Evaluation of Knowledge, Attitude, Practice and Hospital Experience Regarding COVID-19 among Post-partum Mothers at a Tertiary Care Center: A Cross-sectional Study

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ABSTRACT

Background

Pregnant and breastfeeding women are more susceptible to viral infection and in the year 2020 they have to face the COVID-19 pandemic. Since, no successful treatment and vaccine has been developed so far, efforts to enhance the knowledge, attitudes, and practice of the public, especially the high-risk groups like pregnancy and post-partum period are crucial to manage COVID-19 pandemic.

Objective

To analyze the knowledge, attitude, practice and hospital experience regarding COVID-19 among post-partum mothers at a tertiary care center of Nepal

Method

The data collection was based on direct interview after receiving written consent from the research participants, using a semi-structured questionnaire. The questionnaire consisted of 4 major domains- knowledge (8 questions), attitude (6 questions), practice (5 questions) and experience (5 questions). Standard descriptive statistics were used for the data, mean and standard deviation for continuous variables whereas frequencies and percentages for categorical variables.

Result

A total of 203 post-partum women participated in the study. Almost all the participants had heard about COVID-19 (96.6%). A majority of them were aware about how COVID-19 gets transmitted and its preventive measures. Most of the participants (88.2%) knew that COVID-19 has effects on pregnancy. Almost all of participants (97%) wore mask during hospital stay. All of the women washed their hands with soap water or alcohol based sanitizer. A majority of the mothers (79.3%) wore mask while breastfeeding their baby.

Conclusion

The post-partum mothers have good knowledge, attitude, practice and experiences regarding the COVID-19 pandemic.

KEY WORDS

Attitude, COVID-19, Experience, Knowledge, Post-partum

INTRODUCTION

The novel corona virus, COVID-19, a disease caused by SARS-CoV-2 has become a significant global health problem. With the number of infected cases and affected countries escalating rapidly, on March 11, 2020, the World Health Organization (WHO) declared COVID-19 a pandemic.[1] Although majority of people are asymptomatic, individuals with confirmed SARS-CoV-2 develop clinical symptoms of fever, cough, and shortness of breath.[2] Pregnant and post-partum women are considered high-risk group and deserve our great attention because of the physiological changes during pregnancy and an associated immunocompromized state that make them more susceptible to virus. Good knowledge is a prerequisite for overall practice of preventive measures aimed to reduce the disease burden, forming positive attitude and promoting positive practice to disease.[3,4]

In the year 2020, pregnant and breastfeeding women have to face the COVID-19 pandemic, and associated quarantine and isolation measures that have disturbed their private and professional lives.[5] Since, no successful treatment and vaccine has been reported so far, efforts to enhance the knowledge, attitudes, and practice of the public, especially the high-risk groups like pregnancy and post-partum period, are crucial to manage COVID-19 pandemic.[3]

This study aims to assess knowledge, attitude, and practice (KAP) towards COVID-19 among the post-partum mothers that had delivered at a tertiary care center at Bharatpur, Chitwan and describe their experience during hospital admission.

METHODS

This was a single center, cross sectional survey conducted among all the post-partum mothers admitted in the postnatal ward of Bharatpur Hospital, Chitwan from 15 Chaitra – 25 Chaitra 2076 (28 March – 5 April, 2020). Bharatpur Hospital is a tertiary care and referral center located in central region of Nepal, which conducts approximately 12500 deliveries per year (based on labor room audit), and is also a designated hospital for management of COVID-19 patients. Pregnant women, admitted in the hospital with matching symptoms for COVID-19 were categorized as suspects and managed in a separate unit. Positive cases were then referred to COVID designated isolation ward and managed accordingly following appropriate protocol.

This study was approved by Institutional Review Committee (IRC), Bharatpur Hospital. The data collection was based on face-to-face interview by doctors/nurses after receiving written consent from the research participants, using a semi-structured questionnaire. The questionnaire consisted of 4 major domains- Knowledge (8 questions), Attitude (6 questions), Practice (5 questions) and Experience at the hospital (5 questions). The interviewers clarified the participants if they had any queries regarding the questions during the interview process and collected their responses on the proforma.

SPSS version 25 was used for statistical analysis. Standard descriptive statistics were used for the data, mean and standard deviation for continuous variables whereas frequencies and percentages for categorical variables. The questions pertaining to the four domains (Knowledge, Attitude, Practice and Hospital experience) were described as frequencies and percentages.

