Knowledge, Attitude and Practice of Community and Hospital Pharmacists towards the Novel Coronavirus Disease 19 (COVID-19)

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Abstract

Background: Cases of COVID-19 have been increasing in number and spread globally. Pharmacists are an important part of the health care system and their role is critical in completing the management cycles of Coronavirus outbreak surveillance.

Methods: A multi-centric cross-sectional study was conducted on 84 pharmacy professionals recruited from both community and hospital pharmacies in Jigjiga City to assess the knowledge, attitude and practice towards COVID-19. Self-administered questionnaires were developed and distributed to the participants. All extracted data were cleaned, coded and entered into the Statistical Package for the Social Science software version 20 and subsequently analyzed. Binary logistic regression analysis was used to identify determinants of knowledge, attitude and practice towards COVID-19.

Results: All of the respondents had already heard about COVID-19. More than 90% of the participants had adequate knowledge regarding typical symptoms, etiological causes, modes of transmission, measures to protect the infection, risky patients and primarily affected organ system by COVID-19. The majority of the respondents (71.4%) had adequate knowledge regarding COVID-19. The finding indicated that pharmacists had 8 times higher odds (AOR=8.34 95% CI (1.33-36.04)) of adequate knowledge than the pharmacy technicians. Greater than half of the study participants (53.6%) had a positive attitude towards COVID-19. More than 4 out of 5 participants were confident that Ethiopia can win the battle against the pandemic. Participants with less than five years of experience had 6 times greater odds (AOR=6.16; 95% CI (1.52-24.86)) of a positive attitude than their comparator. A low number of participants (16, 22.6%) exercised adequate practice to prevent and control the novel coronavirus spread.

Conclusion: The community and hospital pharmacists had good knowledge but had a poor attitude and practice towards the COVID-19. The majority of the participants perceived that they can play a great role in this pandemic.

Keywords: Knowledge • Attitude • Practice • COVID-19 • Community Pharmacists • Hospital Pharmacists

Introduction

A Severe Acute Respiratory Syndrome Coronavirus 2 (SARS-COV-2) pandemic has explored since the cases were first reported in Wuhan, China in December 2019 and the disease was named as Coronavirus Disease 19 (COVID-19). Cases of COVID-19 have been increasing in number and spread globally raising grave concerns of the world about the future trajectory of the outbreak. The World Health Organization (WHO) declared the COVID-19 as an international pandemic health emergency [1]. From 30 December through October, over 37 million COVID-19 cases and 1 million deaths have been reported globally. Nearly half of these cases (48%) and deaths (55%) continue to be reported in the region of the Americas of which the United States of America, Brazil and Argentina accounting for the greatest number of cases and deaths in the region.

Ethiopian Federal Ministry of Health (FMOH) has confirmed and announced the first case of coronavirus on the 13th of March 2020 since the beginning of the outbreak from China. In Ethiopia, where the limited number of health care professionals, scarce laboratory instruments and inadequate financial capacity are defining features of the health care system, limiting the rate and the extent of COVID-19 spread is the best strategy to minimize the socioeconomic and public health impact of the pandemic. COVID-19 can be prevented and an outbreak can be stopped through the active engagement of different sectors of the health care system.

Pharmacists are an important part of the health care system and their role is critical in completing the management cycles of Coronavirus outbreak surveillance. During the lockdown, pharmacies were among the few centers or places that are kept open for public services and the first point of contact for communities in needs of health care while other professionals closed their doors to patients. Community pharmacists remained the front line and the vital health care provider during the COVID-19 outbreaks for public health [2]. The International Pharmaceutical Federation (FIP) recommends pharmacists should understand the nature of the disease, how it is transmitted and how to prevent its further spread. Besides, pharmacists should inform, advise and educate the community to prevent the spread of the pandemic.

Thus, pharmacists need to have adequate knowledge about COVID-19 and practice appropriate handling and dispensing of pharmaceutical products to successfully exercise their roles and responsibilities in the fight against the disease. This study was aimed to assess COVID-19 related knowledge, attitude and practices of community and hospital pharmacists providing services in Jigjiga city, Ethiopia.

Literature Review

A multi-centric cross-sectional study was conducted on 84 pharmacy professionals working in the community and hospital pharmacies in Jigjiga City in August 2020. The participants were recruited from community pharmacies and two governmental hospitals, Karamara General Hospital (KGH) and Sultan Sheik Hassan Memorial Referral Hospital (SSHMRH).

