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Mental Stress among Medical and Non-Medical Students Engaging in Online Education in Light of COVID-19

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ABSTRACT

The COVID-19 pandemic has drastically affected nearly each and every country on this planet. The closure and lockdown of educational institutions to decrease the danger of disease transmission has resulted in a shift in the medium of instruction, with the majority of educational institutions moving to an online method of instruction. As the number of illnesses and deaths linked to COVID-19 disease rises, stress levels are rising as well. COVID-19 has caused a mental disruption among medical and non-medical students. Introduction of e-learning came as a new mode of learning among many students and it has been difficult for them to cope and adjust to this form of education.

In reaction to the pandemic's disruptions, medical institutions all around the world switched to e-learning. While e-learning can benefit students by allowing them to attend classes from anywhere at their leisure, the abrupt move to e-learning during the pandemic presented medical students with several obstacles, many of which had the potential to cause mental health concerns in the medical and non-medical students. Students with economically backward backgrounds are more exposed to stress due to this new form of learning. Students unfamiliar to e-schooling are facing a lot of difficulties regarding this form of learning and education system.

The main goal of this study is to evaluate stress levels within medical students and non-medical students who were undertaking online/e learning as a result of COVID-19 illness and hence present in front of you the various aspects related to stress due to online education.

Key words: Stress, COVID-19, Lockdown, Quarantine, Pandemic, Mental health

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INTRODUCTION

World Health Organization (WHO) has defined the word pandemic as the spread of a certain disease worldwide or across various international borders, affecting a large population or amount of people. COVID-19 is on-going pandemic across the globe which is primarily caused by a virus known as SARS COV-2. Its symptoms may range from none to many life threatening ones. Severe form of this disease is mainly seen in elderly population and those with underlying medical co morbidities.

COVID-19 is a recently found contagious corona virus that transmits by droplets from one person to another person within close contact. The virus first appeared in December of year 2019 and was found initially in city of Wuhan, China. In January 2020, it was labelled a public health emergency of worldwide significance.

Undergraduate students from medical institutions were quarantined at home or isolation wards and hospitals due to the worldwide COVID-19 epidemic, face to face tuition was phased down since March, and education have been shifted to mostly online form in conformity with Education Ministry requirements. The reason being the intensive self-awareness of sanitary procedures, isolation of individuals, and formal training, it was observed that medical students were a lot more subjected to various adverse implications of the public health conditions and displayed much increasing stress levels than the general public [1].

Thus, mental stress amongst medical students might be interpreted as a disproportion between the demands of living and online form education which occurred at the time of the COVID-19 disease pandemic and the social assistance and resources available for the people and their response skills as they face drastic shifts in study habits and way of living. According to a modified stress model developed for medical students, personal resources (for example optimism, adaptive coping, etc.) have direct effects on stress levels encountered due to the pandemic and spill over impacts on stress responses (for example anxiety, depression etc.) [2]. Multiple different

researches also indicated that extended periods of extreme stress had a very adverse impact on student's mental health and performance with regards to education [2-3].

In the absence of COVID-19, Western and Asian research have studied stress and explored stress variables in medical students and comparing this to the age similar general public and students in other educational areas because of the massive increased proportion of stress among various medicos as compared to the general public and students admitted in various educational platforms [4-5]. Academic pressure, psychological concerns, and health-related stresses are three of medical students' most prevalent sources of stress [6,7]. In other words, these stressors might be considered as unmet academic, psychological, and health-related demands among students [8]. The primary stressors differ between cultural backgrounds and learning situations, despite the fact that there have been interventions designed based on the acknowledged stressors [9-10]. In a wide selected study of medical students from 12 countries, family expectations were identified as a major source of stress. In developed countries like Portugal, Italy, and Poland, economic instability in the family is more likely to be cited as a stressor, whereas test performance was the major stressor for Indian students and students studying in China [11,12]. Prior to the COVID-19 disease, online form of learning has observed to be rapidly increasing over the world for the preceding 20 years, causing a dramatic and substantial shift in the academic environment and student stress levels [13]. One of the most common sources of stress in online education is keeping up with the latest knowledge. Online instructors and students must be available through mobile phones and/or email at all times of the day [14]. Furthermore, students are subjected to a variety of stressors, for instance, the heterogeneity of how individuals use social media and the adoption of continuously evolving technology in order to facilitate their learning flexibility, independence in education and also engagement in various social networking [15-16].

