The role of primary healthcare physicians in the COVID-19 pandemic: a cross-sectional study

Abstract

Background: Following the remarkable spread of coronavirus disease 2019 (COVID-19), worldwide, it quickly became apparent that many public health systems worldwide were not prepared to manage such a pandemic. We aimed to assess the perceptions of primary care physicians (PCPs) in Jordan toward their role during COVID-19.

Methods: A cross-sectional study using a self-administered questionnaire was performed. The study participants included PCPs from the Ministry of Health, academic institutions, and the private sector in Jordan.

Results: A total of 221 PCPs participated in the study. Most participants reported not having received any training on infection control (59.7%) or COVID-19 (81%). More than half PCPs (53.4%) felt positive about the way patients received and/or complied with their instructions. More than half PCPs (55.7%) educated their patients on protective measures against COVID-19 infection and considered this as part of their role and responsibility. Over 80% of the participants would apply social distancing, hand sanitation, facial masks, and patient education, but only half (51.1%) reported planning to order COVID-19 test kits.

Conclusions: PCPs had a positive attitude toward controlling COVID-19 infection and showed a willingness to educate patients on how to protect themselves. However, PCPs should be provided special training on COVID-19.

What's already known about this topic?

1. Social distancing and personal protection equipment are essential in reducing the spread of COVID - 19.

2. Healthcare providers play a crucial role in raising awareness and disease prevention.

What does this article add?

1. Primary care physicians believe in their important role to prevent the spread of COVID - 19.

2. Although many of them are aware of their role in education and disease prevention, most of them lack the proper training needed to properly apply prevention and education approaches.

1. Introduction

Coronavirus disease 2019 (COVID-19) is an ongoing infectious disease caused by the severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2) virus and is generally known as "novel coronavirus" [1]. Since its detection in Wuhan, China in December 2019, the pandemic has proliferated quickly worldwide, and was eventually announced as a pandemic by the World Health Organization (WHO) in March 2020 [1]. Indeed, by the time of writing this report, it is estimated that COVID-19 has already infected more than 33 million individuals worldwide with a total death toll of 1,014,291 [2]. Following the spread of COVID-19 outside Wuhan, it quickly became apparent that many public health systems worldwide were not prepared to manage such a pandemic. The fatality rates in many of these countries were higher than the estimates (i.e., 2%–53%) provided in the earlier reports [3–5]. This discrepancy might be explained by (i) differences in the protocols stipulated by different public health systems to control the spread of the virus, (ii) the continuously evolving knowledge of the behavior of COVID-19 [3,5], and (iii) differences in the population structure among different countries. Some countries have a larger population of elderly citizens with a high level of co-morbidity, and these individuals are particularly more vulnerable to COVID-19 infections [4,6]. Regardless of these differences, global cumulative experience has clearly demonstrated that personnel working in health-related fields, including physicians, nurses, and medical laboratory technicians, are on the frontline to contain the pandemic and prevent it from overwhelming the health care system

of the respective countries. Among these professionals, primary care physicians (PCPs) play a central role.

The nature of the services provided by PCPs entails that they meet patients of different ages, backgrounds, and socioeconomic status more frequently and by a larger volume than other specialists. The responsibility of PCPs in a pandemic situation is not only limited to patient diagnosis and treatment but also covers prevention, disease surveillance, and above all, patient knowledge and education [7]. Public knowledge and education are of particular importance during a pandemic. Several studies found these to be directly related to public compliance with governmental measures implemented to control the spread of the pandemic [8–11]. Importantly, lack of knowledge or misinformation may even facilitate the spread of the disease [12]. For example, during the Ebola epidemic, the poor understanding of the infectivity of the virus, including its airborne mode of transmission, remarkably contributed to the high number of cases and fatalities [13].

Despite the established and wide range of roles that PCPs play during outbreaks, studies aiming to evaluate the way PCPs perceive these roles during the COVID-19 pandemic have been scarce. Considering the above deficiency in the literature, this study aimed to survey the perceptions of PCPs in Jordan toward their roles during the COVID-19 pandemic.

