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Maternal Autonomy and Attitudes Towards Gender Norms: Associations with Childhood Immunization in Nigeria

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Abstract

Objectives—Globally 2.5 million children under-five die from vaccine preventable diseases, and in Nigeria only 23% of children ages 12–23 months are fully immunized. The international community is promoting gender equality as a means to improve the health and well-being of women and their children. This paper looks at whether measures of gender equality, autonomy and individual attitudes towards gender norms, are associated with a child being fully immunized in Nigeria.

Methods—Data from currently married women with a child 12–23 months from the 2008 Nigeria Demographic and Health Survey (DHS) were used to study the influence of autonomy and gender attitudes on whether or not a child is fully immunized. Multivariate logistic regression was used and several key socioeconomic variables were controlled for including wealth and education, which are considered key inputs into gender equality.

Results—Findings indicated that household decision-making and attitudes towards wife beating were significantly associated with a child being fully immunized after controlling for socioeconomic variables. Ethnicity, wealth and education were also significant factors.

Conclusions—Programmatic and policy implications indicate the potential for the promotion of gender equality as a means to improve child health. Gender equality can be seen as a means to enable women to access life-saving services for their children.

Keywords

gender; autonomy; Nigeria; immunizations; children

INTRODUCTION

Morbidity and mortality of children under five years of age could be largely diminished through measures that are both affordable and available. Though two million under-five deaths are prevented through immunizations, tragically 2.5 million children still die every year from vaccine preventable diseases [1]. Immunizations represent a simple and inexpensive means to prevent a large number of under-five deaths, yet many children do not have access to this basic service.

Nigeria's estimated population of 150 million in 2010 makes it the largest country in sub-Saharan Africa and the tenth most populated country worldwide. Nigeria has a young demographic profile with over 17% of the population under five years of age. Of this subpopulation, Nigeria loses about 2,300 children daily, making the country the second largest global contributor to the under-five mortality rate [2]. According to the Nigeria 2008 Demographic and Health Survey (DHS), the under-five mortality rate is 157 per 1,000 live births[3]. A major contributor to the high under-five mortality rate is poor utilization of health care. This can be seen from the 2008 NDHS report, where it is reported that only 23% of children 12–23 months had received all scheduled vaccinations.

Increasingly the global health community is focused on incorporating a gender-based focus in their programming and policies. This attention is highlighted by Millennium Development Indicator (MDG) 3 – promoting gender equality and empowering women. Global health organizations are considering such equality as a key strategy to improve health not just for women but also for their children.

This study seeks to understand the role of a specific construct of gender equality, women's autonomy, on the utilization of child immunization services. Autonomy can be defined as the ability to make decision through control over resources and information and to act upon those decisions [4,5]. Autonomy at the household level is particularly important for individual health behaviors and outcomes [4,6,7]. Previous research has indicated that household autonomy may be associated with a woman's ability to access health services for her children. A study in Gujarat, India found that approximately 50% of women interviewed did not feel free to take a sick child to a health care facility without prior approval from their husband or in-laws [8]. Other studies have found that when women have more decision-making influence within the home, more resources go to children [9,10].

There is some limited research specifically examining the relationship between autonomy and the utilization of immunization services. Woldenmichael [11] found that for women in Ethiopia, decision-making over daily purchases and freedom of movement (decisions on visiting family and friends) were significantly associated with a child being fully immunized after controlling for socioeconomic factors. The same study found that only the decision on visiting family and friends was significantly associated with a child being fully immunized in Eritrea. Data from India has indicated that children whose mothers make joint decisions (with their husbands) on their husband's earnings, household purchases (both large and daily), their own health care and visits to family/friends are the most likely to be fully immunized [12]. A study of the uptake of diphtheria, pertussis and tetanus (DPT) 3 in Northern Nigeria found that women's household decision-making was a significant factor in the likelihood of vaccination completion among children [13].

