RESEARCH ARTICLE

Survey of Public Knowledge and Implementation Regarding COVID-19 in Sulaymaniyah City

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ABSTRACT

The currently pandemic virus called SARS-CoV-2 is an international health issue that we have interacted with since World War II. The virus was discovered in the Chinese city of Wuhan in 2019 and has since spread worldwide. Globally, the number of cases is increasing, with new cases being reported in Asia, Africa, the Americas, and Europe. This paper is intended to analyze 2019 novel coronavirus (COVID-19) knowledge, perceptions, and behaviors toward the substance within the general population in the city of Sulaymaniyah. The study was conducted as a cross-sectional survey with 100 adults from various locations throughout Sulaymaniyah. These places were selected based on the ease of access for survey participants (location and collaboration). A survey questionnaire was structured to gather details regarding gender, age, ethnicity, and education level for all respondents. Other metrics assess details on the illness, its origin, method of transmission, symptoms and indications, incubation time, transmission period, and prevention steps. Eventually, we regained that people have been given enough instructions by the ministry of world health and social media. The majority of Sulaymaniyah residents are aware of how to protect themselves against COVID-19. The results suggest that clear messaging from government and health agencies are required to increase awareness and attitudes and that health promotion campaigns are needed to improve knowledge and attitudes.

Keywords: Health authorities; Knowledge, attitudes, and practices; Novel coronavirus 2019 Sulaymaniyah

INTRODUCTION

CoV-2 is a member of the CoV family and is the source of COVID-19 disease. The virus has been identified in China at the end of 2019. The epidemic has spread globally and has triggered a global pandemic. Extreme COVID-19 occurs more often as pneumonia with fever, cough, and shortness of breath. The Chinese Center for Disease Control and Prevention recorded that 44,500 illnesses confirmed that the majority of infected patients (80 percent) had a moderate illness (with no or mild pneumonia), 14 percent had the serious disease (with shortness of breath or hypoxia or more than 50 percent Lung damage in imaging tests) and 5 percent critical illness (characterized by respiratory failure, systemic shock, or multi-organ failure (Wu et al., 2020). About 20–30 percent of patients whose pneumonia is triggered by the COVID-19 gene obtained intensive care help (Huang et al., 2020; Merad and Martin, 2020). Acute respiratory distress syndrome (ARDS) is a frequent cause of acute viral pneumonia involving the pathogenic coronaviruses (CoV) and Extreme Acute Respiratory Diseases Coronavirus (SARV) in Middle East Respiratory

Syndrome (Channappanavar and Perlman, 2017). In the research, the prevalence of ARDS incidence was 15.6 percent in a population of 1099 patients with acute pneumonia (Guan et al., 2020; Merad and Martin, 2020). Research from New York City, which developed as an outbreak hub in the United States, reports that 14.2 percent of hospitals were hospitalized in intensive care units, 12.2 percent received invasive artificial ventilation, and 21 percent died. The death rate among individuals who required artificial breathing was 88.1 percent (Merad and Martin, 2020).

To date, over 50,333,072 COVID-19 positive cases have been recorded, with at least 839,663 deaths globally. The first case of COVID-19 was discovered in Iraq on February 24, 2020, involving an Iranian citizen in the holy Shiite city of Najaf, south of Baghdad (Merza et al., 2020). In April, the number of confirmed cases exceeded a hundred in Baghdad, Basra, Sulaymaniyah, Erbil, and Najaf (Xinhua, 2020). The first case of COVID-19 was confirmed in Iraqi Kurdistan on March 1 (Sazan et al., 2020). On March 3, the 70-year-old Iraqi Islamic preacher, Rashid Abdul Rahman, became the first person to die in Iraq as

