

Psychosocial Impact of COVID-19 on Family Physicians in the Kingdom of Saudi Arabia

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Abstract

Background: The emergence of the new pandemic, COVID-19 has had a profound effect on public health and health care workers (HCWs) are at the frontline in combating this crisis. The pressure from work during this period may contribute to psychosocial problems in these HCWs.

Objectives: The study aimed to assess the effects of COVID-19 on the psychological health of family physicians in Saudi Arabia.

Materials and Methods: A cross-sectional study was conducted among doctors in the field of Family Medicine at various hospital settings in the Kingdom of Saudi Arabia. A pre-tested and validated questionnaire measured sociodemographic details; health concerns and emotional distress; perceptions related to precautionary measures and other effects of COVID-19.

Results: More than 81.9% of the physicians were concerned about their personal health during COVID-19 which showed a statistically significant relationship with self-reported health status. The degree of concern showed a statistically significant relationship between position, self-reported health and employment status ($p < 0.05$). The prevalence of emotional distress due to COVID-19 was reported in 52.6% of the participants which showed a statistically significant association was seen highest with age group 30-39 years ($p = 0.004$).

Conclusion: The study showed that this pandemic has created many high concerns among Family physicians about their health, family's health and also the public health. Stress reducing techniques such a physician-directed and organization-directed interventions should be initiated in helping the physicians in the management of stress while combating COVID-19.

Key words: COVID-19, Stress, Family, Physician, Burnout, Saudi Arabia

Introduction

SARS-CoV-2, commonly known as COVID-19 is a newly identified β -coronavirus that emerged as a pandemic after its emergence in Wuhan, China (1). Currently, it is labeled as an international public health emergency that has shown a rapid transmission rate the world has never witnessed (2). Health care workers (HCWs) are facing huge challenges in treating and managing the patients infected with COVID-19 and this demonstrates the uncertain preparedness of health care systems (2).

The HCWs, including family physicians, are at the frontline of this public health emergency and have a significant role to play in responding to this crisis. Also, the health care systems' capacity to prepare and respond properly relies on their ability to work well during these situations (3). Indeed, family physicians face tremendous pressure dealing with the COVID-19 pandemic as they have higher risk of being exposed to the virus through direct contact with the patients with a wide range of complaints. In addition, they need to deal with fast-paced changes in their organizations' policies as a response to this emergency, which adds more stress to their daily work. As a result, there is a higher risk of a negative impact on their mental health such as anxiety and depression in such situations (3).

Although the majority of current COVID-19 studies have been concentrated on disease epidemiology and its severity, there is limited evidence examining the psychological effect on family physicians as one of the frontline health care workers dealing with this crisis. A study in Hong Kong during the Severe Acute Respiratory Syndrome (SARS) pandemic reported that 89% of the HCWs reported psychological trauma (4). Additionally, a recent study on HCWs who are exposed to COVID-19 situations found that 70% of them reported psychological distress manifestations (5). It has been reported that COVID-19 is associated with symptoms of psychological distress and mental illness among the general population (6). Moreover, this has made them feel increased anxiety, stress, and concern towards hygiene when buying essential items (7,8). Literature review revealed insufficient evidence regarding the psychosocial effects of COVID-19 on family physicians in Saudi Arabia. Our objective is to explore and describe the impact of COVID-19 on family physicians to help enhance their resilience and preparedness for future public health emergencies.

Materials and Methods

Our study was a cross-sectional study done among doctors practicing in the field of Family Medicine (FM) that included consultants, specialists, residents, and interns practicing in different hospital settings in the Kingdom of Saudi Arabia. A pre-tested and validated questionnaire was used. A pilot study was done on 25 participants of the same categories to check the validity and reliability of the questionnaire and to calculate the minimum sample size. A minimum sample size of 315 was calculated considering

values of the standard deviation of scores obtained from the pilot study done in 25 interns using the sample size formula,

$$n = \frac{S^2 [Z_{1-\frac{\alpha}{2}} + Z_{1-\frac{\alpha}{2}}]^2}{(\chi - \mu)^2}$$

$$\Delta = (\chi - \mu) / S$$

Where

S= standard deviation (10.19), χ = sample mean=12.23, μ = population mean = 9.87; Δ = effect size=0.2316; α = significant level (95%) and $1-\beta$ = power of study (80%).