There is a wide range of variation in individual attitudes towards gender norms. Expressions of autonomy may differ across cultures [14], with women's personal attitudes towards gender norms influencing their health seeking behavior. Associations between gender attitudes and the use of child health services is a new area of research. In one of the few studies exploring this association, Woldenmichael [11] found that individual attitudes towards a form of gender-based violence, wife beating, was not significantly associated with childhood immunization in either Ethiopia or Eritrea.

This study looks at associations between autonomy and attitudes towards gender norms with childhood immunization in Nigeria. Because of the diversity of the Nigerian population, the influence of these gender measures may vary by culture and religion. Thus social context is taken into account in this paper.

METHODS

Data for this paper come from the 2008 Nigeria Demographic and Health Survey (DHS). Data for 3454 currently married women with a child between ages 12–23 months were analyzed. The outcome variable is binary – either a child was fully immunized or not. A fully immunized child was defined as a child between 12 and 23 months who received three doses of oral polio vaccine (OPV), three doses of diphtheria, pertussis and tetanus (DPT), one dose each of Bacille Calmette-Guerin (BCG) and measles vaccine before 12 months of age.

The autonomy variables included household and financial decision-making. Four specific questions were used to create a household decision-making variable - decisions regarding health care, the purchase of major household goods, the purchase of daily goods and visits to family/friends. Women who made all decisions either alone or jointly were categorized as having high household decision-making while those who were not involved in all four decisions were categorized as having low household decision-making. A question on who made decisions regarding their husband's earnings was used as a measure of financial decision-making. Women who made this decision either alone or jointly were categorized as having high financial decision-making while those who did not participate in this decision were classified as having low financial decision-making.

Two indicators for capturing individual attitudes regarding gender norms were used in this analysis. One attitude variable focused on the acceptability of wife beating in regards to specific circumstances (a wife going out without telling her husband, neglecting the children, arguing with her husband, refusing to have sex with her husband and burning food). Respondents who indicated that a husband is not justified in beating his wife for any of these reasons were categorized together as believing wife beating is not acceptable. Those who indicated that wife beating is justified for at least one of the items on the list were classified as indicating that wife beating is acceptable. The second attitude variable focused on couple power relations – whether a wife is justified in refusing sex with her husband in specific circumstances (he has sex with other women, he has a sexually transmitted infection, she is tired/not in the mood). Respondents who indicated that a wife is justified in refusing sex for all three reasons were classified as believing a wife is justified in refusing sex. Those not indicating a wife is justified in refusing sex in all three circumstances were classified as believing a wife is not justified in refusing sex.

Socioeconomic Variables

The socioeconomic variables examined in this paper include age, parity, residence (urban/rural), education level, religion, ethnicity, wealth quintile and working status, as well as gender of the index child. The working status variable indicated whether or not the respondent had worked outside the home in the past 12 months but did not differentiate respondents who worked in formal versus nonformal employment. The wealth quintile was calculated from DHS questions on household ownership of assets, type of flooring material, water source and other household characteristics related to wealth. Unfortunately the 2008 Nigeria DHS did not have information on accessibility to services such as the distance to the nearest health facility.

Analysis

Multivariate logistic regression was used to study the influence of the covariates of interest on whether a child 12–23 months is fully immunized. Sampling weights were applied and the cluster sampling design of the DHS data was taken into account using STATA's `svy` command. In Model 1 only the socioeconomic variables were included in the regression,

while Model 2 included both the socioeconomic variables and the four gender measures of interest.

RESULTS

Table 1 presents a description of the sample of women. Women were evenly split between having and not having an education, while about 45% of women were in the lowest two wealth quintiles. Almost half of the respondents had four or more children. About 68% of women lived in a rural setting and 69% reported working outside the home in the past year. About 62% of women were Muslim or followers of traditional religions while 38% were Christian. The largest ethnic group was the Hausa (38%), followed by the Yoruba (18%) and Igbo (16%).

