Quality of antenatal care experience in rural Bangladesh: social support, respect, dignity, communication and counselling

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Research

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Abstract

Background

Quality antenatal care (ANC) can contribute to reducing maternal and neonatal morbidity and mortality. Very little information is available on the experience of care during ANC contacts in Bangladesh. This study aims to understand social support received by women, their experience of respect and dignity, and quality of communication and counselling during ANC contacts in rural Bangladesh for improving the quality of ANC services.

Methods

A cross-sectional household survey was administered in three upazillas (sub-districts) of Bangladesh in 2018. We defined the experience of care as reported by women using three indicators: social support received, respect and dignity experienced, quality of communication and counselling. Associations between explanatory and outcome variables were explored through binary and multiple logistic regression models controlling for background characteristics and health system contacts.

Findings:

Most women (79%) reported having any social support during their ANC contacts, i.e. someone was present during the ANC contact. More than half the women desired their husbands' presence during their ANC contact while only one-fourth of the husbands were present. Experiences regarding different aspects of respect and dignity were mixed. Almost all women reported that their visual (94%) and auditory privacy (94%) were maintained. However, only in 58% of the ANC contacts the health service providers sought permission before carrying physical examination. Less than half of the women reported that the health services listened to their problems, assessed the overall situation and encouraged women to take part in the discussion during ANC counselling. After adjusting for background characteristics and other covariates, the odds of experiencing respect and dignity and the odds of receiving quality communication and counselling were significantly higher (AOR 1.9 and 16 respectively at $p < 0.5$) when the women were accompanied by someone during ANC contact.

Conclusion

Ensuring quality ANC in Bangladesh required focusing on addressing the existing gaps in the experience of care for a positive pregnancy experience. This study presents the importance of social support in improving the experience of care and suggests further research to identify effective interventions for the integration of quality of care components in this context.

Background

Quality antenatal care (ANC) during pregnancy can contribute to a positive pregnancy experience and improved health outcomes for women and newborns (1-3). It can reduce maternal and neonatal morbidity and mortality, and stillbirths through prevention, early identification and management of pregnancy-related complications or pre-existing conditions (4-6). However, the quality of this care is often compromised in resource-scarce settings where women and newborns face the greatest risks to their health and well-being (7, 8).

Previously, the quality improvement initiatives at the global and country-level, focused predominantly on the technical and clinical aspects maternal and newborn health (MNH) services, i.e. provision of care. In recent years there has been a revolution in this regard, as the discussions quality of care started acknowledging the importance of experience of care while receiving MNH services (2, 9). Indeed, this has largely been in response to global realization that women's experience while receiving MNH services is sub-optimum, and often perplexed with disrespect and abuse. These observations have led to the transformations at global level toward an increased focus in the experience of care, reflected in global initiatives, such as the White Ribbon Alliance's Respectful Maternity Care Charter and the World Health Organization's (WHO) guidelines and quality of care standards (2, 10, 11). The updated ANC guidelines thus emphasizes that every women should be able to enjoy the contacts with the health services which contribute to a positive pregnancy experience (2).

While Bangladesh has made impressive rains in reducing maternal and neonatal mortality over the past several decades, these rates still remain too high. Moreover, the latest Bangladesh Maternal Mortality Survey (BMMS) suggests that the progress in reducing maternal mortality has stalled (12). Use of MNH services remains low. Indeed, only 37% of pregnant women attend at least four antenatal care (ANC) contacts, 47% of births occur in health facilities and 48% (6% in the case of home-based births) of women receive postnatal care from a skilled health-care professional within the first two days after birth (12). As such, it is particularly critical that each contact women have with the formal health sector is of high quality in order to optimize the benefits of this care.

Previous studies have suggested that the technical content of ANC contacts is suboptimal in facilities (1, 8), particularly in rural settings (13). Others have found that health facilities in rural areas often lack functioning equipment, ANC/PNC registers, essential medicines, electricity, and running water to provide quality ANC (14-18). Although some studies explored the experience of care during intrapartum period (19-23), few studies have sought to understand the experience of care during ANC contacts in similar settings despite the global movement advocating for measurement and initiatives to improve respectful care. This study aims to contribute towards filling this gap by assessing women's social support, their experience of respect and dignity and the quality of communication and counselling during ANC contacts in rural Bangladesh. The findings of this study will provide the health policymakers and planners with insights from women's experience of care to improve the quality of ANC services.

Methods

Study design and settings

A cross-sectional household survey in three sub-districts (Bijoynagar, Kasbah and Sarail) of Brahmanbaria district, Bangladesh was conducted in 2018. Brahmanbaria district is located in the east-central region of Bangladesh. Each sub-district included in the study has an approximate population of 300,000. The economy of Brahmanbaria is based primarily on agriculture. Supplementary Table 1 outlines the population and health systems of the selected sub-districts.

Study population, sample size and sampling

This study included women who had a history of a live birth within 12-months of the survey. We identified the women adopting a stratified cluster sampling approach. The three selected sub-districts were considered as the strata, and the villages were regarded as clusters. The probability proportional to size (PPS) sampling technique was adopted to select 20 villages (PPS clusters with approximately 1,000 populations) from each sub-district. A sketch map was drawn for the selected villages indicating village boundaries, household locations, and important landmarks. Then all households were enumerated and listed. All eligible women from the selected villages/clusters were visited by data collectors and invited to participate in the survey. A maximum of three household visits was conducted at different times and on different days of the week when women were not available on the first and second attempts. A total of 1,367 women were successfully interviewed using an interviewer-administered structured questionnaire. The non-response rate was less than 1%.

Data collection

The household survey was conducted between March and May of 2018. Trained data collectors approached all eligible women for an interview using a structured questionnaire. During the interview, women were alone, without the presence of their husbands or other family members.

