

Knowledge, Attitude, and Practice Regarding Antenatal Care among Husbands of Primiparous Mothers Attending Antenatal Clinics at De Soysa Maternity Hospital in Colombo

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Abstract

Antenatal care (ANC) aims to monitor the health status of the mother and her baby during the antenatal period. In the Sri Lankan cultural setting, husbands play a major role as decision makers in the family context, and their knowledge, attitude, and practice (KAP) positively impact maternal health. These factors help prevent complications during the antenatal period, enable early detection of risk factors, timely treatment, and ensure access to health facilities. A quantitative non-experimental research study was conducted at the antenatal clinic of De Soysa Maternity Hospital in Colombo to assess KAP regarding ANC among husbands of primiparous mothers attending the clinic. A total of 250 husbands of primiparous mothers were subjected to a self-administered questionnaire over a period of two months. The study demonstrated significant associations between socio-demographic factors and husbands' KAP regarding antenatal care. Education was strongly correlated with knowledge ($r = 0.402$, $p < 0.001$), and younger husbands (18–24 years) showed better knowledge compared to older husbands. Attitudes were significantly influenced by ethnicity ($r = -0.213$, $p = 0.001$) and religion ($r = -0.127$, $p = 0.046$), indicating variation in favourability across groups. In contrast, practice showed no significant association with income ($r = 0.090$, $p = 0.158$). The study highlights the importance of focused, culturally sensitive interventions to promote active husband participation during the antenatal period. In conclusion, the study provides valuable insights into husbands' involvement in antenatal care. Variables such as age, education, ethnicity, and religion influenced knowledge and attitudes. These findings support efforts to strengthen male involvement for better maternal and child health outcomes.

Keywords: Antenatal care; Spouse support; Knowledge, Attitude and Practice (KAP); Primiparous mothers; Maternal health

Introduction

Antenatal care (ANC) aims to monitor the status and health condition of the mother and her baby, in order to early diagnosis of any kind of pregnancy-related problems throughout the regular ANC during pregnancy, which contributes to positive outcomes in delivery. According to Pruthi et al., ANC helps early detection, treatment, and prevention of complications associated with maternal morbidity and mortality (Pruthi, Bacchani, & Singh, 2016). In South Asia, only 49% of women attend at least four ANC visits, while 80% attend at least one, suggesting that a key challenge is ensuring that women initiate ANC early in

pregnancy and continue attending after their first visit (Winters et al., 2023). Approximately 800 women die every day due to complications of pregnancy and childbirth. Most of these deaths are preventable through effective interventions during the antenatal period. Here, partners can play a crucial role in achieving a positive pregnancy outcome by supporting ANC (Audet et al., 2023).

Several studies have been conducted worldwide to understand the partner's role in ANC. In a study conducted in Ethiopia, male involvement in ANC was linked to factors such as the age gap between partners, women's age at marriage, level of empowerment, type of nearby health facility, and whether health providers invited men to attend antenatal visits (Mamo, Kebede, Agidew, & Belay, 2021). A national study in Afghanistan found that when men accompanied their pregnant partners to ANC, women were more likely to attend four or more visits (Alemi, Nakamura, Rahman, & Seino, 2021). Another study further confirmed the previous observation, which found that most women who received physical, emotional, and financial support from their partners also attended the recommended number of ANC visits (Mapunda, August, Mwakawanga, Mhando, & Mgaya, 2022). However, some social and cultural influences showcased a negative impact on the role of males in ANC. In Nepal, cultural restrictions still limit their involvement in birth preparedness and ANC, pointing to a need for more community education (Pokharel, 2019). These findings suggest that while many men are willing to support their partners, cultural norms, lack of awareness, and health system challenges often reduce their ability to participate in ANC fully. Further, factors such as education level, religion, and existing knowledge of pregnancy-related care are associated with men's involvement in pregnancy (Falade-Fatila & Adebayo, 2020).

