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Original Research Article

KNOWLEDGE, ATTITUDE AND SAFE PRACTICES AMONG PREGNANT WOMEN ON COVID-19 ATTENDING A TERTIARY CARE HOSPITAL IN KERALA: A CROSS SECTIONAL STUDY

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Abstract

Background: Pregnant women are the vulnerable group affected by COVID-19 with fear of adverse maternal and perinatal outcome and little is known about this pandemic. Hence knowledge, attitude and safe practices of preventive measures against the spread of virus among them is utmost importance. Objective of the present study is to asses knowledge, attitude and practices of pregnant mothers towards COVID-19 attending a tertiary care hospital in Kerala and also to find the association of demographic variables. **Materials and Methods:** The descriptive cross-sectional study was conducted among 424 antenatal women attending the outpatient Department of Obstetrics and Gynaecology, Government Medical College, Thiruvananthapuram, Kerala, South India during the second wave of COVID-19 between August 2021 to January 2022. The study participants were given validated questionnaire and the data was collected by trained investigators. The data were analysed using SPSS version27. **Result:** The mean age of antenatal women was 27.6± 6.3 years. Nearly 80% of the study population were well educated. More than half of respondents belong to their third trimester of pregnancy. Overall level of knowledge (76.7%), attitude (94.1%), and practices (96%) were good. **Conclusion:** The study showed that the antenatal mothers strictly followed the COVID-19 guidelines issued by the government. The antenatal mothers were well knowledgeable about the morbidity and mortality situations of COVID-19 possibly due to the high literacy rate of Kerala. Their attitude and practice towards COVID-19 were also positive. The IEC activities of the health workers, electronic and mass media in Kerala had a key role in shaping positive attitude and practices among antenatal mothers.

INTRODUCTION

Coronavirus disease (COVID-19) is an infectious disease caused by a newly discovered severe acute respiratory syndrome coronavirus (SARS-CoV-2) first identified in Wuhan City, China, In December 2019.[1] On 11th March 2020, the World Health Organization (WHO) declared the COVID-19 outbreak as a global pandemic with exponential spread worldwide.[2] It didn't take long for the first case reported in India on Jan 30th 20203. As per latest data on 02- 02-2021, the total number of cases in Kerala was 9,38,353 and death of 3776 reported by GoK Dashboard.[4] All are at the risk of infection especially immunocompromised people, pregnant women and children compared to the population [5.6]. Pregnant women are extremely anxious about the COVID-19 infection.[7.8.9]

According to CDC guidelines, pregnant and breastfeeding women are subgroups that need extra precaution to avoid COVID-19 infection. They are at increased risk of severe illness compared to nonpregnant people. There are fears of adverse maternal and perinatal outcomes due to distinctive immunological suppression during pregnancy. In addition, there may be an increased risk of adverse pregnancy outcomes, such as preterm birth, among pregnant people with COVID-19.[10] 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

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uneventful outcome. Pregnant women who constitute a vulnerable group need to be more cautious and hence knowledge, attitude and safe practices (KAP) of preventive measures against the spread of the virus among them is of utmost importance.[11]

Aim of this study is to assess the knowledge attitude and safe practices among pregnant women towards COVID-19 attending a tertiary care hospital in Kerala and also to find out association of demographic variables (Age, Place of residence, Education etc.) with knowledge attitude and safe practices.

MATERIALS AND METHODS

This descriptive cross-sectional study was conducted in the Department of Obstetrics and Gynaecology, Government Medical College, Thiruvananthapuram, Kerala, South India which is a premier territory level maternity care centre that caters both COVID-19 and Non- COVID-19 pregnancy care. The annual outpatient department turn is around 40000 and deliveries around 3000. Antenatal women attending outpatient department were taken after taking informed written consent. Sample size of 424 pregnant women were enrolled during the second wave of COVID-19 between August 2021 to January 2022.