The structured questionnaire adapted the majority of questions from the validated survey instruments of Bangladesh Demographic and Health Survey (BDHS), Bangladesh Maternal Mortality Survey (BMMS) and Multiple Indicator Cluster Survey (MICS) (24-26). In addition, the experience of care specific questions was based on desk review and expert consultation. The questionnaire was pre-tested in non-selected villages of the sub-districts. Based on the pre-test findings the tools were revised.

The data collectors were recruited locally so that they would be familiar with the local context, culture, norms, and language. It facilitated their access to the communities and their ability to build rapport with the respondents. icddr,b master trainers provided three days of extensive training on the data collection tools to the data collectors, followed by four days of field practice. In addition, during data collection, bi-weekly refresher training was conducted.

Data management and analysis

Data analysis was performed using STATA 14.0 (StataCorp. 2015. Stata Statistical Software: Release 14. College Station, TX: StataCorp LP.).

Socio-demographic characteristics, e.g., age, educational attainment, family size, and parity, were transformed into categorical variables. Due to small numbers, all other religions except 'Muslim' were grouped into one category and coded as 'other'. We used the standard steps of principal component analysis to generate the socio-economic index of households that were interviewed, based on which the wealth quintile was generated (27, 28). Household-level variables such as household possessions; materials used for the construction of floor, wall, and roof; drinking water source; toilet facilities; and ownership of land and domestic animals were used to generate this index.

We first ran descriptive analyses to examine the background characteristics and the distribution of ANC contacts. Experience of care during ANC was considered as the main outcomes of interest in this paper. The following indicators, as reported by women, were used to define the experience of care during ANC contacts:

I. **Social support:** We defined the social support of women during ANC contacts with the following six indices: whether a woman's husband travelled with her to during the ANC contact, whether the husband was present during the ANC contact (inside the consultation room), whether any other family members (besides the husband) were present, whether relatives/neighbors/friends (except husband and family members) were present, whether women wanted their husband to be present during the ANC contact, and whether the healthcare provider asked the women about their preference of husband's presence during the contact.
II. **Respect and dignity:** We defined respect and dignity during ANC contacts with the following six indices: visual privacy (i.e., no person other than the health service provider could see the woman during the contact), auditory privacy (i.e., no person other than the health service provider could overhear the discussion during the contact with the woman), whether the health service provider asked permission before carrying a physical examination, whether the health service provider explained the process of examination, whether the woman felt that her privacy was violated during the consultation, and whether at any point during the visit the woman felt humiliated or disrespected by the health service provider.
III. **Counselling and communication:** Using WHO's *Counselling for maternal and newborn health care: a handbook for building skills* as a guide (29), we defined counselling and communication during ANC contact using the following seven indices: whether the health service provider greeted the woman at the initiation of the ANC contact, whether the health service provider listened to the women's problems, whether the health service provider assessed women's knowledge regarding care during pregnancy, childbirth and after the birth of herself and her newborn, whether the health service provider assessed the overall situation of the woman, her family and problems she may be facing, whether the health service provider tried to help the women to find solutions to her problems, whether the health service provider encouraged the woman to speak during the discussion, and whether women understood the information provided by the health service provider.

We presented the current status of social support, respect and dignity, and counselling and communication based on the total number of ANC contacts, which implies that some of the women had more than one ANC contacts. We then took the sum of the selected indices to generate composite scores for respect and dignity (score of 0-6 where no=0 and yes=1), counselling and communication (score of 0-14, where no=0, somewhat well=1, and very well=2). Then, the composite scores of respect and dignity were categorized as low (score 0-5) or high (score 6). For communication and counselling, the composite scores were categorized as low (score 0-10) or high (score 11-14).

Chi-square tests were initially used to explore whether there is an association between the main explanatory variables (social support) and outcomes of interest (respect and dignity, and counselling and communication). Then measures of association between social support during ANC contacts and experience of care regarding respect and dignity, and communication and counselling were tested through binary logistic regression. The effect of covariates and known confounders (background characteristics and health systems contacts) were adjusted by multiple logistic regression models for the following factors: age, education, religion, parity, ANC status, and wealth quintile (30-33). Similarly, the effect of different indices of communications and counselling on women's understanding of the information were presented with multiple logistic regression models.

All odds ratios (ORs) and adjusted odds ratios (AORs) were reported with 95% confidence intervals (CI). An association (OR or AOR) was considered significant if both the lower and the upper limit of the CI were more or less than one.

Findings

Background characteristics of the women who had a history of birth in 12-months preceding the survey are presented in Table 1. Of the 1367 women who were interviewed, nearly half of the women were under 25 years of age, and only 8% of women were over 34 years of age. More than half of the women (58%) had completed primary schooling (5-9 years), and only 20% of women had secondary schooling completed (more than 10 years of schooling). The majority of the respondents were Muslim (97%), and around 70% of the respondents were multiparous. Approximately one-quarter of women did not attend any ANC, and only 8% attended 4 or more ANC contacts during their most recent pregnancies.

