

Knowledge, Attitude and Practices Regarding Covid in Pregnancy Among Women Attending Antenatal Clinic

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Abstract

Objective : Covid has emerged in December 2019 and since then has spread exponentially to present as pandemic. Awareness about social distancing and hygiene measures and practicing them correctly all the time remains the mainstay of prevention from this disease. This study aims to assess the knowledge attitude and practices related to Covid infection among pregnant women. **Methods:** This study was conducted over a period of three months from July 2020 to September 2020. Data was collected using a pre-designed validated questionnaire from 200 participants. Questionnaire included questions related to knowledge (15), attitude (4) and practices (5) regarding Covid infection. Scores for every participant in each category were calculated and then data was analysed. **Results:** 200 pregnant women who attended obstetric outpatient department of Sultania Zanana Hospital, Gandhi Medical College, Bhopal were included in the study. The median score for knowledge was 7 (SD±1.266). The median for attitude was 2 (SD±0.543) and the median score for practice was 3 (SD±0.298). Most of the participants (81%) knew that corona is a viral infection and 82% knew the main clinical symptoms of covid -19. 84% participant have positive attitude of winning of battle against corona virus. 64.5% knowingly skipped scheduled TT Vaccination or IFA/Calcium supplement due to covid infection. 70% wore mask while going outside of the house. **Conclusion:** Findings from this study suggest that pregnant women visiting our facility have good knowledge, optimistic attitude and somewhat appropriate practices towards covid. Correct knowledge and awareness remains the first step towards prevention from this unpredictable disease. Targeted approach towards pregnant women with low KAP score who are at high risk for contracting disease would be helpful in spread of disease among them and their families.

Keywords: Covid-19, Knowledge, Attitude, Practice, Pandemic, India

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Introduction

Coronavirus disease 2019 is a respiratory illness caused by severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2), which first emerged in China in December 2019, and has since spread to most countries around the world. It may predispose pregnant women to higher risks of severe disease and poorer neonatal outcome. Psychological sequelae of this pandemic may pose a greater conundrum than its clinical aspects. It is currently unknown that how pregnant women cope with this global pandemic and its ramifications. The aims of the study are to understand the attitudes and precaution practices of non-infected pregnant women towards the covid outbreak. [1,2] The immune system during pregnancy become less aggressive, as not to attack the genetically different fetus inside the mother. Many of pregnant patients have expressed concerns, both for themselves and their babies, about the impact of covid on their health. The size of the thoracic cavity is decreased during pregnancy. All these factors may lead to developing severe

covidinfection. Over and above the impact of covid infection on pregnant women, there are concerns relating to the potential effect on fetus and neonatal outcome, therefore pregnant women constitute a group that requires special attention in relation to prevention, diagnosis and management. We need to protect its pregnant women and their newborns, from this yet not so known infection, by enhancing the awareness of the disease changing attitudes of the society and adapting certain preventive measures meant for pregnant women. In order to minimize risk, pregnant women are required to follow accepted infection control practices. Aside from hand hygiene, one of the infection control measures is the routine use of a face mask, avoiding visit to crowded place. As the threat for future waves keeps lurking over us, with their varied deadly outcomes, there is dire need to devise mechanisms in time to minimize damages inflicted by each wave on the people of our country both in terms of covid and non covid losses. This study is an effort to identify whether pregnant women attending antenatal OPD of Sultania Zanana Hospital have adequate knowledge about covid and their attitude and health care seeking pattern regarding covid so that more focused, relevant educational plan as a health promotion intervention can be taken up.

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Materials and Methods

This cross sectional observational study was conducted in the department of Obstetrics & Gynecology, Sultania Zanana Hospital, Gandhi Medical College, Bhopal for a period of 3 months from July 2020 to September 2020 after clearance from Institutional Ethical Committee. Pregnant women registering for antenatal visit at outdoor department of our hospital were included in study.

Consent

Written consent was obtained from the relatives of patients after explaining them the nature and purpose of the study. They were assured that confidentiality would be strictly maintained. The option to withdraw from the study was always open.