2. Materials and Methods

2.1. Study design and population

This study used a cross-sectional design. Data were collected from a self-administered questionnaire in July 2020. Study participants included primary healthcare physicians, including family medicine or general practitioners from the Ministry of Health, academic institutions, and the private sector in Jordan.

The questionnaire was sent to 309 PCP participants. Ethical approval from the Institutional Review Board at Jordan University of Science and Technology was obtained before

conducting the study. Participation in the study was voluntary, and signed informed consent was obtained from the participants before they completed the questionnaire.

2.2. Study instrument

At the time of conducting the study and collecting the data, non-emergency medical care was still suspended in Jordan in compliance with government measures to control the spread of COVID-19. Therefore, the survey was designed to evaluate the perceptions of PCPs as to how COVID-19 would affect their practice once non-emergency visits to primary healthcare centers resumed following the control of COVID-19 spread in the country. The survey comprised 24 items enquiring about (i) previous training/experience with specific COVID-19 infection control protocols (three items), (ii) perceptions of PCPs regarding their specific role(s) in educating/counseling the patients on COVID-19 (10 items), and (iii) new infection control protocols they intend to implement in their respective practices (seven items). In addition to these twenty items, the survey also collected demographic information, including data on sex, age, years of experience, and specific specialty of the survey taker (four items).

The study items were developed after reviewing pertinent literature and the latest WHO infection control recommendations and were further reviewed by a team of four experts in public health, epidemiology, family medicine, and infectious diseases (one expert from each specialty). The survey was first tested on a group of 10 PCPs and then further modified according to their recommendations.

2.3. Data analysis

Descriptive statistical analysis was used to analyze data on the items included in the survey. Frequencies and means were used to describe categorical and continuous variables, respectively.

3. Results

A total of 221 out of 309 PCPs completed the survey (response rate 71.5%). The baseline characteristics of the participants are presented in **Table 1**. Most participants were males (59.7%) in the age group of 25–35 years (59.3%) and were practicing family medicine (61.1%). Most participants reported that they did not receive any training related to infection control (59.7%) or COVID-19 (81%). However, 44.8% of participants reported treating patients with COVID-19.

More than half PCPs in this survey (53.4%) felt positive about the way patients received and/or complied with their instructions and recommendations, and most of them (56.1%) believed that most patients would follow instructions and recommendations about COVID-19. More than half PCPs (55.7%) reported that they would often or always educate their patients about ways to protect themselves from the risk of infections. Moreover, educating patients on ways to reduce the risk of infection was the most used method by PCPs. Most PCPs believed that they shared the responsibility of fighting the spread of COVID-19 and that their role as PCPs included educating patients about methods of preventing the transmission of the disease (**Table 2**).

Table 3 summarizes the practices that PCPs would employ to reduce the possibility of COVID-19 transmission at their workplace. Over 80% of the participants would apply social distancing, hand sanitation, facial masks, and patient education. However, only half of them (51.1%) reported that they were planning to order COVID-19 test kits. Conversely, if a COVID-19 test becomes readily available, the majority (85.9%) of the participants expressed their intention to use it on their patients, with 52.5% reporting that they would only be using the kit on patients whom they suspect to have COVID-19. Finally, upon asking the participants regarding the most suitable protocol to use when treating a patient with COVID-19 in their clinic, most PCPs (63.8%) reported that they would prioritize the patient in treatment, separate from other patients, and ask the patient to immediately leave the clinic following the treatment. A minority of

PCPs (10.4%) reported that they would completely avoid receiving patients with COVID-19 and would request them to leave their clinics.

4. Discussion

The role of PCPs in controlling the spread of COVID-19 is considered a cornerstone in the global health response to defeat this pandemic. They are responsible for early detection of diseases, triaging of diseases that require special attention, and provision of essential treatment and proper patient management. They should also be capable of distinguishing patients suspected to have COVID-19 from those with other respiratory diseases or symptoms [14]. These responsibilities highlight the importance of the PCPs role in controlling the pandemic. Additionally, PCPs carry an important duty of counseling and educating patients. These responsibilities emphasize the importance of focusing on the role of PCPs in the prevention and control of infectious disease outbreaks, including pandemics.