As explained, male partners' participation during ANC visits is still a challenge worldwide for optimal management of maternal health (Nyang'au, Were, & Wanzala, 2021). Hence, research is needed to identify region-specific challenges, beginning with an assessment of male partners' knowledge, attitude, and practice (KAP). Several studies have highlighted the importance of expectant fathers' KAP in improving ANC. For example, Pruthi et al. (2016) reported that while most husbands valued ANC, only about half knew that care should start in the first trimester (Pruthi et al., 2016). Many were aware of the need for supplements and tests, but gaps in knowledge still existed. Similarly, Swetha et al. (2019) found that although a high number of husbands attended antenatal visits, only a portion were aware of key services like tetanus injections (Swetha, Shivaswamy, & Srisanthanakrishnan, 2019). These findings suggest that while men are participating more in ANC, further efforts are needed to improve their knowledge and involvement for better outcomes for both mother and baby. A study by Dahake et al. (2020) in an urban health centre in India reported that 64.4% of husbands had a positive attitude toward involvement in ANC, influenced by factors such as education, occupation, distance to health facilities, waiting time, and interaction with healthcare providers (Dahake & Shinde, 2020). Another study in Iran found that overall male participation and attitude scores were low, though many men still agreed on the importance of attending medical visits with their pregnant wives. These findings show that while attitudes toward ANC are generally positive, they are strongly influenced by social, economic, and healthcare-related factors (Waseghi, Nasiri, Moravveji, & Karimian, 2021).

Studies on husbands' practices related to ANC show varying levels of involvement. A study by in Pakistan found that 84% of men showed good involvement in ANC, with most allowing their wives to visit health facilities and 85.5% accompanying them. However, their practical support was better than their overall knowledge (Younas et al., 2020).

Even though there are several studies on ANC (Chathurika, Rathnayake, Nanayakkara, Thennakoon, & Rathnayake, 2024), only a limited number of studies describe the male involvement in ANC in the Sri Lankan context (Rathnayaka & Rathnayake, 2025). Thus, it is important to study husbands' KAP in ANC in the Sri Lankan context, as it directly influences the effectiveness of ANC to identify certain obstacles that downgrade the quality of ANC. Therefore, in this study, we studied the KAP regarding ANC among Husbands in the maternity clinic of De Zoysa Hospital for women. Healthy pregnancy and childbirth are meaningful and emotional experiences for parents, and they also contribute to building a healthy nation.

Hence, these findings of this research can help guide policy and strategy for relevant authorities and will also be useful for future research studies to attain the aforementioned objectives.

Materials and Methods

A quantitative descriptive design was used to examine KAP among husbands accompanying their wives (primigravida) to antenatal clinics. The dependent variables were regarding ANC, while the independent variables included age, education, ethnicity, religion, and income level. This design allowed the researchers to summarize data using statistics and explore associations between variables. The study was conducted at De Soysa Maternity Hospital in Colombo, Sri Lanka, one of the leading maternal care hospitals in the country. The hospital serves a large number of antenatal mothers from nearby areas and includes several antenatal and postnatal care units. The target population included 250 husbands of primigravida mothers attending the antenatal clinic at De Soysa Maternity Hospital.

A simple random sampling technique was used to select participants. Sample size was calculated using the formula by Lwanga and Lemeshow (1991) with an assumed prevalence of 30%, 6% margin of error, and 95% confidence interval, resulting in a minimum sample size of 224. With an anticipated 10% non-response rate, the final sample was rounded to 250 participants. Husbands of primigravida mothers who accompanied their wives to the clinic and gave written consent in Sinhala, Tamil, or English were included in this study, whereas the husbands who were unable to read or write in any of the three main languages were excluded from the study. Data was collected using a self-administered questionnaire provided in Sinhala, Tamil, and English under four sections of Demographics (Age, education, occupation, religion, and income), Knowledge (Multiple Choice Questions-MCQs), Attitude (Assessed using a Likert scale), and the Practice (Assessed using Yes/No questions). The questionnaire was developed based on previous KAP studies conducted in India and other countries and adapted to the Sri Lankan context (Pruthi et al., 2016). Its content validity was established through review by academic staff of the Department of Nursing at the Open University of Sri Lanka and clinical experts from De Soysa Maternity Hospital. Reliability was assessed through a test-retest method with 10 participants to ensure consistency.

Ethical approval was obtained (ERCAN-008/2023) from the Ethical Review Committee of De Soysa Maternity Hospital. Participation was voluntary, and informed consent was obtained. Anonymity and confidentiality were ensured by assigning participant codes. Data was stored securely in a password-protected file. Data collection was done without interrupting participants. There were no risks involved. Participants had the right to withdraw at any time. Data was analysed using SPSS software for descriptive statistics, normalization, and correlation analysis.