The Ethics and Research Committee of the institution approved this study. The questionnaire was sent randomly to selected participants (Family medicine) after contacting them either by phone and/or email. We used a mixed-method of convenience and snowball sampling, where doctors in FM from each province were identified and asked to answer the questionnaire. They were also requested to forward to their colleagues and other family medicine doctors from other provinces so that maximal participation could be ensured. The participants were briefed about the need and benefits of the study and anonymity of their responses was assured. Thus, the inclusion criteria were all the doctors who gave consent to participate and were practicing in the FM departments in the Kingdom of Saudi Arabia. Doctors who are currently on leave during the study period for any reason (e.g. maternity leave, sick leave, vacation, etc.) were excluded from our analysis.

Validation of Questionnaire

We checked the content validity and face validity of the questionnaire by expert evaluation and focused group discussion. Construct validity was established by exploratory factor analysis with varimax rotation to test the hypothesized domain structure and examine its substructure. Items with a correlation coefficient >0.7 were omitted. Internal consistency was examined, but test/retest reliability could not be performed because of the paucity of time. The homogeneity of the question items in each domain was evaluated using Cronbach's α coefficient. A coefficient of 0.7 or higher is preferred for a questionnaire to be internally consistent. The questionnaire contained items that recorded the psychosocial impact of COVID-19. Thus, the final version of the questionnaire had four sections with a total of 22 items. Section I had items that recorded sociodemographic details, section II- health concerns and emotional distress; section III- perceptions related to precautionary measures for COVID-19; Section IV-others effects of COVID-19.

Data Management and Statistical Analysis

Data collected were entered into MS Excel by a calibrated investigator and statistical analysis done using SPSS version 23 (IBM Corp. USA) by an independent biostatistician. Categorical variables were summarized as proportions and frequencies and any possible relationship of the variables analyzed using Pearson's Chi-square test.

Continuous variables obtained were expressed as mean and standard deviation. The significance value (p-value) ≤ 0.05 was considered as statistically significant.

Results

The data was collected using an online questionnaire that was sent to doctors residing in different provinces in the Kingdom of Saudi Arabia. We received a total of 516 responses and the final analysis included 475 completed responses that satisfied our eligibility criteria that were included. Our study had 48.2% of females and 51.8% males. The details of the personal and work-related information are given in Table 1. The self-reported health status by the participants showed that 81.9% had 'good to excellent' and 18.1% had 'very poor to fair' health status (Table 1).

When the participants were asked about concerns about their own and family's health and also about the COVID-19 death rates, it was found that 30.5% and 59.8% of the participants were 'very to extremely' concerned about their health and family's health respectively. The concern about COVID-19 death rates showed that 25.9% were 'not concerned', 48.4% were 'Slightly to somewhat' and 25.7% were 'very to extremely' concerned. It was also found that participants who had 'very poor to fair' self-reported health status were 'very to extremely' concerned about their health ($p < 0.001$), with their family's health ($p < 0.001$) and also with COVID-19 death rates ($p = 0.014$). The prevalence of emotional distress due to COVID-19 was reported in 52.6% of the participants that showed a statistically significant association with age group 30-39 years ($p = 0.004$) and also in participants who had 'very poor to fair' self-reported health status ($p < 0.001$) [Table 2].

When we assessed the status of precautionary measures at the workplace, 55.2% of the participants reported that it was 'sufficient' and 31.6% reported it was 'not sufficient', which showed a statistically significant association with experience, position, self-reported health status, and employment status. The precautionary measures that made the participants bothered during work are depicted in Figure 1. Participants who reported 'sufficient' precautionary measures at workplace belonged more to the category of a) 'consultants (15.3%) and residents (48.5%), b) who had experienced more than 10 years in FM (17.1%) ($p = 0.015$), c) 'good to excellent' self-reported health status (86.3%) and d) full-time employment status (78.2%) compared to their respective counterparts ($p < 0.05$) [Table 3]. It was also reported that these precautionary measures affected their ability to do the job in 47.6% of the participants and were comparatively more reported in medical interns (27.2%) and who had 'very poor to fair' health status which showed a statistically significant association ($p < 0.05$). Wearing masks was found particularly bothersome in 60.2%, which showed a significant association with age less than 30 years ($p = 0.048$) and those who had 'very poor to fair' health status ($p < 0.001$) [Table 3]. The bothering reasons for using masks as reported by participants ($n = 286$) are depicted in Figure 2.