Table 1: Background characteristics of women with a history of birth in 12-months preceding the survey in Brahmanbaria, Bangladesh, presented in percent distribution, (N=1367 women)

Background characteristics	%
Age	
15-24 years	48.4
25-34 years	43.7
35+ years	7.9
Mean age in years (SD)	25.3 (5.2)
Education	
Primary incomplete (0-4 years)	20.7
Primary complete to secondary incomplete (5-9 years)	58.4
Secondary complete or higher (10+ years)	20.9
Mean years of schooling (SD)	6.7 (3.4)
Religion	
Muslim	97.4
Others (Hindu/ Christian etc.)	2.6
Family size	
1-4	24.8
5 or more	75.2
Parity	
Primipara	30.1
Multipara	69.6
ANC Status	
None	26
1	27
2	25
3	15
4	7
5 or more	1
Wealth quintile	
Lowest	20.0
Second	20.0
Middle	20.0
Fourth	20.0
Highest	20.0

Figure 1 presents the social support that women had during their ANC contacts. More than half of the women reported that they desired their husbands' presence during their ANC contact. However, husbands travelled with their wives to the health facility for only in 40% of the ANC contacts and only one-fourth of the husbands were present during the ANC contacts. In the majority of ANC contacts (59%), family members other than husbands were present whereas other persons (relatives, neighbors, friends) were present in 17% of the ANC contacts. Women reported that in 79% of the ANC contacts someone from their social

circle was present. In less than 10% of ANC contacts, women reported that the health service provider asked about their preference of husbands' presence during the contacts.

Figure 1: Social support during ANC contacts, reported by the woman who had a birth in the 12-months preceding the survey, presented in percentage (N=2125 ANC contacts)

Respect and dignity experienced by women during their ANC contacts are summarized in Figure 2. Visual and auditory privacy was maintained (no one other than the health service provider and those that she had invited to be present could see or hear them) in more than 90% of ANC contacts. The health service provider asked permission before carrying physical examination during 58% of ANC contacts and explained the process before conducting the physical examination during 56% ANC contacts. Almost without exception, women did not report receiving any disrespectful behavior from the health service providers, including verbal mistreatment or disrespectful tone of voice and facial expressions, during their ANC contacts.

Figure 2: Respect and dignity experienced during ANC contacts, reported by women who had a birth in the 12-months preceding the survey, presented in percentage (N=2125 ANC contacts)

Figure 3 shows the percent distribution of women's reported quality of communication and counselling during their ANC contacts in stacked bars. According to the women's report, during half of the ANC contacts, the healthcare providers greeted the women and listened to their problems very well. The women were not greeted at all, and the health service providers did not listen to their problems at all in 5% of ANC contacts. During one-third of these ANC contacts, the health service providers tried very well to assess the woman's knowledge of pregnancy, childbirth, and maternal and newborn care and only in 16% of ANC contacts they assessed the overall situation of women including family life and problems very well. During 40% of ANC contacts, women reported that the health service provider helped them to find solutions to their problems very well. Only in one-third of the ANC contacts, the health service providers encouraged women to participate in the discussion very well, whereas in 16% of contacts they did not receive any encouragement at

all. Only in 50% of ANC contacts, women reported that they understood the information provided by the health service providers very well. In 6% of the contacts, they reported that they did not understand the information at all.

Figure 3: Quality of communication and counselling during ANC contacts, reported by the women who had a birth in the 12-months preceding the survey, presented in percentage (N=2125 ANC contacts)

Table 5 summarizes the relationship between social support during ANC contacts with experience of care i.e. respect and dignity, and counselling and communication separately. After adjusting for background characteristics and other covariates, the odds of experiencing respect and dignity (High score= 6) was 1.9 times (95% CI 1.49, 2.34) higher among those contacts where the women had any social support (a companion from the woman's social circle was present) compared to the women who did not. A similar pattern was also noted for the other aspects of the experience of care, as the odds of receiving quality communication and counselling (High score ≥11) was 1.7 times (95% CI 1.11, 2.61) higher when the women had any social support during the ANC contact than when they did not.

Table 5: Relationship between social support and experience of care during ANC contacts, reported by the women who had a birth in the 12-months preceding the survey, presented in adjusted odds ratio (N=2125 ANC contacts)

	Experience of respect and dignity (High score= 6)			Quality of communication and counselling (High score ≥11)		
	%	OR (CI)	AOR (CI)	%	OR (CI)	AOR (CI)
Age						
15-24 (ref)	43.7			34.4		
25-34	44.6	1.0 (0.87,1.24)	1.2 (0.96,1.44)	29.7	0.8 (0.67,0.97)	0.8 (0.63,0.96)
35+	44.2	1.0 (0.7,1.49)	1.1 (0.73,1.64)	35.0	1.0 (0.69,1.53)	0.9 (0.6,1.40)
Education						
0-4 years(ref)	38.2			37.9		
5-9 years	40.1	1.1 (0.83,1.41)	1.2 (0.88,1.56)	32.4	0.8 (0.60,1.03)	0.8 (0.58,1.04)
≥10 years	54.3	1.9 (1.44,2.55)	2.4 (1.72,3.36)	29.7	0.7 (0.52,0.93)	0.6 (0.45,0.90)
Religion						
Hinduism/Christianity/others (ref)	36.6			35.4		
Islam	44.4	1.4 (0.88,2.19)	1.6 (1.00,2.58)	32.2	0.9 (0.55,1.38)	0.9 (0.54,1.39)
Family size						
1-4 (ref)	41.2			34.3		
5 or more	45.1	1.2 (0.96,1.43)	1.2 (0.95,1.44)	31.7	0.9 (0.72,1.09)	0.9 (0.74,1.14)
Parity						
Nullipara (ref)	43.0			31.8		
Multipara	44.5	1.1 (0.89,1.28)	1.1 (0.88,1.34)	32.7	1 (0.86,1.27)	1.1 (0.9,1.39)
Wealth Quintile						
Lowest (ref)	38.6			39.4		
Second	50.9	1.6 (1.18,2.31)	1.6 (1.14,2.3)	29.8	0.7 (0.46,0.92)	0.6 (0.45,0.92)
Middle	39.5	1.0 (0.75,1.45)	0.9 (0.63,1.26)	30.9	0.7 (0.49,0.96)	0.7 (0.49,1.00)
Fourth	43.9	1.2 (0.91,1.7)	0.9 (0.67,1.32)	31.2	0.7 (0.51,0.96)	0.7 (0.53,1.05)
Highest	45.8	1.3 (0.99,1.82)	0.9 (0.61,1.22)	32.8	0.8 (0.55,1.02)	0.8 (0.59,1.18)
Type of health facility						
Private (ref)	45.4			32.5		
Public	29.5	2 (1.42,2.8)	1.9 (1.38,2.76)	30.1	1.1 (0.8,1.57)	1.1 (0.79,1.57)
Type of provider						
Nurses/ paramedic and others (ref)	34.6			23.1		
Doctor	44.8	1.5 (1.06,2.22)	1.4 (0.96,2.07)	32.9	1.6 (1.08,2.49)	1.7 (1.11,2.61)
Social support						
None present (ref)	33.9			24.7		
Someone present	46.9	1.7 (1.39,2.14)	1.9 (1.49,2.34)	34.4	1.6 (1.26,2.03)	1.6 (1.24,2)

