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# Attitude and utilization of postnatal care services among women of reproductive age in the rural and urban communities in Northern Nigeria

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## ABSTRACT

**Objective:** Low- and middle-income countries are disproportionately affected by poor outcomes of maternal and newborn health. About a 10th of women in developing countries receive postnatal care (PNC) visits within 2 days of delivery. To compare the attitudes of mothers towards PNC and to their level of utilisation of PNC services in rural and urban commuities in Northern Nigeria.

**Material and Methods:** A comparative cross-sectional study design was used to compare attitudes and utilization levels among respondents from the urban and rural communities in Kano state, North Nigeria. The participants were mothers who delivered a live baby within the preceding year of the study. One hundred and thirty mothers each from the two communities were selected by multistage sampling. Data were collected from them using interviewer-administered semi-structured questionnaires.

**Results:** The attitude of mothers toward PNC was good in both the urban (93.7%) and rural (76.0%) communities. However, utilization of the services was poor with 15.7% and 2.3% of the respondents in the urban and rural areas, respectively, accessing the service. The husband's educational level was a predictor of good maternal attitude with mothers whose husbands have formal education having 62% less chance of having a negative attitude to PNC (OR = 0.38, 95% CI [0.15–0.99]).

**Conclusion:** To reduce newborn and maternal mortality, essential PNC should be promoted and supported in policies and integrated into existing health programs. Addressing social drivers for health in North Nigeria will ensure improved health behavior.

**Keywords:** Postnatal care, Attitude, Utilization, Urban, Rural, Nigeria

## INTRODUCTION

Low- and middle-income countries are disproportionately affected by poor outcomes of maternal and newborn health.[1] Postnatal care (PNC) refers to all medical, psychological, emotional, and social support, and opportunities provided to mothers. Mothers are also given comprehensive information on how to properly care for their infants; nutritional counseling forms an integral part of the care provided. PNC is an essential component of safe motherhood. During this period, mothers are assessed for any complications of the delivery process and advised on ideal self-care and infant care measures.[2] The World Health Organization (WHO) recommends that PNC for newborns should include immediate and exclusive breastfeeding, optimal measures to

ensure infants are kept warm, adequate cord care, and early detection of danger signs such as infection and bleeding and prompt treatment. PNC should commence as soon as possible after delivery since a majority of maternal and newborn deaths occur during the first few hours and days after birth.[3] The WHO recommends at least four postnatal visits occurring within 6–12 h after birth; 3–6 days; at 6 weeks, and 6 months also known as the 6-6-6-6 model. Neonatal mortality occurs at a higher rate among low birth weight (LBW) babies; therefore, PNC should also include extra care for LBW newborns for nutrition, warmth, and early detection of danger signs.[3]

Mothers who commence PNC early receive health education on the importance of good maternal nutrition while breastfeeding as well as the benefits of family planning.[4] Despite the benefits of PNC, most newborns and mothers in developing countries do not access PNC services from a skilled healthcare provider during the critical early postpartum period. Research has shown that regardless of the place of delivery (at home or a health facility), PNC services are often absent. Furthermore, available PNC services are generally deficient; lacking crucial components of the comprehensive package required for the desired health outcomes of the mother and newborn.[5]

Disparities in the utilization of PNC services exist between countries and within countries (especially the rural and urban areas). Research shows that the attendance rates are higher in developed countries; with the developing countries having unacceptably low utilization of PNC services. A review of the literature indicates that there are individual, household, community, and national factors modulating PNC attendance.[3]

Sociocultural, economic, and medical factors such as maternal education, place of residence, household income, awareness and perceptions related to the risks of pregnancy and skilled maternal services, parity, previous experiences, and female autonomy are examples of individual variables which affect PNC utilization.[4] The accessibility, availability, and quality of services as well as the cadre; capability; and client-centered behavior of providers are very important health system factors that determine the uptake of maternal services. The underperformance of health systems is a major problem in developing countries; as a corollary, PNC services are suboptimal with abysmally low utilization. The competence gap among health workers who otherwise would be considered skilled is a major drawback of PNC provision in low- and middle-income countries. Every 3–5 years, maternal care providers are expected to receive continuing medical education or updates in midwifery; this is a recommended solution to bridging the competence gap.[5]

In Nigeria, only about a third of all births take place in health facilities.[6] Therefore, to achieve equitable access to PNC services, health care workers need to provide the services closer to or within the homes of these women. However, it should be reiterated that merely providing the service will not guarantee utilization as uptake is modulated by a complex interplay of factors.[7]

There are only a few comprehensively and routinely measured indicators of PNC coverage, none of which track the effectiveness of the national PNC programs.[7] The Demographic and Health Surveys, for example, may measure the timing of the first PNC visit but not where it took place, by whom it was given, or its content or quality hence the need for this study.