The study instrument was a pretested structural questionnaire schedule consisted of sociodemographic and obstetric characters, Knowledge, attitude and safe practices of COVID-19 infection. A 4 points Likert scale (strongly agree, agree, disagree, strongly disagree) is used to assess the adequacy of attitude among the responders. A respondent is judged as having an adequate attitude if her response to the question is agree or strongly agree, while those with a response of disagree or strongly agree are assessed as having inadequate knowledge. The questionnaire contains total 60 questions of which 15 are socio demographic and obstetrical characteristic related.18 questions on knowledge ,15 questions on attitude and12 questions on practices. Each question will take 5-10 minutes to complete. Knowledge is the awareness of women regarding COVID-19 infection. Attitude are the feelings towards COVID-19 infection and pre beliefs on this topic. Safe practices are various actions that prevent the spread of disease like sanitizer use, mask and safe distance from others.

Higher score indicates better knowledge, more favorable attitude and more desirable practice. For classifying these attributes as good, average or poor 33.3rd and 66.6th percentiles for their total scores were worked out. Those with scores below 33.3rd percentiles were considered as having poor attribute and those with scores above 66.6th percentiles were considered as having good attribute and those having scores in between were treated as having average attribute. All variables were expressed as frequency and percentage and association of knowledge, and practice with important socio demographic and obstetric variables were evaluated using chi square test. The data collected was analysed using SPSS version 27 [IBM Corp., Armonk, NY, USA]. The result was presented with frequency tables/percentages and bar charts. Categorial variables was compared with x2 test. p less than 0.05 is the test of significance.

Ethical Considerations

The study was reviewed and approved by institutional Ethics committee. Informed consent of the antenatal mothers was obtained prior to the administration of the interview schedule.

RESULTS

The descriptive cross-sectional study was carried out at the Department of Obstetrics and Gynaecology, Government Medical college, Thiruvananthapuram from Aug 2021 to January 2022.during the study period,424 pregnant women enrolled.

Table 1: Sociodemographic and obstetric characteristics of the sample

Variable	No:	%
Age		
<18	6	1.4
18-24	155	36.6
25-34	230	54.2
35-44	32	7.5
>45	1	1.2
Education		
Primary	12	2.8
Secondary	2	4.7
High school	53	12.5
Higher secondary	176	41.5
Graduate	135	31.8
Technical	28	6.6
Occupation		
House wife	338	79.7
Coolie	8	1.9
Government job	20	4.7
Private job	43	10.1
Others	15	3.5

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Religion		
Hindu	264	62.3
Christian	92	21.7
Muslim	68	16.0
Caste		
Forward	127	30.0
Backward	172	46.6
SC	109	25.7
ST	163	63.8
Type of family		
Nuclear	231	54.5
Joint	182	42.9
Extended	11	2.6
Area of residence		
Rural	257	60.6
Urban	167	39.4
Gestational age		
First trimester	89	21.0
Second trimester	112	26.4
History of abortion		
Yes	103	24.3
No	321	75.7

Among the enrolled woman the mean age of antenatal woman was 27.6±6.3 years. Literacy rate of 80.0%. Nearly 80.0% are housewives. The study group is generally had poor economic status. Reflecting the pattern of referrals 60.0% are from rural areas. Corporation residents form 22.6%. As the study conducted during lockdown most of the respondents visited their third trimester of pregnancy [52.6%]as they need frequent antenatal care. Nearly one fourth of women had history of abortion during the pandemic period. Nearly one fourth of respondents had history of abortion during the pandemic period.

Table 2: Distribution of statements related to the level of Knowledge on COVID- -19

Sl.no	**Items**	**Yes**		**No**	
		No:	%	No:	%
1	Breathing can infect COVID-19	381	89.9	43	10.1
2	Use of Mask is the chief prevention	416	98.1	8	1.9
3	Maintenance of sanitary condition can prevent COVID-19	420	99.1	4	0.9
4	Social distance can help in preventing COVID-19	416	98.1	8	1.9
5	Head ache, breathing difficulties, body pain are the symptoms of COVID-19	414	97.6	10	2.4
6	Intake of nutritional food can prevent COVOD 19	408	96.2	16	3.8
7	Quarantine can prevent the spread of COVID-19	411	96.9	13	3.1
8	Pregnant women belong to high-risk group	317	74.8	107	25.2
9	COVID-19 can lead to miscarriage	129	30.4	295	69.6
10	COVID-19 can lead to preterm delivery	129	30.4	295	69.6
11	COVID-19 can affect physical health	336	79.2	88	20.8
12	COVID-19 can affect mental health	227	53.5	197	46.5
13	Infected mother can transmit the disease to the child	148	34.9	276	65.1
14	Breast feeding can be continued even if mother is infected with COVID-19	134	31.6	290	68.4
15	Pregnant women should confine to their home to get protection from COVID-	408	96.2	16	3.8
16	During hospital visit pregnant women should avoid gatherings to prevent the spread of COVID-19	411	96.9	13	3.1
17	After health check-up women should use sanitizer	415	97.9	9	2.1
18	Dresses used outside home must be washed before next use	405	95.5	19	4.5

