

Original Article

Impact of COVID-19 on mental and emotional health of dental undergraduate students: a cross-sectional study.

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Abstract:

Introduction: COVID-19 pandemic has disrupted all walks of life. The psychological impact of COVID-19 has been shown to be immense in terms of moderate to severe depressive and anxious symptoms in general public. Such data is important on dental undergraduates to help them cope with stress and promote overall wellbeing. **Aim:** To assess dental undergraduate students' perception on impact of COVID-19 on their physical, mental and emotional health.

Materials and Methods: A cross-sectional survey was undertaken among 227 students of Faculty of Dentistry, SEGi University, Malaysia. A questionnaire containing 25 close ended questions was developed and validated at the faculty. The survey was electronically disseminated through google forms. Data was analysed using SPSS version 22. Descriptive statistics and chi-square test were used. $p < 0.05$ was considered as statistically significant.

Results: The response rate was 85.4%. About 80% of students were concerned that their physical health might be impaired. About 40% reported disturbed sleep, 60% were anxious that they might contact corona virus while treating patients or attending face to face class. More than half of them felt financial instability and 70% students' emotional health was affected. About 30% felt angry, lost control and stressed due to pandemic changes. About 43% missed their social life and 20% felt lonely and depressed during the pandemic lockdown.

Conclusion: Covid-19 has had an impact on mental and emotional health of our dental undergraduates. The faculty has already initiated suitable measures to provide them with necessary moral and psychological support.

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Introduction:

Coronavirus disease (COVID-19) is an infectious disease caused by the newly discovered coronavirus. The World Health Organization labelled the Novel Coronavirus Disease 2019 (COVID-19) a pandemic in March 2020 as it spread quickly over the world, impacting all facets of daily life. As a response to this pandemic, the Malaysian government imposed social and physical distancing, as well as self-quarantining, due to the virus's primary mode of transmission, being direct contact, i.e. droplets transferred by infected individuals coughing or sneezing. Quarantine on one hand helped to curtail the spread of virus, but on the other hand, had significant impact on economic, social, and psychological health. As a result, several obstacles and issues, including psychological pressures, have arisen as a result of this and affected individuals.¹ Recent research on COVID-19 reveals that healthcare workers (HCWs) experience high levels of stressful and traumatic events, and that their mental health is negatively affected including stress-related symptoms, depression, anxiety and insomnia.²

Several other safety measures were also taken by the government ranging from the temporary postponement of educational activities and events to the complete shutdown of schools and colleges. Online and distance learning became the most widely used method of education, bringing with it a slew of new issues and concerns, one of which was effects on mental health of students.³ The psychological impact of COVID-19 has been shown to be immense in terms of moderate to severe depressive and anxious symptoms.⁴ Individual mental health is an important public health concern that is likely to be disrupted during pandemics, such as the COVID-19 pandemic. Previous research papers have found that a considerable rise in the incidence of mental health disorders after similar virus outbreaks. Anxiety, depression, and traumatic stress are among the common problems faced. Individuals in various parts of the world have also reported higher levels of tension, anger, anxiety, and depression as a result of the recent COVID-19 outbreak.⁵

Due to the extreme pandemic's unprecedented character, which affected students at all levels of training, collection of data was required to determine the psychological effects of the COVID-19 pandemic among undergraduate dental students, so that suitable remedial measures could be undertaken. Hence, this study was undertaken. The aim was to assess the Impact of COVID-19 on mental and emotional health of dental undergraduate students with the objectives of using a questionnaire to identify students requiring additional help.

Methodology

This was a descriptive cross-sectional study carried out at Faculty of Dentistry, SEGI University, Kota Damansara. The study was approved by the SEGI Ethics committee (SEGiEC/SR/FOD/2020-2021). Permission to carry out the study on all dental undergraduate students of the faculty was obtained from the Dean. Informed consent was obtained from all the participants. This study was carried out for 1 month starting from October 2020 until November 2020.

The study participants were clinical year dental students from Faculty of Dentistry at SEGI university Kota Damansara who are students from Year 1,2,3,4 and 5 totalling to 227 students.

