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# Evaluation of Service-Quality Dimensions during Antenatal care in Primary Health Care Centers, Southern Kaduna Senatorial District, Nigeria

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**ABSTRACT:** Shortage of qualified health care providers, weak health systems characterized by deficiencies of functioning equipment and essential medications, attitude of health workers as well as a range of physical, cultural, and financial barriers have been implicated for inaccessibility of quality care to many women. Poor acceptance of antenatal care is due to pervasive poverty, subordinate role of women, low literacy levels and the non-existent social systems in most developing countries. A cross-sectional, descriptive research design was used and a total of 296 respondents (pregnant women) who met the inclusion criteria participated in the study. A multistage sampling technique was used in selecting the required facilities and sample were selected in proportion with the inflow of clients in the facilities. Data were collected with the aid of questionnaires adapted from Parasuraman etal (1988) and mean of 2.5 was used to ascertain satisfaction on the Likert scales. PHCs in southern Kaduna Senatorial district are very accessible to the Clients (2.574±0.540) both financially and geographically as well as the opening hours of the clinics. The Clients have full confidence in the health care givers (2.977±0.483). Clients were satisfied with the level of empathy exhibited by the health care givers toward them during antenatal care (3.346±0.688) and that PHCs Centres' care was reliable (3.017±0.346). The mean score (3.043±0.375) shows satisfaction with the responsiveness of the Health care givers to the need of the Clients' during ANC. Clients were satisfied with the general appearance of the health facilities (3.103±0.364).

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Despite the global attempts to improve maternal health in the developing countries, the present quality of maternal care evident by the magnitude of severe maternal morbidity and mortality in these regions make evaluation of service-quality maternity care to women a worthwhile study. More than 600,000 women die yearly from pregnancy-related complications globally (Ibeh, 2009). As evident in the final report of the Nigeria Demographic Health Survey (NDHS) of 2013, the estimated Maternal Mortality Ratio (MMR) was 576 per 100,000 live births during the seven-year period preceding the survey. This implies that, for every 1,000 live births in Nigeria during the seven years preceding 2013, approximately six women died during pregnancy or within two months of childbirth (National Population Commission (NPC), 2014). The estimated MMR in 2013 (576/100,000 live births) is almost the same as in the 2008 NDHS (545/100,000 live births). The difference between the 2008 and 2013 estimated MMRs is not statistically significant (NPC, 2014). Research has shown that most of these deaths could be prevented, if women have access to skilled and quality care throughout pregnancy, childbirth and the postpartum period. Severe shortage of qualified health providers, weak health systems characterized by deficiencies of functioning health care equipment, instruments and essential medications as well as the attitude of health workers, and a range of physical, cultural, and financial barriers have been implicated for inaccessibility of skilled and quality care to many women (Lanre-Abass, 2008).The root causes of poor acceptance of antenatal care with the concomitantly high maternal and perinatal mortality rates include pervasive poverty, the subordinate role of our women, low literacy levels and the non-existent social systems in most developing countries. Besides access and utilization of maternity care, poor quality care also

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contributes significantly to the high maternal and perinatal mortality figures (Fawole *et al.,* 2010). The concept of quality of care is therefore becoming increasingly recognized as a key element in the provision of health care; it links the outcome of care with the effectiveness, compliance and continuity of care. Good communication, support and compassion from staff, and having her wishes respected can help her feel in control of what is happening and contribute to making pregnancy and child birth a positive experience for the woman and birth companion (National institute for health and care excellence (NICE), 2014a and 2014b). Many developing countries do not have free health care for mothers and children under five. This is a huge barrier to mothers in these countries as 396 million people live in abject poverty meaning that they live on $1.25 a day or less. For them, even small health care fees are often impossible to pay making it less likely that they will seek care at clinic or hospital. Even if a mother lives relatively close to a health care facility, she often has no transportation or has to travel over really bad roads making the journey much longer and much more difficult. Traveling long distances is also difficult because it takes women away from their responsibilities at home such as taking care of their other children and household needs (World Health Organization (WHO), 2012). More than 60 percent of people living in impoverished countries live more than five miles from a health facility. This distance drastically increases for those living in rural areas (WHO, 2012). Hence, it is essential to determine the service-quality dimensions during antenatal care. Therefore, the main objective of this paper is to evaluate the service-quality dimensions during antenatal Care in Primary Health Care Centers of Southern Kaduna Senatorial District, Nigeria.