As a result, it is critical to integrate cultural and social factors as well as to understand their impact on mental health and overall health status.

LITERATURE REVIEW

Methodology

In the duration of COVID-19 disease in March 2020, researchers employed a cross-sectional study approach to perform this investigation. From March 11 of 2020 and 21st of March 2020, data were gathered. Students from medical colleges and universities, also dental and the non-medical schools in the UAE were requested to engage in the study *via* an online survey performed and uploaded and available on a website called as survey monkey [16]. Using convenience sampling, each and every students registered/studying in the University of Sharjah's medical and dentistry institutions got a link of the survey in their university emails. Students from other colleges were emailed the poll link *via* the WhatsApp application and various other social media applications using snowball sample form, which included friends who are passing the knowledge on to each other. The first page of the survey link outlined the study's goals and guaranteed participants of their privacy and confidentiality. Students' acceptance signified that they were willing to take part in the study. Prior to participant recruitment, the University of Sharjah Research And Ethics Committee gave its approval to the study.

A total of 1484 students completed the survey, with data evaluated for 1385 completed surveys (93.3 percent) taken from four other countries within the United Arab Emirates. The average age of the various students was 20 years old, and the majority of the participants were female (72 percent). Almost a third of students taken into account were pursuing medicine or dental medicine and also once third of them (35 percent) of those students were doing clinical aspects of study, performing clinical ward rotations. Twelve percent among the pupils said they had come into touch with a COVID-19 infected or suspected case.

Females who were dental students, also other students who had interaction with COVID-infected patients, and students in the clinical portion pertaining to their studies all showed statistically significant greater levels of anxiety. Mild anxiety was expressed by many more students (27%) in lower risk ward rotations, whereas moderate to severe anxiety was recorded by the majority of students (26%) in high-risk ward rotations.

Females reported higher degrees of anxiety as a result of online learning as compared to non-medical students, medical students reported increased intensity of anxiousness prior to online for of education and learning.

Interestingly, after switching to online learning, anxiety levels fell considerably for females and medical students, with a larger proportion of lowered anxiety amidst dentistry students; nevertheless, non-medicos seem to have experienced an increase in the amount of stress after the opening of online learning.

It was observed that that most of students (73%) expressed concern about the risk of transferring COVID-19 to a family member or friend, while it was noted that 65 percent expressed concern about contracting the COVID-19 virus themselves. It was also seen that almost one half of medical students (49%) stated that they were much more concerned about spreading the dreadful disease to others. Females reported higher degrees of anxiety as a result of online learning. As compared to non-medical students, medical students prior to online education, participants reported high levels of anxiety.

Surprisingly, after moving to online learning, anxiety levels fell considerably for the female medical students and while other medical students showing greater percentage of lowering anxiety within dentistry students; nevertheless, students who medical students

weren't showed elevated levels of fear following switching to online mode of learning.

The majority of students (61%) believed that public fear was justified, while just 46% thought it was dysfunctional [24].

DISCUSSION

COVID-19 had an influence on anxiety levels amongst the various university students in the UAE, according to this survey, with nearly half of students feeling mild to moderate/severe anxiety. COVID-19 disease has had a huge effect on the worldwide population, producing dread, stress, and worry, particularly due to apprehensions about the disease's prognosis, changes in society's habits, lockdown limits, and educational interruptions COVID-19 does indeed have a particularly negative impact on university students because of the virus's possible effects on their education, particularly among medical students.