RESULTS

A total of 203 post-partum women (median age: 25 years (range: 15 – 40 years) participated in the study. Among them, 136 (67.0%) had normal vaginal delivery whereas the remaining 33.0% had cesarean delivery.

Almost all the participants had heard about COVID-19 (96.6%). The most frequent source of information was television and radio (81.8%) followed by internet and social media (63.5%). 90.1% of the participants knew that the causative agent of COVID-19 was a virus. A majority of them were aware about how COVID-19 gets transmitted, its clinical features and preventive measures. Most of the participants (88.2%) knew that COVID-19 has effect on pregnancy and 79.8% thought that the disease can be transmitted from mother to baby (Table 1).

Around three-quarters of the participants were worried about getting COVID-19 infection during delivery. Almost all the participants (98.5%) agreed that lock down will help in reducing spread and prevention of COVID-19 and it should be further added (Table 2).

Ninety-seven percent of participants wore mask during hospital stay, the commonest being a cloth mask. Very few women (2.5%) used an N95 mask. All of the women washed their hands with soap water or alcohol based sanitizer after contact with objects, but some of them did not wash hands before and after breast feeding (2.5%). A majority of the mothers (79.3%) wore mask while breastfeeding their baby.

Only 40.9% of participants were asked about the clinical features of COVID-19 during admission. Body temperature measurement by a digital thermometer was done in 21.7% of the participants. According to the experience of the participants, only 27.6% of health workers examined them wearing by PPE whereas only 30% recalled that their deliveries were conducted wearing PPE by health care workers.

DISCUSSION

COVID-19 is an emerging respiratory disease caused by a single-stranded, positive-sense ribonucleic acid (RNA) virus. The first case of COVID-19 was identified in Nepal on

Table 1. Distribution of Knowledge related characteristics regarding COVID-19 (n = 203)

Knowledge domain	Frequency	Percentage
1. Heard of COVID-19		
Yes	196	96.6
No	7	3.4
2. Source of information		
Television and Radio	166	81.8
Telephone and Mobile communication alert	129	63.5
Internet and social media (facebook)	129	63.5
Newspaper	38	18.7
Friends and Family	88	43.3
3. Causative Agent		
Virus	183	90.1
Don't know	20	9.9
4. Modes of transmission		
Direct contact with infected person	178	87.7
Respiratory Droplet	170	83.7
Airborne Disease	65	32
Contact with contaminated surfaces or objects	73	36
Contact with person with travel history to COVID-19 circulating country	68	33.5
5. Clinical Features		
Fever	196	96.6
Cough	190	93.6
Shortness of Breath	127	62.6
Headache	97	47.8
Myalgia	44	21.7
6. Preventive measures		
Clean hand with soap and water, or alcohol based hand sanitizer	194	95.6
Cover nose and mouth with coughing or sneezing with tissue or a flexed elbow	174	85.7
Avoid close contact with anyone with a cold or flu-like symptoms	114	56.5
7. Does COVID-19 affect pregnancy?		
Yes	179	88.2
No	23	11.3
Don't know	01	0.5
8. Is COVID-19 transmitted from mother to baby?		
Yes	162	79.8
No	40	19.7
Don't know	01	0.5

Table 2. Distribution of Attitude related characteristics regarding COVID-19

Attitude domain	Frequency	Percentage
1. Worried of getting COVID-19 infection		
Yes	144	70.9
No	59	29.1
2. Worried about Delivery Plan and Place		
Yes	149	73.4
No	54	26.6
3. Lock Down by Government will help in reducing spread and prevention of COVID-19		
Yes	200	98.5
No	3	1.5
4. Government should add another Lock Down		
Yes	200	98.5
No	3	1.5
5. Awareness programme helps in practice of public to prevent COVID-19 infection		
Yes	201	99.1
No	2	0.9
6. Government should give surgical mask to public		
Yes	188	92.6
No	15	7.4

Table 3. Distribution of Practice related characteristics regarding COVID-19

Practice domain	Frequency	Percentage
1. Wear mask during hospital stay		
Yes	197	97.0
No	6	3.0
2. If yes, which Mask		
Cloth	182	89.9
Surgical	10	4.9
N95	5	2.5
3. Wash hand with soap water or alcohol based sanitizer after contact with objects		
Yes	203	100.0
No	0	0.0
4. Wash hand with soap water before and after breast feeding		
Yes	198	97.5
No	5	2.5
5. Wear mask while breast feeding		
Yes	161	79.3
No	42	20.7

