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Women autonomy and maternal healthcare services utilization among young ever-married women in Nigeria

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In Nigeria, the lifetime risk of death from pregnancy or childbirth complications is 1 in 30. Maternal healthcare utilisation addresses the risk of maternal mortality and morbidity but its utilisation is influenced by varying factors of which autonomy has been neglected especially for young married women. Therefore, this study examined the relationship between young married women's level of autonomy and maternal health care utilisation in Nigeria. Secondary data from the 2013 Nigeria Demographic and Health Survey was analysed (n=4996) with consideration of young ever married women (age 15 to 24), who had at least one live birth in the last five years preceding the survey. The binary logistic regression models were fitted into the data. Findings revealed that only 30% of women aged 15 to 24 delivered at a health facility while 44% of the total pregnant women had four or more antenatal care visits before delivery. Also, young women with low autonomy were less likely to meet the minimum requirement of four antenatal visits (OR=0.35: CI: 0.29-0.43) and less likely to deliver at a health facility (OR=0.32: CI: 0.27-0.39). The study underscores the need to empower young women to achieve higher levels of autonomy due to its obvious implication on their health and to encourage integrated interventions that considers engaging household and community structures on the benefits of women autonomy and its importance for mother and child's health. Policy and program considerations that would enable the removal of socio-cultural/demographic barriers towards women autonomy in Nigeria should be encouraged.

Key words: Maternal healthcare utilization, antenatal, postnatal, place of delivery, women autonomy

INTRODUCTION

Maternal mortality refers to the death of a woman during pregnancy or within 42 days after the termination of a pregnancy, from any cause related to the pregnancy or its management but not from accidental causes (PRI, 2013). On a global scale, developing countries account for almost all maternal deaths (99%) of the world maternal deaths (WHO, 2015), while in Nigeria, one woman dies every thirteen minutes from preventable causes related to pregnancy or childbirth making the country to account for 14% of the global total maternal deaths second only to India (APHRC, 2017). It is however interesting to note that it has been established in literature that most of these deaths and health consequences faced by women are preventable (Anya et

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al., 2008; APHRC, 2017).

The challenge of reducing maternal mortality remains a major health problem in Nigeria and recent statistics from national surveys show that in 2008 the estimated maternal mortality ratio (MMR) was 545 /100,000 live-births while in 2013 it estimated to be 576 /100,000 live births implying that the ratio increased between that five-year period and Nigeria did not achieve the millennium development goal 4 of improving maternal health (WHO, 2015). Literature has established utilisation of maternal health care services such as antenatal care visits, place of delivery (delivery at health facility) and postnatal care received from skilled health workers as veritable and effective way of reducing the risk of maternal mortality and morbidity (Bayu et al., 2015; Deo et al., 2015; Hagos et al., 2014; Ochako et al., 2011; Situ, 2013).

The world currently has the highest number of young people in all of human history, with about 1.2 billion people aged 15 to 24 as at the year 2017 (PRB, 2017). This large numbers of young people are faced with numerous challenges which threaten their health and social wellbeing including their sexual and reproductive life. Many of these young people especially girls in less developed countries get married at young ages, fall victim of adolescent or teenage pregnancies and so on.

Adolescent girls who get pregnant in Nigeria have been reported to be at heightened risk of maternal mortality as report has been found that they are less likely to use maternal healthcare services compared to older women (APHRC, 2017). Another study showed that most of these young women due to their uniqueness (Banke-Thomas et al., 2017), neither benefited from these services nor derive any joy of motherhood, as a result of their young age, lack of autonomy and inexperience (Baral et al., 2010). Studies have examined the relationship between women's autonomy and utilisation of any or all of the maternal health care services, and have found association between them (Asweto et al., 2014; Baral et al., 2010; Bhandari et al., 2017; Hagos et al., 2014; Lowe et al., 2016; Speizer et al., 2014; Thapa, 2012; Tiruneh et al., 2017). Other factors such as age, education, employment or labour force participation and wealth quintile have also been found to be associated with maternal healthcare utilisation (Acharya et al., 2017; Adhikari, 2016; Asweto et al., 2014; Banke-Thomas et al., 2017; Baral et al., 2010; Dahiru and Oche, 2015; Deo et al., 2015; Fawole and Adeoye, 2015; Kamiya, 2010; Okeshola and Sadiq, 2013; Sebayang et al., 2017; Sharma et al., 2007; Situ, 2013; Tarekegn et al., 2014; Teklehaymanot et al., 2017; Tiruneh et al., 2017; Urbaeva, 2015; Woldemicael, 2007a, 2007b; Workineh and Hailu, 2014; Yaya et al., 2017).

