

Knowledge, Attitude and Practice towards Covid-19 Infection and Preventive Measures among Pregnant Womens, Attending Antenatal Clinic of JNU Hospital

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ABSTRACT

Background: Prenatal anxiety has been a major public health issue globally, resulting in adverse health outcomes for mothers and children. The study aimed to evaluate the socio-demographic characteristics, knowledge, attitudes, and practices (KAP) and anxiety level of pregnant women during the corona virus illness (COVID-19) pandemic in India and investigate the influencing factors for prenatal anxiety in this specific context. **Methods:** The cross-sectional study was conducted for pregnant women attending the OPD of obstetrics and gynecology department at a tertiary care hospital (JNU hospital), in Rajasthan. Pregnant females' KAP towards COVID-19 and their socio-demographic and pregnancy information were collected using questionnaires. **Results:** The prenatal anxiety prevalence in this population was 20.8%. The analysis of the association of demographic variables with KAP about COVID 19 revealed a significant association. **Conclusion:** Prenatal anxiety was prevalent among pregnant women of Rajasthan during the outbreak of COVID-19. To improve the KAP of the general population is crucial during the rapid rise period of a pandemic outbreak such as COVID 19. Therefore the development of effective health education programs that incorporate consideration of KAP – modifying factors is needed.

Key words: COVID-19 virus, pregnant woman, antenatal period.

INTRODUCTION

According to the Chinese Center for Disease Control and Prevention, the identification of the first case of COVID-19 virus infection in Wuhan (China) was noted on 8 December 2019. Since the identification of its first case, the virus has slowly spread to Europe, North America, Southeast Asia, Australia, and the Middle East till 11 March 2020. The World Health Organization has announced it as a public health emergency of international concern on January 30, 2020 and called for collaborative efforts of all countries to prevent the rapid spread of COVID 19⁽¹⁾. The COVID-19 virus infection is caused by SARS-CoV-2, a new human-infecting beta corona virus that is different from the SARS-CoV-1 virus,

and the virus has been shown to use the angiotensin-converting enzyme 2 (ACE2) receptor for cell entry. The person infected by the novel corona virus are the main source of infection. COVID-19 transmission is largely through the airborne route, through the respiratory droplets to close contacts of infected individuals while coughing, sneezing or speaking.

These droplets may also land on surfaces, where the virus has been seen to remain viable for a variable duration of time depending on the type of surface. The infection can also occur if a person touches an infected surface and then touches his / her eyes, nose or mouth (known as fomite transmission). The median incubation period is 5.1 days (range 1-14 days). More than 2/3rd of pregnant women with covid 19 were asymptomatic, but compared to non-pregnant women with

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covid 19, pregnant women with COVID-19 had higher rates of ICU admission. Pregnant women do not appear more likely to contract the infection than the general population but due to immunomodulation in pregnancy, severity is more likely. It is not clear about the intrauterine infection caused by vertical transmission in pregnant women who contract COVID-19 virus infection during pregnancy. No recorded cases of breast milk tested positive for COVID 19 are available till date. However, most research has mainly focused on the therapeutic aspects, while pregnant women's mental health status during the COVID-19 is much less studied. Pregnancy is one of the important milestones in a women's life. During pregnancy, women are extremely apprehensive and anxious. According to CDC guidelines, pregnant and breastfeeding women are subgroups that need extra precaution to avoid COVID 19 infection. They are at increased risk for severe illness from COVID 19 compared to non-pregnant people. There may be an increased risk of adverse pregnancy outcome, such as preterm birth among pregnant women with COVID 19. Consequently, even during a pandemic, pregnant women need constant obstetric consultations during the antepartum period and adequate care during the intrapartum and postpartum period for the uneventful outcome. Prenatal care is vital to a healthy pregnancy⁽²⁾. Any non-routine changes to prenatal care could be a stress factor to pregnant women, especially during the outbreak. Antenatal care was available, but the delivery of it was affected. The pregnant women were recommended to reduce the antenatal visit. The H1N1 pandemic taught us that knowledge and attitude towards infectious disease play crucial role in precise practices for curtailing the spread of the disease. Anxiety and fear among the population further clouds the efforts to prevent the spread of infection. Adherence to preventive measures by the population is crucial for the control of spread, which is mainly affected by their knowledge, attitudes, and practices (KAP) towards COVID 19. Pregnant women who constitute a vulnerable group need to be more cautious and hence KAP of preventive measures against the spread of the virus among them is of utmost importance. The primary aim of our study was to assess the KAP level among pregnant women. Association of demographic variables (age groups, education, and place of residence) and KAP was studied as a secondary outcome.