We included all clinical year dental students from Year 1 to Year 5 without any bar for age and gender. We excluded those students who did not consent to participate in the study.

A validated questionnaire was used as our study tool. The Questionnaire was adopted from a previous study.⁶ It was modified based on our needs and validated for clarity on 10 students. The questionnaire included 25 close ended questions pertaining to demographic details, mental and physical health of students, questions related to their financial status and emotional health. Minor modifications were made to the questionnaire based on the feedback from the students. Internal consistency was checked using Cronbach's alpha which showed a value of 0.79. The questionnaire was transferred to Google forms and electronically disseminated through email and whatsapp.

Data Analysis:

The excel sheet was downloaded and transferred to statistical software. Data was analysed using SPSS version 22. Descriptive statistics and chi-square test were used. $p < 0.05$ was considered as statistically significant. Data was presented as tables.

Results

Out of 227 students, 193 responded to the survey leading to a response rate of 85%. About 66% (126) were females and 34% (67) were males. The mean age of the participants was 21.8 ± 0.5 years. Out of 193 (100%), 17% were from year 1, 21% from year 2, 19% from year 3, 22% from year 4 and 21% from year 5.

The results were split into 4 sections, mental health, physical health, financial health and emotional health.

Mental health

About 80% of the respondents said that they were more concerned about their mental health now than before. About 40% could not have normal sleep and about 60% said that they are anxious about contracting COVID-19 infection. Table 1. Shows the responses for fear about mental health.

Table.1: Responses for questions pertaining to fear about mental health

Fear about mental health	Yes %(N)	No %(N)	Maybe %(N)
More concerned about physical health now than before	79.8% (154)	6.7% (13)	13.5% (26)
No normal sleep during COVID-19 pandemic	38.3% (74)	49.7% (96)	11.9% (23)

Anxious about contacting COVID-19	60.1% (116)	10.4% (20)	29.5% (57)
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Physical health

About 64% were worried about contacting COVID-19 while treating patients, 51% were worried about contacting COVID-19 while attending class and about 64% were worried about contacting COVID-19 while in the campus. Table 2. Shows responses for questions pertaining to physical health.

Table 2: Responses for questions pertaining to physical health.

Worried about contacting COVID-19	Yes %(N)	No %(N)	Maybe %(N)
While treating patient	63.7% (123)	11.4% (22)	24.9% (48)
While attending class	50.8% (98)	15% (29)	34.2% (66)
While in the campus	63.2% (122)	5.2% (10)	31.6% (61)

Financial Health

About 60% felt financial instability, 45% felt that it would be difficult to get a job in the future. Only 29% said that they could meet their financial problems during the pandemic. Table 3 shows the responses related to financial insecurity.

Table 3: Responses related to financial insecurity.

Fear related financial insecurity	Yes %(N)	No %(N)	Maybe %(N)
Financial instability	59.1% (114)	21.2% (41)	19.7% (38)
Getting a job	44.6% (86)	17.6% (34)	37.8% (73)
Difficulty in meeting needs	29% (56)	34.7% (67)	36.3% (70)

Emotional health

About 72% were able to control their emotional health, 30% felt that they did not have control over important things in life during the pandemic. About 35% could not cope up with their routine, 42% Felt stressed,29% Felt angry,54% Felt uncertain about their future,21% felt depressed,92% were worried about their family members 43% said they missed social activities and about 20% felt lonely. Table 4 shows the responses pertaining to emotional health.

Table 4: Responses related to Emotional Health.

Fear about emotional health	Yes %(N)	No %(N)	Maybe %(N)
Ability to control emotional	71.5% (138)	8.3% (16)	20.2% (39)
No control over important things	29.5% (57)	40.9% (79)	29.5% (57)
Coping up with routine	35.2% (68)	35.2% (68)	29.5% (57)
Feeling stressed	42% (81)	23.8% (46)	34.2% (66)
Anger	28.5% (55)	37.3% (72)	34.2% (66)
Uncertain about future	53.9% (104)	20.2% (39)	25.9% (50)
Depression	21.2% (41)	50.8% (98)	28% (54)
Worry about family member	92.2% (178)	3.6% (7)	4.1% (8)
Missing social activities	43% (83)	35.8% (69)	21.2% (41)
Loneliness	19.7% (38)	56.5% (109)	23.8% (46)

Discussion

On 30th January 2020, WHO declared the 2019 novel Coronavirus outbreak as a Public Health Emergency of International concern. The Malaysian government imposed the Movement Control Order (MCO) on the 18th March 2020 to control the spread of virus in our country.