## MATERIAL AND METHODS

### Study setting

The study was carried out in the Kano Municipal and Rimin Gado Local Government areas of Kano State. The Nigerian Demographic and Health Survey (NDHS) showed that Northwest Nigeria where Kano is located, has a neonatal mortality rate of 37/1000 live births.[8] It also revealed that 80.1% of mothers did not have any postnatal check-ups. In spatial terms, there is a very high concentration of healthcare infrastructure, services, and personnel in the Kano metropolis compared to the rest of the state. About 75% of people who live in Kano have access to health services.[8] In KMC local government area (LGA), there is one secondary health facility, five primary health care (PHC) centers, six health clinics, one health post, and numerous private clinics while in Rimin Gado LGA, there is one comprehensive health center, 19 health posts, and one health clinic.

### Study design and population

It was a comparative cross-sectional descriptive survey used to compare attitudes and utilization levels among 130 mothers each in the urban and rural communities of Kano State. The respondents were mothers who delivered a live baby within the preceding year of the study. A total of 260 respondents were randomly selected after a line listing was done of all households in the selected communities. In a household with more than 1 eligible respondent, one woman was selected with a single-time ballot.

A multistage sampling technique was applied in this study.

- Stage 1: From a list of urban and rural LGAs, one LGA in each group was picked by simple random sampling (balloting)
- Stage 2: From the total number of wards in each LGA, four wards each were selected using simple random sampling (balloting)
- Stage 3: Household listing was done and the households to be part of the study were selected using systematic sampling

- Stage 4: From each selected household, one eligible respondent was selected.

### Data collection

Data were collected from a total of 260 women who had a live birth within the preceding year using a structured questionnaire translated to Hausa, the local language. Two Hausa-speaking research assistants collected data using paper-based questionnaires. The tool had three sections: Section I sought information on the respondent's sociodemographic and obstetric characteristics, Section II elicited the respondent's attitude toward PNC, while Section III sought information on the respondent's utilization of PNC services. Two independent professional Hausa scholars translated the questionnaire into local (Hausa) vernacular as it was administered in that language.

### Data processing and analysis

Data collected were entered, validated, and analyzed using IBM SPSS Statistics version 21. Descriptive statistics were conducted using frequencies and percentages. Means (and standard deviations [SD]), medians (and range), and proportions of the sociodemographic variables of women in the urban and rural areas were also calculated and compared. Attitude to PNC was assessed using a 5-point Likert scale with five responses. The responses were categorized as; "strongly agree," "agree," "not sure," "disagree," and "strongly disagree." These five responses were then collapsed into binary variables; agree and disagree; "agree" for the response "agree" or "strongly agree" and "disagree" for the response "disagree," "strongly disagree," or "not sure." The total attitude score was 7. Respondents were then categorized as having a positive attitude if they scored between 4 and 7 or a negative attitude if they scored between 0 and 3. At the bivariate level, the Chi-square test or Fisher's exact test was used where appropriate to assess attitude to PNC by cross-tabulating with an area of residence. Maternal utilization of PNC was also cross-tabulated with an area of residence. At the multivariate level, factors that showed statistically significant association with an attitude of PNC at the bivariate level were entered into a binary logistic regression model to adjust for confounding. Furthermore, Chi-square tests with $P < 0.1$ were also entered into the logistic regression model so as not to miss any important predictors. Crude and adjusted odds ratio with 95% confidence intervals for predictors of practice to PNC was obtained. $P < 0.05$ was considered statistically significant.

### Ethical consideration

Approval to carry out this study was obtained from the Research Ethics Committee of Aminu Kano Teaching Hospital. Permission to conduct the study was also sought from the Kano State Hospital Management Board, Ministry of Health, and local government for Kano State, and the PHC Departments of Kano Municipal and Rimin Gado LGAs. Written informed consent was obtained from all respondents and permission was obtained from their husbands for participation in this study.