a result of an epidemic (Zhelwan, 2020). In Kurdistan region, more than 321,359 cases recorded (Government, 2021) including 5,732 deaths. Similar to closings in other countries, the Kurdistan Regional Government (KRG) has restricted most unnecessary activities outside the home. People were only permitted to exit their homes for a few simple purposes, such as purchasing food products and visiting the doctor. The KRG implemented an immigration order on the citizens leaving the country and limited international tourists. Non-essential industries and some of their staff were ordered to close operations. Lockdowns were implemented to prevent the virus from spreading; however, the majority of the infection remained unknown (Cao et al., 2019). Because of this new virus's mystery, there has been so much uncertainty about how this virus will spread and the steps that people must attempt to prevent the disease. It becomes a growing obstacle with the overwhelming amount of disinformation and misinformation that is spread on social media and that cloud people's perception of COVID-19 (Azlan et al., 2020). When the KRG was first revealed, people were confused and shocked. This reaction to the KRG was not unexpected, but it raises concerns about public awareness of and comprehension of COVID-19. Knowledge, attitudes, and practices (KAP) about COVID-19 are frequently used to identify knowledge gaps and behavioral patterns among sociodemographic subgroups to implement effective public health interventions (Lee et al., 2021). Thus, it is critical that KAP studies include context information to see if the information about covid19 can help people understand the virus better. The KAP evaluation of COVID19 among the general population could provide a more reliable appraisal of health information and improve the capacity to establish health promotion programs. One of the learning lessons from the SARS-CoV-2 outbreak was that knowledge and behavior were correlated with fear and emotion that can further intensify the spread of disease (Person et al., 2004). The survey contains details on the preventive steps taken before the activity management directive, and these can be used in the future to plan for infectious diseases. This research aims to explore the understanding of novel coronavirus 19 among the public's KAP in Sulaymaniyah and the attitudes they have toward the disease.

METHODOLOGY

This research was conducted in the Sulaymaniyah province, Iraq. Because Sulaymaniyah is geopolitically close to Iran, many Iranians travel to the city before the epidemic is detected, and Sulaymaniyah Governorate was chosen because it is a relatively popular tourist destination for the Middle East. For a survey, we visited all public places. The data collected from 100 persons and the location

was selected according to public accessibility (location and collaboration). Considering the questionnaire to be a sampling of the population, quotas were set based on age, gender, employment status, region, and socioeconomic status. Data regarding KAP were collected from the respondent by a self-administered survey that examined COVID-19. During the period of study, From January to February, we received the data from the 100 participants. The questionnaire also contains other considerations such as Awareness of the disease, its origin, and mode of transmission, symptoms, indications, incubation time, and transmitting period. Survey participants answered yes or no to fifteen questions on the pandemic and government efforts to combat it, as shown by their responses. The data statistically analyzed using GraphPad prism (GraphPad Prism 9, USA). Descriptive statistics have been measured, such as percentages, mean and standard deviation.

RESULTS AND DISCUSSION

This study was undertaken at the beginning of a COVID-19 outbreak in a non-epidemic field, but the outbreak has already spread in most of the regions. The baseline features of the participants were clearly illustrated in Figure 1. A total of over 100 Participant were interviewed (52 males and 48 females). The majority of the 18–24 years old (male and female attendance of 29% and 28% respectively) and 25–39 years old (male and female participation was 10 percent and 15 percent, respectively). The highest number of participants was Kurds (96 %). Almost half of the participants were single and completed their undergraduate degrees (43%). Nearly, all respondents were working (77%).

The complete information of COVID-19 was listed in Table 1. The majority of the responders (66 %) were aware that the disease was caused by a virus. However, a large number of individuals believe that the disease is related to HIV (44%). The majority of respondents correctly identified the mechanism of reproduction; however, many incorrectly ascribed the reason to sexual practices. Only 17% of those who were sick believed the disease would be fatal. Eighty-two percent of those who were sick agreed that the symptoms were comparable to those of seasonal influenza. The incubation period was not well understood by 15% of participants, and the time it takes for the disease to spread was not well understood by 38%. Seventeen percent of respondents believed that a vaccination existed for the illness at the time the research was performed; it was not yet available.

The new research indicates that sensitivity to COVID-19 infection improves people's commitment to prevention steps and their awareness of the need for early access

Table 1: Information of the disease caused by COVID-19

No.	Statement	Yes, %	No, %	Not sure, %
The reasons for the illness are				
1	Virus	66	32	2
2	Immunodeficiency	44	41	15
3	Inherited disease	17	75	8
4	The illness is contagious and may be transferred within persons.	61	34	5
The illness is spread through				
1	Sneezing droplets	86	13	1
2	Touching and trembling hands of an infected human	79	11	10
3	Usage with objects that an infected person uses	81	16	3
4	Sexual route	48	25	27
What are the signs and, symptoms of the disease?				
1	Same as seasonal flu (fever; cough, muscle ache, etc.)	82	16	2
2	2019-CoV could lead directly to death	17	65	18
3	The disease can be transmitted from human to animals and vice versa	48	18	34
4	2019-COV can affect humans more than once in his life	29	26	45
5	There is a vaccine for COVID-19	17	29	54
How long does it take for symptoms of disease to develop the following infection to occur?				
1	Less than three days?	65	20	15
How long days later will an infectious person who has been cured of the disease interact with others to recover?				
1	Immediately	16	46	38

