

DOI

ORIGINAL ARTICLE

UDC: 616.98:578.834(540)

## KNOWLEDGE, ATTITUDE AND PRECAUTIONARY MEASURES REGARDING COVID-19 AMONG MOTHERS IN A TERTIARY CARE HOSPITAL – A CROSS-SECTIONAL STUDY

Santosh KUMAR KAMALAKANNAN

Saveetha medical college and hospital SIMATS Tamil Nadu, India.

Santhos KK. Knowledge, attitude and precautionary measures regarding covid-19. Halo 194. 2022; 28(2):53-59.

Rad primljen: 08.05.2022.

Prihvaćen: 13.07.2022

Corresponding author:

Associate professor in Neonatology  
Saveetha medical college and hospital  
SIMATS Tamil Nadu India  
Official contact number:  
9884980677 /9841411513  
Email address:  
[drsantoshmddm@gmail.com](mailto:drsantoshmddm@gmail.com)  
[drsantoshkmc03@gmail.com](mailto:drsantoshkmc03@gmail.com)

**Introduction** Knowledge, attitude and precautionary measures regarding COVID-19 among mothers play an important role in reducing the spread of the infection and helping control the pandemic. It also provides insight into the role of the media in controlling the pandemic.

**Objective** To assess knowledge, attitude and precaution measures (KAP) regarding COVID-19 among mothers in a tertiary care hospital.

**Methodology** This was a questionnaire-based cross-sectional study regarding COVID-19 which was conducted at a tertiary care obstetric facility in India among 100 consenting mothers. The consenting mothers were assessed for demographic data and KAP scores (Knowledge - 8 questions, Attitude - 7 questions, Precautionary measures - 5 questions).

**Results** A total of 100 mothers participated in the study. 21% of the mothers were less than 25 years of age, 67% of them were between the ages of 25 and 29 and the remaining 12% were between the ages of 30 and 35. The participants were asked to fill out a questionnaire on COVID-19 from which their knowledge was assessed. Common questions were about the type of disease, the mode of transmission and the symptoms. Concerning the current stage of distribution of COVID-19, the majority of the mothers stated that it was a pandemic (81%). Regarding the type of disease, the majority of the mothers stated that it was a communicable disease (79%). When enquired about the symptoms of the disease, the majority of the mothers stated fever (97%), cough (98%), and breathlessness (97%). All of the mothers (100%) agreed that the delivery of the baby should be performed at a hospital if they contracted COVID-19.

**Conclusion** This study demonstrates that the majority of the mothers had satisfactory knowledge, a positive attitude and were applying appropriate precautionary measures to protect themselves from COVID-19.

**Keywords:** Covid-19, pandemic, knowledge, attitude

### Introduction

The infectious disease caused by the coronavirus (COVID-19) led to a global pandemic [1, 2]. Since there is no proven definitive treatment for the disease, reducing the spread of the infection is the only effective way to control the pandemic [3]. The government of India (GOI) has conducted media campaigns to educate people and create awareness about the novel coronavirus. The Health Ministry has reached out to people across the country via telecommunication networks to disseminate the required information among citizens. The GOI has launched the Aarogya Setu mobile application to monitor and control the spread of the infection [4].

The public knowledge and attitude toward infectious diseases affect a population's emotional and mental well-being and could lead to panic reactions which may seriously impede the preventive attempts to control the spread of infection [6]. Due to unique changes in a woman's body during pregnancy, pregnant women form a vulnerable group with a significantly higher risk of contracting severe infection [3].

### Objective

This study aims to evaluate the KAP of pregnant women regarding COVID-19 at a tertiary care hospital in India.

### Methods

This is a hospital-based cross-sectional study. The study area is the Outpatient Department of Saveetha Medical College and Hospital in Tamil Nadu. The study population are mothers using the services of the Outpatient Department of Saveetha Medical College and Hospital in Tamil Nadu. The study was carried out from May 2021 to August 2021. Convenient sampling was done. The sample size for the study was determined using previous studies to select a convenient sample size. Therefore the sample size selected for this study was 100 women.