Methodology

Data collection was done using pre-designed printed, validated questionnaire and written consent. The study followed the principle of the Helsinki Declaration. The questionnaire consisted of two parts –Demographic variables and KAP. All questions were given option

of Yes/No with additional DNK (Not Sure) in some questions. A scoring system was applied to every question for each participant – 1 Point for each correct answer and 0 Point for incorrect / Not sure answer, with a total score 14 for knowledge. The participants were grouped into two categories – adequate and inadequate knowledge. Attitude towards Covid-19 was measured using 4 Questions (A1 – A4) with a total score of 4 for attitude. The participants were groups as having positive (+ve) or Negative (-ve) attitude. The practices were assessed by 5 questions (P1-P5) with a total score of 5 for practices. The median value was determined for the KAP score. Participants scoring equal to or more than a median score were classified as having adequate knowledge, a positive attitude and good practice.

Observation Chart**Assessment of Knowledge**

A total of 14 questions were used to measure knowledge of COVID - 19 Most of the participants (81%) knew that corona is a viral infection and 82% knew the main clinical symptoms of covid.

Table 1:Distribution Of The Subject According To Knowledge

Knowledge about	Correct		Incorrect	
	No	%	N	%
Corona is a viral infection	162	81	38	19
Unlike common cold, stuffy nose, runny nose, sneezing are less common in person with COVID infection. Fever, fatigue dry cough myalgia and respiratory difficulties are more common in COVID infection.	164	82	36	18
Pregnant women are more susceptible to COVID infection when compared to general population.?	128	64	72	36
Pregnant women should maintain a distance of at least 1 meter from other family members	136	68	64	32
pregnant women should wear mask to protect herself from COVID infection ?	168	84	32	16
knowledge about proper hand hygiene	153	76.5	47	23.5
Pregnant women should avoid going to crowded place and avoid taking public transport	148	74	52	26
knowledge about proper cough etiquette	158	79	42	21
Knowledge about recommendation of lesser antenatal visits during COVID pandemic?	68	34	132	66
Tetanus vaccination are recommended as usual during COVID pandemic	96	48	104	52
Knowledge that regular Iron, Folic acid & calcium supplementation is recommended as usual during Covid Pandemic	114	57	86	43
COVID infection may transmit from mother to baby during pregnancy	92	46	108	54
COVID infection may transmit from mother to baby during delivery	124	62	76	38
COVID infection may transmit from mother to baby during breast feeding	119	59.5	81	40.5

Assessment of Attitude

Participants were asked four question for assessment of attitude 84% participant have positive attitude of winning of battle of corona virus .59% participants were afraid of going to hospital for delivery and

36.5% participants having attitude to avoid breast feed after delivery due to fear of transmission of infection to baby through breast milk.14.5% participants think that concerned authority are over reacting to the present situation of Covidinfection

Table 2:Participants Attitude Towards Covid -19

	Yes	%	No	%
Confidence that we can win the battle against COVID Virus	168	84	32	16
Feeling that concerned authority are overreacting to the present situation of Covidinfection	29	14.5	171	85.5
Afraid of acquiring COVID infection if you go to hospital for delivery	118	59	82	41
Attitude to avoid breastfeeding due to fear of transmission of infection to baby through breast milk?	73	36.5	127	63.5%

Assessments of Practices

Practices towards COVID -19 were measured using five questions which included avoidance of crowded place, wearing face masks, proper hand hygiene and avoiding meeting people, skipping dose of Tetanus toxoids and iron, folic acid due to fear of COVID. 49.5% visited crowded place during pandemic ,64.5% knowingly skipped scheduled TT Vaccination or IFA/Calcium supplement due to COVID infection.70% wore mask while going out of the house,86% increased the frequency of hand washing,85.5% avoided meeting people if not absolutely necessary.

Results

We interviewed a total of 200 pregnant women who attended obstetric outpatient department of Sultania Zanana Hospital, Gandhi

Medical College, Bhopal. The median score for knowledge was 7 (SD±1.266). The median for attitude was 2 (SD±0.543) and the median score for practice was 3 (SD±0.298). Hence the participants scoring 7 or more for knowledge were grouped as having adequate knowledge. Participants scoring 2 for attitude and 3 for practices were grouped as having positive attitude and good practices respectively.

Statistical Analysis

Data was compiled using MS excel 2007 and analysis was done with the help of Epi-Info 7 software. Frequency and percentage were calculated & statistical test (Chi Square) was applied wherever applicable; p<0.05 was taken as statistically significant.

