

# Medical Interns' Perceptions and Attitudes During the COVID-19 Pandemic: A Qualitative Study

## Tıbbi İntörnlerin COVID-19 Pandemisi Sırasındaki Algı ve Tutumları: Niteliksel bir Çalışma

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**ABSTRACT Objective:** This study was designed to explore the potential association between the severity of the impact of the coronavirus disease-2019 (COVID-19) pandemic on perceptions and attitudes among medical interns. **Material and Methods:** The study was carried out as qualitative key informant semi-structured interviews, and were enrolled from September-October 2020 using a convenience sampling was used to recruit nine medical interns at King Faisal University College of Medicine, Saudi Arabia. Data were analyzed qualitatively using framework analysis. Semi-structured interviews were performed in Microsoft Teams (online) for an average of 21 minutes, and the English language was utilized. A thematic analysis was done to identify the main concerns of the interns about education loss. **Results:** Nine participants (4 male medical interns and 5 female interns) were interviewed. The interview time averaged 18.4 minutes (range 17-21 minutes) and the mean age of the sample was 24 (standard deviation 0.707) years. Interns were more likely to be anxious, panic-ridden, horrified, depressed, stressful and disorganised due to the influence of the COVID-19 pandemic. In addition, the COVID-19 pandemic has had an impact on interns' organization of hospital rotation schedules. Furthermore, there is disagreement on the impact of the COVID-19 epidemic on preparation for the Medical Licensing Exams. **Conclusion:** It should be ensured that the pandemic does not affect any more interns on medical rotations, by raising awareness through a bundle of educational courses.

**Keywords:** COVID-19; stress; anxiety; medical intern; qualitative research

**ÖZET Amaç:** Bu çalışma, koronavirüs hastalığı 2019 (COVID-19) pandemisinin etkisinin şiddeti ile intörnlerin algı ve tutumları arasındaki potansiyel ilişkiyi araştırmak amacıyla tasarlanmıştır. **Gereç ve Yöntemler:** Çalışma, nitel anahtar bilgilendirici yarı-yapılandırılmış görüşmeler olarak yürütülmüştür ve Suudi Arabistan King Faisal Üniversitesi Tıp Koleji'nden dokuz uygun intörn toplamak için uygunluk örnekleme kullanılarak Eylül-Ekim 2020 arasında kayda alınmıştır. Veriler, çerçeve analizi kullanılarak niteliksel olarak analiz edilmiştir. Yarı-yapılandırılmış görüşmeler Microsoft Teams (çevrimiçi) platformunda, ortalama 21 dakika sürecek şekilde İngilizce dili kullanılarak gerçekleştirilmiştir. İntörnlerin eğitim kaybı hakkındaki temel endişelerini belirlemek için bir tematik analiz yapılmıştır. **Bulgular:** Dokuz katılımcı (4 erkek tıbbi intörn ve 5 kadın intörn) ile görüşme yapılmıştır. Görüşme ortalama 18,4 dakika sürmüştür (17-21 dakika arası) ve ortalama yaş 24'tür (standart sapma 0,707). İntörnler COVID-19 pandemisi etkisinden dolayı daha çok kaygılı, panik halinde, korkmuş, stresli ve düzensiz haller sergilemişlerdir. Ek olarak, COVID-19 pandemisinin intörnlerin hastane rotasyon programları organizasyonu üzerinde de etkileri olmuştur. Dahası, COVID-19 epidemisi Tıbbi Lisans Sınavı hazırlıklarında da anlaşmazlık yaratmıştır. **Sonuç:** Bir dizi eğitim kursu ile farkındalık yaratılarak, pandeminin tıbbi rotasyonlardaki intörnleri daha fazla etkilememesi sağlanmalıdır.

**Anahtar Kelimeler:** COVID-19; stres; kaygı; tıbbi intörn; niteliksel çalışma

Recently, there has been renewed interest in the novel coronavirus severe acute respiratory syndrome-coronavirus-2 (SARS-CoV-2), since it was first reported at Wuhan, Hubei province, China, in December 2019.<sup>1</sup> Following the outbreak, on March 11, 2020, the World Health Organization declared coronavirus disease-2019 (COVID-19) as a global

pandemic.<sup>2</sup> As these data indicate, China has been severely affected by COVID-19, a significant public health disaster.<sup>3</sup> The virus spread very quickly, so that 1,000 patients tested positive in 2 weeks from the first cases.<sup>3</sup> Globally, a total of 93 million cases (and over 2 million deaths) have been confirmed since January 19, 2021, 10 am Central European Summer Time.<sup>4</sup>

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Peer review under responsibility of Türkiye Klinikleri Journal of Medical Sciences.