MATERIAL AND METHODS

This cross-sectional survey was conducted from January to March 2021, on pregnant women attending the outpatient department of Obstetrics and Gynecology, at a tertiary care hospital in Rajasthan. It included a brief introduction to the study. A questionnaire was developed from pretested and validated standard questionnaire as recommended by WHO on preventive measures against COVID 19, with few minor modifications as deemed necessary for our study. Verbal and

informed consent was taken before the formal survey from each participant. A printed questionnaire was given to each participant separately in the outpatient department of the hospital. Participants filled the questionnaire in the outpatient department of the hospital. The questionnaire consisted of two parts – demographic variables and KAP.

Measures

The questionnaire contained two parts; socio demographic characteristics and KAP.

Socio-demographic characteristics

included maternal age, residence, religion, occupation, educational level, marital status and socioeconomic status.

Knowledge, attitude, and practices

To assess the level of knowledge, attitude and practices of the respondents, a total of 14 questions were included. After completion of initial draft of a survey of questionnaire, it was validated by the academic experts knowledgeable in our area and adopted after that.

Data Analysis:- The data analysis was performed using Microsoft excel 2019 and SPSS version 25.0. Microsoft Excel was used for editing, sorting and coding.

RESULTS

Table 1: Demographic characteristics of participants

Age	N (%)
15-19 year	3
20-24 year	55
25-29 year	53
30-34 year	34
> 35 year	47
Residence	
Rural	125
Urban	67
Religion	
Christian	2
Hindu	125
Muslim	65
Educational Status	
Graduation & above	49
No formal education	33

Primary	76
Secondary	34
Occupation	
Employed	27
Housewife	152
Student	11
Other	2
Marital status	
Married	185
Single	6
Widow	1
Socioeconomic status	
Lower	91
Middle	85
Upper	16

Table 2: Knowledge of participants towards COVID-19

Have you ever heard about COVID-19 infection	
No	6
Yes	186
How it spread? (Mode of transmission)	
Airborne transmission	1
Close contact with infected person	30
Direct	17
All of the above	143
Who is at most risk age of COVID-19 infection	
30 year	2
30-60	1
Age - > 60 year	149
All of the above	40
COVID-19 infection cause by a virus or a bacteria	
Bacteria	5
Virus	187
What are preventive measures of COVID-19 infection	
Hand washing	2

social distancing	2
Stay home	1
Wear a mask	22
All of the above	165

How corona virus transmitted	
Breathing	2
contaminated surface	3
Droplets from sneezing or coughing	26
All of the above	161

what do you think of source of COVID-19 virus?	
Genetically modified virus in the laboratory	78
Human	21
Animal	93

Who are at high risk	
> 60 yrs	46
Children	4
Female with low immunity	4
Pregnancy	1
With comorbidities	3
All of the above	134

Table 3: Attitude of participants towards COVID 19

Are you worried about COVID-19 virus	
No	11
Yes	181
Is hand hygiene important in preventing the spread of the virus	
No	6
Yes	186
Does wearing a mask help prevent the spread of virus	
No	13
Yes	179
Health education can play an important role in COVID 19 prevention	
Yes	171
No	21

Table 4: Practices of participants towards COVID-19

What is best preventive method	
Avoid crowd	6
Avoid touching, face, mouth, nose	17
Avoid travel	6
Drink plenty of hot liquids	1
Hand wash with soap and wear a mask	160
Hand wash with water only	2
Your preferred preventive measures	
Hand washing	9
Mask	19
Sanitizer	1
All of the above	163

INTERPRETATIONS

A total of 200 respondents were enclosed within the end, with a median age of years (SD) starting from 20 to 29 years. Most respondents were married (80.8%). The majority were housewives (71.2%), had a primary level of education (61.0%), came from rural areas (69.8%), belonged to lower socioeconomic status (50.0%), and were Hindu by religion (Table 1).