Figure 4 presents the relationship of each aspect of the quality of communication and counselling during ANC contacts and women's understanding of the information provided by the health care providers, reported by the women. When the health care providers encouraged women to take part in the discussion, the likelihood of women's understanding was 4.2 times higher compared to the women who were not encouraged to take part in the discussion. When health care providers listened to the problems of the women and try to help them finding the solution to those problems, the likelihood of women's understanding were 3.6 and 3.5 times higher respectively comparing to the women whose health care provider did not listen to their problems and did not help them find the solutions. Moreover, it shows that the likelihood of women's understanding was 17 times higher in presence of 4-6 quality of communication and counselling aspects comparing to the presence of 0-3 quality of communication and counselling aspects.

Figure 4: Association between each aspect of quality of counselling during ANC contacts with women's understanding of the information provided by the health care providers, reported by the women who have had a history of birth in the 12-months preceding the survey, (N=2125 ANC contacts)

Discussion

While previously neglected, the experience of care during ANC contacts has risen to prominence in the quality of care discourses as a critical element to promoting the health of women and newborns and ensuring a positive pregnancy experience. In this paper, we present that the experience of ANC contacts in rural Bangladesh, where social support and perceptions of privacy are reported to be better than other aspects such as consent, interpersonal communication and counselling. It is critical to work on ensuring these aspects of ANC in order to optimize the benefit of each contact which women have during pregnancy.

Consistent with other studies conducted in the context of rural Bangladesh, we found the coverage of ANC to be relatively low compared to the ambitious targets set at the global and national level (8, 12, 34, 35). With less than one-tenth of women attending at least four ANC contacts, the global vision of women attending eight visits as proposed in the most recent WHO guidelines seem that it will be difficult to achieve in the near term (2). Considering how rarely women attend ANC, it is particularly important to

maintain the quality of each contact, both in the provision and experience of care. Each visit represents an opportunity for the formal health sector to influence the care of women and their fetus during the pregnancy period. The alternate way of looking at is through the perspectives of women. Approximately three-quarters of women attended at least one ANC contacts, and of them, one-third did not come back for the second contact. This is a missed opportunity for the health systems to capitalize on the first contact, which could be explained by the gaps in quality of care, particularly the experience of care.

Social support, or the support that women receive from their personal social network, i.e. from husbands, families, friends or neighbors, can help them feel more comfortable during the ANC contacts as the environment of the health facility or the health care provider can be “foreign” and intimidating for them. Moreover, the accompanying person can advocate for her health and preferences in this “foreign” context (36, 37). Our findings suggest that social support during ANC is quite high, with most of the women benefiting from the attendance of someone from among their social circle. In our study, around two-thirds of the women were accompanied by their family members. Although we do not have specific data, other studies conducted in similar settings reported that such social support was provided by a female member of the woman’s family, and sometimes a female person outside of the family (38). This is not surprising, given that pregnancy and childbirth are often considered women-centric life transitions (39).

However, men seem to be playing an important role in providing social support during ANC as well, with nearly half of women reporting that their husbands travelled with them to the health facility or health care provider for ANC. This companionship did not necessarily translate into men’s attendance during the contact, as women reported that their husbands remained present during less than a quarter of the ANC contacts. Studies suggest that involvement of husband during ANC contacts improves MNH utilization and skilled birth attendance (40, 41). This may be an important area to explore for increasing the use of skilled and appropriate services for women; however, this should only be promoted taking women’s preferences and expectations into consideration. Slightly over half of the women reported that they would like their husband to be present during the consultation. In order for this to happen, health services should be male-friendly (42), so that these preferences can be accommodated. We cannot assess the degree to which health facilities are male-friendly in our study, but given that few women in our study reported that a health service provider even asked whether they wanted their husbands to be present suggests that there is work to be done in this regard. Although the Maternal Health Strategy of Bangladesh emphasizes on quality of care, including the experience of care aspect, it does not explicitly provide guidance on promoting male involvement and male-friendly environment during ANC consultations (12).

Regarding respect and dignity, we found that women overwhelmingly consider that their privacy was maintained during ANC contacts. This was a bit surprising, given that privacy has been demonstrated as a major challenge in several studies across different settings (21, 23, 43-45). While it is possible that visual and auditory privacy was maintained during these visits such as conceptualized in global normative documents (2, 46, 47), it is also possible that women in Bangladesh conceptualize privacy differently and that their expectations of privacy are maintained even if others, particularly women, can see and hear them during the visit. Alternatively, it is possible that due to the prior experience in public

health facilities or prior knowledge about the service delivery process in these facilities, women accepted those aspects challenging their privacy during ANC consultations (48). Women's understandings, expectations and preferences around privacy should be explored to design actions to promote privacy which articulates with their conceptualizations and desires.