Umar (2017) submitted that the ability of a young woman to make independent decisions and take appropriate actions on her reproductive desire is dependent on her level of autonomy especially in a society like Nigeria where in some cultures young girls are married off to older men. Further, owing to their inexperience, the married female adolescent need to seek permission from their mother-in-law or husband before taking steps on health matters including maternal healthcare services and that of their babies because they lack the needed autonomy or decision-making power to seek health services (Baral et al., 2010).

However, most, if not all of these studies have focused on the full reproductive age spectrum of 15 to 49 years while little attention has been paid to how young married women's autonomy influence their utilisation of maternal health care services in Nigeria especially the married ones, as increasing the autonomy of these young women could be an effective strategy to maximize the use of maternal healthcare services in developing countries if research findings and recommendations are put in place, and this would give these women the much needed "voice" to be able to seek health care services.

Hence, this study seeks to examine the relationship between autonomy and utilisation of maternal health care services among young ever-married women in Nigeria.

MATERIALS AND METHODS

The study utilized secondary data from the 2013 Nigeria Demographic and Health Survey (NDHS) with a total sample size of 4996 young married women aged 15 to 24 who had at least one child in the last five years preceding the survey. Sampling for the survey involved the use of a nationally representative two-stage cluster sampling design with stratification for rural and urban residence. The outcome variable was utilisation of maternal health care service using place of delivery and number of antenatal care visits. Each of the outcome variables were dichotomized; those who delivered their babies in government hospital, government health center, government health post, other public sectors, private health center and other private sector were coded as (1) while those who delivered their babies at respondent home, other home and others are coded as (0). The number of antenatal care visits was also dichotomized as (0) less than four visits, (1) four visits and above.

Further, the principal explanatory variable was women's autonomy which was measured using women decision on large household purchase, decision on visits to relative/family and decision on woman's own health care. In these three indicators an overall composite score was created to reflect number of decision women participate either alone or jointly. This was achieved by generating a new variable by adding the 3 variables measuring women's autonomy. This produced a minimum of 0 and a maximum of 3. Respondent who had scored between 2 to 3 were classified as "high autonomy" and respondent who scored between 0 to 1 classified as "low autonomy". Other important socio-demographic variables included in the analysis were; wealth index, employment status, highest level of education, religion, place of resident, marital status and age of respondents.

Data was analysed at the univariate, bivariate and multivariate levels. At the univariate level, simple frequencies were obtained, test of associations were conducted between the dependent and independent variables at the bivariate level while variables were fitted into the binary logistic regression in the multivariate level analysis and these variables fitted into the logistic regression were those that were found to be associated with the dependent variable at the bivariate level. For the model specification, in an experiment with possible outcomes as either success or failure, coded 1 or 0

respectively representing a binary outcome, the rate of change in the outcome of interest with respect to explanatory variable(s) can be achieved examining its log odds as shown in the binary logistic model below;

$$\ln p/1-p = \beta 0+\beta 1X1 + \beta 2X2+ \beta 3X3+\ldots +\beta nXn$$

Where $\ln p/1-p$ represents the log odds of using maternal healthcare services, β0 represents the maternal healthcare service utilisation risk without interplay with any explanatory variable, and β1X1 + β2X2+ β3X3+… +βnXn represents the fraction by which the use of maternal healthcare services is altered by a unit change in the respective explanatory variables X1, X2, X3, …Xn, which in this case includes women autonomy and selected women's socio-demographic characteristics of these young women.

RESULTS

Background of respondents

Table 1 presents the socio-demographic characteristics of the study respondents. Youths of age 20 to 24 years made up three-quarter of the study respondents. Approximately 76% of the respondents were either in the poorest or poor categories of wealth status, with 53% of the respondents reported to be currently working. Exactly 9 in 10 respondents were married, slightly more than half (54 percent) had no education and more than two-thirds of the respondents reported Islam as their religion, with almost the same proportion residing in rural areas.

