Section: OBS and Gynae

Original Research Article

KNOWLEDGE, ATTITUDE AND PRACTICE OF ANTENATAL CARE AMONG PREGNANT WOMEN ATTENDING ANTENATAL CLINIC IN TERTIARY CARE HOSPITAL OF GOVERNMENT DOON MEDICAL COLLEGE, DEHRADUN

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ABSTRACT

Background: Antenatal care (ANC) is vital for ensuring the health of both mother and child. Despite advancements in maternal health services, gaps remain in awareness, accessibility, and practice, particularly in resource-limited settings. This study aimed to assess the knowledge, attitude, and practices (KAP) related to antenatal care among pregnant women attending a tertiary care hospital in Dehradun, India. **Materials and Methods:** A cross-sectional study was conducted among 332 pregnant women attending the antenatal clinic at Government Doon Medical College, Dehradun. Data were collected through structured interviews assessing demographic details, knowledge levels, attitudes, and ANC-related practices. **Result:** Out of 332 participants, 81.02% demonstrated adequate knowledge of antenatal care. Knowledge levels were positively associated with age and education; women aged 30–40 years and those with high school education or above showed the highest awareness. Regular ANC checkups were reported by 81.02% of women, and 87.34% and 85.24% reported compliance with iron-folic acid supplementation and tetanus toxoid vaccination, respectively. Barriers to ANC included distance to health facilities (26.20%), unaffordability (25%), and lack of transportation (19.27%). Information about ANC was primarily acquired through friends and family (36.05%), media (33.30%), and health workers (30.85%). **Conclusion:** While the majority of women exhibited good knowledge and practice of ANC, a significant proportion, especially younger and less educated women, lacked essential awareness. Addressing barriers like transportation, cost, and cultural beliefs, alongside enhancing community-based awareness initiatives, is crucial to improving maternal health outcomes.

INTRODUCTION

Antenatal care is comprehensive antepartum care programme with medical care and psychosocial support beginning before conception and throughout antepartum period. The health of the mother affects the overall growth and development of the child. The safe motherhood initiatives launched by the World Health Organisation, 1987 aimed to reduce number of deaths associated with pregnancy and childbirth.[1] Antenatal care aims to bring forth a healthy mother and a healthy baby. It aims at nutrition, preventive health practices and early detection of maternal and foetal complications.

In 2023 India recorded 19,000 maternal deaths.[2] Majority of deaths contributed due to haemorrhage, obstructed labour, chronic anaemia, hypertension, chronic disorders like diabetes, cardiovascular and renal disorders and other conditions.[3]

Major cause of death is due to lack of awareness, particularly in rural parts of India. World Health Organization recommends four Antenatal visits in low-risk pregnancies, first before 12weeks, second between 24-28 weeks, third at32 weeks and fourth at36weeks or at term.[4]

It is our aim to identify high risk pregnancies for awareness of warning signs for early detection and treatment of pregnancy related adverse outcomes. For this we need, early registration and compliancefor regular checkups. This study aims to assess the Knowledge, Attitude & Practice related to antenatal careamong pregnant women and to bring forth awareness among them.

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MATERIALS AND METHODS

This was a cross-sectional study conducted by the Department of Obstetrics and Gynaecology at Government Doon Medical College and hospital, Dehradun to assess the Knowledge, Attitude and Practice of antenatal care among 332 pregnant women attending antenatal clinic. All antenatal women attending the antenatal clinic were interviewed. Out of which women refusing to take part in the study were excluded and a total data of 332 women was obtained.

RESULTS

Majority of our participants belonged to age group of 20 -25 years. There is a strong, statistically significant relationship between age and antenatal care knowledge. Knowledge increases steadily with age, with the highest levels observed among women aged 31–40 years (94–100%), and the lowest among those aged 18–20 (48.27%).

The majority of participants were Hindu 145 (43.67%), followed by Muslim 112 (34.6%), Sikh 50 (13.06%), and Christian 25 (7.5%).

In this study, family structure showed a significant association with knowledge of antenatal care. Among women from nuclear families (n = 148), 85.13% had adequate knowledge of antenatal care, while only 14.86% lacked it. In comparison, 77.17% of women from joint families (n = 184) were knowledgeable, and 22.28% were not.

There is a highly significant association between the level of education and knowledge of antenatal care ($p < 0.001$). Knowledge increased consistently with education level: Only 43.9% of illiterate women had ANC knowledge, While100% of women with high school or graduate education were knowledgeable.

Majority of our participants belonged to multiparity (187). Although primigravida women (84.33%) had slightly higher knowledge levels than multipara (81.28%) and grandmultipara (75.80%). In contrast, no statistically significant association was found between parity and ANC knowledge ($p = 0.236$), suggesting that the number of previous pregnancies does not significantly influence a woman's awareness or understanding of antenatal care.