In addition, women rarely reported having been disrespected or abused by health service providers in any way during the contact. This finding stands in contrast to a number of studies which have documented disrespect and abuse of women when obtaining maternal health services, including ANC in various contexts (43, 49) (50-54). This contrast in our study compared to others may be explained by the strong social values around respect in the Bangladeshi context. It may also be related to expectations and conceptualizations around respect and dignity as an action considered as disrespectful in one context may not necessarily be interpreted as disrespectful in another (55, 56). However, our results are encouraging as the majority of the women felt that they were treated with respect during the ANC contacts. This may also encourage the community to use formal health services during pregnancy, for birth as well as following birth.

Consent is fundamental to the experience of care, which appeared to be an issue in our study as over half of women reporting that the health service provider asked for their permission prior to carrying out physical examinations, or that the provider explained what they were going to do beforehand. This suggests that obtaining consent was not routinely and appropriately practiced while providing maternal health services, which is also reported in other studies in similar settings (19, 22, 57, 58). This may be due to the heavy workload of health service providers, as they may be rushed to meet their obligations to provide services. A health care provider should take into account the physical and emotional discomfort/pain that physical examinations can cause to a woman. The cultural context of a place may lead a woman to hide her pain during invasive examinations. Moreover, religion plays an important role in Bangladesh, and there may be more resistance to physical examinations due to conceptualizations around shame and purdah (59, 60). Health service providers should be sensitive to this and be particularly careful to explain the processes of physical examinations and obtain consent prior to carrying out examinations.

The capacity of health workers to interact respectfully with women and families and to counsel them on MNH issues effectively is critical to improving women's experiences of receiving MNH health services. Our findings suggest that counselling and interpersonal skills of health service providers is a major area for improvement, as few women reported that health service providers did this very well. These findings are consistent with other studies which looked at ANC counselling and found it to be a neglected component in routine practices (61-64). Our study also found that around half of the women could not understand the information provided by the healthcare provider during the ANC contacts, which is a reflection of the gaps in communication and counselling skills. For a positive patient-provider interaction, it is important that healthcare providers share information with women about their condition, procedures required, and advice on care. Effective communication, including active listening, understanding the context and involving women in finding solutions to their problems are important aspects emotional support as they

help them in understanding the information better as well as taking care for themselves and their baby (65).

Training health workers to improve their interpersonal and communication skills can contribute to their capacity to counsel women and families on these topics adequately. However, current training programs of health service providers in Bangladesh tend to focus almost exclusively on the provision of services, typically neglecting aspects related to interpersonal communication and counselling. Further research is needed to understand which interventions and approaches are effective for improving interpersonal skills of MNH care providers in this context.

Finally, there were variations in the experience of care based on wealth, family size and education. This is important to note, as respectful care should be provided equitably, and not based on differences in socio-demographic characteristics. Efforts should be taken to ensure that all women are treated with dignity and benefit from support, counselling and positive interpersonal communication during their contacts with the formal health system. Indeed, efforts should be made to promote special care for women who may be disadvantaged, for instance, due to socioeconomic or educational status. This can be done by promotion of a culture of respect within the health services and building to capacities of health service providers to interact respectfully with women and families and identify and respond to those with specific needs.

Study strengths and limitation

The study was designed to assess the experience of care during ANC contacts adopting a cross-sectional design, and we acknowledge the limitation to infer causality of the associations that we have presented. However, we have conducted multiple logistic regression to adjust for the potential effect of confounders and covariates while presenting the relationships between social support and experience of care.

Another limitation of the study was that it adopted the experience of care standards from the global normative documents. While these are recommended based on available evidence and expert consultations, they may fail to adequately capture granularity and variations in expectations, conceptualizations and preferences specific to different contexts. We, therefore, recommend further research to explore in more depths these specificities in order to promote quality of ANC which corresponds to the local preferences and realities.

Another potential limitation of our study is recall error as we accepted up to 12 months of recall. We tried to minimize this by ensuring that the data collectors received extensive training to clarify different elements of the questionnaire to the respondents for their proper understanding and appropriate recall. Also, this recall period is much shorter than the 3 to 5 years recall period that is accepted by other surveys generating national estimates (12, 66, 67). Another potential limitation could be social desirability bias, which we tried to address by recruiting data collectors from local communities who are familiar with the

local culture, language and norms. Moreover, rigorous pre-testing of the questionnaire was done to address this bias.

Finally, it is important to recognize the limitations of what we can learn regarding components of quality ANC like respect, dignity, privacy, and consent phenomena through such quantitative approaches. Therefore, we call for future research to better understand these dynamics through qualitative, and particularly ethnographic, approaches.

Conclusion

Quality ANC has been identified as critical to promoting the health of women and newborns. This study revealed the existing gaps in the experience of care and identified insufficient communication and interpersonal skills of the health service providers. The study reported the potential effect of social support on improving the experience of care. Provision of women-centered care in a compassionate and respectful manner needs to be given adequate emphasis to attract more women to health facilities and make services more women-friendly. Further research is required to understand the barriers to build the woman-provider relationship and to develop effective interventions to integrate social support and respectful care as routine components of quality MNH care in this context.