**Received:** 08 Mar 2022 **Accepted:** 29 Oct 2022 **Available online:** 02 Dec 2022

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Between January and February 2021, confirmed cases in Saudi Arabia reached 366,267, with more than 6,043 deaths.<sup>4</sup>

Data from several studies suggest that the prevalence of anxiety, fear, depression, sleep disturbance, somatisation, and obsessive-compulsive symptoms among health workers was high during this pandemic.<sup>5,6</sup> It has previously been observed that extended work shifts, shortage of appropriate personal protection equipment and increased risk of exposure to SARS-CoV-2 are some of the reasons why health-care workers have more psychological symptoms.<sup>7</sup> Extensive researches have shown that the fear of infection with this highly infectious virus, fear of losing beloved ones, dissemination of misinformation associated with COVID-19, failure to access medical care and the lack of properly-equipped patient services, issues of lockout (e.g., prolonged home isolation, social distancing, food insecurity, fear of unemployment, income loss, etc.), are expected to be correlated with psychological conditions such as depression, anxiety, phobia and insomnia.<sup>8-11</sup>

Medical students, during their hospital rotations, are frontline workers who are in direct touch with the people affected. Though medical interns are usually aware of all common diseases, since COVID-19 is a novel virus, detailed information is yet to be available. Thus, the lack of proper information in this population will prompt them to exaggerate the situation and increase their stress and anxiety, leading to medical decisions being effected.<sup>12</sup> Medical interns are medical graduates who will need medical training for one year.<sup>13</sup> They rotate in 5 mandatory clinical positions during this training, viz., internal medicine, surgery, pediatrics, obstetrics and gynecology and family and community medicine. Another 3 months would be spent in training, in either psychiatry, emergency medicine or anaesthesiology or orthopaedics or dermatology or any other relevant medical specialty.<sup>13</sup>

Little in-depth analysis has been done about the psychological impact of the outbreak of COVID-19 among medical interns, which is crucial to guiding policies and interventions to maintain their psychological well-being, as COVID-19 is spreading fast

and wide in Saudi Arabia and worldwide. This study has been designed to the potential association between the severity of the impact of the COVID-19 pandemic on perceptions and attitudes among medical interns in the College of Medicine, King Faisal University, Saudi Arabia.

## MATERIAL AND METHODS

### STUDY DESIGN

The preference for quantitative over qualitative research technology has gradually changed, and the dominance of quantitative research is not as high as before.<sup>14</sup> This study used individual interviews, to obtain a deeper understanding of the psychological effect of the outbreak of COVID-19 among medical interns in order to provide evidence for future studies and to create awareness of this problem among the health authorities in Saudi Arabia.

### STUDY SETTINGS

A total of 15 interns were contacted, of whom 9 participated in the key-informant interview.<sup>15</sup> Semi-structured questions were used for the interviews.<sup>16</sup> Participants were recruited between September and October of 2020, and the study began after ethical permission was given by the College of Medicine, King Faisal University, Saudi Arabia. Consent forms were prepared in English. Recruitment emails were sent to 60 medical interns at King Faisal University College of Medicine.

### SAMPLE SIZE

A sample of nine participants was selected. The sample size of the analysis will be determined when the point of saturation of the emerging themes is reached. In particular, the size of the sample is difficult to predict in qualitative analysis. One study suggested 3 to 16 participants.<sup>17</sup>

### INCLUSION CRITERIA/EXCLUSION CRITERIA

Medical interns and student graduates from King Faisal University College of Medicine were included in this study. On the other hand, mentally incapable student (i.e. diagnosis with depression or stress disorder) was excluded from this study.