Knowledge and Perception towards the COVID-19 concerning the mode of transmission, period of time, symptoms, risk factors, treatments, prevention, initiatives, and challenges. In the perception part, Table 2 depicts our findings. For the mode of transmission, more than half of the respondents reported contact with an infected person (93.7%), transmission mechanism was through coughing (66.4%), touching contaminated surfaces (61.3%), alongside others who reported contact with infected animals (30.8%), through feeding infected animal product (e.g., meat, milk) (21.4%), and only 0.5% had no knowledge concerning the mode of transmission of COVID-19. Most of the respondents (91.3%) reported the right period of time (2–14 days), and only 2.4% had no information regarding the incubation period. Most of the respondents (99.4%) reported fever, dry cough, and difficulty in respiration which were the common symptoms of the COVID-19. On the opposite hand, half the respondents (51.2%) reported sore throat, nasal stuffiness, alongside headache (0.1%), diarrhoea (0.7%), and some reported no symptoms (0.4%). The respondent's known risk groups for developing COVID-19 are as follows: older age persons (86.1%), people with cancer, diabetes, chronic metabolism diseases (74.6%), migrants from other countries having COVID-19 (44.8%), kids (25.3%), pregnant women (21.2%), and non-specified (0.8%). The majority (80.7%) reported

collateral treatments, however a vaccine was seldomly mentioned (1.0%), and 18.3% had no knowledge regarding the treatment choices of COVID. The respondents recognized the subsequent preventive measures for the COVID-19: cleaning hands with water and soap (93.5%), maintaining social distance (93.5%), avoiding touching the eyes, nose with hands (90.4%), employing a mask (87.2%), avoiding contacts with infected individuals (84.7%), taking all members of the family into home quarantine (78.1%), maintaining self-quarantine (76.9%), strengthening to health care (63.6%), and making a powerful force to fight against COVID-19 (26.7%).

The respondents took the initiative to shield their family members: temporary and absolute restricted access to outside individuals returning within the house (87.8%), for hand washing with soap within or outside the house (85.5%), and cleaning hands with soap immediately after touching pets (39.4%). The respondents additionally reported that they faced several issues to form awareness among their family members: not having the ability to move out of the house (57.1%), negligence concerning the severity of the sickness (40.3%), reluctance to use masks (25.5%), and only 19.5% had no issues.

For each question of information, the distribution of responses from participants is conferred in Table 3. 48.3% of respondents had correct information, and 51.7% of respondents had relatively inaccurate information relating to COVID-19. The proportion of more correct information were considerably among (i) younger (12–20 years) (49.3% vs. 38.8% in aged over thirty years, $p = .029$), and (ii) respondent from a rural area (52.8% vs. 46.3% in those from urban area, $p = .008$).

Attitude

For each question centered on perspective, the distribution of responses from participants is conferred in Table 4. The response rates of “Agree” were considerably higher in females (99.5% vs. 98.3% in males, $p = .043$) to the item of perspective section relating to “Are you upset concerning COVID-19?”. The response rates of “Agree” were considerably higher in females (99.6% vs. 98.1% in males, $p = .011$) to “Is hand hygiene vital in preventing the spreading the COVID-19 virus?”. Will sporting mask facilitate in preventing the spread of the virus and will health education play vital role in preventing the spread of the virus. The findings indicated that 62.3% of respondents had additional positive attitudes towards COVID-19. The proportion of additional positive attitudes was considerably (i) among older people (>30 years) (72.5% vs. 55.1% in age 12–20 years, $p < .001$), and (ii) those with education (74.1% vs. 52.2% in intermediate [class 11–12], $p < .001$), (iii) married (70.4% vs. 37.5% in unmarried, $p = .001$), (iv) housewives (78.1% vs. 58.2% in student, $p < .001$), (v) living in joint family (66.7% vs. 61.1% in extended family,

$p = .029$), (vi) have monthly family financial income $>30,000$ BDT (65.2% vs. 57.8% in those but 20,000 BDT, $p = .016$), and (vii) have additional protective preventive practices (66.1% vs. 57.7% in relatively less frequent practices, $p < .001$).