Table 1: Socio-Demographic Profile of Study Participants (N=332)

Variables	N	With ANC Knowledge		Without ANC Knowledge		P value
		No.	%	No.	%	
Age						
18-20	58	28	48.27	30	51.72	P <0.001
21-25	114	94	82.46	20	17.54	
26-30	108	98	90.74	10	9.25	
31-35	50	47	94.23	3	6.00	
36-40	2	2	100.00	0	0.00	
Total	332	269	81.02	63	18.97	
Family						
Nuclear	148	126	85.13	22	14.86	P=0.037
Joint	184	143	77.17	41	22.28	
Total	332	269	81.02	63	18.97	
Schooling						
Illiterate	82	36	43.90	46	12	P<0.001
Primary	125	110	88	15	3.77	
Middle	53	51	96.22	2	0	
High school	47	47	100	0	0	
Graduate	25	25	100	0	0	
Total	332	269	81.02	63	18.97	
Parity						
Primigravida	83	70	84.33	13	15.56	P=0.232
Multipara	187	152	81.28	35	18.71	
Grandmultipara	62	47	75.80	15	24.19	
Total	332	269	81.02	63	18.97	

Table 2: Attitude Toward Antenatal Care

Source of Information	Frequency (%)
Friends and Family	97 (36.05%)
Media	89 (33.30%)
Health Workers	83 (30.85%)

Majority of the people have reported that they gained awareness through media, health worker, friends and family. Among these majority of 36.05% gained knowledge from friends and family, 33.30% from media and 30.85% from health worker.

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Table 3: Barriers to Antenatal Care Access (n = 332)

Barrier Type	Frequency (%)
Distance	87 (26.20%)
Unaffordability	83 (25.0%)
Transportation	64 (19.27%)
Unawareness	50 (15.06%)
Cultural Beliefs	48 (14.45%)

People who were not receiving antenatal care were seem to have limitations via maximum due to unaffordability and distance. Other causes included lack of transportation facilities, unawareness of antenatal care and cultural stigmas.

Table 4: Antenatal Care Practices Among Participants

Practice	Yes n (%)	No n (%)
Regular ANC Check-up	269 (81.02%)	63 (18.97%)
Iron-Folic Acid Compliance	290 (87.34%)	42 (12.65%)
Tetanus Toxoid Administration	283 (85.24%)	49 (14.75%)

In our study around 81.02% of the participants were seen to receive regular health checkup and among the participants around 87.34% were having compliance for iron folic acid intake and 85.24% showed compliance for injection tetanus toxoid administration.

Table 5: Place of Antenatal Care Received

Place of ANC	Frequency (%)
Hospital	117 (35.24%)
Health Institution	152 (45.78%)
Traditional Providers	63 (18.97%)

In our study 63 people who were not having any knowledge of antenatal care were seen to be receiving antenatal care through traditional birth attendance.

DISCUSSION

This study assessed the knowledge, attitude, and practices related to antenatal care (ANC) among pregnant women attending a tertiary care hospital in Dehradun. The results demonstrate encouraging trends in overall ANC awareness, but also reveal critical disparities influenced by socio-demographic factors such as age, education, family structure, and access to information.

In the present study, a significant number of antenatal women (222) were from the age group 20-30 years. Age showed a strong and statistically significant association with ANC awareness ($p < 0.001$), with knowledge increasing consistently with age. While only 48.27% of women aged 18–20 had adequate ANC knowledge, the percentage rose to 94.23% in the 31–35 age group and reached 100% among those aged 36–40. This trend aligns with findings from Sanjel et al. (2011) and Rozliza et al. (2011), which showed that majority (46.2%) participants were between 20-29years of age.[5] A study by Shirin et al, showed that mean age of women was 33.5 + 10.4 years.[6]

Family structure was also found to influence ANC knowledge significantly ($p = 0.037$). Women from nuclear families reported higher awareness (85.13%) compared to those from joint families (77.17%). This may reflect greater autonomy in health decision-making in nuclear settings, a pattern also observed by Alam et al. (2005), who reported that women in extended households often defer decisions to senior family members, potentially limiting timely care-seeking behavior.

Education emerged as the most influential factor in determining ANC knowledge, with a highly significant association ($p < 0.001$). While only 43.9% of illiterate women were knowledgeable about ANC, 100% of women with high school or graduate-level education had full awareness. These results are supported by studies from Agarwal et al. (2007) and Garg et al. (2020), both of which emphasized the critical role of female literacy in improving maternal healthcare utilization. Education not only enhances comprehension of health messages but also empowers women to engage actively with healthcare providers.

In contrast, parity did not show a statistically significant association with ANC knowledge ($p = 0.232$), despite a slight trend suggesting that primigravida women (84.33%) had marginally better awareness than grand multiparas (75.80%). This finding suggests that experience with multiple pregnancies does not necessarily translate into increased maternal health awareness, a conclusion consistent with Shirin et al. (2011), who found that unless supported by adequate education or healthcare access, parity alone does not improve knowledge or practices.