## MATERIALS AND METHODS

*Research Questions:* The research questions were (1). Do the clients have access to the Primary Health Care Centres of Southern Senatorial District of Kaduna State during antenatal care? (2) Do the clients have confidence in the Health Care givers at the Primary Health Care centers in Southern Kaduna Senatorial District during antenatal care? (3) How satisfied are the clients with the level of empathy exhibited by the Health Care givers at the Primary Health Care centers in Southern Kaduna Senatorial District during antenatal care? (4) How reliable is the antenatal care given at the Primary Health Care centers in Southern Kaduna Senatorial District? (5) Are the clients satisfied with the Health Care givers response during antenatal care at the Primary Health Care centers in Southern Kaduna Senatorial District? (6) Are the clients satisfied with the general appearance of the health care facilities at the Primary Health Care Centers in Southern Kaduna Senatorial District?

*Research Design:* A cross-sectional, descriptive survey research design was used for this research to evaluate the Service-quality dimensions of the Antenatal Care in Primary health care centers of Southern Senatorial Districts, Kaduna State.

*Target Population:* Southern Kaduna senatorial district comprises eight local government of Kaduna State. The total projection population of southern Kaduna Senatorial district is 2,522,700 (National Bureau of Statistics, 2016). The estimated target population for the study is the population of women within child bearing age. This is 20% of the total projection population (Funso-tope, 2016). Hence, the target population is 20% of 2,522,700 which is 504,540. (National Bureau of Statistics, 2016). The target Primary Health Care Centres were 80 out of which 20 were selected.

*Sample Size Determination:* The Sample Size of the Clients required for the study was calculated using Cochran (1963) formula for a large population was obtained using the formula:

$$n = \frac{Z^2 pq}{d^2}$$

Where: $n$ = the sample size, z = the standard normal deviate, set at 1.96 (for 95% confidence level), $d$= the desired degree of accuracy (taken as 0.05), p = the estimate of the satisfaction rate among our target population (p = 0.814, proportion of clients satisfied with services among primary health centers was 81.4%. (Sufiyan *et al.,* 2013), and q = 1-p. Hence, complementary probability = 1- 0.814 = 0.186

The sample size (n) was therefore calculated to be 233. 10 % of 233 is taken as non – response rate or attrition, which is approximately = 23. Hence, the Sample Size for the clients, n = 233 + 23 = 256.

*Sampling Technique:* A Multistage Sampling Technique was used in selecting the required Primary Health Care Centers and clients were selected proportionately base on their inflow in each PHC.

*Instruments for Data Collection:* Instruments used in the collection of data was Structured Service-quality questionnaire adapted from Parasuraman *et al.,* (1988). A 4 point modified likert scale was used adopted ranging from strongly agree to strongly disagree.

*Procedure for Data Analysis:* The collected data were analyzed by the use of descriptive statistical tools such as Percentages and mean with the aid of Statistical Package for Social Sciences version 24.0. A constant mean of 2.5 was used to ascertain the agreement of the respondents

## RESULTS AND DISCUSSION

From table 1 it was revealed that the clients take less than 30minutes to reach the PHCs and the cost of transportation is less than # 1000 from their homes and that the PHCs do not make any arrangements for them when going back home. They also agreed that the PHCs were located close to them and that they were satisfied with the opening hours of the PHCs. The overall mean scores for the access scale 2.574±0.540 (mean ± standard deviation) implies that the PHCs in southern Kaduna Senatorial district were accessible to the Clients.