The effects of COVID-19 on work and personal life of the participants showed that 74.5% had reported changes in their regular job due to the pandemic situation and this was comparatively seen more in doctors who were on a full-time contract status ($p = 0.008$). There was no statistically significant association seen between other sociodemographic variables and changes to regular jobs ($p > 0.05$). In our study, 46.9% of the doctors reported that they started working over-time due to the COVID-19 situation and this showed statistically significant association with those with a 'very poor to fair' health status ($p = 0.022$). The financial loss was reported by 45.9% of the participants, which also showed a statistically significant association with those 'very poor to fair' health status ($p = 0.003$). It was surprising to find that 52.4% reported that society treated them differently because of their work nature in the hospital, but this didn't show any association with sociodemographic characteristics (Table 4). It was reported that the COVID-19 situation had positive outcomes in their personal and work life in 61.7% of the participants which showed a significant association with those who had 'Good to excellent' health status only ($p = 0.001$) [Table 4]. The most reported positive outcome of this pandemic by the participants was 'increased awareness of the disease control' (41%) followed by new learning experience (23%), a greater appreciation of life and work (20%). [Figure 3]

Discussion

The risk of transmission of COVID-19 is higher for people who come in close proximity with the infected individual and this is huge for family medicine doctors. Thus there is a huge risk of becoming infected and transmitting to other health care workers and relatives. Doctors should take immediate and appropriate measures to control the spread of this pandemic (8). To the best of our knowledge, no study has been conducted in the kingdom to assess the concerns and perceptions of FM doctors about COVID-19 and its impact on personal and family health.

In our study, the majority of the FM doctors are concerned about their and also their family's health. The FM doctors are dealing with a new form of stress in their work and personal life dealing not only with patients but also with the emotional problems associated with their patients and also from the society (9). A study was done by Urooj et al. among doctors working in hospitals who reported that the majority of them feared to infect their family members, the rapid spread of disease, complications of the disease, becoming a carrier and also feared to miss the diagnosis (10). Our findings show that more than half of the participants experienced emotional distress due to this pandemic situation. It has been consistently reported that doctors are at higher emotional distress even under normal circumstances compared to the general population (11,12). So, no doubt the stress will increase during this pandemic, particularly when there are no effective control measures in place. A study done during the 2009 swine flu pandemic reported that 20% of the healthcare professionals (HCPs) reported the symptoms

Table 1: Sociodemographic details of the participants

		N	%
Gender	Female	229	48.2
	Male	246	51.8
Age	<30	274	57.7
	30-39	124	26.1
	40-49	56	11.8
	>50	21	4.4
Position/ designation	Family medicine intern	103	21.7
	Family medicine Resident	225	47.4
	Family medicine Specialist	87	18.3
	Family medicine Consultant	60	12.6
Experience in current position (years)	Less than 1 year	153	32.2
	1 to 3 years	158	33.3
	4 to 9 years	106	22.3
	More than 10 years	58	12.2
Employment status	Full-time	346	72.8
	Part-time	129	27.2
Self-rated health status	Good to excellent	389	81.9
	Very poor to fair	86	18.1

Table 2: Relationship concerns related to COVID-19 with sociodemographic characteristics

		N	%	P value* (Pearson's Chi- square test)					
				Age	Gender	Position/ Designation	Experience	Self-reported health	Employment status
Degree of concern about personal health	Not concerned	86	18.1	0.669	0.701	0.110	0.812	<0.001	0.005
	Slightly to somewhat	244	51.4						
	Very to extremely	145	30.5						
Degree of concern about family's health	Not concerned	53	11.2	0.106	0.101	0.003	0.230	<0.001	0.003
	Slightly to somewhat	138	29.1						
	Very to extremely	284	59.8						
Degree of concern about COVID-19 death rates	Not concerned	123	25.9	0.425	0.053	0.605	0.360	0.014	0.299
	Slightly to somewhat	230	48.4						
	Very to extremely	122	25.7						
Emotional distress	No	225	47.4	0.004	0.081	0.884	0.090	<0.001	0.223
	Yes	250	52.6						

* p value>0.05 is considered as statistically significant

Table 3: Relationship of perceptions of precautionary measures in COVID-19 with sociodemographic characteristics

		N	%	P value* (Pearson's Chi- square test)					
				Age	Gender	Position/ Designation	Experience	Self-reported health	Employment status
Precautionary measures at workplace were	Don't know	63	13.3	0.276	0.063	0.001	0.015	0.011	<0.001
	Not sufficient	150	31.6						
	Sufficient	262	55.2						
Precautionary measures affect ability to do job	No	249	52.4	0.270	0.576	0.013	0.174	0.030	0.588
	Yes	226	47.6						
Wearing mask is particularly bothersome	No	189	39.8	0.048	0.251	0.235	0.063	0.001	0.160
	Yes	286	60.2						

