Knowledge, attitude, and practice towards COVID-19 among antenatal care clients of Adama hospital medical college, Adama, Ethiopia: A cross sectional study

Tsega-Ab Abebaw Tekeba (✉ tsega.ab1@gmail.com)

Adama Hospital Medical College

Research note

Keywords: COVID-19, knowledge, attitude and practice, ANC, Ethiopia

Posted Date: July 20th, 2021

DOI: <https://doi.org/10.21203/rs.3.rs-737032/v1>

License: This work is licensed under a Creative Commons Attribution 4.0 International License.

[Read Full License](#)

Abstract

Objective

An already overwhelmed health system with many sporadic outbreaks is now threatened by the COVID-19 epidemics. Person-to-person transmission is currently ongoing in the country, making it necessary to control the disease. To guarantee successful disease control, the knowledge, attitudes and, practices people hold towards the disease play an integral role. Therefore, the aim of this study was to determine the knowledge, attitude, and practice towards COVID-19 among antenatal care clients of Adama Hospital Medical College, Adama, Ethiopia.

Results

A cross-sectional study was conducted from May 6, 2021, to May 31, 2021. Among the 292 study participants, 222 (75.3%) had good knowledge and 70 (24%) moderate knowledge status. Significant number of respondents 131 (44.9%) had neutral attitude while 159 (54.5%) had positive attitude. The prevalence of poor practice was 61 (20.9%). Majority of the respondents, 136 (46.6%) had moderate practice level.

Introduction

At the end of 2019, Wuhan City, the capital city of Hubei province in China, experienced a new coronavirus outbreak (1). The new virus is a member of the beta group of coronaviruses and was named the 2019 novel coronavirus (2019-nCoV). Thereafter, the International Committee on Taxonomy of Viruses named the virus SARS-CoV-2 on February 11, 2020, and the disease as COVID-19 (2,3,4). COVID-19, a large family of viruses, is the third zoonotic coronavirus after SARS-CoV and MERS-CoV (5). COVID-19 is the only one that appears to be with pandemic potential (6). The pandemic gave rise to a major public health crisis worldwide and challenged the healthcare system across six continents (7). As the infection has spread to over 216 countries the world health organization (WHO) declared the COVID-19 eruption a Public Health Emergency of International Concern on 30th January 2020 (5,6,7,8).

The WHO declared the COVID-19 outbreak a global pandemic on March 11, 2020 (9). The pandemic presented extra pressure and overstretched the health care system that is already

reached the breaking point throughout the world (10).

The COVID-19 pandemic has led to a dramatic loss of human life worldwide and presents an unprecedented challenge to public health, food systems and the world of work (11). People with certain health conditions have a higher risk of severe complications if they acquire the infection. Pregnant women are among this group (12).

The knowledge, attitudes and, practices (KAP) that people hold towards the disease play an integral role in determining a society's readiness to accept behavioral change measures from health authorities (13). The KAP of people towards COVID-19 is critical to understand the epidemiological dynamics of the disease (14). Pregnancy is an exciting and sometimes stressful experience. Being pregnant during a disease outbreak may add extra anxiety and concern for pregnant women and for those who provide care for them in addition to the high risk to have the severe form of the disease if they acquire the infection. Therefore, this study aimed to determine KAP towards the COVID-19 among antenatal care (ANC) clients of Adama hospital medical college (AHMC).

The study will contribute by adding knowledge regarding KAP towards COVID-19 and show the direction how to improve for health care providers, health care service managers, researchers and stakeholders who are working in this area.

Methods

A cross-sectional study was conducted in AHMC, Adama, Ethiopia from May 6, 2021, to May 31, 2021. The source population was all clients visiting ANC at AHMC during the study period and the study population was those clients selected by using a systematic random sampling technique. A single population proportion formula was applied to determine the sample size. Assuming 95% confidence interval, marginal error (d) of 5% and proportion 50%, a correction formula was used and 5% non-response rate was added to give a sample size of 302.

Knowledge, attitude and practice were assigned as good or positive if the score was between 80 and 100%, moderate or neutral if the score was between 60 and 79%, and poor or negative if the score was less than 60%.

The data was collected using a pre-tested, structured interviewer-administered questionnaire.