[Table 2] shows the distribution of statements related to the level of Knowledge on COVID- -19 among the antenatal mothers. The distribution of statements shows that the knowledge level regarding statements pertaining to the general population is higher than knowledge pertaining to pregnancy and child birth. This is particularly noteworthy statements pertaining to miscarriage (30.4%), preterm delivery (30.4%) and breast feeding (31.6%) and transmission of disease from mother to child (34.9%).

Table 3: Distribution of statements related to the level of attitude on COVID- -19

		Yes		**No**	
	Attitude	No:	%	No:	%
1	Early identification of COVID-19 makes the treatment easy.	412	97.2	12	2.8
2	COVID-19 can be treated in the house itself	320	75.5	104	24.5
3	Health Education can be a preventive measure for COVID-19	388	91.5	36	8.5
4	COVID-19 Requires more attention	415	97.9	9	2.1

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5	Precautions can prevent COVID-19	418	98.6	6	1.4
6	COVID-19 can be prevented through vaccination	418	98.6	6	1.4
7	COVID-19 can be cured effectively	412	97.2	12	2.8
8	Society is aware about COVD 19	377	88.9	47	11.1
9	COVID-19 had high fatality rate	118	27.8	306	72.2
10	Travel restrictions are effective in containing COVID-19	390	92.0	34	8.0
11	Special hospitals are required for the treatment of COVID-19	410	96.7	14	3.3
12	Closure of educational institutions can prevent COVID-19	414	97.6	10	2.4
13	Closure of places of worship can prevent COVID-19	405	95.5	19	4.5
14	Lock down in urban areas is a right step in preventing COVID-19	413	97.4	11	2.6

[Table 3] shows the distribution of statements related to the level of Attitude on COVID- -19 among the antenatal mothers. Level of attitude on COVID-19 was good or favourable for 94.1% of the respondents. There is an association between age and level of the attitude with subject below the age of 24 years had more favourable attitude than those above the age of 25 years. The differences are significant also. There is significant association between attitude and level of educational of women [p=.006. There is no association with age of husband, cast of respondents, and place of residents

Generally younger age respondents aged below 24 years had good knowledge. Generally, there is a positive association between education of respondent and their level of knowledge. knowledge level is more among respondents who had education higher secondary and above.

statements pertaining to miscarriage (30.4%), preterm delivery (30.4%) and breast feeding (31.6%) and transmission of disease from mother to child (34.9%).

Table 4: Distribution of statements related to the level of Practice on COVID- -19

.		**Yes**		**No**	
	Practice	No:	%	No:	%
1	Outside visits are limited to prevent COVID-19	412	97.2	12	2.8
2	Outside food are avoided to prevent COVID-19	408	96.2	16	3.8
3	Body contacts like shaking hands is stopped to prevent COVID-19	419	98.8	5	1.2
4	Mask is used to prevent COVID-19	423	99.8	1	0.2
5	Sanitiser is used to prevent COVID-19	423	99.8	1	0.2
6	Social distance is maintained to prevent COVID-19	424	100	0	0
7	After hospital visit, sanitizer is used to prevent COVID-19	422	99.5	2	0.5
8	Public transport is avoided to prevent COVID-19	414	97.6	10	2.4
9	Work from home is followed to Prevent COVID-19	388	91.5	36	8.5
10	Hands are frequently washed	422	99.5	2	0.5
11	sanitizer is frequently used	410	96.7	14	3.3
12	Personal hygiene is strictly followed	424	100	0	0

[Table 4] shows the percentage distribution shows the prevalence of good practice among the respondents. It was nearly universal. Very few exceptions include limiting the outside visit, avoidance of outside visit and public transport and frequent use of sanitizer and work from home.