Table 2 presents descriptive statistics for the gender measures. In terms of autonomy, 35% of women had high household decision-making and 27% had high financial decision-making. In terms of attitudes towards gender norms, 52% indicated that wife beating is never acceptable and 46% indicated that a wife has the right to refuse sex.

Table 3 presents the multivariate analysis. Model 1 presents the socioeconomic variables only while Model 2 includes both the socioeconomic and gender variables. In both models we see strong associations between wealth and immunization status with those in the highest wealth quintile having an Odds Ratio greater than 7 in both models 1 and 2. In addition we see an influence of ethnicity with all ethnic groups more likely to have their children immunized than the Hausa. However, religion was only significant in Model 1 with Muslim women less likely to have their child fully immunized (OR=0.58, CI: 1.40, 3.21, $p < 0.05$). In Model 2 we find that one of the autonomy measures and one of the attitude measures were significantly associated with a child being fully immunized. Women with high household decision-making were more likely to have their child fully immunized than women with low decision-making (OR=1.64, CI: 1.25, 2.14, $p < 0.001$). Women who believed that wife beating is not acceptable were also more likely to have their child fully immunized than women who believed wife beating was acceptable (OR=1.47, CI: 1.16, 1.85, $p < 0.05$).

CONCLUSION

Results from this paper indicate the importance of autonomy and positive gender norms on a key child health outcome – whether or not a one year old child is fully immunized against six diseases. While the international community's focus on gender equality is important in and of itself, this focus also has the potential to improve a woman's ability to access an important child health prevention service and thereby prevent under-five mortality. Only a handful of studies have explored how women's autonomy can improve the utilization of childhood immunization [11–13] and the focus on individual attitudes is a new, but important, area of research.

Our results also indicate the importance of cultural context when studying the influence of gender variables on health outcomes. Nigeria is a country inhabited by individuals from more than 250 ethnic groups. In this analysis all ethnicities were more likely to have their children fully immunized than the Hausa, the largest ethnic group. These differences reflect both cultural differences, level of development and policy differences among different ethnicities and states within Nigeria. The Hausa inhabit Northern Nigeria which is less developed than the south and where women's mobility is restricted [15].

Wealth and education are considered key inputs into gender equality and empowerment [16]. Without education and at least a certain amount of wealth, it is difficult for an

individual to make choices or to a greater extent to merely have choices. A woman who is very poor may not have the option of taking a child to a facility for immunizations if the cost is great. With this in mind the global focus on girl's education and poverty reduction has great potential to improve the health and well-being of children. Notably after controlling for these important inputs, two of the gender measures were significant. Thus a programmatic and policy focus on gender equality has a potential to lead to further improvements in child health than a focus on education and poverty reduction alone.

A limitation of this work is endogeneity due to missing variables. We did not have a measure of distance to the nearest facility, but given that many immunization are done through community outreach we believe this limitation is somewhat mitigated. We also did not have a measure for perceptions regarding immunization. In Nigeria there is some fear and mistrust about immunization, but this is often found among specific cultures and ethnicity. Since our analysis controlled for religion and ethnicity we believe this latent measure of fear or mistrust may have been captured.

Overall the policy and programmatic implications from these results indicate that the global health community is warranted in promoting women's equality as a means of improving child health outcomes in Nigeria and elsewhere. A focus on equality in addition to a focus on education and poverty reduction can enable countries to reduce under-five mortality by improving women's ability to utilize child health services. Thus gender equality can enable women to access life-saving services for their children.

