



COVID-19 Impact on Saudi Healthcare Workers’ Knowledge, Attitudes and Practices

Mohammed Alshihry^{a*}, Fahad Almotairy^b, Fatmah Alharbi^c, Rawan Alshehri^d

^aMinistry of Health Assistant Agency for Preventive health

^bAlasyah general hospital

^cAldiriyah general hospital

^dQuality department directorate of health, Aseer region

^aEmail: mdalshihry@gmail.com, ^bEmail: F.alwasmy88@hotmail.com

^cEmail: falharbi225@moh.gov.sa, ^dEmail: ph.rawan.alshehri@hotmail.com

Abstract

In December 2019, Chinese authorities in the city of Wuhan reported the discovery of a new infectious disease spread by a beta coronavirus. Since the discovery of the first case, COVID-19 has had a global impact in almost every country around the world, resulting in more than 698 million cases and close to 7 million deaths (20). Saudi Arabia was one of the most impacted Middle East countries by COVID-19 having more than 800,000 cases and nearly 10,000 deaths (20). Healthcare workers’ knowledge, attitudes, and practices concerning COVID-19 were some of the key factors that were attributed to its rapid spread and prevention across many countries around the world. This literature review will discuss the COVID-19 impact on Saudi healthcare worker's knowledge, attitude, and practices (KAP). Healthcare workers especially those working in the frontline needed comprehensive information and training on coronavirus to effectively protect themselves from the disease. It was through creating awareness and training on the disease that the Saudi healthcare system was able to promote KAP among its workers to effectively combat the spread of the disease (16). In conclusion, the literature review discussed various studies touching on the impacts of knowledge, attitude, and practices among healthcare workers in Saudi Arabia during the COVID-19 pandemic.

Keywords: COVID 19; knowledge; attitude; practice.

Received: 10/1/2023

Accepted: 12/1/2023

Published: 12/10/2023

* Corresponding author.

1. Literature Review

In December 2019, Chinese authorities in the city of Wuhan reported the discovery of a new infectious disease spread by a beta coronavirus. Since the discovery of the first case, COVID-19 has had a global impact in almost every country around the world, resulting in more than 698 million cases and close to 7 million deaths [1]. Saudi Arabia was one of the most impacted Middle East countries by COVID-19 having more than 800,000 cases and nearly 10,000 deaths [1]. Healthcare workers' knowledge, attitudes, and practices concerning COVID-19 were some of the key factors that attributed to its rapid spread/prevention across many countries around the world. This literature review will discuss the COVID-19 impact on Saudi healthcare worker's knowledge, attitude, and practices (KAP).

According to studies, the lack of knowledge among healthcare workers concerning different infectious diseases can result in delayed diagnosis of new cases, determination of the extent of the spread of the disease, and poor implementation of infection control measures and practices [2]. Thus, a healthcare organization needs to equip its healthcare workers with knowledge about different pathogens and diseases to help them better prepare for a robust fight against such infectious diseases. Mohammed and his colleagues. conducted a cross-sectional, online questionnaire-based study to investigate the level of knowledge, attitude, and practices about coronavirus among Saudi Arabia's healthcare workers during the COVID-19 pandemic [3]. The study involved a total of 510 healthcare workers from different hospitals who were subjected to an online survey. The results of the study showed approximately 68 percent of the participants had satisfactory knowledge about COVID-19. The study also showed that about 72 percent of the participants had a positive attitude towards COVID-19 while approximately 80 percent achieved proper practices during the pandemic [3]. The study also showed that the female participants had better knowledge and attitude towards COVID-19 while male patients showed better practices when dealing with COVID-19 patients. The study concluded that that Saudi healthcare workers lacked the adequate training and emotional preparedness that was needed to effectively manage the pandemic and continuous education programs were needed to bring them adapt. The study's limitations included its descriptive design which failed to establish the causal relationship. Also, the study did not use ant theory and thus the findings could only be explained by speculation [3]. Lastly, the lack of other studies investigating the topic for comparison during that time limited the study discussion.