Overall, the students in the research had a good understanding of the pandemic COVID-19 and reported using credible sources for example the Ministry of Health Department of the country made announcements and news releases, as well as the WHO website. Social media platform has been a greatest source of information for both non medicos and medicos, despite the fact that medical students were more likely and comfortable to use these sources. The literature backs up this conclusion, emphasizing the importance of social media in risk perception and trustworthy information distribution during pandemics like COVID-19, [17,18]. Other research has discovered that young people utilise social media to obtain a great amount of information, which might work as a quick trigger and reliable indicator to study effects on mental health and of amount of anxiety and stress [19,20]. In this study, students' adherence to hygiene practises may also be explained by their knowledge about the same. The majority of students reported a substantial shift in their hygienic practices after the COVID-19 disease pandemic, including enhanced hand cleanliness, avoidance of crowded settings, and avoidance of contact with those who had flu-like symptoms. Despite the fact that medical students had much better levels of knowledge, compliance with sanitary measures was similar in both groups. Furthermore, it was discovered that there is substantial positive connections between sanitary behaviour modifications and increasing heights of anxiety. Furthermore, even more than one half of students who mentioned altered hygienic behaviours had greater anxiety levels, which is consistent with a prior study that revealed that students who were more concerned about the COVID-19 illness practised frequent hand cleaning and kept a safe distance from others [21].

The escalating number of COVID-19 instances throughout the world, including in the UAE, is causing public alarm [22,23]. Furthermore, due to a shortage of vaccines and effective treatment, government officials have enforced a slew of laws and restrictions [24]. Various age groups and communities have reported different compliancy and commitment to these boundaries, with younger age groups expressing lesser acceptance of these restraints [25]. However, the bulk of students in this study did not believe that the harsh measures used by healthcare officials were inefficient or unnecessary. The students were more worried about infecting their family members with COVID-19 than about acquiring the virus themselves, demonstrating a desired sense of responsibility for the society during such an infectious disease outbreak.

During the SARS pandemic, healthcare personnel in Hong Kong and Canada expressed similar fears [26-27]. The outcomes of this study show that stress levels caused by COVID-19 are quite high, starting from a range of milder to severe forms, particularly observed among females, which is steady and similar with previous studies that were performed [5,6,17]. Most of the students in the survey were mainly female candidates, reflecting the gender difference in the UAE's curriculum of higher education. Furthermore, 75% of students had mild anxiety, while a rest of them had severe anxiety. This study is unique in that it compared medical and non-medical students, as well as medical and dental students within in the medical group of students.

Moreover, because this study took place at a pivotal moment in the pandemic's inception and transition to online learning, anxiety levels could be assessed at three different times: throughout visits in the hospital premises for medical and as well as dental studying students, prior to actually online learning, and that after all university students switched to online learning. Medical/dental students who were in their clinical stage of the study who worked in wards which were of higher risk for infection by COVID-19 disease or interacted with COVID-19 patients reported greater levels of anxiety (moderate to severe), showing that an increased risk perception due to COVID-19 can lead on to increase in the severity and level of stress or anxiety.

Dental and medical students persisted to visit hospitals during the initial phase of COVID-when the epidemic's fright and terror were at the peak and prior to the imposition of lockdown limitations which could justify their adherence to infection control protocols. Higher fear scale scores and levels of anxiety amongst various health -care personnel, as well as medical students' high-risk perspectives of visiting hospitals during outbreaks of infectious diseases, have been connected to higher levels of anxiety [18-27].

It was discovered that dental students exhibited higher levels of anxiety than medical students, which remained significant after further detailed analysis. According to previous research, medical and BDS schools are exceedingly challenging, and students typically underwent higher levels of stress during their studies [28,29].