List Of Abbreviations

Adjusted Odds Ratio (AOR); Antenatal Care (ANC); Bangladesh Demographic Health Survey (BDHS); Bangladesh Maternal Mortality Survey (BMMS); Confidence Interval (CI); Ethical Review Committee (ERC); International Centre for Diarrhoeal Disease Research, Bangladesh (icddr,b); International Conference on Population and Development (ICPD); Multiple Indicator Cluster Surveys (MICS); Maternal and Newborn Health (MNH); Probability Proportional to Size (PPS); Postnatal Care (PNC); Reproductive, Maternal, Newborn, and Child Health (RMNCH); Research Review Committee (RRC); Odds Ratio (OR); World Health Organization (WHO)

Declarations

Ethical approval and consent to participate

Ethical approval to conduct the study was obtained from the Research Review Committee (RRC) and Ethical Review Committee (ERC) of icddr,b (Protocol Number PR-17088). Administrative approval was obtained from the health managers of the Ministry of Health and Family Welfare (MOHFW) at the national and local level before data collection. During the training on data collection, data collectors were trained specifically on research ethics and the maintenance of the protection of participants, including through obtaining informed consent. Written informed consent was then obtained from each participant before initiating the interview. The participants were briefed about the objectives of the study and the potential use of the data. Participation in the study was fully voluntary, and the respondents did not receive any compensation for their participation. The participants were informed that they could decline

their participation at any point without any penalty. They were then given time to reflect before signing a written informed consent form, in the case of literate participants, or providing a thumbprint and audio-recorded verbal consent for participants with limited literacy. Privacy, anonymity and confidentiality of participants were strictly maintained throughout the study. All survey-related information (paper form and electronic data) are kept under lock and key at the central office of icddr,b. All personal identifiers were removed from the dataset before analysis.

Consent for Publication

Not applicable

Availability of data and material

The datasets generated during and/or analysed during the current study will be made available upon a valid request to the corresponding author (Ahmed Ehsanur Rahman, ehsanur@icddrb.org).

Competing Interest

The authors declare that they have no competing interest.

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Authors' Contribution

AER and JP designed the study, developed the data collection tools, led the data collection process, analyzed and interpreted data as Principal and Co-Principal Investigators respectively. TM and SEA were involved conceptualizing the study and its design. SM and JEP conceptualized and developed the first draft of the manuscript as joint first authors with equal contributions and AER contributed as the senior author. ABS conducted data analysis with support from ATH. All authors read and approved the final manuscript.

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Figures

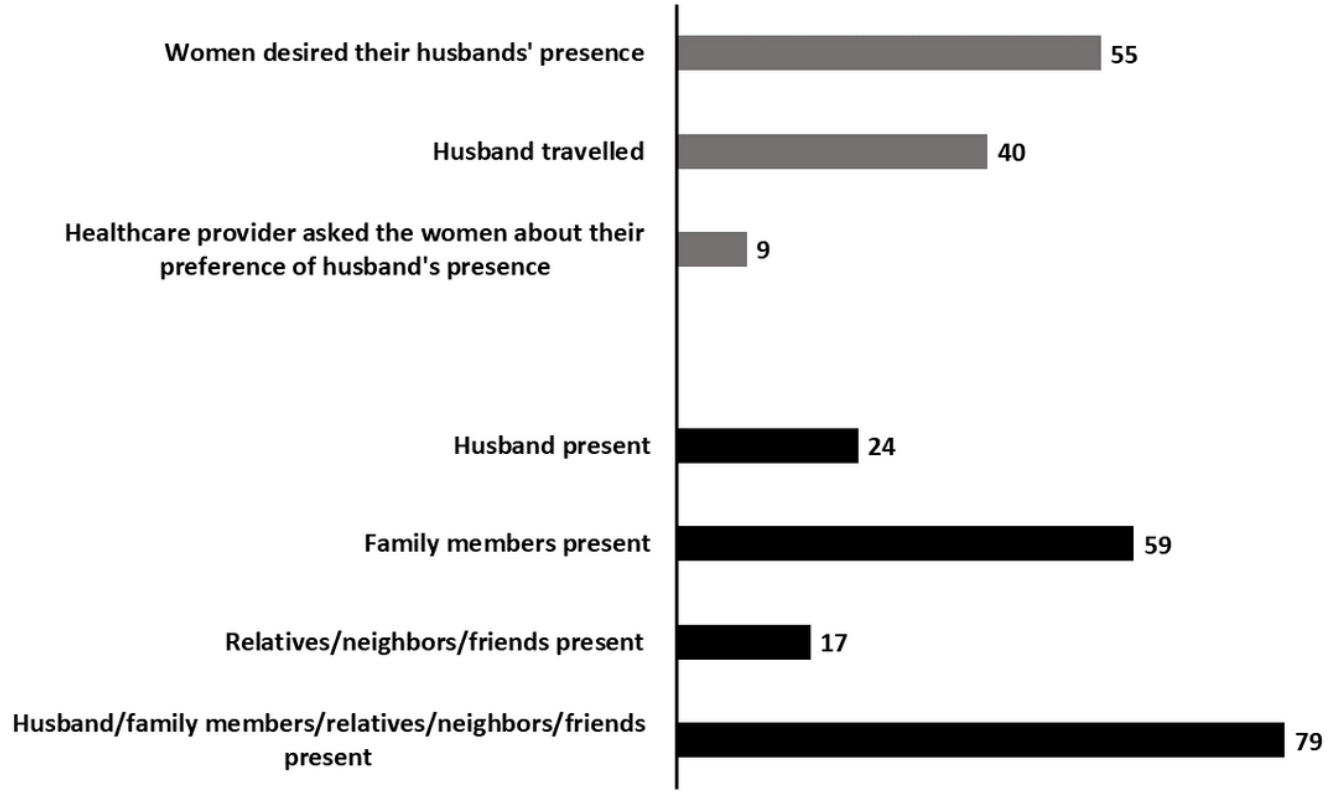

Figure 1

Social support during ANC contacts, reported by the woman who had a birth in the 12-months preceding the survey, presented in percentage (N=2125 ANC contacts)