**Inclusion criteria:** Mothers with children using the services of the Outpatient Department of the Saveetha Medical College and Hospital who were willing to participate in the study by giving informed oral consent were included in the study.

**Exclusion criteria:** Mothers not willing to participate in the study were excluded.

**Study tool and data collection method:** A semi-structured pretested questionnaire was used to interview the subjects during the study. The questionnaire was prepared in the local language and then translated back for validation before it was used in the study. Demographic details were recorded and the mothers' knowledge of basic information about the Covid-19 was analyzed.

**Informed consent:** Informed oral consent in the local language i.e Tamil, was obtained from the participants involved in this study before administering the questionnaire.

**Statistical analysis:** The data was entered and analyzed using Microsoft Excel.

## Results

A total of 100 mothers participated in the study. The participants' socio-demographic data is presented in **Table 1**. Out of the 100 participants in the study, 21% of the mothers were less than 25 years of age, 67% of them were between the ages of 25 and 29 and the remaining 12% were between the ages of 30 and 35.

**Table 1.** Socio-demographic characteristics

Parameters	n (%)
<b><u>Age of mother:</u></b>	
<25 years	21(21%)
25-29 years	67(67%)
30-35 years	12(12%)
<b><u>Participants' educational qualifications:</u></b>	
Primary School	14(14%)
Secondary School	49(49%)
Graduation and higher	37(37%)
<b><u>Area of living :</u></b>	
Rural	34(34%)
Urban	17(17%)
Semi-urban	49(49%)
<b><u>Gender of the baby:</u></b>	
Male	37(37%)
Female	63(63%)
<b><u>Occupation</u></b>	
Healthcare related	13(13%)
Unrelated to healthcare	87(87%)

About 14% of the mothers had achieved primary education or less, 49% had completed secondary education and 37% had achieved graduation and higher education. About 13% of the mothers were healthcare-related workers and the remaining 87% were not.

### Knowledge regarding COVID-19

The participants were asked to fill out a questionnaire on COVID-19 from which their knowledge was assessed. Common questions were about the type of disease, the mode of transmission and the symptoms. Concerning the current stage of distribution of COVID-19, the majority of the mothers stated that it was a pandemic (81%). Regarding the type of disease, the majority of the mothers stated that it was a communicable disease (79%). When enquired about the symptoms of the disease, the majority of the mothers stated fever (97%), cough (98%), and breathlessness

(97%). The distribution of participants' responses to each of the questions on knowledge was analyzed (**Table 2**).

### Attitude towards COVID-19

The attitude of the participants in the study toward COVID-19 is presented in **Table 3**. All of the mothers (100%) agreed that the delivery of the baby should be performed at a hospital if they contracted COVID-19 [7].

### Precautionary measures against COVID-19

An insight into the precautionary measures practiced by the mothers during the COVID-19 pandemic is presented in **Table 4**.

**Table 2.** Knowledge about COVID-19

<b>Parameters</b>	<b>N (%)</b>
<b>What type of disease is COVID-19?</b>	
Communicable	81 (81%)
Both communicable and non-communicable	7 (7%)
Not communicable/not answered	12 (12%)
<b>What is the current stage of distribution of COVID-19?</b>	
Pandemic	79 (79%)
Epidemic or others	21 (21%)
<b>Which of the following are symptoms of COVID-19?</b>	
Fever	99 (99%)
Myalgia/weakness	71 (71%)
Cough	99 (99%)
Breathlessness	94 (94%)
<b>How does the virus spread?</b>	
Respiratory droplets	97 (97%)
Others [mosquitoes, contacts with contaminated surfaces] (3%)	3 (3%)
<b>Which group is at the highest risk of contracting a severe form of COVID-19?</b>	
Adults with comorbidities	98 (98%)
Others (adults without comorbidities, all age groups, pregnant women)	2 (2%)
<b>What should be the mode of delivery in COVID-19?</b>	
Vaginal delivery	28 (28%)
Operational vaginal delivery	1 (1%)
Caesarean section	37 (37%)
Not affected by COVID-19 status	34 (34%)
<b>What are the feeding options for the baby born to a COVID-19 mother?</b>	
Breastfeeding	27 (27%)
Expressed breast milk	31 (31%)
Formula-feed	47 (47%)
<b>Can pregnant and lactating mothers get the COVID-19 vaccine?</b>	
Yes	23 (23%)
No	33 (33%)
Don't know	44 (44%)