Discussion

As we know that spread of this deadly virus is caused by human behaviour. Due to altered physiology, weakened mechanical and immunological features pregnant mothers constitute a particularly susceptible segment of population in any infection pandemic. So obviously the curtailment of the spread is mostly dependent on the behavior of people, their attitudes towards this problem and the practices they develop over the time. In light of this understanding it becomes all the more important to conduct well designed studies in this field to identify the gap areas in the information available to the general public, their level of knowledge regarding the issue and the need to bring a change in their attitudes and behaviour, whereby focused strategies can be designed and implemented with robust steps taken in the required direction. This would help in not just minimizing the spread but also the damages caused by the pandemic, in terms of both direct covid related mortalities or morbidities, as also the collateral damages arising out of the reduced non covid health care accessed by the general public, especially obstetric services, which if conducted unsupervised, unspecialized leads to disastrous outcomes. Since its discovery in December 2019, Covid has greatly impacted on the world as a whole with devastating effect in most countries with significant public health challenges, sudden appearance along with uncertainties in Covid-19 pandemic it was difficult to manage the general public health. This KAP study included pregnant women registering for antenatal visit at outdoor department of Sultania Zanana Hospital, Bhopal. Other similar studies done on KAP about covid in pregnant women were also studied and compared with our study to derive a conclusion. Anikwe CC et al did a study to determine the knowledge, attitude, and practice of antenatal attendees towards COVID-19 in Nigeria. A cross-sectional survey was carried out among consenting pregnant women attending antenatal clinics using pretested questionnaires. More than four-fifths (82%) of the women believed that COVID-19 is real and their main source of information was mass media. The majority had adequate knowledge of COVID-19. More than half of the respondents said COVID-19 is a curable disease and that chloroquine can be used. The majority showed a good attitude and preventive practice of COVID-19 disease; however, one-fourth (24%) thought that infected individuals should be killed to prevent the spread of the virus. Proper education must be given to the populace to avert these negative attitudes while promoting a positive preventive attitude. Like our study, they also emphasized on community education, to reduce anxiety among the people.[1] An online cross-sectional survey of COVID-19 awareness among pregnant women attending antenatal clinics in Singapore was conducted by Lee RW et al. An internet link was provided to complete an online electronic survey on Google platform using a quick response (QR) code on mobile devices. The online survey consists of 34 questions that were categorized into 4 main sections, namely 1) social demographics 2) attitude on safe distancing measures 3) precaution practices and 4) perceptions of COVID-19. Multiple linear regression analysis was performed to examine women's precaution practices among six independent socio-demographic variables, including age, ethnicity, education, front-line jobs, history of miscarriage and type of antenatal clinic (general, high risk). Social demographical factors including age > 36 years old, Malay ethnicity, employment in front line jobs and attendance at high-risk clinics are likely to influence the attitudes and precaution practices among pregnant women towards COVID-19 in Singapore.[2] Allagao DO et al did a study to determine the knowledge, attitudes and practices towards COVID-19 among pregnant women at the Federal Medical Centre, Yenagoa. It was a descriptive cross-sectional study. The study population consisted pregnant women that presented to the antenatal clinic for their routine antenatal care. A lot of the participants (80%) knew that the main clinical symptoms of Covid-19 are fever, fatigue, dry cough and myalgia. Findings from this study suggest that the pregnant

population of the facility have good knowledge, optimistic attitudes and somewhat appropriate practices towards COVID-19.[3]

A cross-sectional study was done by Maharlouei N et al in the early period of its outbreak on knowledge and attitude regarding covid-19 among pregnant women in southwestern Iran. A strong relationship was found between knowledge, SES, and health insurance coverage with reference to multivariate analysis results. Moreover, majority of the pregnant women and their households expressed their concern about using preventive measures against COVID-19. Although most respondents were moderately worried about becoming infected with COVID-19 Hence, health policy-makers should pay much focus on educating pregnant mothers to help them prevent mental exhaustion.[4] Degu A et al did cross-sectional study on knowledge and attitude towards the current pandemic corona virus disease and associated factors among pregnant women attending antenatal care in Debre Tabor General Hospital Northwest Ethiopia. The goal of this study was to assess level of knowledge and attitude towards COVID-19 and determinants among pregnant mothers attending antenatal care (ANC) in Debre Tabor General Hospital Northwest Ethiopia. Findings show that almost half of the participants had a good level of knowledge and positive attitude towards COVID-19. Age, educational status, occupational status, condition of current pregnancy was positively associated with women level of awareness of the disease.[5]