Community pharmacies were identified using both Google map and door to door assessment. Out of 63 community pharmacies identified, only 40 permitted us to collect the data on their premises [3]. Sample size calculation was not conducted because of incomplete data on the number of employees registered in each community and hospital pharmacies. Hence, a convenience sampling technique was used to recruit the participants. All Pharmacy professionals who worked in the institutions, and gave consent for participation were included in the study. As a result, 84 participants were recruited for the study.

Data collection tools and techniques

A data collection tool was developed by the investigators according to the COVID-19 Guidelines for Pharmacists and Pharmacy Workforce developed by FIP, the National Comprehensive COVID-19 Management Handbook by the Ethiopian FMOH and previously published research articles. A pilot study was conducted on 10 pharmacists from both community and hospital pharmacies. The reliability coefficient was estimated and Cronbach alpha found to be 0.679.

The questionnaire comprises of five parts included socio-demographic characteristics of the participants, the basic questions, Knowledge, attitude and practice of pharmacists toward COVID-19. The demographic variables included age, sex, marital status, years of experience, professional level, job position and working setup [4]. The basic questions contained two items related to if they heard about COVID-19 and the source of their information.

The knowledge part contained 18 closed-ended questions related to the causes, the modes and routes of transmission, the diagnosis, the symptoms, the prevention and control mechanism and the current management of the COVID-19. The correct response was assigned a value of 1 and 0 was assigned for incorrect responses. The total score ranges from 0 to 18. A score of less than 14 indicated poor knowledge.

The attitude portion consists of 10 questions related to the participants' perception of COVID-19. The answers were recorded on the five-point "Likert Scale" as strongly agree=5, agree=4, uncertain=3, disagree=2 and strongly disagree=1. The total score ranges from 1-50 and a score of less than 40 (<80%) indicated poor attitude. The last portion of the questionnaire comprised of 10 items related to the practice of the hospital and community pharmacists regarding COVID-19 [5]. The answers were recorded as Yes=1, No=0, and sometimes=0 points. A total score range from 0-10 and a score of less than 8 indicated poor practice.

All extracted data were cleaned, coded and entered to the Statistical Package for the Social Science (SPSS) software version 20 and subsequently analyzed. Categorical data were expressed in numbers and percentages. Potential variables with p-value <0.2 by univariate analysis were retained for subsequent consideration for binary logistic regression analysis. Finally, variables with p-value <0.05 were considered to have a significant association with the outcome variable.

The study was conducted as per the declaration of Helsinki. Ethical approval was obtained from the Ethical Review Board of the College of Medicine and Health Science, Jigjiga University with the reference number of ERB/SOM\0746\20. Permission to conduct the study was also obtained from the KGH and SSHMRH Medical Directorate. Written informed consent was obtained from all the participants before data collection. The confidentiality of the study participants was maintained by assigning unique identifiers during data collection and analysis.

Out of 103 participants included in the study, 84 (81.6%) of them answered and completed the questionnaires and submitted to the investigators. A large number the participants were aged between 20 to 30 (65, 77.4%) with a mean age of 22+5.7. The majorities of the participants were males (60, 71.4%) and had less than five years of experience (64, 76.2%). Greater than half of the participants (44, 52.4%) were working in the hospital (Hospital pharmacist) and pharmacy technician (49, 58.3%) in their profession [6]. The socio-demographic characteristics of the participants.

All of the respondents had already heard about COVID-19 and the main sources of information were news media (40, 47.6%) followed

by social media (20, 23.8%). The various information sources utilized by the pharmacist were indicated.

The majority of the respondents (60, 71.4%) had adequate knowledge regarding COVID-19. More than 90% of the participants had adequate knowledge regarding typical symptoms, etiological causes, modes of transmission, measures to protect the infection, risky patients and primarily affected organ system by COVID-19. Regarding questions related to management or treatment of COVID-19, 80 (95.2%) of the participants reported that symptomatic and supportive care is the current management option and 63 (75%) responded this is also the WHO recommended management option to date. Also, 48 (57.1%) and 69 (82.1%) participants reported that there is no COVID-19 vaccination as of today and antibiotics are ineffective in preventing and treating the COVID-19, respectively. Sixty-two (73.8%) participants know the incubation period of the novel coronavirus and 70 (83.3) reported the diagnosis of the COVID-19 is confirmed by a nasopharyngeal swab or throat swab. The responses of the participants regarding the knowledge questions were indicated in supplementary [7].