**Table 3.** Attitude towards COVID-19

<b>Parameters</b>	<b>N (%)</b>
<b>How often do you check for COVID-19-related news in the media?</b>	
Very often	37 (37%)
Often	42 (42%)
Occasionally	20 (20%)
Not often	1 (1%)
<b>Do you think you could get COVID-19?</b>	
Yes	34 (34%)
No	51 (51%)
Don't know	17 (17%)
<b>What will you do if you suspect that you have COVID-19?</b>	
Visit healthcare facility	92 (92%)
Visit traditional/ local healer	8 (8%)
Do not believe in treatment	0 (0%)
<b>Where should pregnant females with COVID-19 deliver their baby?</b>	
Home	0 (0%)
Hospital	100 (100%)
<b>What concerns you the most if you are diagnosed with COVID-19?</b>	
Fear of transmitting it to my baby/family members	78 (78%)
Social stigma	6 (6%)
Cost of treatment	7 (7%)
Fear of death	6 (6%)
I am confident that I will get cured	3 (3%)
<b>Are you worried about being infected with COVID-19 during your pregnancy?</b>	
Very worried	64 (64%)
Worried	32 (32%)
Neutral	1 (1%)
Not worried	3 (3%)
<b>Will you get vaccinated during pregnancy or lactation?</b>	
Yes	22 (22%)
No	66 (66%)
Can't say	12 (12%)

**Table 4.** Precautionary measures against COVID-19

Parameters	N (%)
<b>Which precautions are you taking to prevent yourself from contracting and spreading COVID-19?</b>	
Wearing a mask	99 (99%)
Avoiding crowded places	98 (98%)
Avoiding handshakes	94 (94%)
Washing vegetables before storing them	89 (89%)
Social distancing (97%)	97 (97%)
<b>Have you changed the frequency of hand washing to prevent yourself from contracting and spreading COVID-19?</b>	
Increased	97 (97%)
Decreased	1 (1%)
Same as before	2 (2%)
<b>How often do you practise social distancing during the current pandemic?</b>	
Very often	75 (75%)
Often	21 (21%)
Sometimes	2 (2%)
Hardly ever	2 (2%)
Never	0 (0%)
<b>How often do you stay at home for social distancing?</b>	
Very often	23 (23%)
Often	21 (21%)
Sometimes	33 (33%)
Hardly ever	22 (22%)
Never	1 (1%)
<b>Do you take herbal products and traditional medicine to prevent yourself from contracting and spreading COVID-19?</b>	
Yes	31 (31%)
No	69 (69%)

## Discussion

This study aims to provide an insight into the knowledge, attitude and precautionary measures regarding COVID-19 in the population of mothers. Since mothers usually take care of their children in Indian society it is important to analyze their knowledge about the COVID-19 disease and the precaution measures they are taking to prevent their child and themselves from contracting the infection. This is crucial in a developing country like India where the health infrastructure and awareness are not as developed as they are in developed countries.