## RESULTS

One hundred and thirty questionnaires were administered each in the urban and rural communities. The response rate was 97.7% in the urban and 99.2% in the rural communities. The mean ages (±SD) of respondents in the urban and rural communities were 29.5 ± 7.2 and 27.9 ± 6.5 years, respectively. Most women from both communities (95.4% urban and 93.8% rural) are Hausa and of the Islamic faith (97.7% and 100%), respectively. Nearly a quarter (23.7%) of the respondents in the urban community had tertiary education as against just 1.6% of their rural contemporaries. Almost half (47.2%) of the women in the rural setting had no Western education. The main occupation of women participating in both the urban (36.2%) and rural (41.1%) communities was business predominantly petty trading [Table 1]. Mothers in the urban community had a more positive attitude (93.7%) toward PNC as compared to their rural counterparts (76.0%). This difference was statistically significant ($P < 0.0001$) [Table 2]. Attendance of postnatal clinics was statistically significantly different between mothers in the urban and rural communities ($P < 0.0001$) [Table 3]. Attitude toward PNC was not significantly ($P < 0.05$) associated with any of the variables in the urban community, while respondent's education, husband's education, and husband's income were significantly associated in the rural community [Table 4]. After adjusting for covariates, none of the variables was a significant predictor of a positive attitude toward PNC in the urban community while the husband's educational level was found to be a predictor of positive maternal attitude to PNC ($P = 0.05$) [Table 5].

## DISCUSSION

Globally, attitude toward PNC is generally good as studies in Ethiopia, Tanzania, and Nigeria have shown.[9-11] This corroborates respondents' attitude to PNC in this study which was generally good as the majority of respondents in both the urban and rural communities (93.8% and 76.2%, respectively) had a positive attitude. This is also similar to a study done in Lagos where mothers were found to have a very good attitude toward a component of PNC.[12] In this study, the attitude of mothers in the urban community was not associated with any factor at a bivariate level while the attitude of rural mothers was found to be associated with respondent's education, husband's education, and husband's

**Table 1:** Summary of sociodemographic characteristics of respondents.

| Variable | Total | Urban (*n*=127) | Rural (*n*=129) | $\chi^2$ | *P*-value |
|---|---|---|---|---|---|
| | *n* (%) | *n* (%) | *n* (%) | | |
| Age group (years) | | | | | |
| 15–24 | 98 (37.7) | 39 (30.7) | 59 (45.7) | | |
| 25–34 | 97 (37.8) | 55 (43.3) | 42 (32.6) | | |
| 35–44 | 54 (20.8) | 27 (21.3) | 27 (20.9) | | |
| 45–49 | 7 (2.7) | 6 (4.7) | 1 (0.8) | 9.38 | 0.02* |
| Tribe | | | | | |
| Hausa/Fulani | 244 (95.4) | 119 (93.8) | 125 (96.9) | | |
| Other tribes | 12 (4.6) | 8 (6.2) | 4 (3.1) | 0.8 | 0.36 |
| Religion | | | | | |
| Islam | 253 (98.8) | 124 (97.7) | 129 (100) | | |
| Christianity | 3 (1.2) | 3 (2.3) | 0 (0.0) | | 0.12† |
| Marital setting | | | | | |
| Monogamous | 149 (58.2) | 85 (66.9) | 64 (49.6) | | |
| Polygamous | 107 (41.8) | 42 (33.1) | 65 (50.4) | 7.89 | 0.005* |
| Educational attainment | | | | | |
| None | 11 (4.4) | 5 (3.9) | 6 (4.6) | | |
| Quranic | 77 (30.0) | 22 (17.3) | 55 (42.6) | | |
| Primary | 84 (32.8) | 31 (24.4) | 53 (41.1) | | |
| Secondary | 52 (20.3) | 39 (30.7) | 13 (10.1) | | |
| Tertiary | 32 (12.5) | 30 (23.7) | 2 (1.6) | 57.5 | <0.001* |
| Occupation | | | | | |
| Civil servant | 20 (7.8) | 18 (14.2) | 2 (1.5) | | |
| Business | 99 (38.7) | 46 (36.2) | 53 (41.1) | | |
| Artisan | 65 (25.4) | 19 (14.9) | 46 (35.7) | | |
| Housewives | 72 (28.1) | 44 (34.7) | 28 (21.7) | 28.1 | <0.001* |
| Respondent's income | | | | | |
| <$2/day | 234 (91.4) | 108 (85.0) | 126 (97.7) | | |
| ≥$2/day | 22 (8.6) | 19 (15.0) | 3 (2.3) | 11.4 | <0.001* |
| Husband's age | | | | | |
| 20–29 years | 15 (5.9) | 7 (5.5) | 8 (6.2) | | |
| 30–39 years | 77 (30.1) | 45 (35.4) | 32 (24.8) | | |
| 40–49 years | 57 (22.3) | 37 (29.1) | 20 (15.5) | | |
| 50–59 years | 33 (12.9) | 13 (10.2) | 20 (15.5) | | |
| ≥60 years | 12 (4.6) | 5 (3.9) | 7 (5.4) | 7.2 | 0.13 |
| Unknown | 62 (24.2) | 20 (15.7) | 42 (32.6) | | |
| Husband's educational attainment | | | | | |
| None | 3 (1.2) | 1 (0.8) | 2 (1.6) | | |
| Quranic | 51 (19.9) | 19 (15.0) | 32 (24.8) | | |
| Primary | 44 (17.2) | 11 (8.6) | 33 (25.6) | | |
| Secondary | 78 (30.5) | 43 (33.9) | 35 (27.1) | | |
| Tertiary | 71 (27.7) | 47 (37.0) | 24 (18.6) | 22.5 | <0.001* |
| Unknown | 9 (3.5) | 6 (4.7) | 3 (2.3) | | |
| Husband's occupation | | | | | |
| Civil servant | 58 (22.7) | 31 (24.4) | 27 (20.9) | | |
| Business | 96 (37.5) | 52 (40.9) | 44 (34.1) | | |
| Semi-skilled/unemployed | 102 (39.8) | 44 (34.7) | 58 (45.0) | 2.85 | 0.24 |
| Husband's income | | | | | |
| <$2/day | 36 (14.1) | 14 (11.0) | 22 (17.1) | | |
| ≥$2/day | 41 (16.0) | 30 (23.6) | 11 (8.5) | 9.2 | 0.002* |
| Unknown | 179 (69.9) | 83 (65.4) | 96 (74.4) | | |
| Parity | | | | | |
| 1 | 49 (19.1) | 30 (23.6) | 19 (14.7) | | |
| 2-4 | 89 (34.8) | 41 (32.3) | 48 (37.2) | | |