Binary logistic regression analysis was performed to evaluate the substantial determinants of the community and hospital pharmacists' knowledge regarding COVID-19. The finding indicated that pharmacists had 8 times higher odds (AOR=8.34 95% CI (1.33-36.04)) of adequate knowledge than the pharmacy technicians.

The study finding indicated that greater than half of the participants (45, 53.6%) had a positive attitude towards COVID-19. Only less than 5% of the participants did not agree with the WHO precautions to reduce transmission of the novel coronavirus [8-10]. Of the total participants, 82.1% were confident that COVID-19 will be controlled, 92.2% perceived that pharmacist can play a significant role to control the pandemic, 70 (83.3%) were willing to accept isolation if get infected with the novel coronavirus, 75% were confident that Ethiopia can win the battle against the pandemic and 56% believed that the government of Ethiopia has been doing enough to prevent and control coronavirus outbreak.

The finding of this study indicated that years of experience determine the attitude of the participants. Accordingly, participants with less than five years of experience had 6 times greater odds (AOR=6.16; 95% CI (1.52-24.86)) of a positive attitude than their comparator as indicated.

The possibility of exposure of front-line pharmacists to COVID-19 exists because they are interacting with patients who are possibly infected. Therefore, pharmacists and pharmacy workforce should take measures to protect themselves and their patients. The current study assessed the practices of the pharmacists to prevent and control COVID-19. Of the total participants, 36 (42.9%) disinfect their pharmacy periodically or regularly and 56 (66.7%) had been provided hand rub sanitizers. However, only 18 (21.4%) participants use hand sanitizers and/or soap and water after each monetary transaction, filling a prescription, and receiving medication boxes and medical supplies from wholesalers or distributors. Only 12 (14.3%) participants reported that their institution provides hand sanitizers for customers at the entrance of the pharmacy [11-13]. Most of the participants (64, 76.2%) keep the social distance at least 1 m behind the entrance for one patient at a time, but only 11 (13.1%) reported that they keep social distance among themselves.

In general, a low number of participants (16, 22.6%) exercised adequate practice to prevent and control the novel coronavirus spread. The regression analysis results indicated that job position and working set up affects the practice of the participants [14]. The dispensers were less likely (AOR=0.07, 95% CI (0.12-0.27)) to follow the recommended practices than their comparator to prevent the coronavirus infection. The finding also indicated that the hospital pharmacists had 6 times (AOR=6.03; 95% CI (1.37-26.53)) greater odds of good practice than the community pharmacists.

Discussion

Ethiopia is among 13 African countries the WHO considers as a top priority for COVID-19 preparedness due to direct links or a high volume of travel to China. The FIP emphasizes the active roles of pharmacists in the community and hospital setups in preventing the spread of the pandemic [15-17]. The possibility of exposure of front-line pharmacists to COVID-19 exists because they are interacting with patients who are possibly infected. Therefore, the pharmacy workforce should take measures to protect themselves and their patients. The current study assessed the knowledge, attitude and practices of the pharmacy workforce to prevent and control COVID-19 at Jigjiga city.

The study finding indicated that all the study participants had already heard about the COVID-19. The primary sources of information were news media (47.6%) followed by social media (20, 23.8%). These results were in agreement with findings of studies conducted in Addis Ababa, Ethiopia and Turkey. In contrast, other studies reported that social media and research articles are the primary sources to get information about COVID-19 [18]. An editorial published in The Lancet Infectious Disease addresses the COVID is infodemic which is defined by WHO as "overabundance of information, some accurate and some not that occurs during an epidemic". Therefore, the pharmacist should consult reliable sources, such as guidelines and reports published by WHO and the US Centers for Disease Control and Prevention (CDC), to seek information regarding COVID-19.

The finding of this study indicated that the majority of the participants (71.4%) had good knowledge regarding COVID-19. Studies conducted in different setups on different healthcare professions indicated varied results. The study conducted in Addis Ababa, Ethiopia, Northwest Ethiopia, Turkey (90%), and Iran reported that 53.2%, 73.8%, 90% and 56.5% of the respondents had good knowledge about COVID-19, respectively. The difference could be due to the difference in a data collection period, as new information about the virus comes out daily. This level of knowledge has a great concern in the present situation because no vaccine or treatment as of today, but the work continues and schools are open [19]. Community and hospital pharmacists should be familiar with all the latest developments and should take precautionary steps in the prevention and control of the pandemic.

