

Antenatal Care Service Utilization of Pregnant Women Attending Antenatal Care in Public Hospital During the COVID-19 Pandemic Period

Antenatal Care
Utilization of
Pregnant During
COVID-19

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ABSTRACT

Objective: To evaluate antenatal care utilization of pregnant women attending care during COVID-19 pandemic.

Study Design: Cross sectional study

Place and Duration of Study: This study was conducted at the Study was conducted at outpatient department of Gynecology and Obstetrics Sindh Government Hospital, Qasimabad, Hyderabad, from February 2021 to July 2021.

Materials and Methods: Three hundred and twenty patients were enrolled in the study. Main variables of study were antenatal visits, education of mother, residential area (rural and urban), and depression during COVID-19 and number of visits. Data analysis was done by using SPSS version 23. Mean and frequency were calculated, test of significance t-test and chi square test were applied. P value ≤ 0.05 was taken as significance.

Results: The mean height of fundus of the patients was 29.21 ± 4.29 cm. Majority of the patients 92.2% was longitude lie. Cephalic was the most common presenting part i.e. 82.8%. Fetal movement and fetal heart sound were positive in 87.2% and 89.7%, respectively. The mean antenatal care visits of the patients were 2.63 ± 1.77 times. Most of the patients 74.7% had ≤ 3 antenatal care visits. 6.9% patients had positive covid-19 while 5.3% went to isolation.

Conclusion: Findings of this reveal that COVID-19 pandemic reduced the utilization of antenatal health care facilities among pregnant women. Thus, the residency, age of mother and educational status are main contributing factors involved in use ANC facilities.

Key Words: Prenatal care, Antenatal care, Coronavirus disease, Utilization, Pregnant women.

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INTRODUCTION

Novel corona virus that causes COVID-19 has spread rapidly since 2019 which was declared as global pandemic by world health organization (WHO) on 11 March 2020¹. In October 2020 there were 49,373,235 confirmed cases and 1,243,083 confirmed deaths². Care a pregnant mother receives before birth is labeled as antenatal care which includes screening, education, counseling, treatment plan and immunization³.

First contact opportunity with formal health facilities for a pregnant mother is antenatal care that links the women with referral system in case of pregnancy

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complications. Worldwide about 303,000 maternal deaths occur every year because of pregnancy related complications most of them occur in Southern Asia and sub-Saharan Africa⁴. Maternal morbidity and mortality can be reduced with proper antenatal care by pointing danger signs, birth preparedness, health promotion and high care for complications of pregnancy⁵.

WHO recommends at least four antenatal visits for pregnant ladies to overcome mortality after 42 days of termination of pregnancy and during pregnancy? Literature available on this topic reported that number of living children, maternal age,⁶ place of residence, educational status, educational status, socioeconomic status; occupation and previous history of obstetrics were main factors that significantly associated with antenatal care facilities⁷.

COVID-19 pandemic is bedeviling major challenges for many countries to provide and maintain high quality newborn and maternal health services⁸. Women carrying pregnancies and newborn carrying mothers are experiencing difficulties regarding transport, lockdown measures and access to health care facilities along with psychological effects and fear of infection⁹. Approximately 10% decline was observed in coverage and approach of health care services because of corona pandemic. In USA 39.3-51.9% reduction was observed

in antenatal visits that causes 56.700 additional maternal deaths¹⁰.

To the best of our knowledge there is no research paper published that was exploring the effect of COVID-19 pandemic on utilization and visits of antenatal health care facilities among pregnant women of lower Sindh. So, in order to fulfill this scientific literature, gap of this geographical area this study aims to explore the utilization of antenatal health facilities during pandemic.

MATERIALS AND METHODS

Study was conducted at outpatient department of Gynecology and Obstetrics Sindh Government Hospital, Qasimabad, Hyderabad, from February 2021 to July 2021. Study was started after ethical approval from hospital ethical board and informed written consent was obtained from patients after detailed information of study purpose. Non probability consecutive sampling technique was obtained. All pregnant women attended antenatal clinic at hospital were enrolled and 320 women were selected according to inclusion criteria. Patients having 2nd and 3rd trimester during COVID-19 pandemic or history of incomplete antenatal care in previous pregnancies and abortion during study period were excluded from the study. Sample size was calculated by using online source openepi.com taking 95% confidence interval, 5% margin of error and 30.8%¹¹ 1st antenatal visits during pandemic from a previous study.