Utilization of maternal health care services

Table 2 presents the selected intervening variables and their frequency distributions among study respondents. Exposure to mass media was reported by 61% of the women. Almost all women in the study reported having either high or average level of autonomy in their households. Further analysis revealed that the proportion of women who reported average autonomy tripled the proportion with high autonomy while less than one percent reported having low autonomy in the household. On household decision making, more than 70% of the women reported that their husbands alone make decision on the women's health and large household purchases while less than 25% stated these decisions are made jointly. Only 3% of these women reported making decisions alone on their health and on large household purchases. Slightly more than three-fifth of the women (62%) reported that their husbands make decision alone on visit to family or relatives while a small proportion (4%) stated that they make decision on visit to family or relatives alone.

Tables 3 and 4 shows the relationships between the independent, intervening variables and maternal health care utilisation among the respondents. It was revealed that increasing age amongst married youths lead to increase in number of antenatal care visits and facility delivery.

The chi-square statistics indicated significant association between respondents' age, antenatal care ($\chi2=66.27$, $p<0.05$) and place of delivery ($\chi2=46.7$, $p<0.05$). The chi-square statistics also confirmed the significant association between the respondents' wealth status, antenatal care ($\chi2=975.15$, $p<0.05$) and place of delivery ($\chi2=1044.26$, $p<0.05$). Women in the poorest wealth quintile were found to have attended less antenatal care and least utilized facility delivery. Further results showed that the higher the wealth status of respondents the higher the utilisation of maternal health care services.

Respondents who reported being employed had four or more antenatal care visits and also utilized facility delivery than their counterparts who were unemployed. The Chi-square statistics showed a significant association between respondents' employment status and antenatal care visit ($\chi2=59.14$, $p<0.05$) and place of delivery ($\chi2= 56.47$, $p<0.05$). Findings revealed that the higher the respondents level of education, the higher the utilisation of maternal health care services. Respondents with higher education had four or more antenatal care and utilized facility delivery in comparison with other educational levels. The Chi-square test showed significant association between respondents' level of education and antenatal care ($\chi2=930.89$, $p<0.05$) and place of delivery ($\chi2= 1,138$, $p<0.05$). Examining religious affiliation, Christians reported four or more antenatal care visits and utilized facility delivery than their counterparts and the Chi-square statistics revealed that respondents' religion is significantly associated with antenatal care ($\chi2=329.92$, $p<0.05$) and place of delivery ($\chi2= 634.29$, $p<0.05$). Results show respondents who reside in urban area had four or more antenatal care and utilized facility delivery in comparison to rural residents, with the Chi-square statistics also showing that place of residence is significantly associated with antenatal care ($\chi2=452.33$, $p<0.05$) and place of delivery ($\chi2= 541.85$, $p<0.05$).

Women who reported taking decisions alone on her health, large household purchases and visit to relatives reported attending four or more antenatal visits and utilized facility delivery than other women. The Chi-square statistic showed significant association between decision on health and number of antenatal visit ($\chi2=224.17$, $p<0.05$) and place of deliver ($\chi2= 290.0$, $p<0.05$); Also, decision on large household purchase was found to be significantly associated with antenatal care ($\chi2=230.31$, $p<0.05$) and place of delivery ($\chi2=326.36$, $p<0.05$), and this was also the case between women who make decision alone on visit to relative and antenatal care visits ($\chi2=232.79$, $p<0.05$) and place of delivery ($\chi2=285.95$, $p<0.05$).

Analysis of the influence of autonomy on antenatal visits and facility delivery revealed that an increasing level of autonomy lead to increase in number of antenatal visits

Table 1. Distribution of respondents by selected socio-demographic characteristics.

Variable	Frequency (4996)	Percentage (%)
Age of respondent		
15-17 years	338	6.8
18-19 years	851	17.0
20-24 years	3.807	76.2
Wealth index		
Poorest	1.338	26.8
Poorer	1.384	27.7
Middle	993	19.9
Richer	812	16.3
Richest	468	9.4
Employment status		
Not working	2.332	47.0
Working	2.632	53.0
Level of education		
No Education	2.720	54.4
Primary	811	16.2
Secondary	1.383	27.7
Higher	83	1.7
Religion		
Catholic	334	6.7
Other Christians	991	20.0
Islam	3.595	72.5
Traditional	39	0.8
Place of residence		
Urban	1.313	26.3
Rural	3.682	73.7
Marital status		
Married	4.850	97.1
Widowed	19	0.4
Divorced/Separated	127	2.5

Source: 2013 NDHS.

and facility delivery. The Chi-square statistic revealed that women's level of autonomy is significantly associated with antenatal care ($\chi2=239.33$, $p<0.05$) and place of delivery ($\chi2=332.48$, $p<0.05$). Exposure to mass media also had a positive influence antenatal visit and facility delivery with the Chi-square test showing a significant association ($\chi2=397.82$, $p<0.05$) and ($\chi2=306.20$, $p<0.05$) for antenatal and place of delivery respectively.