## DATA COLLECTION PROCEDURE

Signed informed consent form was obtained prior to interviews from all interns meeting the inclusion requirements. The semi-structured interview addresses the how and why of the problems discussed from the viewpoint of the subjects' experiences, encouraging researchers to explore the attitudes of individuals and how they give meaning to or perceive their experiences.<sup>18</sup> Semi-structured interviews were performed in Microsoft Teams (online) for an average of 30 minutes, and the English language was utilized. In particular, the interview was recorded in a private room using a digital voice recorder, and field notes were written to encourage follow-up questions. By storing all the research-related files safely in a locked room, confidentiality was ensured. The interview guide used was intended to take into account existing literature on the subject. The voice recorder, the hard copy of the notes and the consent form were placed in a secured cabinet in the investigator's office. The audio recording was erased after the transcription of the interview. Participants were given an ID number at the time of the interview, which was used as an identifier for the data at all remaining times. The data was kept on the investigator's personal laptop for data processing purposes. Further, when direct quotations from the participants were used in the analysis process, confidentiality was ensured by anonymising their identity, as stated above.

## DATA ANALYSIS PROCEDURE

Interviews were transcribed verbatim and stopped when the saturation point was reached, at which no new themes or information emerged.<sup>19</sup> Thematic narrative approach and system analysis were used to analyse the results and m coding to coordinate and handle interview transcripts. Inductive and deductive content analysis was obtained to ensure the consistency of the codes and not to allow any force in the data used by the independent researchers.<sup>19</sup> When all the interviews were completed, to allow for a more straightforward interpretation of the material, themes were established. Themes were provided with index numbers that allowed transcripts to quickly classify parts of the information corresponding to a particular theme. Transcript quotes were manually transferred

to coloured index cards. The themes were organized in colour-coded themes, reflecting the contribution of each individual.

Accordingly, a coding book was developed, and all the participants' contributions to each theme and sub-theme were collected. The transcripts were then compared to see whether the same codes were assigned to the text at the same time. It addressed any differences and agreed on sophisticated themes and sub-themes. Reflection on this approach has been used to assist with potential transcript coding. The study was conducted out in compliance with the Helsinki Declaration principles, and the King Faisal University Faculty of Medicine's Ethical Committee approved the research. The reference number for the Committee is 2020-10-26 and date October 20, 2020.

## RESULTS

A total of 15 responses were received, and 9 of the 15 responses were listed as eligible respondents. After interviewing 9 (60%) participants, data saturation was reached. Nine (4 male medical interns and 5 female interns) participants were interviewed. The interview time averaged 18.4 minutes (range 17-21 minutes). All interviews were conducted in English and the mean age of the sample was 24 (standard deviation 0.707) years. All the participants were staying in Alhasa, and all of them were students at the King's Faisal University.

## THEMATIC INDEX

As can be seen from [Table 1](#), a total of 4 delicate subjects were identified and agreed upon with the second coder. The results are presented below in the format of their corresponding themes.

### 1. Medical interns' feelings on account of pandemic COVID-19

Most of the participants (n=6) commented about the effect of pandemic COVID-19 and their psychological status, i.e., the interns were more prone to anxiety, panic, terror, depression, stress and disorganised state. All those consequences have affected the interns in preparing for the Medical Licensing Examinations and organizing and arranging the schedule of hospital rotations: "I was like I'm having a

**TABLE 1:** Identified main themes after thematic analysis.

Refined Themes
1. Medical interns' feelings on account of pandemic COVID-19
2. Internship experiences and pandemic COVID-19
3. Positive and negative experiences in relation to pandemic COVID-19
4. The social aspect and the medical intern during the pandemic

panic being in a hospital, especially with the situation of COVID-19. So, I'm so anxious while touching anyone I think such things sitting in a chair" (P2). The increase in positive cases of Coronavirus had an adverse impact: "My feeling is you know pandemic, and it's horrible with a lot of COVID-19 patients" (P3). The isolation department too affected the interns: "The isolation department, it was also stressful and affected my time in the study. I didn't study well for the Saudi Medical Licensing Examinations (SMLE)" (P4); "I was depressed. So I changed my schedule again to another specialty at the beginning" (P7); "P9: Personally, I'm very confused. I have many disruptions in the organization of the internship. I have a plan, but everything's goes contrary to this plan" (P9).