However, owing to their function as providers of care and early exposure to patients in dental clinics, dentistry students have higher levels of perceived stress than

medical students [30,31]. Moreover, dental students come into close contact with patients and thus are actively involved in their dental care during an apparently dangerous transmissible respiratory virus, with a higher risk of infection due to the course's nature. It might explain why dental students in our study had higher anxiety, as well as the general reduction in anxiety across all medical students once online training was implemented. Mental health support must be adjusted to each and every student's demands and included within the online curriculum.

Non medicos experienced and highlighted or felt greater amount of anxiety occurring before and also after starting online education or learning, and although students of medical course had anxiety levels decreased after starting online learning, anxiety levels of non-medicos increased. It might be because of a multitude of factors, for example medical students' familiarity with online courses/systems, their distance from the perceived risk of COVID, or both groups' divergent sources of information on the pandemic. Although knowledge of COVID-19 disease, its transmission, control strategies and prognosis, may reduce students' concerns and anxiety, a deficiency in the knowledge of COVID-19, its prognosis, transmission, and control strategies can cause negative connotations and anxiety about unidentified facts related to the disease. describing the increasing anxiety levels among non-medicos included in this study.

CONCLUSION

This is the main study that we are aware of, which provides crucial data on university students' early emotions and anxiety levels. Soon after, COVID-19 had been affirmed as a global pandemic. Over one half of university students said they had moderate to severe degrees of anxiety, with a quarter saying they had severe anxiety. Med students, in particular, experienced greater amount of anxiety during clinical residency, which reduced to a percentage of 25% with the beginning of online learning, whereas anxiety levels among non-medical students increased profoundly if compared to others. The findings of this study can be taken up by the government colleges and government universities to build up effective screening techniques and therapies in order to enhance the mental health of all students and thereby decreasing the health hazards related to stress and anxiety among the students. In the case of a COVID-19 pandemic or other future public health disaster, such methods will help university students feel less stressed and worried but while also increasing psychological resilience.

REFERENCES

1. Saraswathi I, Saikarthik J, Senthil Kumar K, et al. Impact of COVID-19 outbreak on the mental health status of undergraduate medical students in a COVID-19 treating medical college: A prospective longitudinal study. Peer J 2020; 8:10164.
2. Heinen I, Bullinger M, Kocalevent RD. Perceived stress in first year medical students-associations with personal resources and emotional distress. BMC Med Educ 2017; 17:4.
3. Rogowska AM, Kusnierz C, Bokszczanin A. Examining anxiety, life satisfaction, general health, stress and coping styles during COVID-19 pandemic in Polish sample of university students. Psychol Res Behav Manag 2020; 13:797-811.
4. Dyrbye LN, Shanafelt TD. Commentary: Medical student distress: A call to action. Acad Med 2011; 86:801-803.
5. Drachev SN, Stangvaltaite-Mouhat L, Bolstad NL, et al. Perceived stress and associated factors in Russian medical and dental students: A cross-sectional study in North-West Russia. Int J Environ Res Public Health 2020; 17:5390.
6. Sreeramareddy CT, Shankar PR, Binu VS, et al. Psychological morbidity, sources of stress and coping strategies among undergraduate medical students of Nepal. BMC Med Educ 2007; 7:26.
7. Borjalilu S, Mohammadi A, Mojtahedzadeh R. Sources and severity of perceived stress among Iranian medical students. Iran Red Crescent Med J 2015; 17:17767.
8. Sheppard R, Deane FP, Ciarrochi J. Unmet need for professional mental health care among adolescents with high psychological distress. Aust N Z J Psychiatry 2018; 52:59-67.
9. Varghese R, Norman TS, Thavaraj S. Perceived stress and self-efficacy among college students: A global review. Soc Sci Electron Publish 2015; 5:15-24.
10. Molodynski A, Lewis T, Kadhum M, et al. Cultural variations in wellbeing, burnout and substance use amongst medical students in twelve countries. Int Rev Psychiatr 2020; 1-6.
11. Machul M, Bieniak M, Chałdaś-Majdańska J, et al. Lifestyle practices, satisfaction with life and the level of perceived stress of Polish and foreign medical students studying in Poland. Int J Environ Res Public Health 2020; 17:4445.
12. Palvia S, Aeron P, Gupta P, et al. Online education: Worldwide status, challenges, trends, and implications. J Glob Info Technol Manag 2018; 21:1-9.
13. Jacolize P, Adéle B. Mental health in higher education: A comparative stress risk assessment at an open distance learning university in South Africa. Int Rev Res Open Distrib Learn 2018; 19:170-191.
14. Arinto PB. A framework for developing competencies in open and distance e-learning. Int Rev Res Open Distrib Learn 2013; 14:168-185.
15. Guraya SY, Al-Qahtani MF, Bilal B, et al. Comparing the extent and pattern of use of social networking sites by medical and non-medical university

