

Postnatal Care in Nigeria: A multilevel analysis of community contextual factors

Maternal and neonatal mortality is a great challenge in sub-Saharan Africa. In Africa, about 125,000 women and 870,000 newborns die annually in the first one week after delivery (Charlotte et al 2006). With an estimated 59,000 maternal deaths annually, Nigeria contributes 10 percent of the world's maternal deaths (Babalola & Fatusi, 2009). Postnatal care is among the major recommended interventions to reduce maternal and newborn deaths globally (Titaley et al., 2010). In spite of the high maternal mortality rates, and the benefits of this intervention, most women in Nigeria do not seek postnatal care. Considering the Millennium Development Goal to reduce maternal mortality by three quarters by 2015, it is necessary to understand the factors influencing the decisions to seek postnatal care. Existing studies have focused on individual and household predictors and have largely ignored community contextual attributes that can influence a woman's decision to seek postnatal care. Hence providing knowledge at the individual level is not sufficient to promote behaviour change as individual decisions can also be influenced by community characteristics (Mackian, 2003). In addition, less information is available on the factors influencing postnatal care in Nigeria. Building on previous studies, we incorporated the role of community contextual factors in our analysis. This will provide a policy tool for the development of community interventions that will increase the use of postnatal care services in Nigeria and other African countries. Specifically, the study examined the influence of community contextual factors on the decisions to seek postnatal care in Nigeria.

Method

The study draws data from the 2008 Nigerian Demographic and Health Survey (NDHS). The 2008 NDHS provided information on population and health indicators at the national, zonal and state levels. The primary sampling unit (PSU), which is referred to as the cluster was selected from the lists of Enumeration Areas (EAs). Sample for the survey was selected using a stratified two-stage cluster design, made up of 888 clusters (NPC and ICF, 2009). A weighted probability sample of 36,800 households was selected in the survey. In all, a total sample of 33,385 women aged 15-49 years and 15,486 men aged 15-59 were interviewed. For the purpose of this study, a sample of 18,028 women aged 15-49 years whose recent delivery occurred in the five years preceding the survey was used.

The dependent variable is postnatal care defined as receiving postnatal check from trained medical personnel and in the first 41 days after childbirth. Receiving postnatal care is categorised as "received" and "not received". The independent variables include age, education, religion, parity, exposure to family planning messages and economic status. The community contextual variables are the main explanatory variables and include community hospital delivery (mean level of hospital deliveries in the primary sampling unit), ethnic diversity (mean number of different ethnic groups in the PSU), community women's education (mean level of female education in the PSU), distance to health facility, type of place of residence (Urban, rural) and region of residence.

Statistical analysis:

Univariate, bivariate and multilevel logistic regression were employed for data analysis. In the univariate analysis, distributions of respondents by key variables were expressed as percentages. While at the bivariate level, frequencies and cross-tabulations were used to identify the distributions of the dependent variable by selected background characteristics. The chi square test of association was used to test the statistical significance of these bivariate distributions of the dependent variables across the independent variables.

Preliminary results:

Findings from bivariate analysis indicate that education, religion, parity, economic status and exposure to family planning messages were significantly associated with the use of postnatal care ($p < 0.001$).

In model 1 of the multivariate analysis, results showed that women with higher education were 16 times more likely to receive postnatal care than the uneducated women. The odds of receiving postnatal care increased with age. Women who were not exposed to family planning messages were 60% (AOR=0.40; 95% CI=0.36-0.44) less likely to receive postnatal care than those who had exposure. After controlling for economic status in model 2, results showed that women in the richest economic status were 11.6 times (95% CI=(9.87-13.86) more likely to receive postnatal care than those in the poorest economic status. We controlled for community variables in model 3 and results indicate that women from communities with high level of hospital delivery (AOR=4.5; 95% CI=3.91-5.33), high community women's education (AOR=1.2, 95% CI=1.13-1.54) and high ethnic diversity (AOR=1.3; 95% CI=1.13-1.55) were more likely to receive postnatal care than those from disadvantaged communities. Regional variations were observed with women from south west (AOR=1.3; 95% CI=1.21-1.59) more likely to receive postnatal care than those from north west (AOR=0.48; 95% CI=0.41-0.56).