Primary outcome of study was proportion of use of antenatal facilities during pandemic and independent variables were demographic, social and obstetric factors. Use of antenatal care was defined as at least three visits of antenatal clinic with two or above dose of tetanus toxoid and use of above 90 tablets of iron and folic acid.

Data was entered in Statistical package for social sciences (SPSS) and analyzed. Mean and standard deviation was calculated for numerical data like age, gestational age, antenatal visits and frequency and percentages were calculated for categorical data like educational status, occupational status. Test of significance was applied (t-test for numerical variables and chi-square for categorical variables). P value ≤ 0.05 was taken as significant.

RESULTS

Three hundred and twenty pregnant women were enrolled in this study, with mean age 28.29 \pm 4.13 years. The mean gestational age was 26.04 \pm 3.48 weeks. Majority of the patients were illiterate and primary educated, (29.1%) and (38.8%), respectively. (41.9%) patients were under depression. (24.1%) patients suffered diabetes mellitus. (31.3%) patients were hypertension. While, (20.6%) women suffered with domestic violence. (Table. I).

Table No.1: Characteristics of pregnant women included in the study

Variable	Mean \pm S.D	N (%)
Age (years)	28.29 \pm 4.13	
18-29 years		201 (62.8)
30-45 years		119 (37.2)
Gestational age (weeks)	26.04 \pm 3.48	
<25		139 (43.4)
>25		181 (56.6)
Area of residence		
Rural		168 (52.5)
Urban		152 (47.5)
Education of mother		
Illiterate		93 (29.1)
Primary		124 (38.8)
Middle		54 (16.8)
Matriculation		30 (9.4)
Above matric		19 (5.9)
Blood Pressure systolic/diastolic	125/72	
Pulse	79.89 \pm 5.39	
Temperature (F ^o)	99.03 \pm 2.17	
Depression		134 (41.9)
Diabetes mellitus		77 (24.1)
Hypertension		100 (31.3)
Domestic violence		66 (20.6)

Table No.2: Outcome characteristics of the study patients

Variable	Mean \pm SD	N (%)
Height of fundus (cm)	29.21 \pm 4.29	
Lie		
Longitude		295 (92.2)
Altitude		25 (7.8)
Presenting part		
Cephalic		265 (82.8)
Breech		55 (17.2)
Fetal movement		
Positive		279 (87.2)
Negative		41 (12.8)
Fetal heart sound		
Positive		287 (89.7)
Negative		33 (10.3)
Antenatal care visit	2.63 \pm 1.77	
1-3		239 (74.7)
4+ visits		81 (25.3)
Covid-19		22 (6.9)
Isolation		17 (5.3)

The mean height of fundus of the patients was 29.21 \pm 4.29 cm. Majority of the patients (92.2%) was longitude lie. Cephalic was the most common presenting part i.e. (82.8%). Fetal movement and fetal heart sound were positive in (87.2%) and (89.7%), respectively. The mean antenatal care visits of the patients were 2.63 \pm 1.77 times. Most of the patients

(74.7%) had ≤ 3 antenatal care visits. (6.9%) patients had positive covid-19 while (5.3%) went to isolation. (Table. 2).

Logistic regression was applied on the area of residence, age, education status, depression, diabetes

mellitus, hypertension, domestic violence and gestational age. It was seen that depression and diabetes mellitus were the predictors of antenatal care visits with odds ratio 1.75 and 2.41, respectively. (Table. 3).

Table No.3: Logistic regression analysis of the antenatal care visits

Covariate	Frequency	Coefficient	S.E	P-value	Odd Ratio	
Area of residence	Urban	152	-	-	-	
	Rural	168	0.353	0.272	0.196	1.42
Age (years)	18-29	201	-	-	-	
	30-45	119	0.146	0.281	0.604	1.16
Education status	Illiterate	93	-	-	-	
	Primary	124	-0.211	0.446	0.637	0.810
	Middle	54	0.152	0.411	0.712	1.16
	Matriculation	30	0.791	0.466	0.090	2.21
	Above matric	19	0.612	0.061	0.000	1.672
Depression	Yes	134	0.63	0.272	0.038	1.75
	No	186	-	-	-	
Diabetes mellitus	Yes	77	0.880	0.297	0.003	2.41
	No	243	-	-	-	
Hypertension	Yes	100	-0.229	0.301	0.447	0.796
	No	220	-	-	-	
Domestic violence	Yes	66	-0.448	0.357	0.171	0.614
	No	254	-	-	-	
Gestational age (weeks)	≤ 25	139	0.080	0.274	0.769	1.08
	> 25	181	-	-	-	
Constant			-1.866	0.489	0.000	0.155