Asdaq and his colleagues. conducted a cross-sectional study aimed at examining the knowledge, attitudes, and practices among healthcare workers/professionals in the Riyadh region from December 2020 to February 2021 [4]. The examination involved evaluating the actions and attitudes of the workers toward the COVID-19 response with a questionnaire that contained questions concerning the COVID-19 clinical characteristics, its prevention, and management. The findings of the study showed the participant scored a mean of 11.43 ± 1.34 on knowledge, 3.89 ± 0.93 on attitude, and 3.85 ± 0.81 on practice. The findings of this study were also in collaboration with the findings of another study by Alhazmi and his colleagues. The study argued that compliance with the preventative measures to control COVID-19 was greatly influenced by the Saudi healthcare workers' level of knowledge, practices, and attitudes [5]. The study concluded that with an improvement in the participant's knowledge and attitude, there could be changes in their general practices when dealing with the pandemic [4]. Thus, improved training of healthcare workers on the virus positively affected their awareness

and practices regarding the management of the spread of the disease. However, since the study only involved a limited number of participants, the findings should be applied or viewed with caution. Also, the self-report practices by the participants may not be correct citing personal bias hence the need for further analysis.

Khobrani and his colleagues. conducted a study to assess the KAP of the coronavirus disease among Pharmacists and other healthcare professionals (HCPs) in the Asir region in Saudi Arabia [6]. In the study, about 491 healthcare professionals were tested through the use of a pre-tested questionnaire. The findings of the study showed that pharmacists and HCPs had good knowledge, a positive attitude, and poor practice when it comes to the management of the COVID-19 pandemic [6]. The study findings also noted a strong association between the knowledge and attitude of the participants. The participant's score on practices concerning COVID-19 was 2.09 ± 0.62 . The study concluded that there was a need for improved management training on the COVID-19 pandemic and other approaches that were targeted to make the HCPs less anxious about managing the disease [6]. The study had several limitations which included the lack of physical assessment of the facilities because the study was web based on numerous hospitals across the country. Also, the study did not include laboratory technicians and pharmaceutical healthcare workers.

Srivastava and his colleagues. carried out a cross-sectional study to assess the KAP of dental health care professionals (DHCPs) on the issue of COVID-19 pandemic preparedness [7]. The study involved the use of a web-based survey that comprised 44 questions targeting 318 DHCPs across five geographical areas in Saudi Arabia [7]. The findings of the study showed that most DHCPs had moderate knowledge (51%), a positive attitude (92%), and satisfactory practice standards (86%) toward addressing the COVID-19 pandemic. Essentially, the DHCPs showed an adequate overall (94%) level of KAP. The DHCPs were able to abide by the numerous guidelines that were issued by international and local authorities and health agencies to prevent the spread of coronavirus. However, the study noted that the DHCP's average level of knowledge on the COVID-19 pandemic needed to be enhanced through education programs. The suggestions of the study were collaborated by another assessment by Almulhim and his colleagues. who argued that because dental students and dental professionals operate near patients, they are at an increased risk [8]. Thus, it is important to provide them with comprehensive information and education on COVID-19 to improve their knowledge, attitude, and practices when handling patients. The studies were web-based self-administered surveys and thus likelihood of response bias cannot be ruled out.

Mushi and his colleagues. investigated to determine the knowledge, attitude, and seeming risks of the coronavirus pandemic among healthcare workers in Saudi Arabia [9]. The investigation also sought to determine the risk communication strategy and its impacts on the attitude and practice of healthcare workers [9]. The study involved a total of 1691 healthcare workers across different healthcare facilities in Saudi Arabia. The study findings showed that the Saudi healthcare workers had a fair knowledge and attitude on the COVID-19 pandemic [9]. Also, the study showed that the risk communication strategy is very effective in improving the attitude and practice of healthcare workers. The study showed that about 93 percent of the participants claimed to have received a message concerning health information on COVID-19. However, the study was web-based and was self-reported and this made it difficult to measure its attrition rates or determine the feelings of the participants during the survey filling. Also, the questionnaire used was not validated quantitatively and this

impacted the accuracy of the conclusion.

In summary, healthcare workers play a very critical role in the management of infectious diseases to lower morbidity and mortality. However, healthcare workers are directly exposed to the patients infected with these infectious diseases and their causal factors. In many instances especially during the start of a pandemic, protecting healthcare workers from these viruses is always a significant problem for many healthcare systems [10, 11]. Studies conducted during the COVID-19 pandemic in Saudi Arabia's healthcare system showed that many healthcare workers lacked enough information and comprehension of the Coronavirus disease [12, 13]. This led to many healthcare workers not taking enough precautions against the disease, significantly exposing them to the risk of infection by the patients [14]. The increasing number of cases and consequently the lack of proper equipment and information on how to protect themselves from the infectious disease while handling COVID-19 patients negatively impacted their attitude and practices in addressing the pandemic.