A large proportion of the participants (94%) knew that COVID-19 is caused by a virus and it primarily attacks the respiratory system (89.3%). Similarly, a high level of knowledge about modes of transmission (99.9%), how to diagnosis (83.3%), and risky patients (84%) for COVID-19 was observed [20]. The regression analysis indicated that pharmacists had 8 times higher odds of knowledge

than the pharmacy technicians. This is not unexpected, as pharmacists hold a higher educational level and professional status than pharmacy technicians. This is in agreement with studies conducted in Addis Ababa.

Regarding the attitudes of the participants, the majority of them (92.9%) perceived that pharmacists could play an important role in the pandemic. Similar findings were reported from study in Jordan. Participants had a high level of positive response regarding WHO recommendations to control the transmission of COVID-19 (95.2%). A study conducted also indicated that pharmacists had a high level of belief toward WHO recommendations to control the disease. The study confirmed that 83.3% of the participants accept isolation if get infected with the novel coronavirus. Regarding the preparedness and future for COVID-19, 82.1% believe that COVID-19 will finally be successfully controlled, 75% had confidence that Ethiopia can win the battle against the COVID-19 and 56% perceived the government of Ethiopia is doing enough to prevent and control the pandemic. A study done in China reported that majority of the respondents (97.1%) were agreed and confident that their government can win the battle against COVID-19.

This study found that 53.6% of the participants had a positive attitude towards COVID-19. This is comparable with study in Addis Ababa, Ethiopia (54.1%). A systematic review indicated that only 46% of the participants had positive perceptions towards COVID-19. In contrast, a survey done in Pakistan identified high positive attitudes among healthcare workers towards the COVID-19. The variation could be due to the varied level of preparedness of the countries and the government towards COVID-19. Regression analysis revealed that years of experience determine the attitude of the participants [21]. Participants who had less than five years of experience had 5 times greater odds of a positive attitude than their comparator. In line with several studies, attitude did not differ significantly with age, gender and profession.

The low percentage of the respondents (22.6%) exercised adequate practice towards COVID-19. A high level of good practice was observed in Study done in Pakistan (88.7%). The variation could be associated with the scarcity of resources and supplies. The other possible reason might be the negligence of the professionals

because most of the personal protective equipment was available in their institutions. This result is of special concern because good knowledge with poor practice increases the transmission of infection and then increases the morbidity and mortality rates in the community. Therefore, it is important between various hospital and community pharmacists to follow the practice guidelines recommended by the national FMOH, CDC and WHO regarding the COVID-19 infection.

The finding showed that dispensers were 0.07 times lower odds of good practices than the department head or storeman [22]. Overcrowding in the dispensing room was perceived as a barrier to exercise good practices to prevent COVID-19 spread. The study also indicated that the hospital pharmacists were 6 times more likely to show good practice compared with community pharmacists. These findings are important and should be addressed by the government and policymakers to establish effective policies focusing on the aforementioned barriers to infection control and ultimately spread of disease.

This study has several implicit limitations. It is a cross-sectional study and carried out during some institutions were closed and fear to approach the healthcare institutions [23]. The use of a non-probability sampling method may also have limited the generalizability of the study.

Conclusion

The community and hospital pharmacists had good knowledge but had a poor attitude and practice towards the COVID-19. The majority of the participants perceived that pharmacists can play a great role in this pandemic. Pharmacists showed a greater level of knowledge than pharmacy technicians. The dispensers and the hospital pharmacists were showed better practice compared with the department heads and the community pharmacists, respectively. It is important for all the HCWs including pharmacists to have standard authenticated information about the COVID-19 and to further convey this knowledge and beliefs to the community. We recommend the FMOH and other authorities to promote awareness about COVID-19 with comprehensive training, including pharmacists.

Acknowledgement

Availability of Data and Material

All data used to support the results of this research are available and researchers who need further clarification can obtain the data on reasonable request.

Ethical Approval and Consent to Participate

The study was conducted as per the declaration of Helsinki. Ethical approval was obtained from the Ethical Review Board of the College of Medicine and Health Science, Jigjiga University with the reference number of ERB/SOM\0746\20. Permission to conduct the study was also obtained from the KGH and SSHMRH Medical Directorate. Written informed consent was obtained from all the participants before data collection. The confidentiality of the study participants was maintained by assigning unique identifiers during data collection and analysis.

Authors' Contribution

Both authors contributed to the conception, design, analysis and interpretation of the data; took part in drafting, revising and approval of the manuscript; and agree to be accountable for all aspects of the work.

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Disclosure

Both authors declare they have no competing interests.

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