In Mangalore Rai S et al did a study on knowledge, attitude and practice towards the corona virus pandemic among the pregnant women. A validated questionnaire was provided to the patient. It consisted of 2 parts, demographic data, and 25 questions regarding knowledge, attitude, and practices. Among 202 participants the overall knowledge, attitude and practice scores were 90.64 %, 97.33 % and 98.8% respectively. Majority of pregnant women demonstrated good knowledge, positive attitude and good practice regarding Covid-19 pandemic. [6]

Ding W et al did a cross-sectional study on knowledge, attitudes, practices, and influencing factors of anxiety among pregnant women in Wuhan during the outbreak of COVID-19 Prenatal anxiety has been a significant public health issue globally, leading to adverse health outcomes for mothers and children. The study aimed to evaluate the sociodemographic characteristics, knowledge, attitudes, and practices (KAP), and anxiety level of pregnant women during the coronavirus disease epidemic in Wuhan and investigate the influencing factors for prenatal anxiety in this specific context. Pregnant subjects' KAP towards covid and their sociodemographics and pregnancy information was collected using questionnaires. The Zung Self-Rating Anxiety Scale (SAS) was used to assess anxiety status. Factors associated with the level of prenatal anxiety were analyzed by Pearson's chi-square test and multivariable logistic regression analyses. Prenatal anxiety was prevalent among pregnant women in Wuhan during the outbreak of covid. The current findings identified factors associated with the level of prenatal anxiety that could be targeted for psychological care.[7]

To analyze the knowledge, attitude, practice and hospital experience regarding COVID-19 among post-partum mothers at a tertiary care center of Nepal, Adhikari S P et al did an evaluation of knowledge, attitude, practice and hospital experience regarding COVID. 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). 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. The post-partum mothers have good knowledge, attitude, practice and experiences regarding the COVID-19 pandemic.[8]

Our study findings showed that almost all of the respondents had heard about corona virus pandemic. Most of the women (81%) knew that corona is a viral infection and 82% were aware of the symptoms of COVID -19, this is probably due to enlightenment via different channels of information. This is similar to findings by above authors who reported good knowledge of symptoms (89.5%) and 93.2% respectively. A study done by D.O. Allagoa et al in south Nigeria had a similar finding where 80% were aware of main symptomatology[4-6]. Most of the study population was also aware of preventive measures. 68% participants knew about social distancing, 84% had knowledge of wearing mask, 76.5% knows about hand hygiene, 74% had knowledge of avoiding crowded places. Similar results were found in study by D.O. Allagoa et al where 80% participants were aware of preventive strategies. Pregnant women should be appropriately educated on preventive measures to reduce the severity of COVID -19 associated illness.[2,3]

In present study, 84% participants had positive attitude towards winning battle against corona virus. 59% participants were afraid of going to hospital for delivery and 36.5% participants were having attitude to avoid breast feed after delivery due to fear of transmission of infection to baby through breast milk. Study done by Ding et al showed that 80% of women felt vulnerable towards the outbreak. 45% of women were confused or doubtful about delivery and 50% was not sure about the safety of breastfeeding. Similarly in study by Rai et al, only 35% of women choose to breastfeed if they were diagnosed with COVID -19 infection. which is comparable to our study. In the present study 49.5% visited crowded places during pandemic. This potentially risky behavior was related mostly to uneducated participants and those with poor knowledge. D.O. Allagoa et al in his study showed that 58.4% of the participants practiced social distancing, 64.5% knowingly skipped scheduled TT Vaccination or IFA/Calcium supplement due to fear of getting infected.[3,6,7]The current preventive measure practices and knowledge have gaps. Therefore Fikadu Y et al did a cross-sectional study on covid-19 preventive measure practices and knowledge of pregnant women in Guraghe zone hospitals. Conclusion was that covid preventive measure practices and knowledge were low. Age, residence, and perception of covid on chronic disease were independent factors associated with preventive measure practices. Pregnant women aged ≥ 35 need to be counseled on practices of preventing covid by their healthcare providers. [9]An observation made outside the questionnaires in the present study, was that many women believed that there are Covid patients admitted in all hospitals, so they were scared attending hospital or even going for delivery at the hospital, knowing that avoiding ANC visits or delivering at home would translate into enhanced maternal and neonatal complications. This chance observation highlights the need of concrete steps to be taken by the government agencies to clearly demarcate and publically announce non covid maternity wings so that the pregnant women and their families may confidently take services at these facilities thereby avoid unnecessary obstetric complications.