*(Contd...)*

**Table 1:** *(Continued).*

| Variable | Total | Urban (*n*=127) | Rural (*n*=129) | $\chi^2$ | *P*-value |
|---|---|---|---|---|---|
| | *n* (%) | *n* (%) | *n* (%) | | |
| ≥5 | 118 (46.1) | 56 (44.1) | 62 (48.1) | 5.9 | 0.12 |
| Number of children alive | | | | | |
| 1–4 | 153 (59.8) | 80 (63.0) | 73 (56.6) | | |
| ≥5 | 103 (40.2) | 47 (37.0) | 56 (43.4) | 1.02 | 0.3 |
| Duration of marriage (years) | | | | | |
| 1–5 | 80 (31.3) | 43 (33.9) | 37 (28.7) | | |
| 6–10 | 74 (28.9) | 38 (29.9) | 36 (27.9) | | |
| 11–15 | 39 (15.2) | 19 (15.0) | 20 (15.5) | | |
| >15 | 63 (24.6) | 27 (21.3) | 36 (27.7) | 4.4 | 0.35 |

†Fisher's exact test, *statistically significant

**Table 2:** Attitude toward postnatal care.

| Variable | Urban, *n* (%) | Rural, *n* (%) | Total (%) | $\chi^2$ | *P*-value |
|---|---|---|---|---|---|
| Attitude | | | | | |
| Positive | 119 (93.7) | 98 (76.0) | 217 (84.8) | | |
| Negative | 8 (6.3) | 31 (24.0) | 39 (15.2) | 15.58 | <0.0001* |

*Statistically significant difference

**Table 3:** Utilization of postnatal services among mothers.

| Attend postnatal clinic | Urban (%) | Rural (%) | Test statistic |
|---|---|---|---|
| Yes | 20 (15.7) | 3 (2.3) | |
| No | 107 (84.3) | 126 (97.7) | *P*<0.0001 |

income though they were not predictors after binary logistic regression. Attitude is mainly determined by cultural beliefs (which are usually more preserved in rural than urban environs) and a woman's perception of the importance of the service.[13] A good attitude to PNC shows that with the right and persistent interventions from the government, PNC attendance and ultimately PNC practices can be improved.