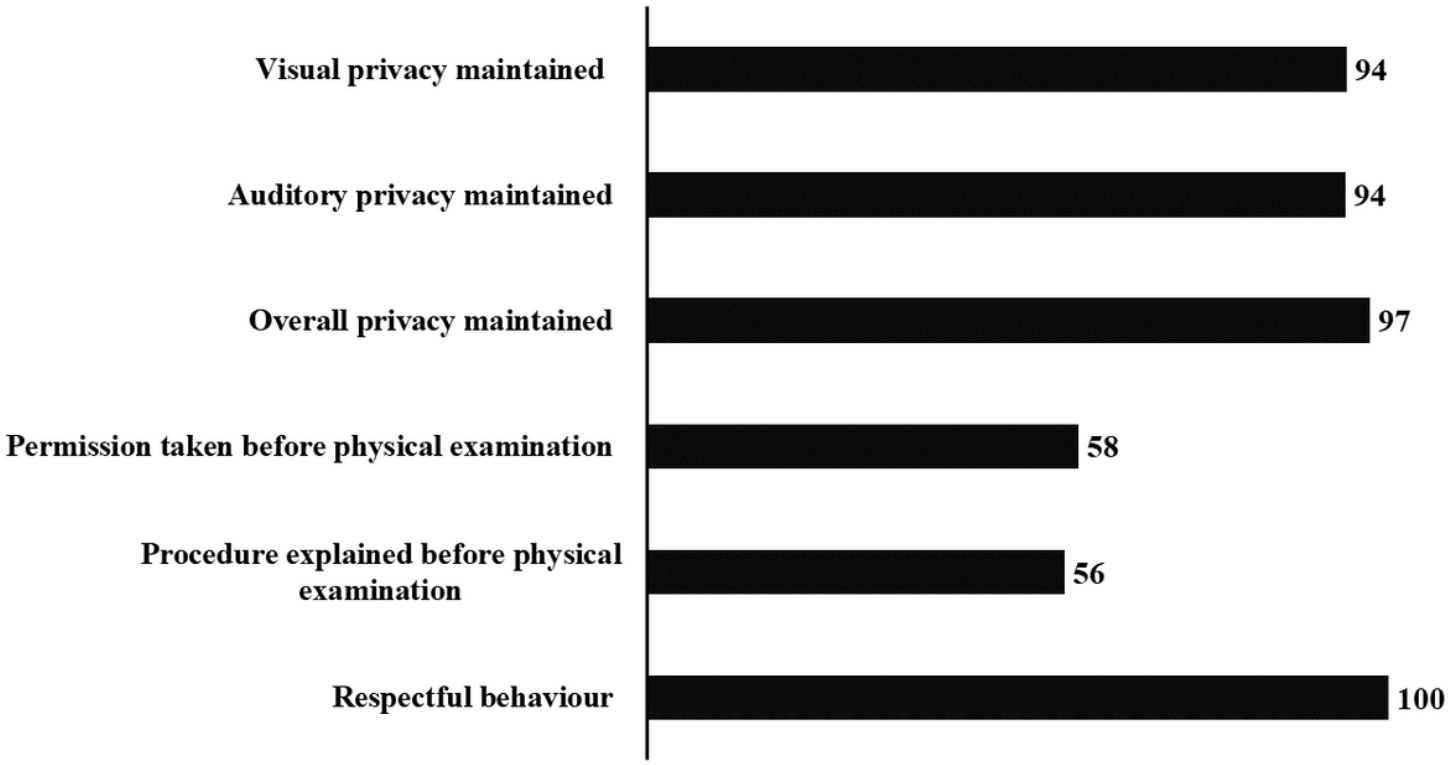

Figure 2

Respect and dignity experienced during ANC contacts, reported by women who had a birth in the 12-months preceding the survey, presented in percentage (N=2125 ANC contacts)