Distance to health facility was assessed and it was found that respondents who reported that distance to health facility was not a big problem had four or more antenatal care visits and utilized facility delivery than their counterparts with the Chi-square test showing a significant association between distance to health facility and antenatal care visit ($\chi2=306.50$, $p<0.05$) and place of delivery ($\chi2=195.10$, $p<0.05$).

M**ultivariate analyses**

Table 5 presents results of the influence of independent variables on antenatal care visits and place of delivery. In model I, results show that women in the highest wealth quintile are 6 times more likely to attend four or more antenatal care visits than those in the poorest quintile (OR= 6.91, $p< 0.05$). Women who are employed are 3 times more likely to attend antenatal care than the

Table 2. Distribution of respondents by women's level of autonomy, household decision making and healthcare utilization.

Variable	Frequency (4.996)	Percentage (%)
Level of autonomy		
High	1.057	21.9
Average	3.761	77.7
Low	20	0.4
Exposure to mass media		
Not exposed	1.921	39.0
Exposed	3.005	61.00
Distance to health facility		
Big problem	1.749	35.1
Not a problem	3.233	64.9
Number of antenatal care visits		
Less than four visits	2744	56.0
Four visits and above	2.159	44.0
Place of last delivery		
Health facility	1.490	29.9
Home	3.496	70.1
Decision on own health		
Respondent alone	164	3.4
Respondent and husband	1.145	23.7
Husband alone	3.510	72.5
Others	22	0.5
Decision on large household purchase		
Respondent alone	155	3.2
Respondent and husband	1.069	22.1
Husband alone	3.591	74.2
Others	24	0.5
Decision on visit to family or relative		
Respondent alone	233	4.8
Respondent and husband	1.572	32.5
Husband alone	3.018	62.4
Others	18	0.4

Source: 2013 NDHS.

unemployed and a woman's level of education was found to significantly influence antenatal care visit as women with secondary or higher educational level were more than 3 times likely to attend antenatal care than those who had no education (OR=3.94, $p<0.05$). Further results at the multivariate level showed that there was no significant relationship between respondents' religion and antenatal care visit but residence played an important role in antenatal care visit as rural residents were 27% less likely to attend antenatal care in comparison to their counterparts who reside in urban areas.

The inclusion of intervening variables in model II alters the nature of the relationship between respondents' socio-economic determinants and antenatal care visit. In the model, results show that respondents who are in the highest wealth quintile are more than 5 times likely to attend 4 or more antenatal visit. Likewise, educated women were 2 times more likely to attend antenatal care in comparison to those who had no formal education.

Results further revealed a significant relationship

Table 3. Cross tabulation of maternal health care utilization and independents and intervening variables.

