By: Ibrahim Musbaudeen Olaitan

TASK: Produce an analysis report for the research titled "Urban-rural variation in essential newborn care practices of mothers in Nigeria: Evidence from Nigeria Multiple Indicators Cluster Survey 2021'. Sample study: https://pubmed.ncbi.nlm.nih.gov/35989946/.

TITLE: URBAN-RURAL VARIATION IN ESSENTIAL NEWBORN CARE PRACTICES OF MOTHERS IN NIGERIA: EVIDENCE FROM NIGERIA MULTIPLE INDICATORS CLUSTER SURVEY 2021

Methodology

Data source

In this paper, the study was based on 2021 Nigerian Multi Indicator Cluster Survey (MICS6) datasets. The Multi Indicator Cluster Survey (MICS) are household survey implemented by countries under the programme developed by the United Nations Children's Fund to provide internationally comparable, statistically rigorous data on the situation of children and women. A total of twenty-five thousand two hundred and eighty-two women (25,282) of the reproductive age group (i.e., 15-49) were engaged and interviewed, seventy-two thousand and ninety-seven from the urban and seventeen thousand nine hundred and eighty-five from the rural communities respectively.

Independent Variable

The independent variable used for this study includes region (North Central, North East, North West, South East, South-south, South West), Respondent's age group (15-19, 20-24, 25-29, 30-34. 35-39, 40-44, 45 and above), the highest education level (no education, primary, secondary, Higher), religion (Christianity, Islam, traditionalist, others), wealth index (poorest, poor, middle, rich and richest), gender of the child (male, female). etc. All of these variables were chosen because of their relevance to reproductive health and newborn care as well as their inclusion in the 2021 MICS dataset

Dependent Variable

For this study, the dependent variable was the newborn care practices, which was measured as a composite index consisting of the following items: cord care, delayed bathing, and immediate breastfeeding. Each item has a 'Yes' or 'No' response, with a value of '1' if the woman practices essential newborn care and '0' otherwise. The composite index ranges from '0' to '1', with '0' indicating that the woman does not practice essential newborn care partially or at all, and '1' indicating that she practices essential newborn care. If she answered 'No' to all three questions, she is considered to not practice essential newborn care,' and if she did not, she is considered to be practicing essential newborn care.

Data Analysis

Descriptive statistics such as frequency and percentage were carried out to describe the research participants' backgrounds. The Chi-square test was done to assess the relationship between the women's socio-demographic variable in essential newborn care practices in rural communities and urban communities. To investigate the association between individual characteristics and essential newborn care practice, Chi-square and binary logistic regression analyses were used. All tests were run using Statistical Package for Social Sciences (IBM SPSS) version 5 at a 5% level of significance.

Ethical Accusation

This study is based on the results of the Nigeria 2021 MICS survey. No ethics approval was required as this study used cross-sectional data which is available freely and publicly with all identifier information removed. To access and analyze the data set we obtained official permission from UNICEF MICS headquarters in NewYork. The survey protocol was approved by the technical committee of the Government of Nigeria led by the Nigeria Bureau of Statistics (BBS). The participants' anonymity and confidentiality were assured.

Result

Socio-Demographic Information of Respondents

A total of twenty-five thousand two hundred and eighty-two women data was used in this study, in which seven thousand two hundred and ninety-seven were from urban communities while seventeen thousand nine hundred and eighty-two were from rural communities. Some of the respondents 32.0% and 25.0% of the women aged group 20-24 years from urban and rural communities respectively practice essential newborn care, majority of the respondents 87.7% and 86.4% of women from south urban and rural communities respectively do not practice essential newborn care, some respondent 20.4% and 20.8% of women with senior secondary education from urban and rural communities respectively, practice essential newborn care, majority of the respondents 83.6% and 83.4% of women who give birth to a female gender from urban and rural communities respectively, do not practice essential newborn care and most of the respondent 84.8% and 85.1% of women with poorest wealth index who are from urban and rural communities respectively do not practice essential newborn care.

