Original Article

Evaluation of the Knowledge, Attitude, and Practice of Pregnant Women in the COVID-19 Outbreak in Mahdiyeh Hospital

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Abstract

Background: As observed in severe acute respiratory syndrome (SARS) and Meddle-East respiratory syndrome (MERS) epidemics, pregnant women are more prone to complications and adverse outcomes of coronavirus infection. Coronavirus disease 2019 (COVID-19) is thought to significantly increase the risks to maternal and fetal health, while others believe that pregnant women have similar morbidity and mortality compared to the general population. Due to the severe prognosis of pregnant women with SARS-Coronavirus (CoV) or MERS-CoV, many concerns have been raised about the effects of SARS-CoV-2 on this sensitive group of patients.

Materials and Methods: The present study was a cross-sectional descriptive study that was performed on all pregnant women referred to Mahdieh Hospital in Tehran, Iran, whose gestation period was during the coronavirus epidemic, by the available sampling method. Pregnant women answered the questions asked by the researcher and the answers were recorded in a pre-prepared structured standard questionnaire. Questionnaire questions included basic information, knowledge, attitude, practice, and obstacles.

Results: A total of 284 people participated in this study with a mean age of 29.6 ± 12.2 years. The mean gestational age among the participants in this study was 28.5 ± 9.7 weeks. The knowledge, attitude, and practice of pregnant women referred to Mahdieh Hospital in Tehran were 74.05, 61.13, and 60.06, respectively. In terms of attitude, improving one's attitude towards herself will have the greatest effect on improving one's attitude. According to this finding, the attitude of individuals increases the level of knowledge about COVID-19. The amount of knowledge has a direct positive and significant effect on practice. Also, the attitude has a direct positive and significant effect on the practice.

Conclusion: Given that the source of information for most of the participants in this study about COVID-19 was the media. Transmission of correct health information about the relationship between pregnancy and COVID-19, to this sensitive group, through the media could be appropriate. This is important because most participants feel they are at higher risk of developing the disease than non-pregnant people due to their pregnancy status.

Keywords: Knowledge, Attitude, Practice, Pregnant women, COVID-19, Pandemic

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Introduction

The world is suffering from the coronavirus disease 2019 (COVID-19) epidemic with the new severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2) detected in late 2019 in Wuhan, Hubei Province, China[1]. Before the World Health Organization (WHO) officially announced the name COVID-19 in February 2020, the disease was known as the new respiratory disease of the 2019 coronavirus (2019-nCoV)[2]. On March 11, 2020, the WHO declared COVID-19 an epidemic[3]. The epidemic spread rapidly with nearly 228 million confirmed infections and more than 4.6 million deaths worldwide by September 27, 2021[4]. Countries around the world had various control measures such as social distancing, hand washing, shutting down public vehicles and public places, and testing and tracking affected people[5].

As observed in SARS and Meddle-East respiratory syndrome (MERS) epidemics, pregnant women are more prone to complications and adverse outcomes of coronavirus infection[6,7]. COVID-19 is thought to significantly increase the risks to maternal and fetal health[8], while others believe that pregnant women have similar morbidity and mortality compared to the general population[9]. Due to the severe prognosis of pregnant women with SARS-CoV or MERS-CoV, many concerns have been raised about the effects of SARS-CoV-2 on this sensitive group of patients[10]. In-depth knowledge supports optimistic attitudes and appropriate actions that help prevent the risk of infection[11]. Adherence of pregnant women to control measures is influenced by their knowledge, attitude, and practice (KAP) towards COVID-19. Therefore, it is very important to understand the knowledge of pregnant women in this field and to determine the factors that affect their attitudes and practices to have adequate measures and protection. This study aimed to investigate the level of knowledge, type of attitude, and practice of pregnant women referred to Mahdieh Hospital in Tehran during the COVID-19 epidemic.