Rabbani and Al Saigul argued that providing healthcare workers with comprehensive information after the COVID-19 pandemic was one of the strategies that greatly helped to promote a positive attitude towards containing the spread of the disease in Saudi Arabia [15]. The creation of awareness and promotion of practices by healthcare professionals concerning the COVID-19 pandemic was instrumental in creating adherence to the control measures developed to prevent the spread of the disease [16]. Bashir and his colleagues [17] stated that the chance of infection for healthcare workers is decreased by attaining a positive attitude, improved work practices, and comprehensive knowledge of the virus. Therefore, ensuring healthcare workers maintained a positive attitude towards their jobs, had sufficient knowledge of COVID-19, and maintained good practices helped improve the COVID-19 pandemic response in Saudi Arabia [18].

Essentially, without adequate knowledge, positive attitude, and enhanced practices among healthcare workers in Saudi Arabia, it would have been very difficult to control the spread of COVID-19 [19]. Healthcare workers especially those working in the frontline needed comprehensive information and training on coronavirus to effectively protect themselves from the disease. It was through creating awareness and training on the disease that the Saudi healthcare system was able to promote KAP among its workers to effectively combat the spread of the disease [20]. In conclusion, the literature review discussed various studies touching on the impacts of knowledge, attitude, and practices among healthcare workers in Saudi Arabia during the COVID-19 pandemic.

References

- [1]. Worldometer. "COVID-19 Coronavirus Pandemic." Internet: <https://www.worldometers.info/coronavirus/> [Nov. 15, 2023].
- [2]. F. Bekele, T. Sheleme, G. Fekadu, and K. Bekele. "Patterns and Associated Factors of COVID-19 Knowledge, Attitude, and Practice among General Population and Health Care Workers: A Systematic Review." *SAGE Open Medicine*, vol. 8, p. 2050312120970721, Nov. 2020.
- [3]. O.A. Almohammed, L.A. Aldwihi, A.M. Alragas, A.I. Almoteer, S. Gopalakrishnan, and N.M. Alqahtani. "Knowledge, Attitude, and Practices Associated with COVID-19 among Healthcare Workers in Hospitals: A Cross-Sectional Study in Saudi Arabia." *Frontiers in Public Health*, vol. 9,