Variable	Antenatal care		Place of delivery	
	4 visits and above	< 4 visits	Health facility	Home
Age of respondents				
15-17 years	92 (27.4)	244 (72.6)	62 (18.3)	276 (81.7)
18-19 years	308 (36.9)	527 (63.1)	200 (23.5)	649 (76.5)
20-24 years	1.759 (47.1)	1.973 (52.9)	1.229 (32.3)	2571 (67.7)
Statistic	χ^2=66.27 DF=2 p<0.05		χ^2=46.7 DF=2 p<0.05	
Wealth index				
Poorest	243 (18.3)	1.081 (81.7)	95 (7.2)	1.240 (92.9)
Poorer	441 (32.4)	921 (67.7)	248 (17.9)	1.133 (82.1)
Middle	523 (53.8)	450 (46.2)	372 (34.5)	620 (62.5)
Richer	567 (71.6)	225 (28.5)	429 (52.9)	383 (47.1)
Richest	386 (85.2)	67 (14.8)	346 (74.20)	120 (25.8)
Statistic	χ^2=975.15 DF=4 p<0.05		χ^2=1044.26 DF=4 p<0.05	
Employment status				
Not working	872 (38.0)	1.420 (62.0)	569 (24.4)	1.760 (75.6)
Working	1.272 (49.3)	1.310 (50.7)	904 (34.4)	1.721 (65.6)
Statistic	χ^2=59.14 DF=1 p<0.05		χ^2= 56.47 DF=1 p<0.05	
Level of education				
No education	667 (24.9)	2.016 (12.9)	306 (11.3)	2.408 (88.7)
Primary	424 (53.9)	363 (46.1)	256 (35.3)	523 (64.7)
Secondary	1000 (73.9)	353 (26.1)	824 (59.7)	556 (40.3)
Higher	69 (85.1)	12 (14.9)	75 (90.3)	8 (9.7)
Statistic s	χ^2=930.89 DF=3 p<0.05		χ^2= 1,138 DF=3 p<0.05	
Religion				
Catholic	201 (61.6)	125 (38.4)	220 (66.0)	114 (34.0)
Other Christian	647 (67.7)	309 (32.3)	539 (54.5)	450 (45.5)
Islam	1.285 (36.2)	2.261 (63.8)	716 (20.0)	2.872 (80.0)
Traditional	15 (36.9)	25.0 (63.2)	7 (18.9)	32 (81.2)
Statistics	χ^2=329.92 DF=3 p<0.05		χ^2= 634.29 DF=3 p<0.05	
Place of residence				
Urban	898 (70.0)	385 (30.0)	732 (55.7)	582 (44.3)
Rural	1.262 (34.9)	2.359 (65.2)	759 (20.7)	2.914 (79.3)
Statistics	χ^2=452.33 DF=1 p<0.05		χ^2= 541.85 DF=1 p<0.05	
Mother marital status				
Married	2.085 (43.8)	2.676 (23.5)	1.429 (29.5)	3.412 (70.5)
Widowed	13 (73.5)	5 (26.5)	10 (55.0)	8 (45.0)
Divorce	62 (49.2)	64 (50.8)	51 (40.5)	75 (59.5)
Statistics	χ^2=7.21 DF=2 p<0.05		χ^2= 12.18 DF=2 p<0.05	
Decision on respondent health				
Respondent alone	120 (75.9)	38 (24.1)	98 (59.4)	67 (40.6)
Respondent and husband	661 (59.0)	458 (41.0)	519 (45.4)	625 (54.6)
Husband alone	1.286 (37.3)	2.167	793 (22.7)	2.708 (77.3)
Others	14(65.1)	7 (34.9)	15 (68.1)	7 (31.9)
Statistics	χ^2=224.17 DF=3 p<0.05		χ^2= 290.0 DF=3 p<0.05	

Table 4. Cross tabulation of maternal health care utilization and independents and intervening variables.

Variable	Antenatal care		Place of delivery	
	4 visits and above	< 4 visits	Health facility	Home
Decision on large household purchase				
Respondent alone	105 (70.5)	44 (29.5)	86 (55.6)	69 (44.4)
Respondent and husband	640 (61.40)	403 (38.0)	523 (49.0)	545 (51.0)
Husband	1.318 (37.3)	2.217 (62.7)	802 (22.4)	2.781 (77.6)
Others	16 (72.1)	6 (27.9)	14 (57.5)	10 (42.5)
Statistics	χ^2=230.31 DF=3 p<0.05		χ^2=326.36 DF=3 p<0.05	
Decision on visits to relative				
Respondent alone	159 (69.7)	69 (30.3)	122 (52.4)	111 (47.7)
Respondent and husband	863 (56.0)	679 (44.0)	668 (42.6)	902 (57.5)
Husband	1.047 (35.3)	1.918 (64.7)	627 (20.8)	2.383 (79.2)
Others	11 (66.0)	5 (34.0)	9 (52.0)	8 (48.0)
Statistics	χ^2=232.79 DF=3 p<0.05		χ^2=285.95 DF=3 p<0.05	
Women's level of autonomy				
High autonomy	674 (65.3)	358 (34.7)	553 (52.3)	504 (47.7)
Medium autonomy	1.394 (37.7)	2.304 (62.3)	860 (22.9)	2.891 (77.1)
Low autonomy	11(62.0)	7(3.0)	11 (29.5)	9 (44.0)
Statistics	χ^2=239.33 DF=2 p<0.05		χ^2=332.48 DF=2 p<0.05	
Exposure to mass media				
Not exposed	489 (25.9)	1.398 (74.1)	293 (15.3)	1.624 (84.7)
Exposed	1.646 (55.8)	1.303 (44.2)	1.177 (39.2)	1.823 (60.8)
Statistics	χ^2=397.82 DF=1 p<0.05		χ^2=306.20 DF=1 p<0.05	
Distance to health facility				
Big problem	465 (26.8)	1.268 (73.2)	302 (17.3)	1.442 (82.7)
Not a big problem	1.687 (53.4)	1.470 (46.6)	1.186 (36.7)	2.042 (63.3)
Statistics	χ^2=306.50 DF=1 p<0.05		χ^2=195.10 DF=1 p<0.05	