Socio-Demographic Information of Respondents

Variables	Classification	Urban		Rural	
		Practices of Essential Newborn Care of Mother		Practices of Essential Newborn Care of Mother	
		Yes Freq (%)	No Freq (%)	Yes Freq (%)	No Freq (%)
Age	15-19	51 (44.3%)	64 (55.7%)	193 (25.9%)	551 (74.1%)
	20-24	232 (32.0%)	492 (68.0%)	633 (25.0%)	1902 (75.0%)
	25-29	362 (27.9%)	936 (72.1%)	819 (23.4%)	2685 (76.6%)
	30-39	217 (14.5%)	1279 (85.5%)	613 (19.2%)	2582 (80.8%)
	40-44	74 (5.9%)	1175 (94.1%)	203 (7.8%)	2401 (92.2%)
	45 and above	18 (1.9%)	954 (98.1%)	77 (3.4%)	2215 (96.6%)
Region	Northcentral	293 (19.7%)	1192 (80.3%)	584 (15.4%)	3207 (84.6%)
	Northeast	214 (16.2%)	1105 (83.8%)	690 (17.3%)	3290 (82.7%)
	Northwest	244 (18.4%)	1083 (81.6%)	749 (15.5%)	4095 (84.5%)
	Southeast	102 (21.5%)	373 (78.5%)	440 (20.7%)	1684 (79.3%)
	South-south	86 (12.3%)	612 (87.7%)	307 (13.6%)	1956 (86.4%)
	Southwest	333 (16.7%)	1663 (83.3%)	188 (19.3%)	788 (80.7%)
Educational level	No education	214 (13.1%)	1415 (86.9%)	1253 (15.0%)	7116 (85.0%)
	Primary	149 (12.9%)	1008 (87.1%)	482 (14.0%)	2973 (86.0%)
	Junior Secondary	103 (20.4%)	401 (79.6%)	255 (18.8%)	1098 (81.2%)
	Senior Secondary	535 (20.4%)	2061 (79.4)	808 (20.8%)	3084 (79.2%)
	Tertiary	271 (19.2%)	271 (19.2%)	160 (17.6%)	749 (82.4%)
Gender of Newborn	Male	685 (18.4%)	3032 (81.6%)	1508 (16.3%)	7746 (83.7%)
	Female	587 (16.4%)	2996 (83.6%)	1450 (16.6%)	7274 (83.4%)
Wealth index	Poorest	57 (15.2%)	319 (84.8%)	899 (14.9%)	5135 (85.1%)
	Poor	97 (17.4%)	461 (82.6%)	944 (16.6%)	4640 (83.1%)
	Middle	274 (16.4%)	1395 (83.6%)	600 (16.6%)	3018 (83.4%)
	Rich	414 (17.3%)	1979 (82.7%)	350 (18.3%)	1563 (81.7%)

	Richest	430 (18.7%)	1874 (81.3%)	165 (19.9%)	664 (80.1%)

Factors Influencing essential newborn care among women of reproductive age in Nigeria