## 2. Internship experiences and pandemic COVID-19

According to participants, the current pandemic has had a clear impact on the training year of the intern. Interns are allowed to be in the hospital for a short period of time: "In the first two months, I barely went to the hospital for like a couple of days because of COVID-19; now they are avoiding having too many interns in the hospital because of risk of infection" (P1). Further, according to the intern, they are confronted with the choice of longer attendance at the hospital: "Hospitals ask the interns on the first day whether or not they are interested in this specialty and based on that, they ask the student to come to the hospital or stay at home" (P1). Similarly, the internship teaching and training process was profoundly affected: "I guess I'm not getting anything from the rotation, nothing to do and nothing to see and nothing to perform, especially after two months, I'm as if I'm still a student, I'm not an intern at the hospital" (P2); "I'm in the surgical department, I didn't get the full experience of the spe-

cialty because they accept only emergency cases" (P4); "We were not also allowed to communicate with patients very much or do physical examinations. So, most of the time, we were there only observing which I think can affect our skills" (P1); "The outpatient section was closed. Hence in surgery rotation, for example, all the cases were either in the emergency or would be given an appointment in the elective cases" (P6); "It affects the education process and the exposure to the patients" (P7). Moreover, the way of training was subject to change due to the current pandemic: "I aimed to work in family medicine in my first month in July, but because there was a need for Coronavirus control, I had to do office work, so I was documenting all the cases in Al Hofuf area" (P5).

## 3. Positive and negative experiences in relation to pandemic COVID-19

The most exciting aspect of the data is the advantage the current pandemic affords, in taking advantage of the absence of hospital attendance for preparation for the SMLE, applying the standard precautions, learning new skills and conducting a virtual clinic: "Due to not being able to go to hospitals, we have like more time to study for our SMLE exam" (P1); "I'm preparing for the (SMLE) exam. So I take advantage just to prepare more" (P3); "I think, uh, doctors become more cautious with the patients and towards infection guidelines" (P4); "The precaution level is rising. Everyone is wearing their mask. They are concerned about the hygiene in the hospital" (P9); "It's surprising that I said was it way because I have got a chance to make swaps and actual swaps for the patient" (P6); "The patients didn't need to come to the clinic, so they just do it at the virtual clinic. It was very nice" (P8).

Despite what has been stated as the positive experiences in dealing with the current situation, there have been some obstacles that may be consider a negative experience. Modification of the education process and stressful workplace circumstances reflect the negativity of the current situation: "Most of the hospitals cancel morning meetings because of large crowds. We're not also able to go to the hospital, examine patients, record history and having an on-call duty— all these have affected our internship experi-

ence negatively” (P1); “It’s the stressful environment, the anxiety because of the situation or the fear of getting affected by it” (P4); “The doctors are busy, the nurses are exhausted. I don’t benefit much; I sometimes feel I am wasting my time” (P9). Likewise, an overload of hospital work and less face-to-face clinic work can be seen as a negative experience in the current situation: “We as interns are overloaded in hospitals. So, some of the hospitals do not welcome interns for training; further, training hours are also reduced” (P2); “A negative point, is that in some places where I worked, they did not receive patients physically. They only consulted through calls. So, the experience was less because, you know, you want to see how the doctor handled the patient before you and you cannot see that” (P5).

#### 4. The social aspect and the medical intern during the pandemic

Most of the respondents reported social life was significantly affected by the current pandemic. One of the most important concerns is fear of transmitting the infection to their families: “Actually, I was stressed because in my home I have a diabetic patient and immuno-compromised patient with cancer. So, due to my exposure to the COVID-19 and or suspected cases, even if there is no infection you still feel that you are working in a hospital (and may infect family members)” (P8); “I think of staying at home all the time, for fear of getting an infection. Everyone is worried. Everyone is depressed about the situation” (P7); “In the beginning, my family isolated me from the house, uh, and, uh, as also my cousins and my friends, uh, also, uh; my wife didn’t accept me, uh, especially if, I came from the hospital directly” (P4). The current situation has strengthened family relations because everyone is forced to be at home most of the time: “We are able to strengthen our bonds with, uh, our family members by spending much time together, uh, which is something that we did not have even as a last-year student, because we were under so much pressure” (P1).

## DISCUSSION

In reviewing the literature, so far, very little was found on the question of the medical intern and the

cognitive impairment in relation to COVID-19. The current study found the impact of COVID-19 pandemic i.e., interns were more likely to be nervous, panicky, depressed, stressful and disorganized. All these effects have influenced interns in the preparation for the Medical Licensing Exams and their coordination of the schedule of hospital rotations. In tune with the present results, previous studies have demonstrated that medical students have higher baseline rates of anxiety relative to the general population.<sup>9</sup> It is encouraging to compare this figure with that found in China by Lai et al., 2020, who found that about half the participants suffered from symptoms of depression, pain, anxiety and insomnia.<sup>20</sup> Another interesting finding is that student depression and untreated anxiety are reported to have a detrimental effect on academic success, professionalism and empathy for patients, and lead to academic dishonesty and attrition from medical school.<sup>21</sup>