Finally, relating to variables associated with additional positive attitudes against COVID-19, we found that being younger (aged 12–20 years) vs. older (>30 years) considerably differed (OR = zero.47; ninety fifth CI = zero.33–.67, $p < .001$). Extra factors of additional positive attitudes against COVID-19 were having education (above bachelor), being jobless, having joint families, having monthly family financial gain over 30,000 BDT, and having additional frequent practices.

Practice

For each question of follow, the distribution of responses from participants is given in Table no. 5. The response rates of “Yes” were considerably higher in females (81.8% vs. 73.5% in males, $p < .001$) to the question “Do you utilize tissues throughout coughing/sneezing?”, additionally as “Do you wash hands often with water and soaps?” (95.6% vs. 92.5% in males, $p = .023$). Similarly, “Yes” response rates were considerably higher in females (96.2% vs. 87.1% in males, $p < .001$) to “Do you maintain social distance (or home quarantine)?”, as well as to “Do you maintain a healthy lifestyle in outbreak?” (88.3% vs. 81.4% in males, $p < .001$), and to “Do you adapt to all government rules associated with the COVID-19. (93.0% vs. 85.4% in males, $p < .001$) Furthermore, 55.2% of respondents had additional frequent practices towards the COVID-19. The proportion of additional frequent practices were considerably additional among (i) female (59.2% vs. 52.6% in male, $p = .003$), (ii) older (age $>$ thirty years) (64.0% vs. 48.6% in aged 12–20 years, $p < .001$), (iii) having education (63.6% vs. 35.0% in secondary [6th–10th grades], $p < .001$), (iv) housewives (68.8% vs. 52.2% in students, $p = .001$). The sociodemographic factors of additional frequent practices were sex (males vs females: OR = 0.76; 95%CI = 0.64–0.92, $p = .003$), being younger (12–20 years) vs. older (>30 years) (OR = 0.53; 95%CI = 0.38–0.75, $p < .001$), having secondary (6th–10th grades) vs. higher education (above bachelor) (OR = 0.31; 95%CI = 0.12–0.79, $p = .014$), having monthly family financial gain $<20,000$ vs. $>30,000$ BDT (OR = 0.71; 95%CI = 0.57–0.88, $p = .001$), rural vs. populated area (OR = 0.63; 95%CI = 0.52–0.76, $p < .001$).

DISCUSSION

This study was conducted aiming at measurement of the extent of information, attitude, and knowledge regarding COVID-19 and perceptions concerning the sickness among Indian population. The findings comparatively less positive attitudes (OR = 1.43; 95%CI = 1.19–1.71, $p < .001$) reveal a considerable range of sociodemographic factors that have an effect on KAP may prove helpful once comin-

gup with health teaching programs regarding rising Infectious diseases. In the scope of perception towards COVID-19, the overwhelming majority of the study participants reported the most typical symptoms associated with COVID-19^(3,4), while solely a little minority being unaware of any of the symptoms, like different studies elsewhere. Information regarding the time period was also incredible and similar (86.2%) to the study conducted by Zegarra et al. Routes of transmission of COVID-19 were reported by majority of the participants: with solely a negligible minority (0.2%) participants not being positive or unable of recognizing transmission routes. Perception of COVID-19 severity within the community showed that solely 13.8% didn't face any problem once they mentioned and tried to persuade their family members regarding COVID-19 severity. Most of the responses by the participants indicated negligence regarding the severity of the sickness, reluctance to use masks, and also the reluctance of obliging with not having the ability to prevent going out of the house. This might imply less participation in the preventive measures stipulated by the government additionally as less inclination to watch social distancing and different individual preventive actions, though some different reconciling ways were

Conjointly mentioned. The foremost often known gap in information among participants was associated with sickness treatment. Only 18.3% of participants believed that there's no treatment for COVID-19, while 47.3% participants indicated that COVID-19 could be a treatable sickness, like another study^(5,6).

Moreover, just 1% of the participants considered vaccine for preventing COVID-19, in marked distinction with the previous study by Srichan et al that found that 31.2% considered vaccine as a possible choice. Zhong et al. found that male sex, age-group of 16–29 years, marital status, education, employment and being a student were significantly associated with knowledge. Therefore, tailoring of the information provided by health officials and other media outlets on the disease needs to address the multifactorial nature of the drivers leading to reduced knowledge.