The data was checked for completeness and consistencies, and then cleaned and entered using Epi info version 7.2 .4.0 and exported to SPSS version 26 for analysis. Then, the data was analyzed using appropriate descriptive statistics, and summarized by frequency, percentage, and mean.

Results

From the total sample size calculated (302), 292 pregnant women were included in the study, making the response rate 96.6%.

Socio-demographic and economic characteristics

Most of the respondents were in the age group of 18-29. Two third of the study participants were housewives, and most of them (97.3%) married. Majority of the respondents (36%) had secondary education (9-12 grade) and urban residence (93.8%). More than one-third of the respondents were

encountered during their 1st ANC visit and majority (72.6%) were nullipara. The socio-demographic and Socio-economic characteristics of the study participants are presented in **table 1**.

Knowledge assessment

A total of 37 questions were used to assess the knowledge status of respondents. The questions had five sections. The sections focused on mode of transmission of COVID-19, major sign and symptoms of the disease, risk groups to develop severe form of the disease, prevention mechanisms and nature of the disease. The minimum knowledge score was 21 and the maximum 35 with a mean score of 31 and standard deviation 2.73.

Among the 292 study participants, 222 (75.3%) had good knowledge and 70 (24%) moderate knowledge status. Only 2 (0.7%) of the respondents had poor knowledge status regarding COVID-19. Of the respondents, 68 (23.3%) didn't know pregnant women has higher risk of developing severe form of the disease if they are one infected. Responses to each knowledge questions are presented in **table 2**.

Attitude towards COVID-19

A total of thirteen questions were used to assess the attitude of the participants towards understanding severity of the problem and preventive measures against the COVID-19 pandemic. The mean score of attitudes was 52 with standard deviation of 4.65. The maximum score was 63 and the minimum 35.

Of the respondents, 159 (54.5%) had positive attitude while only 2 (0.7%) had negative attitude. Significant number of respondents 131 (44.9%) had neutral attitude. Nearly half of the respondents were not willing to take the vaccine and more than one-third didn't agree that they were at risk of acquiring the infection. Responses for specific questions are presented in **table 3**.

Level of practice towards COVID-19 prevention

The questions assessing practice were 12. Correct answers were assigned 1 point. The total practice score among respondents ranged from 3 to 12. The mean score was 8.4 with standard deviation of 1.99.

The prevalence of poor practice was 61 (20.9%). Majority of the respondents, 136 (46.6%) had moderate practice level and the remaining 95 (32.5%) had good practice towards COVID-19 prevention.

More than half of the respondents (54%) reuse masks and (51.4%) didn't practice "physical distancing" by remaining 6 feet/2 meters away from others at all times. Responses for specific practice questions are presented in **table 4**.

Discussion

Currently, the alarmingly spread of COVID-19 is a major public issue in the world. So far, no treatment is discovered to it. Therefore, prevention is the best solution. Effective prevention and control of COVID-19 is achieved through increasing the populations' knowledge, attitude, and practice towards COVID-19.

This study revealed that, 222 (75.3%) of the respondents had good knowledge, 70 (24%) moderate knowledge and only 2 (0.7%) poor knowledge status regarding COVID-19. The level of good knowledge status in this study is lower when compared to a survey among Cameroonian residents, which revealed 84.19% (15) and Nigeria (99.5%) (14). This discrepancy could be subjected to variations in the cut-off values. In addition, the discrepancies might be due to differences in community awareness creation through mass media and social media.

The level of good knowledge in this study is comparable to a study done in Amhara region where 279 (70%) had demonstrated good knowledge and relatively higher when compared to studies conducted among residents of Dessie and Kombolcha city administrations where 54.11% had inadequate knowledge (16), Tigray region where 42.9% of respondents were knowledgeable (17), Sidama region where 43.9% of the study participants had good knowledge (18) and Addis Abeba where only 37.2% had good knowledge (19). The level of poor knowledge is much lower than a study conducted in Addis Zemen Hospital where the prevalence of poor knowledge was 33.9% (20). This may be due to timing of the studies. At the time of previous studies, the virus was new and people were learning more about the symptoms every day. Moreover, it may also be due to the differences in a tool used for assessment of knowledge.