Studies during the previous pandemic have shown that fear of infection, frustration due to lockdown and stigmatization can harm the mental health of the people.⁵

Mental health covers emotional, psychological and social well-being. It determines how we perceive, act and respond to external and internal stimuli in order to help us to decide how we cope with tension, interact with others, and make decisions.⁷ Stress during an infectious disease outbreak can have some impacts on physical, mental and emotional health such as fear and worry about their own health and the health of their loved ones, changes in sleep or eating patterns, difficulty sleeping or concentrating, worsening of chronic health problems, worsening of mental health conditions and increased use of tobacco, and/or alcohol and other substances.⁸

Symptoms of adverse psychological outcomes were seen when individuals were challenged by mandatory quarantine, unexpected unemployment, and uncertainty associated with the COVID-19 outbreak. A high level of psychological stress has been found during COVID-19 pandemic among general population, which has highly included students, health care professionals workers and patients too.^{9,10}

This study has investigated the impact of COVID-19 on mental and emotional health of dental undergraduate students as students are known to be the most vulnerable age group of 18-25 years for developing negative psychological well-being due to disruption of social and academic activities. Moreover, some of them were away from their families which might make them more insecure and feeling lonely. Hence, this study was undertaken to identify such students and help them.

The results of our study showed that half of our study participants feared contacting COVID-19 when they resumed classes which reveals the double-edged nature of COVID-19 lockdown. On one hand, there is fear of contacting virus if they go out while on the other hand there is depression and loneliness being at home. Several studies done across the world on dental and medical students have shown a high stress levels during the pandemic. A study done in Turkey found that medical students were highly worried about being infected with COVID-19.²

The main indicators of psychological health includes depression, anxiety and stress. In our study, prevalence of depression was 20%, anxiety was 35% and stress was 42%. A study conducted among University students in US showed a 71% prevalence of stress,¹⁰ and Jordan students also showed higher stress levels during the pandemic.¹¹ The global prevalence of depression, anxiety and stress has been reported as 33.77%, 31.9% and 29.6% respectively, in the adult population by a systematic review.¹²

By reviewing the result of our survey, we can understand that our participants having depression could have been because of loneliness and lack of normal social gatherings and meeting friends on campus. In a study on university students in Italy, more than 70% agreed that lack of social interaction was main reason for depression.⁹ COVID-19 has had significant impacts on daily life, ranging from Stay at Home orders at the time of the survey to social distancing and mask wearing practices as areas have lifted restrictions. These overarching public health measures may have contributed to feelings of distress. Anxiety could have been also due to uncertainty about graduating on time, fear of increasing backlog of clinical work and the non-availability of the cases to complete the competency test.³ Our participants had a

higher level of stress compared to global values. This can be attributed to change in their routine from classroom to online activities with more asynchronous learning off the campus.

Also, in our study, more than half of the students experienced financial instability, fear of lack of future job opportunities and one third faced difficulties in meeting their regular financial needs. During the pandemic, families have experienced financial troubles due to salary cuts, retrenchment, dying business activities and lack of employment opportunities. Student income is often dependent on maintenance loans, and many report resulting financial hardship- which is also an identified risk to mental health in pandemics.⁶ More than 90% of the students feared about a family member contracting COVID-19. The fear is but natural when one stays away from the family and fear of losing near and dear ones to a pandemic especially when the infection rate was on an increasing trend. A study conducted on dental students in Riyadh also showed similar results that students worried that they themselves or a family member might get infected with COVID-19.¹³ On the good side of view, our participants had a lower level of depression as compared to the global values, this could be attributed to the online mentoring sessions organized by faculty every week to heed to students' academic and personal issues.