between exposure to mass media, distance to health facility and utilisation of antenatal care services. Women with access to mass media were almost twice more likely to attend antenatal care than other women (OR=1.48, p<0.05), likewise those who reported that distance to health facility was not a problem (OR=1.98, p<0.05). Model III examined the relationship between the principal variable; women's level of autonomy and antenatal care. Respondents' with low level of autonomy were 65% less likely to attend antenatal care compared to their counterparts who had high level of autonomy (OR=0.35, p<0.05). The inclusion of intervening variables in model IV slightly changed the extent of relationship but women's autonomy still had significant influence on antenatal care with an increased odd ratio of 5% (OR=0-40, p<0.05).

Model V presents the relationship between respondents' socio-demographic determinants and facility delivery holding intervening variables constant. Result shows that respondents in the highest wealth index were 7 times more likely to deliver in facilities in comparison to

Table 5. Multivariate analysis of the selected independents, intervening and outcome variables.

Variable	Number of antenatal care visits				Place of delivery			
	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6	Model 7	Model 8
	OR	OR	OR	OR	OR	OR	OR	OR
Wealth index								
Poorest	1.00	1.00	-	-	1.00	1.00	-	-
Poorer	1.62*	1.45*	-	-	1.84*	1.81*	-	-
Middle	2.87*	2.28*	-	-	3.53*	3.30*	-	-
Richer	4.21*	3.20*	-	-	4.42*	4.10*	-	-
Richest	6.91*	5.16*	-	-	7.01*	6.44*	-	-
Employment status								
Not working	1.00	1.00	-	-	1.00	1.00	-	-
Working	1.3*	1.31*	-	-	1.29*	1.26*	-	-
Level of education								
No education	1.00*	1.00	-	-	1.00	1.00	-	-
Primary	2.15*	2.11*	-	-	1.92*	1.87*	-	-
Secondary	3.18*	2.88*	-	-	3.03*	2.88*	-	-
Higher	3.94*	3.28*	-	-	13.97*	12.63*	-	-
Religion								
Catholic	1.00	1.00	-	-	1.00	1.00	-	-
Other Christian	1.17**	1.22**	-	-	0.48*	0.46*	-	-
Islam	1.00**	0.97**	-	-	0.27*	0.25*	-	-
Traditional	1.00**	1.27**	-	-	0.28*	0.29*	-	-
Place of residence								
Urban	1.00	1.00	-	-	1.00	1.00	-	-
Rural	0.73**	0.81**	-	-	0.60*	0.63*	-	-
Marital status								
Married	1.00	1.00	-	-	1.00	1.00	-	-
Widowed	2.66**	2.55**	-	-	1.78**	1.68**	-	-
Divorced/Separated	0.97**	0.96**	-	-	1.33**	1.37**	-	-
Exposure to mass media								
Not exposed	-	1.00	-	-	-	1.00	-	-
Exposed	-	1.48*	-	-	-	1.62**	-	-
Distance to health facility								
Big problem	-	1.00	-	-	-	1.00	-	-
Not a problem	-	1.98*	-	-	-	0.62*	-	-

Table 5 Cont'd

Women's level of autonomy								
High autonomy	-	-	1.00	1.00	-	-	1.00	1.00
Low autonomy	-	-	0.35*	0.40*	-	-	0.32*	0.38*
Exposure to mass media								
Not exposed	-	-	-	1.00	-	-	-	1.00
Exposed	-	-	-	3.02*	-	-	-	2.95*
Distance to health facility								
Big problem	-	-	-	1.00	-	-	-	1.00
Not a problem	-	-	-	2.75*	-	-	-	2.31*

*p<0.05, **p>0.05.

women in other wealth quintile (OR=7.01, p<0.05). Being employed was another positive factor as women who were working were 29% more likely to deliver in facilities in comparison to the unemployed. Considering respondents' level of education, respondents' who had a higher level of education were more than 13 times likely to have health facility delivery compared to women who did not have formal education (OR=13.97, p<0.05), that is, the higher the respondents' level of education the higher the utilisation of facility delivery. Respondents' who reside in the rural area were 40% less likely to deliver in health facilities compared to urban residents. Introduction of intervening variables in model VI revealed that there is a significant relationship between wealth index, employment status, level of education, religion, place of residence, distance to health facility and place of delivery.