The participants in the study showed an overall correct knowledge demonstrating that the majority of the mothers were knowledgeable about COVID-19. Since the pandemic began the Government of India made huge efforts to spread information and increase awareness about the pandemic. Mass media was the primary source of information about COVID-19 for the majority of the study participants. Commonly known COVID-19-related symptoms were fever (99%), cough (99%) and breathlessness (94%) but pregnant women were comparatively less aware of the symptom of myalgia/weakness (71%) which is similar to the results of a study conducted in Iran by Erfani et al. [8].

Overall, the study participants showed a positive attitude toward the seriousness of applying preventive measures against COVID-19. These findings are in line with recent studies by Zhong et al. and Al-Hanawi et al. where the results showed a positive attitude among the general public [9,10].

Knowledge and attitude towards vaccination against COVID-19 were also a part of this questionnaire. The participants showed less knowledge about vaccination for pregnant women and lactating mothers and the positive attitude towards vaccination was also reduced in our study. The possible reason for this was that our study was conducted just as the recommendations for vaccinating pregnant women and lactating mothers were published, so there was a certain lack of knowledge and a reluctance to be vaccinated among the participants.

These findings suggest that telecommunication and mass media play a key role in the dissemination of knowledge about COVID-19 and its prevention. The efforts by the State and Central governments need to be appreciated in this regard.

### Conclusion

This study demonstrates that the majority of the mothers had satisfactory knowledge, a positive attitude and were applying appropriate precautionary measures to protect themselves from COVID-19. Knowledge about the importance of hand washing among mothers was higher than expected and this is due to the efforts of GOI in spreading the information.

**Conflict of interest:** none declared.

### REFERENCES:

1. Chen H, Guo J, Wang C, Luo F, Yu X, Zhang W, Li J, Zhao D, Xu D, Gong Q, Liao J, Yang H, Hou W, Zhang Y. Clinical characteristics and intrauterine vertical transmission potential of COVID-19 infection in nine pregnant women: a retrospective review of medical records. *Lancet*. 2020; 395(10226): 809-815. doi: 10.1016/S0140-6736(20)30360-3. Erratum in: *Lancet*. 2020;395(10229):1038. Erratum in: *Lancet*. 2020;395(10229):1038. PMID: 32151335.
2. Andrews MA, Areekal B, Rajesh KR, Krishnan J, Suryakala R, Krishnan B, et al. First confirmed case of COVID-19 infection in India: a case report. *Indian J Med Res*. 2020;151(5):490-492. doi: 10.4103/ijmr.IJMR\_2131\_20. PMID: 32611918.
3. Docherty AB, Harrison EM, Green CA, Hardwick HE, Pius R, Norman L, et al; ISARIC4C investigators. Features of 20 133 UK patients in hospital with covid-19 using the ISARIC WHO Clinical Characterisation Protocol: prospective observational cohort study. *BMJ*. 2020; 369: m1985. doi: 10.1136/bmj.m1985. PMID: 32444460.
4. National Portal of India. Combating Coronavirus [NPI website]. <https://www.india.gov.in/spotlight/combating-coronavirus> [Accessed January 17, 2021].
5. Abe K, Hamada H, Yamada T, Obata-Yasuoka M, Minakami H, Yoshikawa H. Impact of planning of pregnancy in women with epilepsy on seizure control during pregnancy and on maternal and neonatal outcomes. *Seizure*. 2014; 23(2):112-6. doi: 10.1016/j.seizure.2013.10.003. PMID: 24183922.
6. McCauley M, Minsky S, Viswanath K. The H1N1 pandemic: media frames, stigmatization and coping. *BMC Public Health*. 2013 ;3(13): 1116. <https://doi.org/10.1186/1471-2458-13-1116>.
7. Kaur TP, Rana A, Perumal V, Sharma A, Dadhwal V, Kulshrestha V, et al. A Cross-Sectional Analysis to Evaluate Knowledge, Attitude And Practices Among Pregnant Women During COVID-19 Pandemic. *J Obstet Gynaecol India*. 2021; 71(Suppl 1): 18-27. doi: 10.1007/s13224-021-01558-y. PMID: 34511781.
8. Erfani A, Shahriarirad R, Ranjbar K, Mirahmadizadeh A, Moghadami M. Knowledge, attitude and practice toward the novel coronavirus (COVID-19) outbreak: a population-based survey in Iran. *Bull World Health Organ*. 2020; 30(10.2471). DOI: 10.2471/BLT.20.256651.
9. Zhong BL, Luo W, Li HM, Zhang QQ, Liu XG, Li WT, Li Y. Knowledge, attitudes, and practices towards COVID-19 among Chinese residents during the rapid rise period of the COVID-19 outbreak: a quick online cross-sectional survey. *Int J Biol Sci*. 2020; 16(10):1745-1752. doi: 10.7150/ijbs.45221. PMID: 32226294.
10. Al-Hanawi MK, Angawi K, Alshareef N, Qattan AMN, Helmy HZ, Abudawood Y, Alqurashi M, Kattan WM, Kadasah NA, Chirwa GC, Alsharqi O. Knowledge, Attitude and Practice Toward COVID-19 Among the Public in the Kingdom of Saudi Arabia: A Cross-Sectional Study. *Front Public Health*. 2020; 8: 217. doi: 10.3389/fpubh.2020.00217. PMID: 32574300.