students: A multi-center study. Psychol Res Behav Manag 2019; 12:575-584.

16. Albarrak AI, Mohammed R, Al Elayan A, et al. Middle east respiratory syndrome (MERS): Comparing the knowledge, attitude and practices of different health care workers. J Infect Public Health 2019.
17. Yang S, Cho SI. Middle East respiratory syndrome risk perception among students at a university in South Korea, 2015. Am J Infect Control 2017; 45:53-60.
18. Chao M, Xue D, Liu T, et al. Media use and acute psychological outcomes during COVID-19 outbreak in China. J Anxiety Disord 2020; 74:102248.
19. Mertens G, Gerritsen L, Duijndam S, et al. Fear of the coronavirus (COVID-19): Predictors in an online study conducted in March 2020. J Anxiety Disord 2020; 74:102258.
20. Harper CA, Satchell LP, Fido D, et al. Functional fear predicts public health compliance in the COVID-19 pandemic. Int J Ment Health Addict 2020; 1-14.
21. Bao Y, Sun Y, Meng S, et al. 2019-nCoV epidemic: Address mental health care to empower society. Lancet (London, England) 2020; 395:37-38.
22. Rajkumar RP. COVID-19 and mental health: A review of the existing literature. Asian J Psychiatr 2020; 52:102066.
23. Ryan BJ, Coppola D, Canyon DV, et al. COVID-19 community stabilization and sustainability framework: An integration of the Maslow hierarchy of needs and social determinants of health. Disaster Med Public Health Prep 2020; 1-16.
24. Zettler I, Christoph S, Lau L, et al. Individual differences in accepting personal restrictions to fight the COVID-19 pandemic: Results from a Danish adult sample. Psy ArXiv 2020.
25. Maunder RG, Lancee WJ, Balderson KE, et al. Long-term psychological and occupational effects of providing hospital healthcare during SARS outbreak. Emerg Infect Dis 2006; 12:1924-1932.
26. Wong JG, Cheung EP, Cheung V, et al. Psychological responses to the SARS outbreak in healthcare students in Hong Kong. Med Teach 2004; 26:657-659.
27. Aboalshamat K, Hou XY, Strodl E. Psychological well-being status among medical and dental students in Makkah, Saudi Arabia: A cross-sectional study. Med Teach 2015; 37:75-81.
28. Ahmad FA, Karimi AA, Alboloushi NA, et al. Stress level of dental and medical students: Comparison of effects of a subject-based curriculum versus a case-based integrated curriculum. J Dent Educ 2017; 81:534-544.
29. Murphy RJ, Gray SA, Sterling G, et al. A comparative study of professional student stress. J Dent Educ 2009; 73:328-337.
30. Ahmed MA, Jouhar R, Ahmed N, et al. Fear and practice modifications among dentists to combat novel coronavirus disease (COVID-19) outbreak. Int J Environ Res Public Health 2020; 17:2821.
31. Sarfaraz S, Shabbir J, Mudasser MA, et al. Knowledge and attitude of dental practitioners related to disinfection during the COVID-19 pandemic. Healthcare (Basel, Switzerland) 2020; 8.