Relationship between Knowledge, Attitude and Practice on COVID-19

Table 5: Level of knowledge, attitude and practice score on COVID-19

	Good	**Average**	**Poor**	**Total**
Knowledge	325 (76.7)	94(22.2)	5 (22.2)	424 (100)
Attitude	399 (94.1)	22 (5.2)	3(5.2)	424 (100)
Practice	407 (96.0)	17 (4.0)	0 (0)	424 (100)

[Table 5] shows the level of knowledge, attitude and practice score of the respondent on knowledge, attitude and practice on COVID-19. 325 (76.7%) antenatal mothers had good knowledge on COVID-19. 399 (94.1%) had positive attitude and 407 (96%) mothers had good practice on COVID-19.

Responses to all the statements shows that respondents in general are having good or favourable attitude. For the statement related to treatment within house nearly 25.0% had a negative response and for the statement regarding high fatality rate nearly 72.0% were in disagreement. These are natural and reflects the government guidelines prevailed nearly 10-12 months ago wherein government encouraged institutional care and the maintenance greater vigil and consequent low mortality. Respondents followed good practice and this is reflected in the percentage value of 96.0%. Good practices are more followed by women below 34 years compared to those aged above 35 years. Good practice is followed by housewives than employed women and observed difference is statistically significant.

The correlation between knowledge and attitude was positive and statistically significant. R square, the coefficient of determination gives a value of 0.04 indicating about 4 % of variations in attitude scores is explained by knowledge scores. The correlation between knowledge and practice was positive and statistically significant. R square, the coefficient of

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determination gives a value of .032 indicating about 3.2 % of variations in attitude scores is explained by knowledge scores.
The correlation between attitude and practice was positive and statistically significant. R square, the coefficient of determination gives a value of .027 indicating about 2.7 % of variations in attitude scores is explained by knowledge scores.
It is noteworthy that only less than 5% of variations in the attitude and practice score were explained by the knowledge scores. This is true for the variations between attitude and practice scores. The first explanation is that we are dealing with a homogenous group and naturally the coefficient of correlation gives a value of smaller magnitude. Another explanation is that there exist a strong and widespread undertaken at the governmental level which cut the barriers of knowledge and directly hit the attitude and practice towards COVID-19 in a positive way. The health promotion activity under taken by the government was backed by tough legal measures. The entire government machinery was mobilised to spread the message that wearing mask, use of sanitizer and maintenance of social distance could effectively contain the spread of this disease.

DISCUSSION

The study observed good knowledge, attitude, and practices among antenatal women attending a tertiary care hospital in Kerala, Trivandrum like other studies of KAP surveys in India and other part of the globe.[11-15] though little is known about the impact of COVID-19 in pregnant women. This paper has some limitations and strength; Among the strength are the large sample size, population-based data and standardised tool of study. our limitations are no systematic review to evaluate the subset of populations. Kerala having high literacy rate majority of respondent are aware of COVID-19. The positive attitude of respondents is due to various steps taken by the government like SMS, advertisement through various medias and strict legal measures. High level of practices was observed in the respondents because of education and strict adherence to the health care measures.
Study by deep Kamal etal, observed adequate levels of knowledge, positive attitude and good practices to prevent the spread of disease.[11] The demographic variables such as good education levels and socio-economic status are also noted in this study. Some women planned to stay at home to protect themselves from COVID-19. A higher level of awareness concerning COVID-19 was observed in pregnant women in China and India.[11-13] A south African study[14] reported low awareness and negative attitude about COVID-19. another study showed poor practices in spite of adequate knowledge from Ethiopia and Ghana.[15] Another study by Farnas Naqvi etal survey in seven countries from global network for women's and children's health reported nearly one quarter of women avoided or reduced prenatal care visits and 8% women avoided hospital deliveries due to fear of COVID-19 exposure.[16]

Limitations

As this was a hospital-based study and won't reflect the situation of community level. It was a study conducted in the capital city Kerala where most of the women are well educated and hence the present study was not the true representation of the country

CONCLUSION

Knowledge, attitude and practice of pregnant women in south Kerala on COVID-19 were good.
Regular antenatal classes and IEC activities by the Government and non-governmental agencies to improve the knowledge and awareness of disease is highly essential to prevent the spread of pandemic. The study showed that the safe practices scores were good. Tough legal measures taken by the government and the adherence of the guidelines by the general public especially the antenatal mothers helped to reduce the morbidity and mortality.
Conflict of interest **None**
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