Results

Socio-demographic characteristics of the participants

The age distribution of husbands at the antenatal clinic showed that more than 40% of those aged 25–31 were actively involved in ANC practices, including accompanying their wives to clinic visits and providing supportive care. Involvement decreased modestly among those aged 32–38 years, to just under 40%. Participation was limited among younger husbands aged 18–24 years (less than 10%) and among those above 38 years (about 15%). A significant number (41.20%) had completed education up to G.C.E Ordinary Level, indicating basic literacy and numeracy skills. A 39.20% had reached the G.C.E. Advanced Level. Notably, 15.2% of husbands had university qualifications, reflecting active involvement in prenatal care. However, 4.40% with Grade 5 completion were discovered. Despite their literacy level, they were present at the process, yet they may suggest the need for additional assistance in understanding antenatal information.

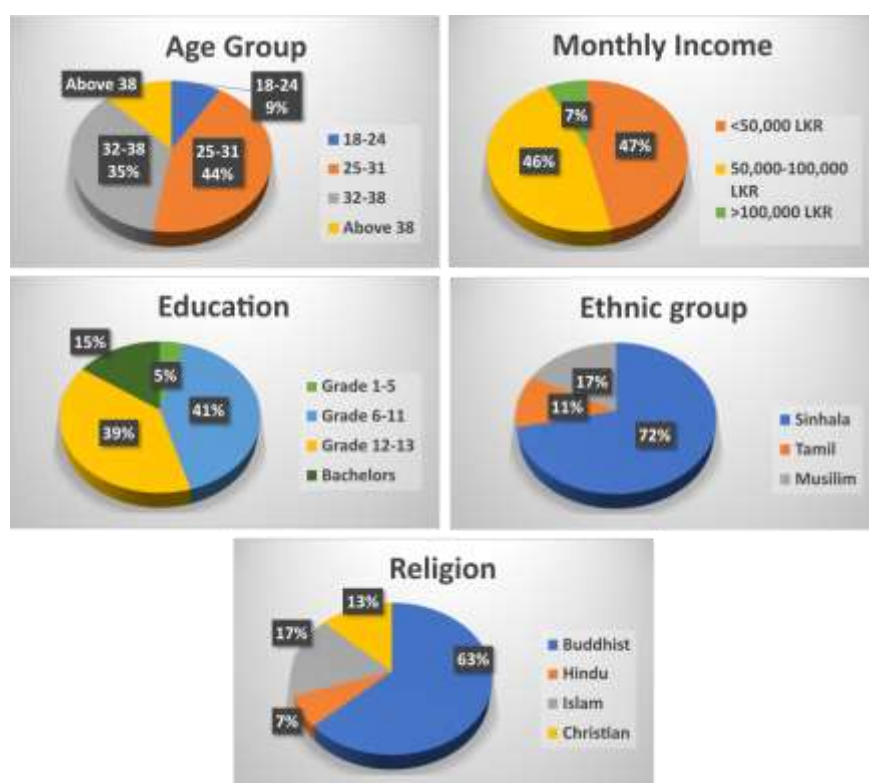


Figure 1: Frequency and percentage distribution of socio-demographic variables of primiparous mothers (N= 250).

According to the monthly income distribution of husbands attending the antenatal clinic, almost half of them (46.4%) earned less than 50,000 LKR as their monthly income, which implies the financial challenges during pregnancy. An equal percentage (46.4%) fell within the range of 50,000-100,000 LKR income. A small economically advantaged group (7.2%) earned over 100,000 LKR, securing sufficient access to ANC. Cultural sensitivity can be used as a key factor in determining the extent of the ANC that is provided. The study revealed a diverse ethnic composition among husbands attending the antenatal clinic, with 71.60% identifying as Sinhala, 17.20% as Muslim, and 11.20% as Tamil. In terms of religion, 63.20% were Buddhist, 17.20% Muslim, 12.80% Christian, and 6.80% Hindu, which reflects the altered interventions in accommodating varied perspectives on ANC.