Logistic regression for receiving postnatal care from skilled provider for the most recent birth in the five years preceding the survey NDHS 2008

Characteristics	Model 1	Model 2	Model 3
	Odd Ratios (95% CI)	Odd Ratios (95% CI)	Odd Ratios (95% CI)
<i>Maternal age</i>			
15-19	1.00	1.00	1.00
20-24	1.20 (0.97-1.39)	1.02 (0.82-1.19)	0.86 (0.70-1.05)
25-29	1.79 (1.44-2.09)***	1.31 (1.09-1.60)*	0.97 (0.79-1.19)
30-34	2.12 (1.67-2.49)***	1.51 (1.20-1.82)***	1.05 (0.84-1.31)
35-39	2.31 (1.81-2.76)***	1.69 (1.32-2.05)***	1.15 (0.91-1.45)
40-44	2.21 (1.68-2.68)***	1.62 (1.22-1.98)***	1.15 (0.80-1.32)
45-49	2.53(1.88-3.24)***	2.05 (1.50-2.64)***	1.03 (1.03-1.88)*
<i>Educational attainment</i>			
No education	1.00	1.00	1.00
Primary	3.92 (3.27-4.03)***	2.54 (2.12-2.64)***	1.54 (1.36-1.74)***
Secondary	7.58 (6.31-7.91)***	3.42 (2.84-3.63)***	2.20 (1.92-2.52)***
Higher	16.32 (13.55-19.81)***	5.46 (4.14-6.29)***	3.95 (3.18-4.91)***
<i>Religion</i>			
Muslims	1.00	1.00	1.00
Christians	1.00 (0.92-1.10)	1.14 (1.04-1.25)*	0.85 (0.75-0.95)*
Traditional/Others	0.55 (0.39-0.76)***	0.67 (0.46-0.94)*	0.57 (0.39-0.82)*
<i>Parity</i>			
1	1.00	1.00	1.00
2-3	0.85 (0.76-0.96)***	0.84 (0.76-0.97)**	0.91 (0.80-1.03)
4+	0.58 (0.51-0.66)***	0.65 (0.56-0.74)***	0.79 (0.68-0.91)*
<i>Exposure to FP messages</i>			
Exposed	1.00	1.00	1.00
Not exposed	0.40 (0.36-0.44)***	0.65 (0.57-0.70)	0.71 (0.64-0.77)***
<i>Economic status</i>			
Poorest		1.00	1.00
Poorer		2.08 (1.78-2.42)***	1.65 (1.41-1.93)***
Middle		3.85 (3.31-4.47)***	2.30 (1.97-2.69)***
Richer		6.11 (5.94-6.64)***	2.75 (2.32-3.26)***
Richest		11.69 (9.87-13.86)***	4.16 (2.42-5.06)***

<i>Distance to health facility</i> A big problem Not a big problem			1.00 1.34 (1.23-1.47)***
<i>Type of place of residence</i> Urban Rural			1.00 0.93 (0.84-1.03)
<i>Region of residence</i> North Central North East North West South East South South South West			1.00 0.71 (0.60-0.83)*** 0.48 (0.41-0.56)*** 0.51 (0.44-0.60)*** 0.68 (0.59-0.78)*** 1.39 (1.21-1.59)***
<i>Community women's education</i> Low Medium High			1.00 1.20 (1.05-1.39)* 1.32 (1.13-1.54)***
<i>Community hospital delivery</i> Low Medium High			1.00 3.12 (2.73-3.57)*** 4.50 (3.91-5.33)***
<i>Ethnic diversity</i> Low Medium High			1.00 1.23 (1.08-1.41)* 1.33 (1.13-1.55)***
X ² ***p<0.001 **p<0.01 *p<0.05			

Conclusion

Findings suggest that interventions to increase the use of postnatal care services should target the uneducated, poor and those women who live in disadvantaged communities. Results also indicate the need for mass media programmes that will educate women about the importance of postnatal care; and provision of social infrastructure in disadvantaged communities to alleviate the problem of distance which is a major barrier to seeking postnatal care.