21 January 2020, one month after its detection in Wuhan City of Hubei province of China.[1,6]

This study focused on KAP of the post-partum mothers in a tertiary care center in Nepal. A majority of participants had a good knowledge about COVID-19. More than 90% of the mothers had knowledge on clinical features, mode of transmission and preventive measures. The finding is different from a study conducted by Neupane et al. on health care professionals and medical students shows that 58% of the study population had good knowledge

Table 4. Distribution of Experience related characteristics regarding COVID-19

Experience domain	Frequency	Percentage
1. Ask clinical features COVID-19 during admission		
Yes	83	40.9
No	120	59.1
2. Record Body temperature		
Yes	44	21.7
No	159	78.3
3. If yes, which type		
Digital Thermometer	44	21.7
Mercury thermometer	0	0.0
Infrared thermometer	0	0.0
4. Do health workers wear PPE while examination in ward?		
Yes	56	27.6
No	147	72.4
5. Do health workers wear PPE while conducting delivery?		
Yes	61	30.0
No	142	70.0

and 22.7% had fair knowledge and remaining had poor knowledge.[7] The difference existed because of the structure of questionnaire used, with our study including very basic questions tailored to general population compared to the questions used in aforementioned study. Besides, that study used Multiple Choice Questions (MCQs) to determine knowledge, which we did not use. The major source of the information was television and radio followed by telephone conversation and social media. This reflected the strength and utility of internet and social media in dissemination of information regarding a pandemic, if properly utilized. 79.9% postpartum mother believed that COVID-19 infection transmit form mother to baby. The comprehensive literature search conducted by Zaigham et al. stated that vertical transmission of COVID-19 was 1 in 75 neonates who were born from COVID-19 infected mothers.[8] More than two thirds of the participants were worried about being affected from COVID-19 and uncertainty regarding delivery plan and place. This might be one of the factors for peripartum depression. In the Lancet Global Health, KC et al. and colleagues reported their prospective observational study on intrapartum care, stillbirth and neonatal mortality among 9 referral Hospitals from January to May, 2020. The number of institutional births had decreased by about 52.4% and the quality of care in the hospitals was compromised compared to scenario before lock-down. Neonatal deaths had also increased during lock-down.[9,10]

Most of the participants in the study population believed that awareness program and distribution of masks among the public would help to prevent COVID-19 infection. A study done by Hu et al. in 6 major English speaking countries concluded that strengthening of the public awareness and vigilance of COVID-19 would reduce the spread of COVID -19 globally.[11]

Majority of the participants used face masks while in the hospital, mainly cloth masks. Although good quality evidence is lacking, some data suggest that cloth masks may be only marginally (15%) less effective than surgical masks in blocking emission of particles, and fivefold more effective than not wearing masks. Use of mask in healthcare settings is clearly essential to protect frontline workers, whereas the evidence supporting masks in non-clinical settings is both limited and of variable quality. Mass manufacture and use of cloth mask is cheap, and even facilitate economic activity.[12]

Almost all the participants followed proper hand hygiene after contact with objects or during breast-feeding. Jordan et al. reported that hand washing and rubbing hand with alcohol-based sanitizer is the simplest and most effective ways to prevent the spread of respiratory infections like COVID-19.[13] Furthermore, increasing the availability of hand washing stations and alcohol-based hand rubbing is extremely beneficial and reduces transmission.[13] A study by Davanzo et al. concluded that proper hand washing and using of face mask by the mothers could reduce the COVID-19 transmission to the neonates.[14]

Based on hospital experience, less than 50% of the participants were asked about the clinical features of COVID -19 during admission and one fifth of the participants had their body temperatures recorded by digital thermometer. Among the health workers who were involved in the delivery and clinical examination, only about 30% used Personal Protective Equipment (PPE). A study conducted by Pandey et al. identified the necessity of educating health care workers on proper and rational use of PPE while examining the patients.[15]

This study was conducted in one of the government hospitals that provides a big chunk of maternity service outside Kathmandu valley. The study has shown that KAP of the post-partum mothers were satisfactory, which is extremely good considering the current circumstances. Informative sessions on updates regarding COVID-19 will be highly beneficial that will help ameliorate stress/anxiety among these women and improve adherence to safe practices.

CONCLUSION

The post-partum mothers have good knowledge about the COVID-19 pandemic. Their attitude, practice and experiences were good enough to keep them and their neonates safe from COVID-19 infection. The study was conducted on limited time period so the number of study population was also small and it is recommended to conduct.

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