to health care (Medhi et al., 2020). Providing knowledge and education in different cultural settings must take into consideration local circumstances and population. Several researches looked at various fields of awareness, behaviors, and procedures regarding outbreaks of infectious diseases, such as SARS and avian flu (Majid et al., 2020). However, the literature review has not identified any public records on coronavirus Awareness among people living in Sulaymaniyah yet. Therefore, this survey will be used to set up baseline evidence that can lead to implementing proactive action if there is an epidemic in the future. In our research, over half of the participants were aware of the region's ongoing coronavirus situation. Without an awareness of how viruses are distributed, citizens can react correctly during an epidemic. Most participants did not know about the unexpected emergence of symptoms (16%), the incubation time (65%), and the availability of the vaccine (17%). Very possibly due to the lack of clinically proven therapeutic options that directly inhibit the symptoms of this virus have not yet been scientifically validated, and vaccines are still under growth (Medhi et al., 2020). Strategies need to be followed for the expansion of laboratory capacities, the manufacture of effective therapeutics, and the manufacture of safe vaccines with long-term immunity.

Most participants agreed that if the number of cases increased dramatically (86.2 percent), the government

should separate patients with COVID-19 in private clinics, minimize the number of crowded sites, and brace for school closures if the number of cases increased significantly (77.4%). Whereas 48.3 percent of respondents claimed that the government should ban travel to and from locations with a high number of cases. In comparison, 40 percent of the participants chose not to move as the outbreak broke out and preferred to sit at home (77%) [Figure 2].

The majority of respondents reported frequent hand washing (88%). In crowded places, face masks (86%). Furthermore, most respondents stated avoiding touching their eyes, mouths, or noses (81%) and when coughing or sneezing, cover their nose and mouth with a tissue (71%). In addition, after use, most participants reported tossing the tissue into the trash. (73%) and avoiding regular activities when they had flu-like symptoms (69%) [Figure 3]. Our study showed a higher level of appropriate health practices among the participants. Eighty-eight percent of the respondents stated washing hands frequently; Most of them use etiquette. This implies the need to encourage and strengthen preventive activities in avoiding coronavirus infection.

The research showed that extreme distress was widespread in many respondents, although it took different forms. The majority of the participants agreed that the government

Figure 1: The research sample's demographics

should limit travel to and from the outbreak regions to prevent disease transmission (86%). Avoid traveling during the epidemic and instead stay at home (77%). Furthermore, stop inviting staff from the places where the disease is circulating, restrict travel to and from these places, and be willing to close schools if the number of cases rises drastically. More than a third of patients indicated they wished to be handled in private hospitals. The results suggest that gender was the only relevant anxiety variable, whereas awareness and precautionary habits were significant anxiety variables and precautions. Therefore, healthcare practitioners' health education initiatives may be successful, but neighborhood standards have to be addressed when designing health education in neighborhoods with high demand. Awareness of COVID-19 in neighboring regions will trigger mass hysteria in the population.

In addition, it may lead early behavior to pursue health treatment. Providing knowledge about encounters with COVID-19 can include the necessary details to reduce or avoid potential epidemics. Educational measures modified locally will avoid panic, promote early access to health services, and minimize illness and death.

Figure 2: Responses of Participants to Statements of Concern (in percentages)

Figure 3: Participants' Reactions to Precautionary Measures Against COVID-19 (percentage)

CONCLUSION

The present study provided a detailed overview of the Sulaimaniyah community's awareness, attitudes, and behaviors regarding COVID-19. The results indicate that people have an unacceptable amount of information about COVID-19 and are mostly pessimistic in their outlook to solve the pandemic. For this reason, we must move according to the instructions of the world health organization, and apply it well, which is to keep napkins and stay away from crowded places and using a mask and gloves as you leave your home and work area. Besides, to minimize the risk of contamination among individuals, strategies and education should be introduced to express the importance of future exposure to the virus.

RECOMMENDATION

The survey was conducted in a few specific places in Sulaymaniyah, so the results may not be generalizable elsewhere. Finally, the KAP calculation is inaccurate since there are very few things in the overall KAP. More analysis is required to build on these issues.