According to Table 1, the highest percentage of correct responses was recorded for the question on compulsory supplements needed during pregnancy, with 88.4% of participants answering correctly. This suggests that most husbands were aware of nutritional requirements during pregnancy. Conversely, the lowest percentage (34%) was observed for the question regarding the normal haemoglobin level to be maintained during pregnancy. Although 54.4% of husbands knew that anaemia could occur, and 40.8% identified its signs, the lack of knowledge regarding specific values highlights a significant gap in understanding of maternal anaemia. Awareness of pregnancy-induced hypertension and gestational diabetes was moderate. While 72.8% knew that blood pressure can rise during pregnancy and 66.8% identified preventive measures, only 39.6% recognized the danger signs associated with hypertension. Similarly, 67.2% knew about increased blood glucose levels, and 68.8% identified preventive measures, yet fewer participants correctly identified the normal glucose range (61.6%) or its clinical signs (62.8%). These results indicate general awareness of these conditions but limited knowledge of their clinical implications.

Knowledge about early signs of pregnancy (68.4%), the first health professional to meet (58%), compulsory vaccinations (68.8%), and the period of first fetal movement (47.2%) showed variability in understanding different aspects of ANC. The appropriate sleeping position in the last trimester was correctly answered by 54.4% of participants. Overall, 12 out of the 17 knowledge-based questions in Table 1 received more than 50% correct responses. Lowest overall knowledge was identified for the age group of 18-24 years. In contrast, older participants (above 24 years) demonstrated a higher overall knowledge, consistent with the findings of Swetha et al. (2019), who reported that 93.5% of men in the older age groups had higher overall

knowledge of ANC, especially concerning nutrition and workload reduction, although awareness of iron tablets and tetanus injections was lacking.

Table 1. *Husband's knowledge regarding the ANC*

Question	Number of Correct Answers	Percentage
What are the early signs you notice when your spouse becomes pregnant?	171	68.4%
According to the Health system in Sri Lanka, who is the first professional to meet after confirming pregnancy?	145	58%
What are the compulsory supplements your wife needs to take during pregnancy?	221	88.4%
Which vaccine do you think is compulsory to get during pregnancy?	172	68.8%
In which pregnancy period does your wife feel the first foetal movement?	118	47.2%
What is the best position your wife should maintain while sleeping during the last three months of pregnancy?	136	54.4%
Do you know that blood pressure can be increased in pregnancy?	182	72.8%
What are the preventive measures for pregnancy-induced high blood pressure?	167	66.8%
What are the danger signs observed in increased blood pressure during your wife's pregnancy?	99	39.6%
Do you know the blood glucose level can be increased during your wife's pregnancy?	168	67.2%
What is the normal blood glucose level to maintain during pregnancy?	154	61.6%
What are the clinical signs of increased blood glucose level during pregnancy?	157	62.8%
What are the preventive measures for early identification of high blood glucose levels?	172	68.8%
Do you know about anaemia occurring during pregnancy?	136	54.4%
What is the normal haemoglobin level to maintain during pregnancy?	85	34%
What are the signs of anaemia occurring during pregnancy?	102	40.8%

A large proportion of participants had completed education up to the G.C.E. Ordinary Level, which provided them with adequate literacy and numeracy skills to grasp antenatal concepts. Those with G.C.E. advanced-level or university education showed greater involvement in prenatal care. A small group with only Grade 5 education was also represented; despite lower literacy, these men still participated, though likely needing additional support to fully understand antenatal information. Further supporting this trend, Pruthi et al. (2016) noted that husbands who married after age 21 had more antenatal knowledge, possibly due to higher educational attainment.

According to the statistical findings, husbands' knowledge regarding ANC was strongly influenced by their level of education. A significant positive correlation was observed between education and knowledge scores ($r = 0.402$, $p < 0.001$), indicating that husbands with higher education levels were more knowledgeable about ANC practices. Regression analysis further confirmed education as a strong predictor of knowledge, with highly educated husbands scoring considerably better ($F = 47.890$, $p < 0.001$). Age group was also found to play a role, although its effect was smaller compared to education ($F = 6.536$, $p = 0.011$). Together, these findings suggest that while overall knowledge among husbands was reasonably high, critical gaps remain in understanding specific clinical indicators. Educational interventions, particularly targeting men with lower literacy or education levels, could enhance male involvement in maternal care and contribute to better maternal and foetal outcomes.