This study showed that majority of the respondents 159 (54.5%) had positive attitude while only 2 (0.7%) had negative attitude and significant number of respondents 131 (44.9%) had neutral attitude. The level of attitude in this study is low when compared to other studies in Nigeria where 69% of respondents had a high attitude score (15) and in Addis Abeba where 60.7% of the respondents had positive attitude (19). The differences in the level of attitude could be subjected to variations in the cut-off values and different type of tools used by the studies. The different level of knowledge among respondents could also attribute to the discrepancy.

The finding in this study regarding the level of positive attitude was higher when compared to a study conducted in Sidama where 37.5% of respondents had high attitude (18). This difference might be related to variations in the study period.

More than one-third (39.7%) of the respondents didn't agree that they were at risk of acquiring the infection. This is supported by another studies. Of the study participants in Addis Zemen, 20.5% perceived that they had a very low risk of infection (20) and 24.6% of the respondents from U.S. believed that they were not at all likely to get infected with COVID-19 (21). This perception of very low risk of infection might be due to poor understanding of high infectiousness of COVID-19.

According to this study, the prevalence of poor practice was 61 (20.9%), majority of the respondents, 136 (46.6%) had moderate practice level and the remaining 95 (32.5%) had good practice towards COVID-19

prevention. This result was comparable to a study in Sidama region where 24.4% of study participants had good practice (18).

In contrary to this study, most participants (77%) in Palestine complied with preventative measures (10), 60.8% of respondents were taking precautions (good practice) in Cameron (15), majority (62%) of the respondents in Amhara region had good prevention practices (22) and 59.8% of study participants in Addis Abeba had good practice to mitigate the pandemic (19).

Prevalence of poor practice in Addis Zemen was 33.9% (20) which is slightly higher than witnessed in this study.

The possible justification of this disparity might be a difference in sources of information, information seeking behavior, frequency of media exposure, knowledge, phase of the outbreak in the study area, and worry related to the outbreak of study participants which lead to the variation in the application of recommended actions and behaviors to prevent COVID-19.

Generally, this level of moderate and poor practices in this study might be primarily attributed to the lack of strict prevention and control measures implemented by local government, such as banning public gatherings and enforcing peoples to wear a mask.

Very interestingly, during early phase of COVID-19 pandemic, there has been an aggressive promotion of covid19 information through ministry of health and main government mass media. This led to better knowledge and preparedness about the pandemic. Though still the promotion is present, adherence seems to become less.

Conclusion

In conclusion, the study revealed that, about three-fourth of respondents had good knowledge, majority of the respondents had positive attitude while significant number of respondents had neutral attitude and the prevalence of good practice towards COVID-19 prevention was very low.

About one-fourth of the respondents of this study didn't know that pregnant women have higher risk of developing severe form of the disease if they are once infected. Nearly half of the respondents were not willing to take the vaccine and more than one-third didn't agree that they were at risk of acquiring the infection.

Preventive attitude has to be reinforced by all stakeholders and appropriate prevention and control strategies should be promoted consistently and priority needs to be given to improve prevention practices parallel to awareness creation.

ANC providers should include health information regarding the higher risk of pregnancy for developing severe form of the disease.

Since the study found there were many respondents who were not willing to take the vaccine, further qualitative researches should be done by AHMC to find out the reason of this resistance.

Limitations

The likelihood of giving socially acceptable answers by the respondents and use of small sample size could be limitations of the study.

List Of Abbreviations

AHMC	Adama Hospital Medical College
ANC	Antenatal Care
KAP	Knowledge, Attitude, and Practice
WHO	World Health Organization

Declarations

Ethics approval and consent to participate

To conduct the study, ethical clearance and supporting letter was obtained from the Ethical review committee of AHMC. Then, permission was obtained from ANC department. Participants were recruited to the study after a verbal explanation of the objectives of the research and were provided a written information sheet. All potential participants who agree to participate were provided a written consent to continue with the interviews and informed that their participation in the study was voluntary and they are free to withdraw their participation at any time they want. Confidentiality was maintained for information collected from each study participant by omitting their names and personal identification or privacy. Information obtained from them was not disclosed to a third party. All clients were given assurance that there was no physical and emotional harm resulting from participating in the study.