According to the NDHS 2013, more than half (56%) of women did not receive any PNC. Inadequate information, low awareness, lack of trained personnel at healthcare centers, financial problems, lack of access to healthcare services, and low quality of services are among the factors preventing mothers' use of postpartum care.[14] In this study, utilization of PNC services was higher among urban than rural women (15.4% and 3.1%, respectively). This is similar to the findings of studies done in other developing countries including Nigeria.[4,10,15] This is further corroborated by studies done in Lagos, Nigeria, which all show the under-utilization of PNC services.[12] The reason for the higher figures in the urban community could be explained by the presence of improved transportation in urban areas, higher education, and income level of urban mothers which give them greater autonomy on where to seek help. This is, further, corroborated by a study done in Bangladesh that found a negative relationship with the utilization of PNC services by rural women due to the distances that had to be covered to reach the health facility as well as greater utilization among more educated and higher-income mothers.[16] In addition, greater awareness of health promotion programs and access to health services among urban women could be an explanation for the urban-rural difference. Interestingly, a study in an urban area in Malawi showed that the main factor that hindered attendance at the postnatal clinic was the lack of advice given by midwives to return for PNC.[17]

Another explanation could be the high rate of home deliveries in the rural community which was found to be a significant determinant of PNC attendance in other studies done in Indonesia and Nepal which found that infants delivered outside a health-care facility were significantly less likely to utilize PNC services.[18,19] This differs from a study done in Nigeria that showed a statistically significant association between the place of delivery and the utilization of PNC services where children delivered in a non-health-care facility had higher odds of not utilizing PNC services.[20] The explanation given for that was that probably mothers who deliver at the health facility may feel quite confident about their health and the health of their newborn and may not see the need to return for check-ups while those that did not deliver in the health facility would like the health of the child to be checked and, hence, are more likely to utilize PNC services.

The generally low level of PNC attendance could also be explained by the socio-cultural norms in North Nigeria, which makes women reluctant to be examined by a male physician or nurse in healthcare facilities. This statement is supported by a study done in Nigeria, which showed the Hausas (which is the predominant tribe in the study environment) utilize postnatal services much lower than