The findings of this study demonstrated a general tendency among PCPs toward providing precautionary measures of prevention and disease control through education and safety practices. Unfortunately, most participants did not receive any sort of professional training related to infectious disease in general or COVID-19 in particular. However, PCPs understood their responsibilities with regard to educating the patients on how to protect themselves, and they were willing to take the necessary protective safety measures at their workplaces. Experts have encouraged the role of PCPs in fighting infections through education, training, and maintaining safety practices during the crisis [3]. Direct contact with the patient, along with the previous knowledge of the patient and his/her family medical history, makes the patient more receptive to the physician advice, particularly regarding the COVID-19 disease [15]. However, many studies found that patients generally do not feel that they have a strong connection with their PCPs [15]. In this study, PCPs expressed a moderately positive view on the willingness of

patients to follow their advice, with more than half PCPs agreeing that most of the patient would follow their advice.

The WHO recommends PCPs to receive and treat patients with COVID-19 by segregating patients with respiratory symptoms from others and prioritizing patients with the highest probability of poor outcomes, including those with a chronic disease such as diabetes [16]. It is encouraging that most PCPs in this study intended to follow WHO recommendations in their practice. However, 9 (4.1%) of PCPs did not see a need for separating patients or taking any action, probably because they had no previous experience with COVID-19 patients or did not see it as any imminent threat [17]. Although low, this proportion is important to take into consideration and it is indicative of the need for having proper training for PCPs on infection control and COVID-19 protective measures. The PCPs in our study showed the willingness to allocate more efforts and resources in the management of the pandemic, including social distancing, applying general hygiene protocols, and assigning nurses and other health personnel to provide proper counseling and advice to their patients, aiming at early detection and prevention of the spread of COVID-19. Although PCPs largely appreciated and respected the general measures, they appeared to be in less favor of applying the specific COVID-19 test kits. Studies have shown that some of the tests in use are not characterized by ample sensitivity or specificity, they are very costly, not widely available, and sometimes provide misleading results [18–20]. Therefore, these test kits should be applied with care in specific circumstances while focusing on the general protective measures during the daily practice, especially for PCPs.

5. Conclusions

Our findings indicate a positive attitude of PCPs toward controlling COVID-19 infection, and willingness to educate patients on how to protect themselves from COVID-19. This, in turn, could help in the early detection and prevention of COVID-19 infection. However, our data show

that PCPs did not receive any specific training on COVID-19; therefore, special training on infection control and management of COVID-19 is urgently needed. This specialized training could help motivate PCPs to use COVID-19 test kits in their clinics rather than merely applying general protective measures. This highlights the importance of PCPs clinical duties since they are on the forefront with means to dampen this fast-spreading pandemic by providing patients' education and counselling on the infection control measures, and by adhering to WHO recommendations on segregating patients with respiratory symptoms from others and prioritizing patients with the highest probability of poor outcomes.

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Table 1. Participant characteristics and COVID-19 related experience

Characteristics	Number (%)
Sex	
Male	132 (59.7)
Female	89 (40.3)
Age	
25–35	131 (59.3)
35–45	56 (25.3)
45–60	34 (15.4)
Specialty	
Family Medicine	135 (61.1)
General Practice	86 (38.9)
Years of Experience	
0–2 years	64 (29)
2–5 years	53 (24)
5–10 years	45 (20.4)
More than 10 years	59 (26.7)
Have you received any training before on infection control?	
No	132 (59.7)
Yes	89 (40.3)
Have you received any training related to COVID-19 at work?	
No	179 (81)
Yes	42 (19)
How many suspected or infected COVID-19 patients have you seen so far?	
None	122 (55.2)

less than 10 patients	79 (35.7)
10–30 patients	11 (5)
More than 30 patients	9 (4.1)

Table 2. Participants' counseling experience and their perceptions about their specific roles in the counseling and education of patients