Methods

The present study was a cross-sectional descriptive study that was performed on all pregnant women who were referred to Mahdieh Hospital in Tehran (the capital city of Iran) whose gestation period was during the coronavirus epidemic, by the available sampling method. Inclusion criteria were all pregnant women referred to Mahdiyeh Hospital in Tehran and exclusion criteria were dissatisfaction to participate in the study and failure to complete the entire questionnaire during the interview. The degree of observance of general and important principles of common health protocols recommended by these women was reviewed by the researcher and recorded in the relevant checklist. Pregnant women then answered the questions asked by the researcher and recorded them in a pre-prepared structured standard questionnaire. Questionnaire questions included basic information, knowledge, attitude, practice, and obstacles. The knowledge questionnaire consisted of 36 questions, which consisted of 31 yes-no questions, 2 multiple-choice questions, and 3 short answer questions. The Women's Attitude Survey Questionnaire consisted of 36 questions, which consisted of 27 yes-no questions, 6 multiple choice questions, and 3 short answer questions. The practice evaluation questionnaire consisted of 22 questions, which consisted of 13 yes-no questions and 9 multiple-choice questions. The obstacles questionnaire also consisted of 23 questions, which consisted of 21 yes-no questions and 2 multiple-choice questions. The study was approved by Shahid Beheshti University of medical sciences (IR.SBMU.RETECH.REC.1399.1123).

Results

A total of 284 people participated in this study with a mean age of 29.6±12.2 years. The mean gestational age among the participants in this study was 28.5±9.7 weeks. The history of coronavirus infection in participants, their housemates, and friends were 11.3%, 12%, and 32.4%, respectively. Other demographic findings of the participants are mentioned in Table (1).
In this study, the knowledge, attitude, and practice of pregnant women referred to Mahdieh Hospital in Tehran were 74.05, 61.13, and 60.06, respectively. By performing Pearson Chi-Square statistical test, the relationship between income level and practice was significant ($P<0.05$) and also the relationship between education and knowledge level was significant ($P=002$).
To evaluate the reliability of the indices, two factors were used: Confirmatory Factor Analysis and

Table 1: Demographic information of study participants.

Variables		Percentages	Variables		Percentages
Education	Illiterate	7.0	Job	Private	8.8
	Diploma	66.2		Governmental	7.0
	Bachelor	23.9		housewife	84.2
	Higher than a bachelor's degree	2.8	Housing situation	Private house	44.8
Number of family members	2	30.3		Rented house	55.2
	3	31.0	History of COVID-19	Yes	11.3
	4	20.8		No	88.7
	5 or more	18.0	Income (toman)	< 2 million	31.0
Roommate history of COVID-19	Yes	12.0		2 – 5 million	56.0
	No	88.0		>5 million	12.0
Friend history of COVID-19	Yes	32.4		No income	1.1
	No	76.6			

Cronbach's alpha. The Confirmatory Factor is calculated by calculating the correlation value of the characteristics of a structure with that structure. If this value is equal to or greater than 0.4, it confirms that the variance between the structure and its characteristics is greater than the variance of the measurement error of that structure, and reliability for that structure is acceptable. Confirmatory Factors are factors that determine whether our questions have been able to measure the item effectively. In this study, all the questions have a Confirmatory Factor higher than 0.4.

Also, according to the Confirmatory Factor, the attitude of the individual towards himself has the greatest effect on the variable of attitude, performance outside the home has the greatest effect on the variable of performance, and recognizing the care conditions of a patient with coronavirus has the greatest effect on the variable of knowledge.

In this study, also considering that Cronbach's alpha is higher than 0.7, all variables have good reliability. R-squares and f-squares criteria were used to evaluate the fit of the model. The R-squares criterion determines the number of properties of a variable that have been measured and evaluated by other variables.

For example, this value for the amount of knowledge is 0.970, meaning that all variables that affect the amount of knowledge, were able to measure 97% of the total variable, and this study did not measure only 3% of the variable of knowledge. In the R-squares criterion, a score above 0.67 means that the fit of this model is strong, which is higher than 0.67 in all variables of this model.

The index f-squares determines the intensity of the relationship between the model variables. The amount of knowledge has the greatest effect on understanding the care conditions of a patient with coronavirus, that is, if the level of knowledge increases, there will be a better understanding of the care conditions of a patient with coronavirus. Also, in terms of attitude, improving one's attitude towards herself will have the greatest effect on improving one's attitude. Finally, how someone practices outdoors have the greatest impact on a person's practice.