DISCUSSION

Antenatal care is affected worldwide during COVID-19 pandemic situation. A very small proportion was reported 100% antenatal visits. In low income countries preparedness and containment policies were made for pregnant women and lockdown restriction almost subsided. But antenatal loss either fetal or maternal is needed to be estimated.

Most of patients in our study were between ages 18-29 years with mean age 28.29 ± 4.13 . A study was conducted by Chimankar et al¹² on Indian population and evaluated the factors that influence the utilization of antenatal health care facilities and reported mostly patients between 25-29 years of age. Forty-five percent women of this study fully received recommended visits. It was also reported in this study that about 67% births were takes place outside the health care system.

Age of patient is also a strong contributing factor of better antenatal care utilization. As the age of mother increases it is associated with better experience of pregnancy and its relevant complications, better knowledge, understanding and the use of antenatal facilities. This observation is also supported by studies conducted in Debre Tobar by Ayalew et al¹³ and in Southern Ethiopia by Abosse et al¹⁴. In our study we

also observed that age of mother is significantly and positively associated with ANC.

Education status of patients is also having main role in proper utilization of antenatal care facilities. Mean gestational age of patient in our study was 26.04 ± 3.48 weeks and most of our patients were illiterate (55%) or primary educated (33%). The study conducted by Manyeh et al¹⁵ reported that most of patients starts their antenatal care from 12 weeks of pregnancy and education is illiterate or primary.

Another similar study was conducted on Nepali population by Tuladhar et al¹⁶ and reported 71.6% pregnant women that were enrolled in study having secondary education or above and 87% pregnant women received full recommended antenatal health care facilities. Study shows that only 6.5% population was not attending antenatal care facilities.

In our study 24.1% of women were diabetic and 31.3% were hypertensive. Our study supported by study conducted by Fagbamigbe et al¹⁷ in 2015 that shows in Nigerian population monitoring of blood pressure and iron supplementation are main components of ANC. About 81.5% of women received full antenatal care during pandemic and 11.3% pregnant women avail minimum level of ANC. Gitonga et al¹⁸ observed similar findings and reported 52% successful antenatal visits and reported that household income, education of

women and type of employment are also contributing factors of antenatal care utilization.

In our study we also observed that education of mother has strong association with compliance of antenatal care. Mothers of secondary education and above have high level of antenatal care than women with formal education. Mulat et al¹⁹ reported that educated women are capable of attaining early information, counseling and can identify danger signs during pregnancy. Another previous study by Nebeb et al²⁰ observed similar findings that use of antenatal care facilities is associated with better education and knowledge understandings.

Our study also observed that women living urban areas have higher ratio of ANC utilization during pandemic. This finding was supported by Saccone et al²¹ and Durankuş et al²², they concluded that better utilization of ANC in urban areas may be due to easy availability of health care facilities. Awareness about ANC use is also more in urban areas as compare to rural areas of any country.

In developing countries lack of infrastructure and deficit in resources along international choices for lockdown position make this harsher and panic for pregnant women²³. Reduction in workforce, restrictions from health facility and access reduction are also responsible for reduction in ANC utilization²⁴.

CONCLUSION

Findings of this reveal that COVID-19 pandemic reduced the utilization of antenatal health care facilities among pregnant women. Thus, the residency, age of mother and educational status are main contributing factors involved in use ANC facilities.

Limitations: Incomplete follow ups and cross sectional nature of our study were main limitations.

Recommendations: Door step antenatal care and awareness programs about importance of antenatal care utilization with proper protective measures are recommended.

Author's Contribution:

Concept & Design of Study: Almas
 Drafting: Shahla Afsheen, Sakeena Ahmed Memon
 Data Analysis: Sakeena Ahmed Memon, Khalida Avesi
 Revisiting Critically: Almas, Shahla Afsheen
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