The findings showed virtually universal agreement among the participants towards reporting to health authorities suspected cases of COVID-19, on the issue wearing a face mask before going to a crowded place, and in following other recommendations. These findings were similar to a very recent study conducted in China, during the rapid rise of COVID-19 outbreak. Saqlain et al. also reported positive attitudes among the vast majority of healthcare professionals towards wearing protective gear. Similarly, the overall attitude towards actions such ‘wash hands and face after coming from outside’ and ‘health education can play an important role for COVID-19 prevention’ was universally favorable.

Like in this study, Saqlain et al. reported that more than 80% participants strongly agreed that transmission of COVID-19 could be prevented by following universal precautions given by WHO or CDC. During the SARS epidemic, 70.1–88.9% of Chinese residents believed that SARS can be successfully controlled or prevented. Zhong et al. found that 90.8% of the respondents agreed that with control measures such as traffic limits all throughout China, and the shutdown of cities and counties of Hubei Province. Surprisingly, the participants' attitudes differ by age, education, marital status, occupation, family type, monthly income, and practices. In contrast, Saqlain et al. found participants' attitudes were not affected by age, gender, experience, and job/occupation. Gao et al. also found that attitudes regarding COVID-19 did not present any significant associations with age, gender, and experience, but found a statistically significant association with occupation/job. Also of relevance, Albarak et al. and Khan et al. did not find any differences in attitude towards MERS among doctors, pharmacists, and nurses⁽⁵⁾.

In the multiple logistic regression analysis, sociodemographic variables related to additional positive attitudes relating to COVID-19 were older age, having education, being employed, having joint family, having higher monthly family financial gain, and implementing additional frequent practices, overall recapitulating previous findings from China. The issue of preventive practices deserves some comment since for a few measures like hand cleaning, the results were remarkably just like the other findings, with the exception of the study by Srichan et al., during which 54.8% failed to frequently use soap throughout washing of hands. Globally, girls were considerably additional doubtless to adopt preventive activities than men, a finding which might be of vital importance since targeting of women during household dissemination of education and preventive tips may ultimately yield improved implementation in households. Consequently, we found that the sociodemographic factors related to additional frequent measures were being feminine, older age, having education, higher financial gain, populated area residence, and having additional positive attitudes. Male gender, occupation of "students", COVID-19 information score, legal status, and residence were considerably associated factors within the Zhong et al. study, whereas expertise was indicated by Saqlain et al., Ivey et al. and Hussain et al. Considering the very fact that Bangladesh is a multi-ethnic country with immensely totally different economical financial gain, education levels, traditions, it's expected that the degree of knowledge, attitude, and prevention will markedly dissent within the population.

Though smart KAP was gift during a sizeable proportion of the sample, it's terribly doubtless that population sectors that don't have any access to net or live in regions with

less doubtless quick increase of transmission may show reduced KAP when uniform education and dissemination initiatives are enforced. Accessibility to data, dissemination and illustration of preventive behaviors, and healthful instructional measures are essential, Particularly in rural areas, among recent folks, poorer neighborhoods or communities, since they might have difficulties in obtaining access to novel data or encounter money or resource barriers to implementation of preventive measures. It's common accord that a additional educated population concerning any given illness can follow higher with the preventive and treatment measures^{6,7}.

Limitations

All the same, our study indicates that KAP assessments towards the COVID-19 pandemic of vulnerable populations warrant special effort to handle the gaps incurred by this study approach. Fourth, we used limited number of questions to measure the level of knowledge, attitude and practice. Thus, further assessments would be necessary, using all aspects of KAP towards COVID-19, to see the particular extent of KAP within the general population.

In addition, the unstandardized and inadequate assessment of attitudes and practices towards COVID-19 ought to be developed via focus groups and in-depth interviews and created as multi-dimensional measures.

CONCLUSION

Our findings indicate that after the immediate lockdown and through the speedy rise amount of the COVID-19 eruption, net users in Asian nation displayed substantial variations in KAP relating to the pandemic. Our findings recommend the requirement for effective and tailored health teaching programs geared toward rising COVID-19 information, thereby resulting in additional favorable attitudes and to implementation and maintenance of safe practices.

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