**Table 4:** Factors associated with attitude to postnatal care.

| Variable | Urban | | | Rural | | |
|---|---|---|---|---|---|---|
| | Positive attitude *n* (%) | Negative attitude *n* (%) | $\chi^2$ (*P*-value) | Positive attitude *n* (%) | Negative attitude *n* (%) | $\chi^2$ (*P*-value) |
| Age group (years) | | | | | | |
| <30 | 60 (92.3) | 5 (7.7) | | 62 (77.5) | 18 (22.5) | |
| ≥30 | 59 (95.2) | 3 (4.8) | 0.72† | 36 (73.5) | 13 (26.5) | 0.31 (0.58) |
| Occupation | | | | | | |
| Civil servant/business | 60 (96.8) | 2 (3.2) | | 45 (81.8) | 10 (18.2) | |
| Artisan/housewife | 59 (90.8) | 6 (9.2) | 0.27† | 53 (71.6) | 21 (28.4) | 1.94 (0.16) |
| Religion | | | | | | |
| Islam | 116 (93.5) | 8 (6.5) | | 98 (76.0) | 31 (23.0) | |
| Christianity | 3 (100) | 0 (0.0) | 1.00† | 0 | 0 (0.00) | |
| Tribe | | | | | | |
| Hausa/Fulani | 111 (93.3) | 8 (6.7) | | 95 (76.0) | 30 (24.0) | |
| Non-Hausa/Fulani | 8 (100) | 0 (0.0) | 1.00† | 3 (75.0) | 1 (25.0) | 1.00† |
| Marital setting | | | | | | |
| Monogamous | 77 (91.7) | 7 (8.3) | | 50 (78.1) | 14 (21.9) | |
| Polygamous | 39 (97.5) | 1 (2.5) | 0.43† | 48 (73.8) | 17 (26.2) | 0.38 (0.54) |
| Parity | | | | | | |
| 1–4 | 66 (93.0) | 5 (7.0) | | 54 (80.6) | 13 (19.4) | |
| ≥5 | 53 (94.6) | 3 (5.4) | 1.00† | 42 (70.0) | 18 (30.0) | 2.32 (0.13) |
| Children alive | | | | | | |
| 1–4 | 74 (92.5) | 6 (7.5) | | 54 (74.0) | 19 (26.0) | |
| ≥5 | 45 (95.7) | 2 (4.3) | 0.71† | 44 (78.6) | 12 (21.4) | 0.32 (0.57) |
| Last childbirth (months) | | | | | | |
| <6 | 42 (95.5) | 2 (4.5) | | 59 (72.8) | 22 (27.2) | |
| ≥6 | 77 (92.7) | 6 (6.3) | 0.72† | 39 (81.3) | 9 (18.7) | 1.30 (0.25) |
| Educational attainment | | | | | | |
| Formal | 93 (93.0) | 7 (7.0) | | 59 (84.3) | 11 (15.7) | |
| Non-formal | 26 (96.3) | 1 (3.7) | 1.00† | 40 (65.6) | 21 (34.4) | 7.08 (0.008)* |
| Employment status | | | | | | |
| Employed | 79 (96.3) | 3 (3.7) | | 77 (76.2) | 24 (23.8) | |
| Unemployed | 40 (88.9) | 5 (11.1) | 0.12† | 21 (75.0) | 7 (25.0) | 0.03 (0.87) |
| Estimated monthly income (₦) | | | | | | |
| <1000 | 52 (91.2) | 5 (8.8) | | 37 (75.5) | 12 (24.5) | |
| >1000 | 70 (95.9) | 3 (4.1) | 1.21 (0.28) | 62 (76.5) | 19 (23.5) | 0.02 (0.89) |
| Marriage duration (years) | | | | | | |
| <10 | 63 (92.6) | 5 (7.4) | | 50 (78.1) | 14 (21.9) | |
| ≥10 | 56 (94.9) | 3 (5.1) | 0.73† | 48 (73.8) | 17 (26.2) | 0.38 (0.54) |
| Husband's age (years) | | | | | | |
| <40 | 51 (94.4) | 3 (5.6) | | 34 (85.0) | 6 (15.0) | |
| ≥40 | 50 (94.3) | 3 (5.7) | 1.00† | 35 (74.5) | 12 (25.5) | 1.46 (0.23) |
| Husband's occupation | | | | | | |
| Civil servant/business | 78 (94.0) | 5 (6.0) | | 55 (77.5) | 16 (22.5) | |
| Semi-skilled/unemployed | 41 (93.2) | 3 (6.8) | 1.00† | 43 (74.1) | 15 (25.9) | 0.23 (0.63) |
| Husband's educational level | | | | | | |
| Formal | 100 (93.5) | 8 (7.5) | | 77 (81.1) | 18 (18.9) | |
| Informal | 20 (100) | 0 (0.0) | 0.61† | 19 (55.9) | 15 (44.1) | 9.77 (0.002)* |
| Husband's minimum income | | | | | | |
| <$2/day | 14 (100) | 0 (0.0) | | 11 (50.0) | 11 (50.0) | |
| ≥$2/day | 26 (86.7) | 4 (13.3) | 0.29† | 11 (100) | 0 (0.0) | 0.005†* |

†Fisher's exact test, *statistically significant

**Table 5:** Predictors of attitude toward postnatal care.

| Variable | Crude OR (95% CI) | *P*-value |
|---|---|---|
| Employment status | | |
| Employed | 3.4 (0.78–15.02) | 0.16 |
| Unemployed | 1 | |
| Husband income (₦) | | |
| <23,000 | 2.96 (0.69–12.69) | 0.15 |
| ≥23,000 | 1 | |
| Educational attainment | | |
| Formal | 0.32 (0.14–0.76) | 0.12 |
| Informal | 1 | |
| Husband's educational level | | |
| Formal | 0.26 (0.11–0.63) | 0.05* |
| Non-formal | 1 | |

*Statistically significant

the Igbos and "minority" tribes which were associated with the "kunya" or "shame" factor present in the North.[20] Furthermore, in this region of the country, the rural woman may not have unrestricted access to go a health center due to sociocultural beliefs which are more ingrained in the rural setting.

## CONCLUSION

In the studied communities, mothers' positive attitudes to PNC did not translate into utilization. In both the urban and rural communities, mothers reported poor utilization of PNC (with mothers in the rural community mainly lacking financial access), thereby buttressing the need for increased support and promotion of postnatal programs to ultimately improve postnatal outcomes.

### Declaration of patient consent

Institutional Review Board (IRB) permission was obtained for the study.

### Financial support and sponsorship

Nil.

### Conflicts of interest

There are no conflicts of interest.

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