Consent for publication

Not applicable.

Availability of data and materials

The datasets used and/or analysed during the current study are available from the corresponding author on reasonable request.

Competing interests

The authors declare that they have no competing interests

Funding

No funding was received.

Authors' contributions

TA conceived and designed the study, performed data analysis, compiled the whole work and prepared the manuscript. NH and HD participated in design, analysis, reviewing the main document and took part in the critical revision of the manuscript. AA participated in analysis, reviewing the main document and took part in the critical revision of the manuscript. All authors read and approved the final manuscript.

Acknowledgements

We would like to express our deepest gratitude to Adama hospital medical college for facilitating the data collection activities of this research. We would like to extend our appreciation to the data collectors who participated in the study and the study subjects.

References

1. MA Shereen , S Khan , A Kazmi , N Bashir , R Siddique. COVID-19 infection: Origin, transmission, and characteristics of human coronaviruses. *Journal of Advanced Research*. 2020 March; 24.

2. Lai CC , Shih TP , Ko WC , Tang HJ , Hsueh PR. Severe acute respiatory syndrome coronavirus 2 (SARS-COV-2) and coronavirus disease-2019 (COVID-19): The epidemic and the challenges. *Int J Antimicrob Agents*. 2020 March; 55(3).

3. World Health Organization. Naming the coronavirus disease (COVID-19) and the virus that cause it. 2020.

4. International Committee on Taxonomy of virus. Naming the 2019 coronavirus. 2020.

5. World Health Organization. Infection prevention and control (IPC) for COVID-19 Virus. 2020.

6. Mackenzie JS , Smith DW. COVID-19: a novel zoonotic disease caused by a coronavirus from China: what we know and what we don't. *Microbiol Aust*. 2020 March; 10.

7. Khachfe H H , Chahrour M , Sammouri J , et al. An Epidemiological Study on COVID-19: A Rapidly Spreading Disease. *cureus*. 2020 March; 12(3).

8. Zhong BL , Luo W , Li HM , et al. Knowledge, attitude 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).

9. World Health Organization. Director-General's opening remarks at the media briefing on COVID-19. 2020.

10. Qutob N , Awartani F. Knowledge, attitudes and practices (KAP) towards COVID-19 among Palestinians during the COVID-19 outbreak: A cross-sectional survey. *PLOS ONE*. 2021; 16(1).

11. ILO , FAO , IFAD , WHO. Impact of COVID-19 on people's livelihoods, their health and our food systems. ; 2020.

12. CDC. Coronavirus disease 2019 (COVID-19): if you are at higher risk. Get ready for COVID-19 now. 2020.

13. Azlan AA , Hamzah MR , Sern TJ , Ayub SH , Mohamad E. Public knowledge, attitudes and practices towards COVID-19: a cross-sectional study in Malaysia. *PLOS ONE*. 2020; 15(5).

14. Reuben RC , Danladi MMA , Saleh DA , Ejembi PE. knowledge, attitudes and practices towards COVID-19: an epidemiological survey in north-central Nigeria. *J Community Health*. 2021 July; 46(3).

15. Ngwewondo A , Nkengazong L , Ambe LA , et al. Knowledge, attitudes, practices of/towards COVID 19 preventive measures and symptoms: A cross-sectional study during the exponential rise of the outbreak in Cameroon. *PLOS Neglected Tropical Diseases*. 2020; 14(9).

16. Kassa AM , Mekonen AM , Yesuf KA , et al. Knowledge level and factors influencing prevention of COVID-19 pandemic among residents of Dessie and Kombolcha City administrations, North East Ethiopia: a population-based crosssectional study. *BMJ Open*. 2020; 10(11).

17. Haftamu M , Petrucka P , Gemechu K , et al. Knowledge, Attitudes, and Practices Towards COVID-19 Pandemic Among Quarantined Adults in Tigray Region, Ethiopia. *Infect Drug Resist*. 2020; 13.

18. Yoseph A , Tamiso A , Ejeso A. Knowledge, attitudes, and practices related to COVID-19 pandemic among adult population in Sidama Regional State, Southern Ethiopia: A community based cross-sectional study. *PLOS ONE*. 2021; 16(1).