These findings highlight the critical importance of targeting younger, less educated, and joint-family-residing women with focused health education and outreach strategies. Enhancing educational opportunities for women, improving community-level health promotion, and engaging family

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members in maternal health education could significantly improve ANC knowledge and related outcomes.

In this study, the primary sources of information about antenatal care (ANC) were friends and family (36.05%), followed closely by media (33.30%) and health workers (30.85%). This pattern highlights the strong influence of informal social networks and mass communication in shaping maternal health awareness. The dominant role of family and friends as information sources is consistent with findings from Shirin et al. (2011), who reported that interpersonal communication—especially among close social circles—was a key driver of maternal health behavior in rural Bangladesh. Similarly, Rozliza et al. (2011) noted that in indigenous Malaysian communities, family influence often outweighed formal health education in decision-making about maternal care.

While health workers accounted for a smaller share in our study compared to informal sources, their contribution remains crucial, especially in ensuring accurate and evidence-based information. Alam et al. (2005) emphasized that engagement with trained health providers significantly improves antenatal service uptake, but also acknowledged the limited reach of such professionals in low-resource settings. The notable role of media in our findings reflects improved access to mobile and digital platforms, which is consistent with global trends showing increasing use of radio, television, and mobile phones for health promotion.

These results underscore the need for integrated communication strategies that leverage both formal (health workers, media) and informal (family, peer) networks. Strengthening the role of frontline health workers and ensuring accurate messaging through media and community influencers could enhance awareness and uptake of antenatal care, particularly in communities with low health literacy.

This study identified key barriers that hindered access to antenatal care (ANC) services among pregnant women. The most commonly reported obstacles were distance to healthcare facilities (26.20%) and unaffordability of services (25%), followed by lack of transportation (19.27%), unawareness of ANC (15.06%), and cultural beliefs (14.45%). These findings align closely with those of Mumbare et al. (2011), who reported that women in tribal and rural areas of North Maharashtra faced similar constraints, particularly related to financial hardship, poor infrastructure, and long travel distances to health centers. Similarly, Yohannes et al. (2013) found that in southern Ethiopia, geographic inaccessibility and low income levels significantly affected ANC utilization. Cultural norms and misconceptions also emerged as barriers, echoing the observations of Alam et al. (2005), who highlighted the influence of traditional beliefs and family decision-making in deterring women from seeking modern maternal healthcare. The consistency of these challenges across diverse settings underscores the importance of targeted interventions—such as mobile health clinics, free or subsidized maternal services, transport incentives, and community education programs—to address both logistical and sociocultural barriers. These steps are essential for ensuring equitable and universal access to ANC, especially for marginalized and underserved populations.

In the present study, antenatal care (ANC) practices among participants were largely positive, with 81.02% reporting regular ANC check-ups, 87.34% adhering to iron-folic acid (IFA) supplementation, and 85.24% receiving tetanus toxoid (TT) injections. These findings indicate a good level of service uptake among women attending a tertiary care facility. Comparable trends have been observed in previous research. For instance, Garg et al. (2020) reported that around 60% of respondents received ANC services, including IFA and TT, highlighting a gradual improvement in ANC coverage over time. Similarly, Shirin et al. (2011) noted that most rural Bangladeshi women were aware of and compliant with iron supplements and tetanus vaccinations, particularly when services were accessible and delivered through public health campaigns. The high rates of compliance in our study may be attributed to effective hospital-based counselling and the availability of free maternal health services under government schemes. However, the 18.97% of women not attending regular check-ups and the small proportion non-compliant with supplements reflect ongoing gaps in service reach and patient education. These results reinforce the need for continuous efforts in strengthening outreach, follow-up, and community engagement to achieve universal ANC coverage and improved maternal outcomes.

In this study, most women received antenatal care (ANC) from formal sources, with 45.78% attending health institutions and 35.24% utilizing hospital services. However, 18.97% relied on traditional birth attendants, and notably, all women in this group lacked knowledge about ANC. This reflects a strong link between low awareness and the use of non-institutional care. Similar trends were reported by Garg et al. (2020) and Alam et al. (2005), where women with poor ANC knowledge were more likely to choose home-based or traditional care. The continued reliance on traditional providers, especially among less educated and underserved women, highlights the need for community-based education and better integration of traditional birth attendants into the formal healthcare system to improve maternal health outcomes.

CONCLUSION

In today's time, with increasing awareness and urbanization, still 18.97% of pregnant women in our study were seen to have inadequate knowledge about ANC. Which is alarming owing to the spread of media awareness and presence of health facilities in various rural part. Therefore, it is needed to bring

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about behavioral changes along with awareness in order to overcome the existing cultural and social stigmas. Transport, and supplement facilities in peripheries was also seen to be a concerning factor along with financial constrains.

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