## ORIGINALNI RAD

**STUDIJA POPREČNOG PRESEKA SA CILJEM ANALIZE UPUĆENOSTI, STAVA PREMA COVID-19 PANDEMIJI I PRIMENE MERA PREDOSTROŽNOSTI KOD MAJKI U ZDRAVSTVENOJ USTANOVI TERCIJARNOG NIVOA***Santosh KUMAR KAMALAKANNAN*

Medicinski koledž Saveetha i bolnica SIMATS, Tamil Nadu, Indija.

**SAŽETAK**

**Uvod/cilj:** Upućenost, stav prema COVID-19 pandemiji i primena mera predostrožnosti kod majki igra značajnu ulogu u sprečavanju širenja infekcije i utiče na kontrolu pandemije. Takođe pruža uvid i u ulogu medija u kontroli pandemije. Cilj rada je procena nivoa upućenosti, stava prema COVID-19 pandemiji i primene mera predostrožnosti (USP) u vezi sa COVID-19 pandemijom među majkama u bolnici tercijarnog nivoa.

**Metodologija** Analiza poprečnog preseka je sprovedena uz pomoć upitnika koji je podeljen stotini majki, koje su potpisale saglasnost, u porodilištu zdravstvene ustanove tercijarnog nivoa u Indiji, a odnosio se na COVID-19. Majkama koje su potpisale saglasnost su uzeti demografski podaci i USP skor (upućenost – 8 pitanja, stav -7 pitanja i mere predostrožnosti -5 pitanja).

**Rezultati** Studija je uključila 100 majki, od kojih je 21% mlađe od 25 godina, 67% je bilo starosti između 25 i 29 godina a preostalih 12% između 30 i 35 godina. Učesnice su popunjavale unapred pripremljeni upitnik o COVID-19 na osnovu koga je procenjivano njihovo znanje. Najveći broj pitanja se odnosio na tip bolesti, način prenošenja i moguće simptome. Većina majki (81%) je bila upoznata da je proglašena pandemija COVID-19 bolesti, a 79% da je u pitanju zarazna bolest. Na pitanje koji su najčešći simptomi bolesti, najveći procenat majki navodi temperature (97%), kašalj (98%), i otežano disanje (97%). Sve ispitanice (100%) bi pristale na porođaj u bolnici ukoliko se zaraze virusom COVID-19.

**Zaključak** Ova studija pokazuje da je većina majki imala zadovoljavajuće znanje, pozitivan stav i da je primenjivala odgovarajuće mere predostrožnosti kako bi se zaštitila od COVID-19.

**Ključne reči:** covid-19, pandemija, upućenost, stav.