	Number (%)
My experience with patients is that they follow my instructions and comply with the advice provided	
Strongly disagree	5 (2.3)
Disagree	15 (6.8)
Neutral	83 (37.6)
Agree	96 (43.4)
Strongly agree	22 (10)
Approximately, what is the proportion of patients you think would follow instructions and recommendations about COVID-19, if provided to them?	
0–25%	24 (10.9)
26–50	73 (33)
51–75%	96 (43.4)
76–100%	28 (12.7)
What type of advice or instructions would you usually provide to patients? (More than one answer may apply)	
How to use their medications	149 (67.1)
Instructions on how to reduce the risk of an infection through precautionary actions	179 (80.6)
Recommendations on physical exercise	136 (61.3)
Instructions on how to reduce the risk of an infection through precautionary actions	177 (79.7)
How often would you educate your patients about ways to protect themselves from the risk of infections?	

Never	
Occasionally	10 (4.5)
Sometimes	26 (11.8)
Often	62 (28.1)
Always	70 (31.7)
	53 (24)
As a primary health care physician, I hold a great responsibility toward controlling the spread of COVID-19	
Strongly disagree	5 (2.3)
Disagree	4 (1.8)
Neutral	14 (6.3)
Agree	93 (42.1)
Strongly agree	105 (47.5)
One of my roles is to educate patients on how to use personal protective equipment	
Strongly disagree	3 (1.4)
Disagree	4 (1.8)
Neutral	20 (9)
Agree	98 (44.3)
Strongly agree	96 (43.4)
One of my roles is to educate patients on how to wash their hands properly	
Strongly disagree	6 (2.7)
Disagree	3 (1.4)
Neutral	22 (10)
Agree	73 (33)
Strongly agree	117 (52.9)
One of my roles is to educate patients on how to practice social distancing	
Strongly disagree	3 (1.4)
Disagree	4 (1.8)
Neutral	11 (5)
Agree	82 (37.1)
Strongly agree	121 (54.8)
One of my roles is to educate patients on how to cover their cough or sneeze	
Strongly disagree	6 (2.7)
Disagree	1 (.5)
Neutral	14 (6.3)
Agree	75 (33.9)

Strongly agree	125 (56.6)
One of my roles is to inform patients about the importance of using disinfectants during the pandemic and how to use them	
Strongly disagree	4 (1.8)
Disagree	4 (1.8)
Neutral	24 (10.9)
Agree	78 (35.3)
Strongly agree	111 (50.2)

Table 3. Participants' intended practices to help control COVID-19 at work

	Number (%)
I'm planning to apply social distancing in my clinic after the quarantine is over and work is back to normal	
No	17 (7.7)
Yes	204 (92.3)
I'm planning to ask patients to wear masks all the time during their visit to the clinic	
No	38 (17.2)
Yes	183 (82.8)
I'm planning to ask patients to wash their hands with soap and water once they get into the clinic	
No	40 (18.1)
Yes	181 (81.9)
I'm planning to assign a nurse or healthcare worker to educate patients on	

personal hygiene, protective measures, and social distancing	36 (16.3)
No	185 (83.7)
Yes	
I'm planning to order COVID-19 test kits	
No	108 (48.9)
Yes	113 (51.1)
If test kits of COVID-19 will be available, whom would you test in your clinic?	
I will not use the test	9 (4.1)
I will not use the test but will take the patient's temperature	22 (10)
I will use the test on those I suspect to have COVID-19	116 (52.5)
I will use the test on the elderly and on patients with pre-existing conditions	14 (6.3)
I will use the test on those socializing with an infected person	44 (19.9)
I will test everyone	16 (7.2)
If you're about/requested to receive a COVID-19 patient, you will	
Meet and treat the patient just like any other patient	9 (4.1)
Make no prioritization but ask the patient to wear a mask and keep a distance to others	48 (21.7)
Prioritize the patient with regard to treatment, separate the patient from other people, and ask the patient to leave immediately after treatment	141 (63.8)
Avoid receiving the patient and ask the patient to leave	23 (10.4)