Conclusion: Covid-19 has had an impact on mental and emotional health of our dental undergraduates. The faculty has already initiated several suitable measures to provide them with necessary moral and psychological support, like online mentoring, buddy programme, support through student societies etc.

References:

- 1.Xiong J, Lipsitz O, Nasri F, Lui LMW, Gill H, Phan L, Chen-Li D, Lacobucci M, Ho R, Majeed A, McIntyre RS. Impact of COVID-19 pandemic on mental health in the general population: A systematic review. *J Affect Disord* 2020; 277:55-64. PubMed PMID: PMC7413844.
- 2.Torun F, Torun SD. The psychological impact of the COVID-19 pandemic on medical students in Turkey. *Pak J Med Sci.* 2020;36(6):1355-1359. doi: <https://doi.org/10.12669/pjms.36.6.2985>.
- 3.Wong J, Lee AC, Zhang C. Effect of COVID-19 on Dental Education and Endodontic Practice in Hong Kong. *Front. Dent. Med.*, 22 September 2020 | <https://doi.org/10.3389/fdmed.2020.569225>
- 4.Rajkumar RP. COVID-19 and mental health: A review of the existing literature. *Asian J Psychiatr* 2020; 52:102066. PubMed PMID: PMC7151415
- 5.Reynolds DL, Garay J, Deamond S, Moran MK, Gold W, Styra R. Understanding, compliance and psychological impact of the SARS quarantine experience. *Epidemiol Infect* 2008; 136 (7): 997–1007.

6. Hung M, Licari FW, Hon ES, et al. In an era of uncertainty: Impact of COVID-19 on dental education. *J Dent Edu.* 2020; <https://doi.org/10.1002/jdd.12404>
7. Hao F, Tan W, Jiang L, Zhang L, Zhao X, Zou Y, Hu Y, Luo X, Jiang X, McIntyre RS, Tran B, Sun J, Zhang Z, Ho R, Ho C, Tam W. Do psychiatric patients experience more psychiatric symptoms during COVID-19 pandemic and lockdown? A case-control study with service and research implications for immunopsychiatry. *Brain Behav. Immun* 2020; 87:100-106. PubMed PMID: PMC7184991
8. Patel V, Flisher AJ, Hetrick S, McGorry P. Mental health of young people: a global public-health challenge. *Lancet* 2007; 369(9569):1302–13. PubMed PMID: 17434406
9. Villani, L., Pastorino, R., Molinari, E. *et al.* Impact of the COVID-19 pandemic on psychological well-being of students in an Italian university: a web-based cross-sectional survey. *Global Health* 17, 39 (2021). <https://doi.org/10.1186/s12992-021-00680-w>
10. Son C, Hegde S, Smith A, Wang X, BS, Sasangohar F. Effects of COVID-19 on College Students' Mental Health in the United States: Interview Survey Study. *J Med Internet Res* 2020;22(9): e21279-e21283.
11. Basheti IA, Mhaidat QN, Mhaidat HN (2021) Prevalence of anxiety and depression during COVID-19 pandemic among healthcare students in Jordan and its effect on their learning process: A national survey. *PLoS ONE* 16(4): e0249716. <https://doi.org/10.1371/journal.pone.0249716>
12. Salari N, Hosseini-Far A, Jalali R, Vaisi-Raygani A, Rasoulpoor S, Mohammadi M, Rasoulpoor S, Khaledi-Paveh B. Prevalence of stress, anxiety, depression among the general population during the COVID-19 pandemic: a systematic review and meta-analysis. *Global Health* 2020; 16(1):57. PubMed PMID: PMC7338126
13. Alrashed FA, Sattar K, Habib SR, Ahmad T, Al Rashoud AS, Safhi TAY, Almajed AHM, Alnafisah HAH, Alharbi NH, Alsubiheen A. Implications of the COVID-19 Pandemic on the Mental Health and Professional Psychomotor Skills of Dental Students. *Psychol Res Behav Manag.* 2021 Jun 3;14:675-685. doi: 10.2147/PRBM.S317641. PMID: 34113184; PMID: PMC8184245.