Conclusion

Findings from this study suggest that pregnant women visiting our facility have good knowledge, optimistic attitude and somewhat appropriate practices towards COVID -19. Awareness about the disease forms the cornerstone for educational activities and is used as an index by health authorities. Knowledge about the disease and implementing the measures for curtailing the spread would eventually help curb the infection. On the bases of results of our study, we suggest that more emphasis should be placed on pregnant women with low KAP score who are at high risk for contracting disease. There is a need of concrete steps to be taken by the

government agencies to clearly demarcate and publically announce non covid maternity wings so that the pregnant women and their families may confidently take services at these facilities thereby avoid unnecessary obstetric complications. This study may help health authorities in recognizing these target population for reducing covid infection.

What This Study Add to Existing Knowledge: Knowledge gained from our survey can better guide clinicians to communicate better with pregnant women. Findings from this study would help the government agencies and public health authorities to become aware of the gap areas regarding health care of pregnant women during the covid era, thereby formulate relevant policies and programs, which is the need of the hour. Hence, it is important for clinicians to render appropriate counselling and focused clarification on the effect of covid among pregnant women for psychological support and mental well being.

References

1. Anikwe CC, Ogah CO, Anikwe IH, Okorochukwu BC, Ikeoha CC. Coronavirus disease 2019: Knowledge, attitude, and practice of pregnant women in a tertiary hospital in Abakaliki, southeast Nigeria. *International Journal of Gynecology & Obstetrics*. 2020;151(2):197-202.
2. Lee RW, Loy SL, Yang L, Chan JK, Tan LK. Attitudes and precaution practices towards COVID-19 among pregnant women in Singapore: a cross-sectional survey. *BMC pregnancy and childbirth*. 2020;20(1):1-0.
3. Allagoa DO, Oriji PC, Obagah L, Tekenah ES, Dambo N, Atemie G. Knowledge, Attitudes and Practices towards Covid-19 among pregnant women in a tertiary hospital in South-South, Nigeria. *International Journal of Research and Reports in Gynaecology*, 2020, 35-41.
4. Maharlouei N, Asadi N, Zahed-Roozgar MH, Shaygani F, Kharmandar A, Honarvar B, Hemyari C, Omidifar N. Knowledge and Attitude regarding COVID-19 among Pregnant Women in Southwestern Iran in the Early Period of its Outbreak: A Cross-Sectional Study. *The American journal of tropical medicine and hygiene*. 2020;103(6):2368.
5. Degu A, Gebrehana H, Getie A, Getnet B. Knowledge and Attitude Towards the Current Pandemic Corona Virus Disease and Associated Factors Among Pregnant Women Attending Antenatal Care in Debre Tabor General Hospital Northwest Ethiopia: an Institutional-Based Cross-Sectional Study. *International Journal of Women's Health*. 2021;13:61.
6. Rai S, Poonja N, Chauhan S, Alevoor S. Knowledge, Attitude and Practice towards the Corona Virus [COVID-19] Pandemic among the Pregnant Women. *Journal of Evolution of Medical and Dental Sciences*. 2021;10(17):1191-7.
7. Ding W, Lu J, Zhou Y, Wei W, Zhou Z, Chen M. Knowledge, attitudes, practices, and influencing factors of anxiety among pregnant women in Wuhan during the outbreak of COVID-19: a cross-sectional study. *BMC pregnancy and childbirth*. 2021; 21(1):1-9.
8. Adhikari SP, Pariyar J, Sapkota K, Gurung TK, Adhikari SR. Evaluation of knowledge, attitude, practice and hospital experience regarding COVID-19 among post-partum mothers at a tertiary care center: A cross-sectional study. *Kathmandu University Medical Journal*. 2020;18(2):10-4.
9. Fikadu Y, Yeshaneh A, Melis T, Mesele M, Anmut W, Argaw M. COVID-19 preventive measure practices and knowledge of pregnant women in Guraghe zone hospitals. *International Journal of Women's Health*. 2021;13:39.

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