In the second phase, attitudes towards ANC were analysed based on ethnicity and religion. Both Sinhala and Tamil husbands exhibited highly positive attitudes toward supporting primiparous mothers. In comparison, Muslim husbands indicated some marginal variations. Religious affiliation also influenced attitudes. Buddhist and Hindu husbands demonstrated positive attitudes, while Muslim and Christian husbands showed slightly less favourable attitudes. According to Pruthi et al. (2016) 82% of men believed

their primary role was financial support rather than involvement in childbirth preparation. According to the statistical analysis, ethnicity showed a negative correlation with attitude scores ($r = -0.213$, $p = 0.001$), indicating that certain ethnic groups demonstrated less supportive attitudes toward ANC. Similarly, religion was found to negatively influence attitudes, though to a lesser extent ($r = -0.127$, $p = 0.046$). Regression analysis confirmed both ethnicity ($F = 11.811$, $p = 0.001$) and religion ($F = 4.035$, $p = 0.046$) as significant predictors of attitude. These results highlight the importance of addressing cultural and religious influences when promoting positive attitudes toward ANC.

According to Table 2, among the practices assessed, the lowest levels of involvement were observed in three areas. Only 76.0% of husbands reported reminding their wives to engage in regular exercise during pregnancy, making this the least practiced supportive behaviour. Similarly, 77.6% discussed marital relationships and family planning methods with their wives, indicating limited communication in this domain. This finding highlights the need for couple-focused counselling and health education to encourage open discussions during pregnancy. In addition, just 81.2% reported changing negative health practices such as smoking and alcohol use. These findings suggest that, while most other practices scored above 90%, gaps remain in areas related to lifestyle modification, communication, and proactive encouragement of healthy behaviours.

Table 2. *Husband's practice regarding the ANC*

Question	Number of Correct Answers	Percentage
Do you attend regular clinic visits with your wife?	239	95.6
Have you already decided on the health care facility to deliver your baby?	234	93.6
Have you allocated your time to participate in clinic visits with your busy schedules?	232	92.8
Do you discuss marital relationships & family planning methods with your wife during the pregnancy period?	194	77.6
Do you help to manage the stress of your wife during pregnancy with the following activities, such as helping with household work, engaging in recreational activities, and providing supportive and loving care?	242	96.8
Do you have effective communication and good interpersonal relationships with your wife during her pregnancy?	237	94.8
Are you satisfied with the ANC services received during your wife's pregnancy period?	227	90.8
Do you remind your wife to have regular exercise during her pregnancy?	190	76.0
Have you changed your negative health practices, including smoking and the use of alcohol, during your wife's pregnancy period?	203	81.2
Have you prepared for any pregnancy emergencies that can occur during pregnancy of your wife? (including severe abdominal pain, vaginal bleeding, and severe headache)	239	95.6

Swetha et al. (2019) found a significant correlation between occupational status and antenatal clinic attendance, suggesting that better financial standing supported greater involvement. However, in the present study, no significant differences were observed between income levels and ANC practices. For example, monthly income showed only a weak and statistically insignificant correlation with practice scores ($r = 0.090$, $p = 0.158$). Regression analysis further confirmed that income did not significantly predict practice ($F = 2.004$, $p = 0.158$). This indicates a consistent level of engagement in supporting primi mothers,

regardless of income, which further suggests that actual involvement in ANC is influenced by factors beyond financial resources, such as time availability, social norms, or personal motivation.

Discussion and Conclusion

This study showed that education was the strongest factor influencing husbands' knowledge of ANC. Husbands with higher education had significantly better knowledge ($r = 0.402$, $p < 0.001$), and regression confirmed education as a strong predictor ($F = 47.890$, $p < 0.001$). Younger husbands (18–24 years) showed 9% knowledge, while those aged 25–31 showed the highest involvement, with more than 40% active in antenatal practices. Attitudes were shaped mainly by cultural and religious factors. Ethnicity had a significant negative correlation with attitude ($r = -0.213$, $p = 0.001$), and religion also showed a negative effect ($r = -0.127$, $p = 0.046$). Regression confirmed both ethnicity ($F = 11.811$, $p = 0.001$) and religion ($F = 4.035$, $p = 0.046$) as significant predictors. These results highlight the importance of culturally sensitive approaches to improve attitudes. Supportive practices showed high scores in most areas, such as attending clinic visits (95.6%) and preparing for emergencies (95.6%). However, some practices were weaker: only 76.0% reminded their wives to exercise, 77.6% discussed family planning, and 81.2% changed negative health habits like smoking and alcohol use. Income had no significant effect on practice ($r = 0.090$, $p = 0.158$). Overall, the findings suggest that education, cultural background, and targeted health promotion play key roles in improving husbands' knowledge, attitudes, and practices. Addressing these areas will help strengthen male involvement in ANC and improve maternal and child health outcomes.

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