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Table 1

Description of Sociodemographic Factors

	n (%)
Age	
15–19	241 (7.0)
20–24	728 (21.1)
25–34	1770 (51.2)
34+	714 (20.7)
Total	3454 (100.0)
Parity	
1	592 (17.2)
2–3	1210 (35.0)
4+	1651 (47.8)
Total	3454 (100.0)
Religion	
Christian	1305 (37.8)
Muslim or other	2149 (62.2)
Total	3454 (100.0)
Ethnicity	
Fulani	368 (10.6)
Hausa	1325 (38.4)
Igbo	554 (16.0)
Yoruba	632 (18.3)
Other	575 (16.7)
Total	3454 (100.0)
Education	
None	1689 (48.9)
Primary	691 (20.0)
Secondary or higher	1074 (31.1)
Total	3454 (100.0)
Residence	
Urban	1122 (32.5)
Rural	2331 (67.5)
Total	3454 (100.0)
Working	
No	1086 (31.4)
Yes	2368 (68.6)
Total	3454 (100.0)
Wealth Index	
Poorest	831 (24.0)
Poor	741 (21.4)
Middle	616 (17.8)
Rich	620 (18.0)
Richest	646 (18.7)
Total	3454 (100.0)
Gender of Youngest Child (12–23 months)	
Male	1618 (48.7)
Female	1705 (51.3)
Total	3323 (100.0)

Table 2

Description of Gender Measures

	n (%)
Household Decision-making Authority *	
High	1198 (34.7)
Low	2255 (65.3)
Total	3454 (100.0)
Financial Decision-making (Husband's Earnings)	
Alone/Jointly	914 (26.5)
Husband/Other	2540 (73.5)
Total	3454 (100.0)
Attitudes Towards Wife Beating	
Never Acceptable	1779 (51.5)
Acceptable	1675 (48.5)
Total	3454 (100.0)
Wife Has Right to Refuse Sex	
No	1880 (54.4)
Yes	1574 (45.6)
Total	3454 (100.0)

Table 3

Multivariate Analysis

	Model 1 OR CI (N=3397)	Model 2 OR CI (N=3250)
Age		
15–19	0.32* (0.144, 0.69)	0.37* (0.17, 0.80)
20–24	0.79 (0.58, 1.09)	0.86 (0.63, 1.17)
25–34	Ref	Ref
34+	1.02 (0.78, 1.34)	0.94 (0.70, 1.25)
Parity		
1	Ref	Ref
2–3	0.95 (0.69, 1.30)	0.96 (0.70, 1.32)
4+	0.71 (0.50, 1.03)	0.73 (0.51, 1.06)
Education		
None	Ref	Ref
Primary	1.45 (1.00, 2.12)	1.38 (0.94, 2.02)
Secondary and Higher	2.12** (1.40, 3.21)	1.84* (1.21, 2.82)
Religion		
Christian	Ref	Ref
Muslim/Other	0.58* (0.42, 0.80)	0.61 (0.44, 0.85)
Ethnicity		
Fulani	1.99* (1.04, 3.77)	2.13* (1.12, 4.07)
Ref	Ref	Ref
Hausa	3.38** (2.10, 5.44)	3.46** (2.11, 5.66)
Igbo	3.51** (2.26, 5.44)	3.21** (2.04, 5.07)
Yoruba	2.49** (1.60, 3.88)	2.39** (1.50, 3.79)
Other		
Residence		
Urban	Ref	Ref
Rural	0.79 (0.60, 1.05)	0.85 (0.63, 1.14)
Working		
No	Ref	Ref
Yes	1.04 (0.79, 1.36)	0.92 (0.69, 1.22)
Wealth Index		
Poorest	Ref	Ref
Poor	2.87** (1.80, 4.59)	3.06** (1.87, 5.01)
Middle	3.72** (2.24, 6.19)	3.72** (2.21, 6.24)
Rich	6.21** (3.73, 10.33)	6.26** (3.71, 10.55)
Richest	7.36** (4.23, 12.81)	7.04** (3.97, 12.48)
Household Decision-Making Authority (12–23 months)		
Low		Ref
High		1.64** (1.25, 2.14)
Financial Decision-Making		
Low		Ref
High		0.98 (0.76, 1.27)
Attitudes Towards Wife Beating		
Acceptable		Ref
Never acceptable		1.47* (1.16, 1.85)
Wife Has Right To Refuse Sex		
Yes		Ref
No		0.80 (0.64, 1.01)

**
p<0.01,*
p<0.05