Table 2 revealed that clients rejected the claim that they do not feel safe dealing with the PHCs. On the Contrary, they agreed that the personnel in the PHCs were courteous dealing with them and that they also answered all their questions about illness and as such instilled confidence in them. The overall mean score (2.977±0.483) signifies an agreement that the clients have full trust and confidence in the health care givers. Table 3 shows that clients agreed that the health care givers at the PHCs were polite and respected their privacy as well as listen to their problems. The overall mean score for the empathy scale (3.346±0.688) shows that the clients were satisfied with the level of empathy exhibited by the health care giver towards them during antenatal care. Table 4 revealed that the health personnel gave details information to their clients regarding what was wrong with them and the clients were not kept waiting to receive their medications although they had to wait a little longer to get their folder. Moreover, the PHCs kept to their promises and show interest in solving maternal problems which is error-free records. The overall mean score (3.017±0.346) for reliability of the antenatal care rendered at the PHCs Centers shows that the care was reliable. Table 5 showed that the clients were satisfied with the visiting hours and people who gave them their folders were helpful. It also revealed that the personnel gave prompt service to women, willing to help the women always and tell them exactly when services would be performed. The personnel were never busy to respond to the women's request. The overall mean score for this scale, (3.043±0.375) shows satisfaction with the responsiveness of the Health care givers to the need of the Clients' during ANC. Table 6 revealed that the PHCs were clean with clean toilets, wards and bedding. There were benches for the clients to sit while waiting and the equipment used for antenatal care were modern and sophisticated in appearance. It was also revealed that the personnel at the PHCs look very neat in appearance. The overall mean scores (3.103±0.364) signifies an agreement that the Clients were satisfied with the general appearance of the health facilities. This study revealed that the PHC Center(s) were located close to the people' (3.267±0.670), so they do not need to travel a long distance for care. This will encourage utilization of the services and as such leaving a great impact on the maternal morbidity and mortality rate. Though from this study the fact that transportation to the PHCs was expensive was rejected as indicated; 'it cost more than ₦1000 to get to the PHC Centers' (1.757±0.891), which implied that the Clients spent ₦1000 or less to transport to the PHCs. Moreover, 'it takes more than 30minutes to get to the PHCs was rejected' (2.441±0.952) and this implied that the Clients take 30minutes or less to transport to the PHCs. WHO in 2012 asserted that more than 60 percent of people living in impoverished countries live more than five miles from a health facility. This distance drastically increases for those living in rural areas. For example, in Zambia it takes an average of 11 hours for a woman in labor to reach a health care facility that is equipped to meet her needs. Therefore the farer apart the PHCs from people residential areas the less the patronage is likely to be. It is recommended that primary health care should be located within the PHC radius of 5km for curative services and less than 2km for preventive services respectively. On the overall, the accessibility of the PHCs centres to the Clients was satisfactory as a mean score of 2.574±0.540 (mean ± standard deviation) was calculated. Furthermore, the assurance of the antenatal care was assessed; the following items on the assurance scale were accepted, which signified agreement: 'The PHC center will tell my local health clinic about my future care needs' (2.838±0.868), 'Personnel in PHC center are courteous with clients' (3.178±0.663), 'Staff at the PHC center answered all questions about my illness' (3.385±0.606), 'The behavior of personnel in PHC center instill confidence in patients' (3.287±0.586). Only 'I did not feel safe dealing with the Primary Health Center' (2.198±1.046) was rejected, on the contrary, this implied that the Clients felt safe dealing with the primary health centers. This is in line with the findings of the research conducted by Ajibade *et al.,* (2013) on antenatal Patients level of satisfaction toward service rendered by Health Workers in Selected Primary Health Centers of Ejigbo Local Government, Osun State, Nigeria where majority of respondents reported that health personnel (60.3%) displayed positive attitude towards them.

**Table1:** Access to Antenatal Care facility by the Clients

| n=247 | Strongly Agree | | Agree | | Disagree | | Strongly Disagree | | $\overline{X}$ (SD) | Standard error |
|---|---|---|---|---|---|---|---|---|---|---|
| **STATEMENT** | **F** | **%** | **F** | **%** | **F** | **%** | **F** | **%** | | |
| It takes more than 30 minutes to get to PHC center | 37 | 15.0 | 79 | 32.0 | 87 | 35.2 | 44 | 17.8 | 2.44(0.95) | 0.061 |
| Costs more than 1000 naira to get to PHC center | 18 | 7.3 | 21 | 8.5 | 91 | 36.8 | 117 | 47.7 | 1.75(0.89) | 0.0567 |
| Out-patients/casualty department has convenient hours of opening | 85 | 34.4 | 99 | 40.1 | 38 | 15.4 | 25 | 10.1 | 2.98(0.95) | 0.061 |
| The PHC center made sure I got a lift home | 33 | 13.4 | 55 | 22.3 | 103 | 41.7 | 56 | 22.7 | 2.26(0.95) | 0.061 |
| PHC center is located close to the people | 91 | 36.8 | 137 | 55.5 | 13 | 5.3 | 6 | 2.4 | 3.27(0.67) | 0.043 |
| People Are transported to Facility | 45 | 18.2 | 122 | 49.4 | 47 | 19.0 | 33 | 13.4 | 2.72(0.91) | 0.058 |
| **Overall** | | | | | | | | | 2.57(0.54) | 0.034 |