- p. 643053, Jul. 2021.
- [4]. S.M. Asdaq, A.S. Alshrari, M. Imran, N. Sreeharsha, and R. Sultana. "Knowledge, Attitude and Practices of Healthcare Professionals of Riyadh, Saudi Arabia Towards COVID-19: A Cross-Sectional Study." *Saudi Journal of Biological Sciences*, vol. 28, no. 9, pp. 5275-5282, Sep. 2021.
- [5]. A. Alhazmi, M.H. Ali, A. Mohieldin, F. Aziz, O.B. Osman, and W.A. Ahmed. "Knowledge, Attitudes and Practices Among People in Saudi Arabia Regarding COVID-19: A Cross-Sectional Study." *Journal of Public Health Research*, vol. 9, no. 3, p. jphr-2020, Sep. 2020.
- [6]. M. Khobrani, R. Vasudevan, G. Kandasamy, J.A. Gramish, K. Prabhakar, and P. Paulsamy. "Evaluation of Health Care Professionals' Knowledge, Attitudes, and Practice to Prevent the Pandemic Spread of COVID-19: A Questionnaire-Based Cross-Sectional Study from Abha, Saudi Arabia." *Healthcare*, vol. 11, no. 4, p. 509, Feb. 2023.
- [7]. K.C. Srivastava, D. Shrivastava, M.G. Sghaireen, A.F. Alsharari, A.A. Alduraywish, K. Al-Johani, M.K. Alam, Y. Khader, and B.K. Alzarea. "Knowledge, Attitudes and Practices Regarding COVID-19 Among Dental Health Care Professionals: A Cross-Sectional Study in Saudi Arabia." *Journal of International Medical Research*, vol. 48, no. 12, p. 0300060520977593, Dec. 2020.
- [8]. B. Almulhim, A. Alassaf, S. Alghamdi, R. Alroomy, S. Aldhuwayhi, A. Aljabr, and S.K. Mallineni. "Dentistry Amidst the COVID-19 Pandemic: Knowledge, Attitude, and Practices among the Saudi Arabian Dental Students." *Frontiers in Medicine*, vol. 8, p. 654524, Apr. 2021.
- [9]. A. Mushi, Y. Yassin, A. Khan, S. Yezli, and Y. Almuzaini. "Knowledge, Attitude, and Perceived Risks Towards COVID-19 Pandemic and the Impact of Risk Communication Messages on Healthcare Workers in Saudi Arabia." *Risk Management and Healthcare Policy*, pp. 2811-2824, Jul. 2021.
- [10]. M. Baig, T. Jameel, S.H. Alzahrani, A.A. Mirza, Z.J. Gazzaz, T. Ahmad, F. Baig, and S.H. Almurashi. "Predictors of Misconceptions, Knowledge, Attitudes, and Practices of the COVID-19 Pandemic among a Sample of Saudi Population." *PloS One*, vol. 15, no. 12, p. e0243526, Dec. 2020.
- [11]. M.H. Temsah, A.N. Alhuzaimi, N. Alamro, A. Alrabiaah, F. Al-Sohime, K. Alhasan, J.A. Kari, I. Almaghlouth, F. Aljamaan, A. Al-Eyadhy, and A. Jamal. "Knowledge, Attitudes and Practices of Healthcare Workers During the Early COVID-19 Pandemic in a Main, Academic Tertiary Care Center in Saudi Arabia." *Epidemiology & Infection*, vol. 148, p. e203, 2020.
- [12]. M.A. Abolfotouh, A.F. Almutairi, A.A. BaniMustafa, and M.A. Hussein. "Perception and Attitude of Healthcare Workers in Saudi Arabia About the COVID-19 Pandemic and Potential Associated Predictors." *BMC Infectious Diseases*, vol. 20, pp. 1-10, Dec. 2020.
- [13]. H. Alahdal, F. Basingab, and R. Alotaibi. "An Analytical Study on the Awareness, Attitude, and Practice During the COVID-19 Pandemic in Riyadh, Saudi Arabia." *Journal of Infection and Public Health*, vol. 13, no. 10, pp.1446-1452, Oct. 2020.
- [14]. M.S. Fawzy, and S.A. AlSadrah. "COVID-19 and Saudi Arabia: Awareness, Attitude, and Practice." *Journal of Multidisciplinary Healthcare*, pp. 1595-1618, Jan. 2022.
- [15]. U. Rabbani, and A.M. Al Saigul. "Knowledge, Attitude, and Practices of Health Care Workers about Coronavirus Disease 2019 in Saudi Arabia." *Journal of Epidemiology and Global Health*, vol. 11, no. 1, p. 60, Mar. 2021.

- [16]. M.S. Alreshidi, N.A. Alreshidi, E. Felemban, and F. Gonzales. "Knowledge, Attitudes, and Practices of Saudi Citizens on COVID-19 Pandemic: A Multi-region Survey." *Makara Journal of Health Research*, vol. 25, no. 3, p. 1, Dec. 2021.
- [17]. S. Bashir, F. Alsultan, M. Iqbal, N. Abdulkarim, K. Alammari, A. Almousa, A. Alsultan, R. Albaradie, A. Mir, K. Alregaiey, and S. Habib. "Healthcare Workers' Knowledge and Attitudes towards COVID-19 in Saudi Arabia." Preprint, Oct. 2020, Internet: <https://doi.org/10.21203/rs.3.rs-99869/v1>.
- [18]. N.Z. Alshahrani, N. Fussi, H.M. Al Shaiban, H.A. Al Arbash, S.E. Mahmood, M.A. Aljunaid, A.M. Albeshry, and Y. Sayyad. "Knowledge, Attitude and Practices of Healthcare Workers regarding Bio-medical Waste of COVID-19 in Aseer Region, KSA." *International Journal of Pharmaceutical Research*, vol. 13, no. 2, Apr. 2021.
- [19]. M.K. Al-Hanawi, K. Angawi, N. Alshareef, A.M. Qattan, H.Z. Helmy, Y. Abudawood, M. Alqurashi, W.M. Kattan, N.A. Kadasah, G.C. Chirwa, and O. Alsharqi. "Knowledge, Attitude and Practice toward COVID-19 among the Public in the Kingdom of Saudi Arabia: A Cross-Sectional Study." *Frontiers in Public Health*, vol. 8, p. 217, May 2020.
- [20]. T. Qadah. "Knowledge and Attitude among Healthcare Workers towards COVID-19: A Cross-Sectional Study from Jeddah city, Saudi Arabia." *The Journal of Infection in Developing Countries*, vol. 14, no. 10, pp.1090-1097, Oct. 2020.