19. Desalegn Z , Deyessa N , Teka B , et al. COVID-19 and the public response: Knowledge, attitude and practice of the public in mitigating the pandemic in Addis Ababa, Ethiopia. PLOS ONE. 2021; 16(1).

20. Akalu Y , Ayelign B , Molla MD. Knowledge, Attitude and Practice Towards COVID-19 Among Chronic Disease Patients at Addis Zemen Hospital, Northwest Ethiopia. Infect Drug Resist. 2020 June; 13.

21. Michael S. Wolf MSLO. Awareness, attitudes, and actions related to COVID-19 among adults with chronic conditions at the onset of the U. S. outbreak. Ann Intern Med. 2020; 9(1–10).

22. Asemahagn MA. Factors determining the knowledge and prevention practice of healthcare workers towards COVID-19 in Amhara region, Ethiopia: a cross-sectional survey. 2020; 48(72).

Tables

Table 1 The socio-demographic characteristics of ANC clients of AHMC. Adama, Ethiopia, 2021. (N=292)

Variables	Category	Frequency	Percent (%)
Age	18-29	217	74.3
	30-39	73	25
	≥40	2	0.7
Occupation	Government employee	34	11.6
	Non-government employee	46	15.8
	Merchant	20	6.8
	Housewife	190	65.1
	Others	2	0.7
Marital status	Single	2	0.7
	Married	284	97.3
	Separated/divorced	6	2.1
Educational status	Can't read and write	9	3.1
	Read and write	4	1.4
	Primary (1-8)	96	32.9
	Secondary (9-12)	105	36
	Diploma and above	78	26.7
Residence	Urban	274	93.8
	Rural	18	6.2
Parity	Nullipara	212	72.6
	Multipara	80	27.4
Number of visits	1	102	34.9
	2	55	18.8
	3	37	12.7
	≥4	98	33.6
Monthly income	<1400	8	2.7
	1400-3550	87	29.8
	3551-5000	108	37
	>5000	89	30.5
Total		292	100

Table 2 Response of ANC clients to knowledge questions regarding COVID-19 in AHMC. Adama, Ethiopia, 2021.

Questions	Responses	Yes	No
		n (%)	n (%)
How do you think a person acquire COVID-19?	1. Directly through breathing/sneezing	290 (99.3)	2 (0.7)
	1. Through a mosquito bite	84 (28.8)	208 (71.2)
	1. Touching mouth and nose by contaminated hand	283 (96.9)	9 (3.1)
	1. Through unprotected sexual intercourse	135 (46.2)	157 (53.8)
	1. Through staying and playing near others	262 (89.7)	30 (10.3)
	1. Not frequently washing while at work	272 (93.2)	20 (6.8)
	1. Using public transport with closed windows	263 (90.1)	29 (9.9)
	1. Opening doors/windows in public places	50 (17.1)	242 (82.9)
	1. Frequent use of disinfectant while at work	15 (5.1)	277 (94.9)
	1. By shaking/hugging anyone	290 (99.3)	2 (0.7)
What are the following do you think are the signs and symptoms of COVID-19?	1. Fever	290 (99.3)	2 (0.7)
	1. Diarrhea	109 (37.3)	183 (62.7)
	1. Tiredness	242 (82.9)	50 (17.1)
	1. Bloody sputum	62 (21.2)	230 (78.8)
	1. Swelling of legs	6 (2.1)	286 (97.9)
	1. Cough	285 (97.6)	7 (2.4)
	1. Headache	240 (82.2)	52 (17.8)