**Table 2:** Assurance of the Antenatal Care received in PHC facilities.

| n=247 | Strongly Agree | | Agree | | Disagree | | Strongly Disagree | | $\overline{X}$ (SD) | Standard error |
|---|---|---|---|---|---|---|---|---|---|---|
| **STATEMENT** | **F** | **%** | **F** | **%** | **F** | **%** | **F** | **%** | | |
| I did not feel safe dealing with the primary health center | 41 | 16.6 | 41 | 16.6 | 91 | 36.8 | 74 | 30.0 | 2.198 (1.046) | 0.076 |
| The PHC center will tell my local health clinic about my future care needs | 56 | 22.7 | 115 | 46.6 | 56 | 22.7 | 20 | 8.1 | 2.838 (0.868) | 0.055 |
| Personnel in PHC center are courteous with clients | 74 | 30.0 | 149 | 60.3 | 18 | 7.3 | 6 | 2.4 | 3.178 (0.663) | 0.042 |
| Staff at the PHC center answered all questions about my illness | 107 | 43.3 | 132 | 53.4 | 4 | 1.6 | 4 | 1.6 | 3.385 (0.606) | 0.039 |
| The behavior of personnel in PHC center instill confidence in patients | 85 | 34.4 | 151 | 61.1 | 8 | 3.2 | 3 | 1.2 | 3.287 (0.586) | 0.037 |
| **Overall** | | | | | | | | | 2.977 (0.483) | 0.031 |

**Table 3:** Empathy of the Health Care worker towardS their Clients in PHC facilities

| n=247 | Strongly Agree | | Agree | | Disagree | | Strongly Disagree | | $\overline{X}$ (SD) | Standard error |
|---|---|---|---|---|---|---|---|---|---|---|
| **STATEMENT** | **F** | **%** | **F** | **%** | **F** | **%** | **F** | **%** | | |
| The health care giver who treated me listened to my problems | 106 | 42.9 | 135 | 54.7 | 3 | 1.2 | 3 | 1.2 | 3.393 (0.581) | 0.037 |
| The health care giver who treated me was polite | 109 | 44.1 | 126 | 51.0 | 8 | 3.2 | 4 | 1.6 | 3.378 (0.631) | 0.040 |
| My privacy was respected by all staff | 94 | 38.1 | 132 | 53.4 | 14 | 5.7 | 7 | 2.8 | 3.267 (0.694) | 0.044 |
| **Overall** | | | | | | | | | 3.346 (0.688) | 0.044 |

**Table 4:** Consistency of the Antenatal Care received in PHC facilities

| n=247 | Strongly Agree | | Agree | | Disagree | | Strongly Disagree | | $\overline{X}$ (SD) | Standard Error |
|---|---|---|---|---|---|---|---|---|---|---|
| **STATEMENT** | **F** | **%** | **F** | **%** | **F** | **%** | **F** | **%** | | |
| The health personnel explained to me what was wrong with me | 84 | 34.0 | 150 | 60.7 | 6 | 2.4 | 7 | 2.8 | 3.260 (0.642) | 0.041 |
| If I am to receive medicines/pills I did not have to wait long for them | 74 | 30 | 135 | 54.7 | 31 | 12.6 | 7 | 2.8 | 3.117 (0.726) | 0.046 |
| When I needed help, there was always a nurse to help me | 82 | 33.2 | 133 | 53.8 | 28 | 11.3 | 4 | 1.6 | 3.189 (0.691) | 0.044 |
| I had to wait a long time to get my folder | 36 | 14.6 | 45 | 18.2 | 108 | 43.7 | 58 | 23.5 | 2.240 (0.973) | 0.062 |
| The PHC center keeps their promise to do something at the time agreed | 52 | 21.1 | 154 | 62.3 | 30 | 12.1 | 11 | 4.5 | 3.00 (0.716) | 0.046 |
| PHC center shows interest in solving maternal problems | 100 | 40.5 | 133 | 53.8 | 14 | 5.7 | - | - | 3.350 (0.585) | 0.037 |
| The PHC center gets things right the first time | 64 | 25.9 | 149 | 60.3 | 27 | 10.9 | 7 | 2.8 | 3.093 (0.689) | 0.044 |
| The PHC center insists on error-free records in antenatal services | 50 | 20.2 | 132 | 53.4 | 51 | 20.6 | 14 | 5.7 | 2.883 (0.790) | 0.050 |
| **Overall** | | | | | | | | | **3.017 (0.346)** | **0.022** |