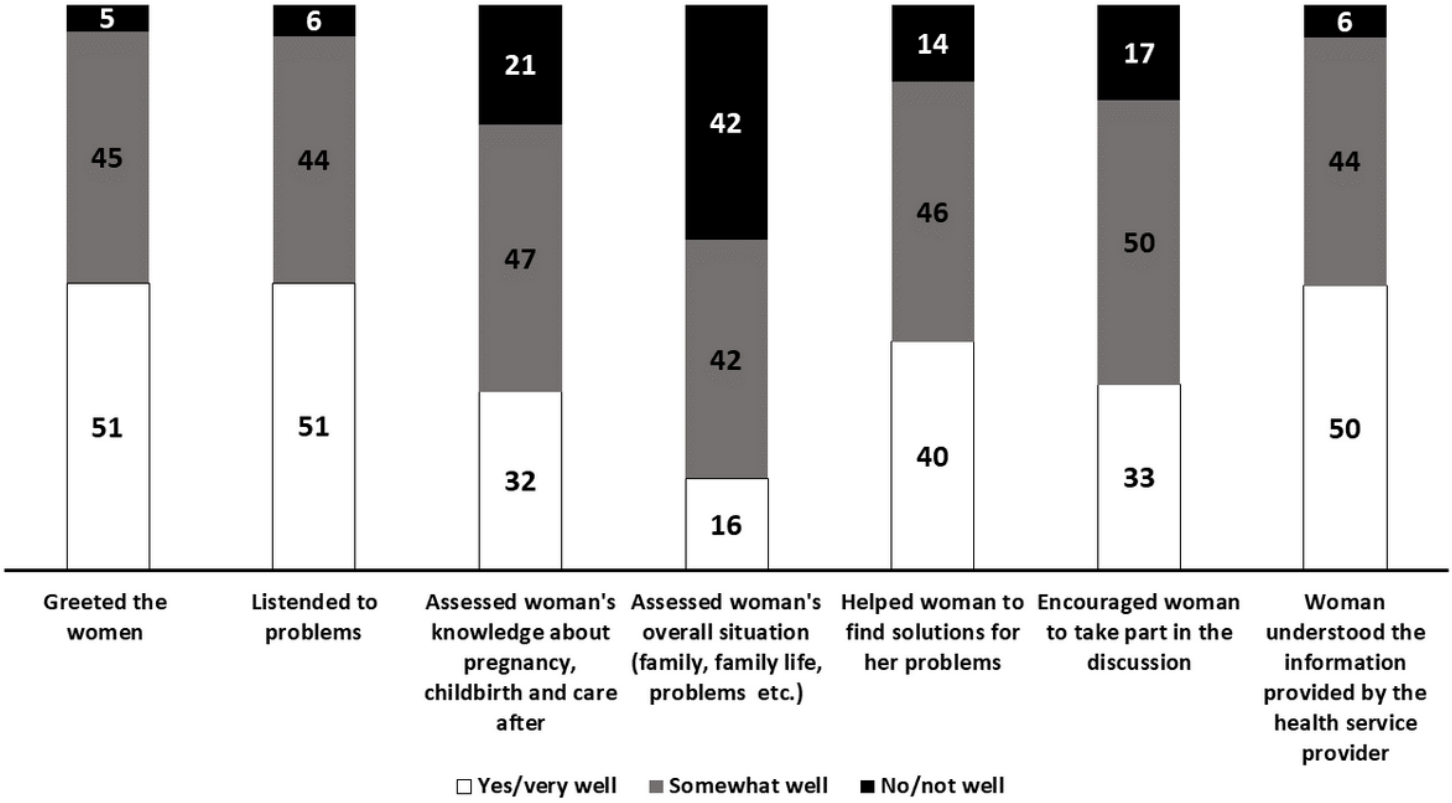

Figure 3

Quality of communication and counselling during ANC contacts, reported by the women who had a birth in the 12-months preceding the survey, presented in percentage (N=2125 ANC contacts)

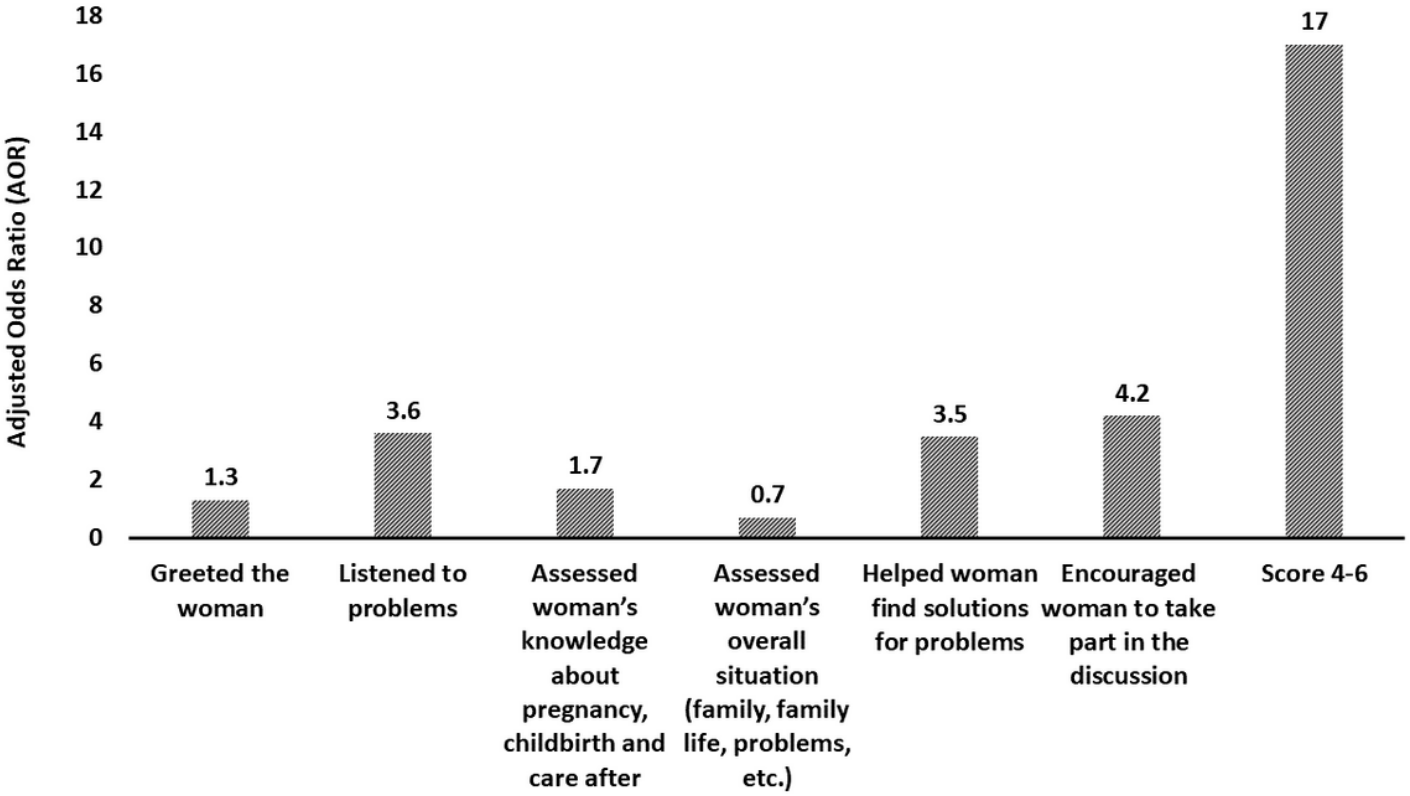

Figure 4

Association between each aspect of quality of counselling during ANC contacts with women's understanding of the information provided by the health care providers, reported by the women who have had a history of birth in the 12-months preceding the survey, (N=2125 ANC contacts)