The most important result is that the current pandemic has had a substantial effect on the internship training year. The interns are allowed to be in the hospital for a short time. This result is in accord with recent studies indicating that COVID-19 has had a significant effect on all health staff in terms of regular ward rounds, elective procedures and clinical arrangements, thereby undermining the existing health care system.<sup>22,23</sup> Similarly, another result seems to be consistent with another study which found insufficient cases and procedures to be observed, lack of expertise and realistic nursing skills, and re-allocation based on the hospital’s capability and workload.<sup>24,25</sup> Further, educational training and medical teaching sessions have been discontinued.<sup>24</sup>

The results of this study show that modification of the education process and the demanding conditions of the workplace represent the negativity of the current situation. Besides, the overload of hospital work and less face-to-face clinical work can be seen as a detrimental experience arising out of the current situation. When the results are compared to those of other studies, it is clear that as the epidemic spread, overworked employees became routine factors that had a negative impact on working conditions.<sup>26-28</sup> Surprisingly, some participants did see a positive side to the pandemic, which enabled better preparation for

SMLE due to lower hospital attendance, apart from learning new skills and conducting a virtual clinic.

Most of the respondents indicated that social life was greatly influenced by the current pandemic. One of the most serious issues of interns is the fear of spreading the infection to their relatives. However, the present situation has improved family relations, because everyone is forced to stay at home much of the time. These results are in accord with recent studies indicating that the most affected population which has experienced academic failure along with changes in their social life due to the coronavirus pandemic are university students.<sup>29</sup> Further, literature research indicates that university students face numerous stressors in their lives and are already vulnerable to depression, anxiety, insomnia and appetite shifts to meet the academic and social challenges of youth.<sup>30</sup> In Bangladesh, a similar study was carried out about the effect of the COVID-19 pandemic on the mental health of university students with a home quarantine length of only one month, which showed that depression, anxiety, stress and anger problems were on the rise, corresponding to the increasing quarantine time.<sup>31</sup>

The major limitation of this study is the sample size and representation of the population. The proportion of participants agreeing to be interviewed from the total number invited is small. In certain situations, it was difficult to schedule interviews at mutually suitable times with medical interns who graduated from King Faisal University. The study has not been able to triangulate the findings with those of other stakeholders, such as policymakers and community staff, but we will consider this in future studies. Another limitation is that we have been conducting online interviews that might mask nuances detectable in face-to-face interviews.

## CONCLUSION

This study explored the effect of pandemic COVID-19 and perceptions and attitudes status of interns, i.e.

the interns were more prone to be anxious, panicky, terrified, depressed, stressful and disorganized. All those consequences have affected the interns in preparing for the Medical Licensing Examinations and in organizing and arranging the schedule of hospital rotations. The internship teaching and training process were pointedly affected. It should be ensured that the pandemic no longer affects medical rotations, by raising awareness through dedicated training programmes. Likewise, most of the respondents reported social life was meaningfully affected by the current pandemic and one of the most serious concerns is the fear of transmitting the infection to their families. The current situation has strengthened family relations because everyone is forced to be at home most of the time.

### Acknowledgments

*The authors would like to sincerely thank everyone who has contributed to this study and convey our heartfelt gratitude to all participants and colleagues for helping to make this study a success.*

### Source of Finance

*During this study, no financial or spiritual support was received neither from any pharmaceutical company that has a direct connection with the research subject, nor from a company that provides or produces medical instruments and materials which may negatively affect the evaluation process of this study.*

### Conflict of Interest

*No conflicts of interest between the authors and / or family members of the scientific and medical committee members or members of the potential conflicts of interest, counseling, expertise, working conditions, share holding and similar situations in any firm.*

### Authorship Contributions

**Idea/Concept:** Abdullah Almaqhawt; **Design:** Abdullah Almaqhawt; **Control/Supervision:** Abdul Sattar Khan; **Data Collection and/or Processing:** Mohammed Albarqi, Abdullah Almulhim; **Analysis and/or Interpretation:** Abdullah Almaqhawt, Sayed Ibrahim Ali; **Literature Review:** Abdullah Almaqhawt; **Writing the Article:** Abdullah Almaqhawt; **Critical Review:** Mohammed Albarqi; **References and Fundings:** Abdullah Almulhim, Abdullah Almaqhawt; **Materials:** Abdullah Almaqhawt.

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