The logistic regression revealed that urban dwellers age group 20-24, 25-29, 30-34, 35-39, 40-44 .44 and above are 36%, 50%, 64%, 78%, 21% and 74% less likely to practice essential newborn care respectively, than age group 15-19 years (OR= 0.64, p=0.039; OR= 0.497, p=0.001; OR=0.36, p= <0.001; OR= 0.22; p= <0.001; OR= 0.79, p=<0.001; OR;=0.26, p=<0.001) while rural dwellers age group 20-24, 25-29, 30-34, 35-39, 40-44 .44 and above are 11%, 21%, 29%, 61%, 79% and 92% less likely to practice essential newborn care respectively, than age group 15-19 years (OR= 0.89, p= 0.205; OR= 0.79, p=0.01; OR= 0.61, p= <0.001; OR= 0.39, p= <0.001; OR= 0.21, p= <0.001; OR= 0.084, p= <0.001). For urban dwellers who are from Northeast, Northwest, South-south, and Southwest are 27%, 7%,45%, and 13% less likely to practice essential newborn care than North Central and Southeast are 1.26 times more likely to practice essential newborn care more than the North Central (OR= 0.73, p= 0.003; OR= 0.93, p= 0.492; OR= 1.26, p= 0.100; OR= 0.55, p= <0.001; OR= 0.87, p= 0.143), while rural dwellers from Northeast, Southeast, and Southwest have 1.15, 1.63, 1.33 times respectively more likely to practice essential newborn care more than their North central counterpart (OR=1.15, p= 0.027; OR= 1.63, <0.001, OR= 1.33, p=0.004), Northwest and South-south are 2% and 14% less likely to practice essential newborn care more than North central (OR= 0.98, p= 0.739; OR= 0.86, p= 0.061). Urban dwellers with primary, junior secondary, senior secondary, and higher education are 1.15, 1.33, 1.40, and 1.54 times more likely to practice essential newborn care than those with no education at all (OR= 1.15, p= 0.271; OR= 1.33, p=0.054; OR= 1.40, p= 0.002; OR= 1.54, p= 0.001) while rural dwellers with primary, junior secondary, senior secondary and higher education are 1.01, 1.12, 1.15, 1.08 times more likely to practices essential newborn care than those with no education (OR= 1.01, p= 0.937; OR= 1.12, p= 1.15; OR= 1.08, p= 0.495). Respondents from urban communities who give birth to a female are 14% less likely to practice essential newborn care than those with a male child (OR= 0.86, p= 0.23) while those from urban with a female newborn are 1.03 times more likely to practice essential newborn care than those with male child. Urban dwellers with wealth index of poor, middle class, rich, and richest are 1.098, 1/092, 1.104, and 1.291times more likely to practice essential newborn care than those with the poorest wealth index (OR= 1.098, p= 0.673; OR=1.092, 0.652; OR= 1.104, p= 0.613, OR= 1.291, p= 0.122). while rural dwellers' wealth index of poor, middle class, rich, and richest are 1.06, 1.16, 1.27, and 1.42 times more likely to practice essential newborn care than those in the category of poorest wealth index (OR= 1.06, p= 0.002; OR= 1.16, p= 0.018; OR= 1.27, p= 1.42).

Factors Influencing essential newborn care among women of reproductive age in Nigeria

Variables	Classification	Urban		Rural	
		Practices of Essential Newborn Care of Mother		Practices of Essential Newborn Care of Mother	
		N	AOR	N	AOR
Age	15-19	105	Ref	754	Ref
	20-24	715	0.640*(0.039)	2544	0.89 (0.205)
	25-29	1298	0.497**(0.001)	3504	0.79* (0.01)
	30-34	1445	0.36***(<0.001)	3196	0.61***(<0.001)
	35-39	1502	0.22***(<0.001)	3098	0.39***(<0.001)
	40-44	1250	0.79***(<0.001)	2603	0.21***(<0.001)
	45 and above	982	0.26***(<0.001)	2282	0.084***(<0.001)
Region	Northcentral	1481	Ref	3795	Ref
	Northeast	1318	0.73**(0.003)	3981	1.15* (0.027)
	Northwest	1325	0.930 (0.492)	4846	0.98 (0.739)
	Southeast	475	1.26 (0.100)	2124	1.63***(<0.001)
	South-south	702	0.55***(<0.001)	2259	0.86 (0.061)
	Southwest	1996	0.87 (0.143)	976	1.33**(0.004)
Educational level	No education	1521	Ref	8477	Ref
	Primary	1135	1.15 (0.271)	3477	1.01 (0.937)
	Junior Secondary	506	1.33 (0.054)	1351	1.12 (0.169)
	Senior Secondary	2659	1.40**(0.002)	3829	1.15* (0.031)
	Tertiary	1476	1.54**(0.001)	847	1.08 (0.495)
Gender of Newborn	Male	3694	Ref	9277	Ref
	Female	3603	0.86*(0.23)	8704	1.034 (0.423)
Wealth index	Poorest	275	Ref	6135	Ref
	Poor	466	1.098 (0.673)	5676	1.06**(0.002)
	Middle	1693	1.092 (0.652)	3594	1.16*(0.018)
	Rich	2483	1.104 (0.613)	1823	1.27**(0.003)
	Richest	2380	1.291 (0.122)	753	1.42***(<0.001)

p < 0.05; **p < 0.01; ***p < 0.0000001 Ref- Reference variable