**Table 5:** Responsiveness of Health Worker during Antenatal Care in PHCs

| n=247 | Strongly Agree | | Agree | | Disagree | | Strongly Disagree | | $\overline{X}$ (SD) | SE |
|---|---|---|---|---|---|---|---|---|---|---|
| **STATEMENT** | **F** | **%** | **F** | **%** | **F** | **%** | **F** | **%** | | |
| The person who gave me my folder was helpful | 87 | 35.2 | 136 | 55.1 | 21 | 8.5 | 3 | 1.2 | 3.243 (0.655) | 0.042 |
| Visiting hours were not long enough | 37 | 15.0 | 64 | 25.9 | 116 | 47.0 | 30 | 12.1 | 2.437 (0.889) | 0.057 |
| The personnel tell mothers undergoing maternal care exactly when services will be performed | 82 | 33.2 | 143 | 57.9 | 21 | 8.5 | 1 | 0.4 | 3.240 (0.615) | 0.391 |
| The personnel give prompt service to women | 84 | 34.0 | 153 | 61.9 | 6 | 2.4 | 4 | 1.6 | 3.283 (0.592) | 0.038 |
| The personnel are willing to help the women always | 104 | 42.1 | 131 | 53.0 | 5 | 2.0 | 7 | 2.8 | 3.344 (0.662) | 0.042 |
| The personnel are never busy to respond to women's request | 60 | 24.3 | 90 | 36.4 | 63 | 25.5 | 34 | 13.8 | 2.713 (0.985) | 0.063 |
| **Overall** | | | | | | | | | **3.043 (0.375)** | **0.024** |

**Table 6:** Tangibles or the general condition of the PHCs facilities

| n=247 | Strongly Agree | | Agree | | Disagree | | Strongly Disagree | | $\overline{X}$ (SD) | SE |
|---|---|---|---|---|---|---|---|---|---|---|
| **STATEMENT** | **F** | **%** | **F** | **%** | **F** | **%** | **F** | **%** | | |
| The primary health care is in good condition | 83 | 33.6 | 142 | 57.5 | 21 | 8.5 | 1 | 0.4 | 3.243 (0.616) | 0.039 |
| The primary health care center is clean | 72 | 29.1 | 155 | 62.8 | 17 | 6.9 | 3 | 1.2 | 3.198 (0.609) | 0.039 |
| The PHC center toilets are dirty | 30 | 12.1 | 45 | 18.2 | 130 | 52.6 | 42 | 17.0 | 2.255 (0.881) | 0.056 |
| There was a bench available for me to sit down while I waited | 103 | 41.7 | 131 | 53.0 | 13 | 5.3 | - | - | 3.364 (0.582) | 0.037 |
| The ward of the PHC center was clean | 72 | 29.1 | 164 | 66.4 | 11 | 4.5 | - | - | 3.247 (0.526) | 0.033 |
| The bedding in the PHC center was clean | 71 | 28.7 | 159 | 64.4 | 16 | 6.5 | 1 | 0.4 | 3.215 (0.569) | 0.036 |
| The PHC center has modern looking equipment for antenatal care | 57 | 23.1 | 129 | 52.2 | 55 | 22.3 | 6 | 2.4 | 2.960 (0.742) | 0.047 |
| Personnel at the PHC center are neat in appearance | 104 | 42.1 | 125 | 50.6 | 16 | 6.5 | 2 | 0.8 | 3.340 (0.640) | 0.041 |
| **Overall** | | | | | | | | | **3.103 (0.364)** | **0.023** |