REFERENCES

- Sazan, Q. M., S. O. Majed, B. A. Ali, P. J. Jalal, S. H. Azeez, and K. A. Mohammad. 2020. Epidemiological approach of SARS-CoV2 in the first month of appearance in the Kurdistan region of Iraq. *Eur. J. Mol. Clin. Med.* 7(11): 2853-2865.
- Azlan, A. A., M. R. Hamzah, T. J. Sern, S. H. Ayub and E. Mohamad. 2020. Public knowledge, attitudes and practices towards COVID-19: A cross-sectional study in Malaysia. *PLoS One.* 15(5): 1-15.
- Cao, J., W. J. Tu, W. Cheng, L. Yu, Y. K. Liu, X. Hu and Q. Liu. 2019. Clinical features and short-term outcomes of 102 patients with Coronavirus disease 2019 in Wuhan, China 2. Institute of Radiation Medicine, China Academy of Medical Science and Peking Union Medical College, Tianjin, China 3. Department of Infectious. Vol. 238. Oxford University Press, Oxford, United Kingdom. p4-21.
- Channappanavar, R. and S. Perlman. 2017. Pathogenic human coronavirus infections: Causes and consequences of cytokine storm and immunopathology. *Semin. Immunopathol.* 39(5): 529-539.
- Guan, W. J., Z. Y. Ni and Y. Hu Y. 2020. Clinical characteristics of Coronavirus disease 2019 in China. *N. Engl. J. Med.* 382(18): 1708-1720.
- Huang, C., Y. Wang, X. Li, L. Ren, J. Zhao, Y. Hu, L. Zhang, G. Fan, J. Xu, X. Gu, Z. Cheng, T. Yu, J. Xia, Y. Wei, W. Wu, X. Xie, W. Yin, H. Li, M. Liu, Y. Xiao, H. Gao, L. Guo, J. Xie, G. Wang, R. Jiang, Z. Gao, Q. Jin, J. Wang J and B. Cao. 2020. Clinical features of patients infected with 2019 novel Coronavirus in Wuhan, China. *Lancet.* 395(10223): 497-506.
- Kurdistan Regional Government. 2021. Cases in the Kurdistan Region. Kurdistan Regional Government, Cabinet.
- Lee, M., B. A. Kang and M. You. 2021. Knowledge, attitudes, and practices (KAP) toward COVID-19: A cross-sectional study in South Korea. *BMC Public Health.* 21(1): 1-10.
- Majid, U., A. Wasim, S. Bakshi and J. Truong. 2020. Knowledge, (mis-)conceptions, risk perception, and behavior change during pandemics: A scoping review of 149 studies. *Public Unders. Sci.* 29(8): 777-799.
- Medhi, R., P. Srinoi, N. Ngo, H. V. Tran and T. R. Lee. 2020. Nanoparticle-based strategies to combat COVID-19. *ACS Appl. Nano Mater.* 3(9): 8557-8580.
- Merad, M. and J. C. Martin. 2020. Pathological inflammation in patients with COVID-19: A key role for monocytes and macrophages. *Nat. Rev. Immunol.* 20(6): 355-362.
- Merza, M. A., A. A. H. Al Mezori and H. M. Mohammed. 2020. COVID-19 outbreak in Iraqi Kurdistan: The first report characterizing epidemiological, clinical, laboratory, and radiological findings of the disease. *Diabetes Metab. Syndr.* 14(4): 547-554.
- Person, B., F. Sy, K. Holton, B. Govert, A. Liang, National Center for Infectious Diseases/SARS Community Outreach Team. 2004. Fear and stigma: The epidemic within the SARS outbreak. *Emerg. Infect. Dis.* 10(2): 358-363.
- Wali, Z. Z. (2020) First Cases of Coronavirus Confirmed in Kurdistan Region. RUDAW, Erbil, Iraq.
- Wu, C., X. Chen, Y. Cai, J. Xia, X. Zhou, S. Xu, H. Huang, L. Zhang, X. Zhou, C. Du, Y. Zhang, J. Song, S. Wang, Y. Chao, Z. Yang, J. Xu, X. Zhou, D. Chen, W. Xiong, L. Xu, F. Zhou, J. Jiang, C. Bai, J. Zheng and Y. Song. 2020. Risk factors associated with acute respiratory distress syndrome and death in patients with Coronavirus disease 2019 pneumonia in Wuhan, China. *JAMA Internal Med.* 180(7): 934-943.
- Xinhua. (2020) Iraq Announces 1st Case of COVID-19 in Najaf, Chinadaily. Xinhua, China.