* p value>0.05 is considered as statistically significant

Table 4: Relationship of work and personal life related factors during COVID-19 sociodemographic characteristics

		N	%	P value* (Pearson's Chi- square test)					
				Age	Gender	Position/ Designation	Experience	Self-reported health	Employment status
Changes to regular job duties	No	121	25.5	0.122	0.079	0.274	0.265	0.567	0.008
	Yes	354	74.5						
Working overtime	No	252	53.1	0.064	0.311	0.929	0.819	0.022	0.596
	Yes	223	46.9						
Financial losses	No	257	54.1	0.429	0.868	0.394	0.253	0.003	0.563
	Yes	218	45.9						
Being treated differently because of working in hospital	No	226	47.6	0.097	0.139	0.095	0.891	0.059	0.115
	Yes	249	52.4						
Personal or family lifestyle affected	No	99	20.8	0.001	0.869	0.640	0.883	0.982	0.429
	Yes	376	79.2						
Live with children	No	211	44.4	0.003	0.894	0.116	0.143	0.314	0.026
	Yes	264	55.6						
COVID-19 situation had positive outcomes	No	182	38.3	0.328	0.370	0.527	0.446	0.001	0.448
	Yes	293	61.7						

of flu in their family members (13). Furthermore, family medicine physicians who are at the forefront of fighting this pandemic fear their families becoming infected, which makes them stay away from their beloved ones and this would add more stress to their mental health.

Studies conducted during epidemics and pandemics such as SARS in 2003, MERS in 2012, and Ebola in 2014-16 reported that healthcare professionals could experience immense psychological morbidities, including trauma, which might be experienced even after the outbreak is gone (14,15,16). To tackle this issue, the employer or organization should take measures to support the doctors mentally by motivation, assuring medical and financial support to both the doctor and family, supply of standard PPE kits. In our study, 31.6% of the participants reported that precautionary measures at their workplace were not sufficient. The shortage of PPE and the lack of other precautionary measures could make the situation worse.

The use of facemasks has become ubiquitous in every country after this pandemic even though their effectiveness in reducing the risk of transmission of SARS-CoV-2 is unclear and also scarce (17). Still, facemasks are widely being used by healthcare workers mainly to prevent the droplet spread, which is proved to be the main mode of direct transmission (18,19). But our study finding showed that 60.2% of the participants had bother in wearing masks. The majority of the doctors who had this problem with facemasks reported that it caused physical discomfort. The extended use of protective filtering face-piece respirators (FFR) such as N95 masks would cause physical discomfort in doctors (29,21).

There is an accelerating surge of patients with COVID-19 and this puts pressure on the global health care workforce, which will intensify the workload of HCPs. In our study, 74.5% of the doctors have reported that there were changes in the pattern of regular jobs due to this pandemic. It is been reported that the extended work hours in HCPs can contribute to adverse effects on mental and physical health (22). Employers or hospital administration should consider reducing the workload, as it would help to mitigate fatigue and related adverse effects on Family physicians (23).

Another important concern in this pandemic situation is the stigmatization and discrimination that HCPs experiences in society. In our study more than half of the participants reported that they are being unfairly treated by society because of their current work nature. Reports are showing that several frontline health care workers are facing discrimination and often face difficulty in finding food and shelter (24). It has also been reported that even relatives and neighbors have been showing a kind of displeasure to HCPs despite the fact they are working with all precautionary measures during this pandemic (25). To thwart this denounced discrimination towards doctors, it is important to disseminate accurate information to the public regarding the COVID-19 that will help the society to fight this public health crisis and also support the frontline health care workers.

Our study also tested whether this COVID-19 pandemic has produced some positive outcomes and it was found that 61.7% of the FM doctors had reported the same. According to 41% of doctors, this pandemic helped to increase the awareness of disease control measures not only in doctors but also among the general population. This increase in awareness and knowledge regarding the virus and its control measures would help the public and also the doctors to prepare for future epidemics or pandemic outbreaks. The study finding showed that 20% of doctors our study had reported that the pandemic increased the appreciation of life and work. This would help to increase the confidence and performance of the work skills of family medicine doctors (26).

Limitations

Being a cross-sectional study showed the relation between variables but hinders the cause-effect relationship.

Conclusion

It is clear from the above findings that, the COVID-19 pandemic has created demanding challenges for Family medicine doctors. These doctors deal both with the emotional and the scientific aspect, which plays a vital role in tackling this pandemic. It is thus important to provide comprehensive support to doctors from the administrators and the society, as they are the frontline healthcare providers in this public health crisis.

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