of hurting yourself (80%) respectively. Nearly 50 percentage of the students were expressed not at all had depression in the aspects of little interest or pleasure in doing things (44%), Feeling down, depressed, or hopeless (56%), Trouble falling or staying asleep, or sleeping too much (50%) & feeling tired or having little energy (44%). Whereas highest percentage of student's expressed depression for several days in the aspect of little interest or pleasure in doing things (32%). 30 percentage had anxious on Feeling tired or having little energy for several days. Less than 20 percentage of students were answered as got anxious on nearly every day and over half the days in all the aspects of patient health questionnaire.

Table 4: frequency and percentage wise distribution of perceived stress scale

S. No	Description	Never (0)	Almost never (1)	Sometimes (2)	Fairly often (3)	Very often (4)
1	In the last month, how often have you been upset because of	14 (28%)	16 (32%)	12 (24%)	4 (8%)	4 (8%)

	something that happened unexpectedly?				
2	In the last month, how often have you felt that you were unable to control the important things in your life?	18 (36%)	12 (24%)	10 (20%)	6 (12%)	4 (8%)
3	In the last month, how often have you felt nervous and "stressed"?	20 (40%)	10 (20%)	5 (10%)	10 (20%)	5 (10%)
4	In the last month, how often have you felt confident about your ability to handle your personal problems?	25 (50%)	14 (28%)	2 (4%)	8 (16%)	1 (2%)
5	In the last month, how often have you felt that things were going your way?	15 (30%)	12 (24%)	16 (32%)	4 (8%)	3 (6%)
6	In the last month, how often have you found that you could not cope with all the things that you had to do?	30 (60%)	7 (14%)	6 (12%)	5 (10%)	2 (4%)
7	In the last month, how often have you been able to control irritations in your life?	14 (28%)	10 (20%)	6 (12%)	15 (30%)	5 (10%)
8	In the last month, how often have you felt that you were on top of things?	22 (44%)	14 (28%)	6 (12%)	3 (6%)	5 (10%)
9	In the last month, how often have you been angered because of things that were outside of your control?	25 (50%)	8 (16%)	15 (30%)	1 (2%)	1 (2%)
10	In the last month, how often have you felt difficulties were piling up so high that you could not overcome them?	26 (52%)	10 (20%)	5 (10%)	6 (12%)	3 (6%)

Frequency and Percentage wise distribution of Perceived Stress Scale shows that, the highest percentage (60%) of students were never had stress in the aspect of in the last month, how often have you found that you could not cope with all the things that you had to do. The similar percentage of students were never had stress in the aspects of in the last month, how often have you felt confident about your ability to handle your personal problems (50%), In the last month, how often have you been angered because of things that were outside of your control (50%) & in the last month, how often have you felt difficulties were piling up so high that you could not overcome them (52%) respectively. Nearly 40 percentage of students were never had stress in in the last month, how often have you felt that you were unable to control the important things in your life (36%), In the last month, how often have you felt nervous and "stressed (40%) & in the last month, how often have you felt that you were on top of things (44%). Very less percentage (28%) were expressed never had stress in the aspect of the last month, how often have you been able to control irritations in your life. Whereas the nearly 30 percentage of students were expressed almost never had stress in the areas of in the last month, how often have you been upset because of something that happened unexpectedly (32%), In the last month, how often have you felt confident about your ability to handle your personal problems (28%) & In the last month, how often have you felt that you were on top of things (28%). Nearly 30 percentage of students were expressed sometimes had stress in the areas of In the last month, how often have you been angered because of things that were outside of your control (30%), In the last month, how often have you felt that things were going your way (32%) respectively. Less than 20 percentage of students were answered as often or very often got stress in all the aspects of Perceived stress questionnaire.

Table 5: Distribution of mean, SD and mean percentage student's scores on Covid 19

S. no	Descriptions	Max Score	Mean	SD	Mean Percentage
1	Knowledge Questions on Covid 19	15	12.74	1.192	85%
2	Anxiety assessment scale (Generalized Anxiety Disorder scale)	0-4, 5-9, 10-14, 15-21	8.62	5.81	96%
3	Depression assessment scale (Patient Health Questionnaire)	1-4, 5-9,10-14, 15-19, 20-27	9.92	5.31	71%
4	Stress Assessment Scale (Perceived Stress Scale)	0-13,14-26, 27-40	14.74	6.91	57%

Overall distribution of Mean, SD and Mean percentage of Knowledge, anxiety assessment, depression assessment and stress assessment of Covid 19 shows that, in awareness the total mean score was 12.74 ± 1.192 with the mean percentage of 85. It shows that students had excellent knowledge on Covid 19 information. The total mean score for anxiety assessment scale shows that the mean score was 8.62 ± 5.81, with the mean percentage of 96. It shows that students had mild anxiety about impact of Covid 19 pandemic. The mean score for depression assessment scale shows that 9.92 ± 5.31 with the mean percentage of 71. It reveals the students had mild level of depression on after impact of Covid 19. Whereas in stress assessment scale the total mean score was 14.74 ± 6.91 with the mean percentage of 57. It shows that students had moderate level of stress after Covid 19 impact.

Hence it shows that students had adequate knowledge but needs to improve coping mechanism and more support. The need-based education was given for all the information about Covid 19 and coping strategies was given to all the students.

There was no significant association between age, academic level and previous knowledge about Covid 19 and Covid vaccination with the student's scores. Hence it shows that the difference observed mean score values were not true difference so the research hypothesis was rejected.

Summary

This study was conducted to assess the student's Knowledge and psychological impact of Covid 19 in university college of Farasan, KSA. Through survey research approach and descriptive design 50 students were purposively selected. In awareness the total mean score was 12.74 ± 1.192 with the mean percentage of 85. It shows that students had excellent knowledge on Covid 19 information. The total mean score for anxiety assessment scale was 8.62 ± 5.81, with the mean percentage of 96. It shows that students had mild anxiety about impact of Covid 19 pandemic. The mean score for depression shows that 9.92 ± 5.31 with the mean percentage of 71. It reveals the students had mild level of depression after impact of Covid 19. Whereas in stress assessment the mean score was 14.74 ± 6.91 with the mean percentage of 57. It shows that students had moderate level of stress after Covid 19 impact. Hence it shows that students had adequate knowledge but needs to improve coping mechanism and more support. The need-based education was given for all the information about Covid 19 and coping strategies was given to all the students

Conclusion

A systematic narrative literature review of the clinical features, risks and consequences of the new COVID-19 on the students was carried out using online databases. Recent and related articles were retrieved mainly from Google Scholar and PubMed search. Students are less susceptible to develop severe forms of COVID-19 infection. The frailty in this geriatric group is attributable to their unique immune, physical and psycho-social vulnerabilities. During the initial phase of the COVID-19 pandemic in Saudi Arabia, most respondent were from female gender. Our findings may enable policymakers to introduce several measures and psychological interventions that can enhance mental health during the COVID-19 pandemic.

Conflicts of interests

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