An aggregate mean score on the assurance scale (2.977±0.483) was obtained and it signified that the clients were satisfied with the assurance of antenatal care they received in the PHCs centers of Southern Kaduna Senatorial Districts. The empathy scale of quality measurement to ascertain care satisfaction revealed that the all items on the scale were accepted which signified agreement. The aggregate mean score for the empathy scale (3.346±0.688) showed an agreement that the clients were satisfied with the level of empathy exhibited by the health care givers during antenatal care. This is not in line with the findings of the research conducted by Ajibade *et al.,* (2013) on antenatal Patients level of satisfaction toward service rendered by Health Workers in Selected Primary Health Centers of Ejigbo Local Government, Osun State, Nigeria where majority of their respondents (77.4%) reported that their privacy and confidentiality were not maintained during the consultation with the health providers. Majority of the items on consistency or reliability scale were accepted which signifies the agreement of the Clients with those items: 'the health personnel explained to me what was wrong with me' (3.260±0.642), 'if am to receive medicines or pills I did not have to wait for long for the health care givers' (3.117±0.7216): this showed that the Clients at the point of collecting their medications during antenatal care were always being attended to promptly. The item: 'when I needed help, there were always health personnel to help me' was accepted (3.189±0.691) and also, 'the PHC centers kept their promise to do something at the agreed time' (3.00±0.716) was also accepted. Others items that were accepted include: 'PHC centers show interest in solving maternal problems' (3.350±0.585), 'the PHC centers get things right the first time' (3.093±0.689), 'the PHC centers insist on error-free records during antenatal care' (2.883±0.790). Only the item: 'I had to wait a long time to get my folder' was rejected (2.240±0.973) which means the client waited for a short time before they were being attended to. The overall mean score (3.017±0.346) for consistency of the antenatal care rendered at the PHCs centers showed an agreement that the clients were satisfied with how consistent the antenatal care was, hence revealing that the care was consistent. Responsiveness was also one of the Service-quality dimensions which was assessed as regard antenatal care. It showed that all the items, except. Visiting hours were not long enough' was rejected (2.437±0.889) meaning that the visiting hour were long enough. The other accepted items which signified agreement by the clients were as follows: The person who gave me my folder was helpful' (3.243±0.655), The personnel tell mothers undergoing maternal care exactly when care will be performed' (3.240±0.615).

The personnel give prompt care to women' (3.283±0.592), 'The personnel are willing to help the women always' (3.344±0.662), and 'the personnel are never busy to respond to women's request' (2.713±0.985) respectively. The overall mean score for this scale (3.043±0.375) showed satisfaction with the responsiveness of antenatal care. The tangibility of the PHCs center can never be under emphasized in assessing the satisfaction and quality of care, all the items on this scale except 'The PHC centres toilets are dirty (2.255±0.881) was rejected, this implied that the toilets were clean. Other items that were accepted and agreed to were: 'the primary health care centres is in good condition' (3.243±0.616), 'the primary health care is clean' (3.198±0.609), 'there was bench available for me to sit down while I waited' (3.364±0.582), 'the ward of the PHCs centres were clean' (3.247±0.526), 'the bedding in the PHCs Centres was clean' (3.215±0.569), 'the PHC Centres has modern looking equipment for antenatal care' (2.960±0.742) and 'Personnel at the PHCs Centres were neat in appearance' (3.340±0.640). The overall mean scores for the tangibility signified an agreement that the clients were satisfied with the general condition of the PHCs. According to the study carried out by Nyongesa *et al.,* (2014) on the determinant of clients' satisfaction with health care services at Pumwani Maternity Hospital in Nairobi it was revealed that most of the clients were dissatisfied with the level of cleanliness especially in toilets and bathroom which is not in line with the finding of this study. This could be due to different geographical location and because the Studies were carried out in different Countries.

*Conclusion:* This study evaluated the need to bridge the gap between the quality of antenatal care rendered in the urban and rural areas. Clients were satisfied with some service delivery. State government with the support of the Federal government need to should ensure that Buses provide transportation service for health personnel. The PHC facilities management should ensure that Clients' perception about Antenatal care services and other related health care services should be up to their expectation of care in terms of accessibility, assurance, empathy during care, consistency, responsiveness and tangibles of antenatal care.

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