	1. Red and painful eyes	80 (27.4)	212 (72.6)
	1. Sneezing/runny nose	250 (85.6)	42 (14.4)
risk of developing a severe form of se?	1. Diabetic patients	286 (97.9)	6 (2.1)
	1. Hypertensive patients	271 (92.8)	21 (7.2)
	1. People with heart problems	267 (91.4)	25 (8.6)
	1. Pregnant women	224 (76.7)	68 (23.3)
	1. Cancer patients	221 (75.7)	71 (24.3)
	1. Khat chewers/smokers	219 (75)	73 (25)
	1. Asthmatic patients	280 (95.9)	12 (4.1)
	1. People with chronic obstructive pulmonary disease	266 (91.1)	26 (8.9)
the current ways of prevention?	1. Vaccination	240 (82.2)	52 (17.8)
	1. Anti-viral therapy	18 (6.2)	274 (93.8)
	1. Using masks	292 (100)	0 (0)
	1. Frequent washing of hands	287 (98.3)	5 (1.7)
	1. Staying at home	235 (80.5)	57 (19.5)
	1. Frequent disinfectant	280 (95.9)	12 (4.1)
	1. Staying >2meters from others	288 (98.6)	4 (1.4)
age group do you think the disease	1. Children	217 (74.3)	75 (25.4)

1. Youth	247 (84.6)	45 (15.4)
1. Elderly	292 (100)	0 (0)

Table 3 Response of ANC clients to attitude questions towards COVID-19 prevention in AHMC. Adama, Ethiopia, 2021.

Questions	Responses				
	Strongly disagree	Disagree	Neutral	Agree	Strongly agree
	n (%)	n (%)	n (%)	n (%)	n (%)
think that disease is serious?	2 (0.7)	2 (0.7)	14 (4.8)	38 (13)	236 (80.8)
worried about one of your members can get infection?	0 (0)	67 (22.9)	42 (14.4)	101 (34.6)	82 (28.1)
afraid to go to common places to avoid infection?	0 (0)	68 (23.3)	23 (7.9)	141 (48.3)	60 (20.5)
think the early diagnosis and the treatment and outcome?	0 (0)	6 (2.1)	36 (12.3)	213 (72.9)	37 (12.7)
think isolation of the infected is important?	0 (0)	0 (0)	2 (0.7)	108 (37)	182 (62.3)
think health education is important to prevent COVID-19?	0 (0)	8 (2.7)	7 (2.4)	132 (45.2)	145 (49.7)
take precautions, can the COVID-19 infection be prevented?	2 (0.7)	2 (0.7)	32 (11)	155 (53.1)	101 (34.6)
now there is a vaccine, are you going to take it?	20 (6.8)	77 (26.4)	40 (13.7)	107 (36.6)	48 (16.4)
available information about COVID-19 in Ethiopia sufficient?	18 (6.2)	90 (30.8)	50 (17.1)	102 (34.9)	32 (11)
think yourself at risk?	4 (1.4)	75 (25.7)	37 (12.7)	152 (52.1)	24 (8.2)
have one of the symptoms of the disease do you go to the health center?	4 (1.4)	12 (4.1)	8 (2.7)	191 (65.4)	77 (26.4)
have COVID-19 symptoms, do you stop normal activities?	0 (0)	7 (2.4)	4 (1.4)	166 (56.8)	115 (39.4)
avoid contact with infected people?	2 (0.7)	6 (2.1)	4 (1.4)	119 (40.8)	161 (55.1)

Table 4 Response of ANC clients to practice questions towards COVID-19 prevention in AHMC. Adama, Ethiopia, 2021.

Questions	Responses	
	Yes	No
	n (%)	n (%)
participate in meetings, religious activities, events, and other gatherings or any crowded place?	178 (61)	114 (39)
7 days, have you worn a mask when leaving home?	284 (97.3)	8 (2.7)
use a mask?	159 (54.5)	133 (45.5)
wash your hands with soap and water frequently for at least 15 seconds or use sanitizer/60% alcohol?	233 (79.8)	59 (20.2)
touch your eyes, nose, and mouth frequently with unwashed hands?	104 (35.6)	188 (64.4)
clean and disinfect frequently touched objects and surfaces?	174 (59.6)	118 (40.4)
practice “physical distancing” by remaining 6 feet/2 meters away from others at all times?	142 (48.6)	150 (51.4)
limit contact (such as handshakes)?	212 (72.6)	80 (27.4)
eat or drink in bars and restaurants?	70 (24)	222 (76)
cover your nose and mouth during coughing or sneezing with the elbow or a tissue, and then throw the tissue in the trash?	271 (92.8)	21 (7.2)
prefer to stay at home, in a room with the window open?	275 (94.2)	17 (5.8)