In testing the hypotheses, the attitude had a positive and significant effect on the amount of knowledge with a path analysis of 0.985 and a value of t equal to 665.84. This finding was significant at a 95% confidence level. According to this finding, the attitude of individuals increases the level of knowledge about COVID-19. The

Table 2: Path coefficient and T-Value values.

Variable	Result	T-Value	Path coefficient	Dependent agent	Independent agent
Attitude on Knowledge	Confirmed	665.84	0.985	Knowledge	Attitude
Knowledge on Practice	Confirmed	15.363	0.525	Practice	Knowledge
Attitude on Practice	Confirmed	13.667	0.467	Practice	Attitude

significance coefficient of the path between the variable of knowledge and practice was more than 1.96 (15.363). Also, the standardized coefficient of the path between these two variables indicated that the amount of knowledge at the rate of 0.525 of the changes in the variable explained how it works. In other words, the amount of knowledge has a direct positive and significant effect on practice. The significance coefficient of the path between the variables of attitude and practice was 0.467 and therefore showed a positive effect of attitude on practice. Also, the standardized coefficient of the path between these two variables indicates that the attitude explained 0.467 of the practice. In other words, the attitude has a direct positive and significant effect on practice (Table 2).

The best source of information on COVID-19 for the participants in this study was the media (60%) and then the Internet (20.4%). The most important obstacles in not using the mask, not observing a physical distance of 1 to 2 meters with others, and not disinfecting the hands after touching contaminated objects, respectively, was the feeling of suffocation caused by using the mask (22.5%), forgetting the need to maintain physical distance Others (27.2%) and the idea of adequate handwashing at home (25%).

Discussion

This study aimed to investigate the level of knowledge, attitude, and practice of pregnant women referred to Mahdieh Hospital in Tehran during the COVID-19 epidemic.

This study showed that pregnant women: had a positive attitude towards the prevalence of COVID-19 as well as the struggle of health care workers, had increased anxiety and worry about pregnancy and their baby due to COVID-19; and had insufficient information and knowledge about the relationship between pregnancy and COVID-19.

The results of this study showed that 82.1% of the participants in this study believed that COVID-19 could be treated. The main source of knowledge for most of the participants in this study about the COVID-19 epidemic was the public media (60.0%). More than half of the participants had sufficient knowledge about COVID-19 and followed the recommended health protocols. Another study in Nigeria found that pregnant women had sufficient knowledge about COVID-19, and more than half of them considered the disease to be curable, and the main treatment was chloroquine. The main source of information about the disease was also the public media (12).

In the present study, more than half (50.4%) of pregnant women believed that government officials did not take the necessary measures to reduce the risk of transmitting the disease. Meanwhile, 78.2% of them trusted the healthcare system in caring for people against COVID-19 and 92.5% of them felt appreciative about the medical staff. 70.7% of the participants believed that because they were pregnant, they were more likely to be infected with the coronavirus than non-pregnant women, and this was a factor in increasing their anxiety. Another study found that 65% of pregnant women trusted the government and government policies to combat the coronavirus. Also, 92% of the participants in that study stated that they trust the medical staff and the healthcare system in helping people prevent and treat COVID-19. In that study, 52% of pregnant women considered themselves more susceptible to the coronavirus than others in the community, and 80% said they were concerned about

the situation (13).

In this study, the knowledge and practice of pregnant women referred to Mahdieh Hospital in Tehran were 74.05 and 60.06, respectively. However, in the study of Erfani et al. (14) in Iran, the overall score of the participants in the field of knowledge was 90% excellent and average, and 10% poor. Also, in the study of Honarvar et al. (15), the results of the study showed that 63% of the answers given in the field of knowledge and 78% of the answers given in the field of practice were correct.

Conclusion

Given that the source of information for most of the participants in this study about COVID-19 was the media, the transmission of correct health information about the relationship between pregnancy with COVID-19, to this sensitive group through the media could be appropriate. This is important because most of these participants feel that they are at higher risk of developing the disease than non-pregnant people due to their pregnancy status.

Acknowledgment

Conflict of interest

The authors further declare that they have no conflict of interest.

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