Results further showed that women who were in the richest category were more than 6 times likely to deliver at health facilities than women in the reference category (OR=6.44, p<0.05). Result pattern reveal an increasing proportion of facility delivery with increasing wealth quintile and occupation (OR=1.26, p<0.05).

In addition, holding intervening variables constant, a significant relationship was observed between women's level of autonomy and place of delivery. Women who reported low level of autonomy were 68% less likely to deliver at health facility compared to other women (OR=0.32, p<0.05). Introduction of the intervening variables revealed a significant relationship between women's level of autonomy, exposure to mass media, distance to health facility and place of delivery; with women who were exposed to mass media approximately 3 times more likely to deliver at health facility than other women (OR=2.95, p<0.05). With respect to distance to health facility, women who reported distant to health facility not being a problem are more than 2 times likely to deliver at health facility other women (OR=2.31, p<0.05) (Table 5).

DISCUSSION

The study objective was to examine the relationship between young women's socio-demographic characteristics, level of autonomy and maternal health care utilisation among young ever married women in Nigeria. It was found that more than half (56%) of young women had less than four antenatal visits while pregnant while the required standard by the World Health Organization (WHO) was a minimum of 4 antenatal visit and as much as 8 visits. It was also found that less than 40% women deliver at a health facility. This study found significant relationships between women autonomy, antenatal care visits and health facility delivery. The findings of this study are consistent with the findings of (Asweto et al., 2014; Baral et al., 2010; Bhandari et al., 2017; Deo et al., 2015; Fawole and Adeoye, 2015; Woldemicael, 2007b), who found that maternal healthcare utilisation is influenced by women autonomy. Also, the findings of this study are in agreement with the findings of Sharma et al., (2007) where it was stated that women with greater autonomy irrespective of physical and financial resources are able to manage their own children's health care and make fertility decisions too. Furthermore, other findings including those of Kamiya

(2010); Tarekegn et al., (2014); Teklehaymanot et al., (2017); Thapa, (2012); Workineh and Hailu, (2014) and Deo et al. (2015) found that significant associations between women autonomy and utilisations of maternal healthcare services and specifically stated that women with higher level of autonomy were nearly three times more likely to have at least 4 antenatal care visits. Speizer et al. (2014) highlighted the role of community norms in institutional delivery but stated that women autonomy played a major role in ensuring these deliveries are facility based. This was also the case in Ethiopia as found by Tiruneh et al. (2017)

Findings on the relationship between women autonomy and maternal healthcare utilisation is explained by the fact that younger women in marriages are not as educated as older women, don't have the financial wherewithal to make decisions that have financial implications and follow through, don't have adequate information to ensure evidence-based decision making and also perceive that they are inexperienced to make decisions on issues related to motherhood and pregnancy, hence the dependence of their mother in-laws but this is in contrast to the findings of Hagos et al. (2014) in Ethiopia and Lowe et al. (2016) in Gambia where it was found that women who had autonomy in decision making about place of delivery were less likely to deliver in a health facility and that at the time of delivery, the decision to receive care by trained personnel was often beyond the women's control, resulting in birth-related complications respectively.

Socio-demographic determinants strongly influencing maternal healthcare utilisation identified in this study include employment status, educational level, exposure to mass media and household wealth index. These has also been established in other studies as Okeshola and Sadiq (2013) stated that there is a close relationship between household wealth index and maternal healthcare utilisation among young women in Nigeria; that is, the richer the family, the higher the likelihood of a young woman using maternal healthcare services. Also, in Kenya, Ochako et al. (2011) established that household wealth is significantly associated with the use of maternal healthcare services among young women as also highlighted by the studies of Bhandari et al. (2017), Fawole and Adeoye (2015), Hagos et al. (2014) and Tarekegn et al. (2014) and summarised that households with more financial strength have more access to healthcare generally and not just maternal healthcare, hence, women in these households should ordinarily attend maternal healthcare services more than women from households in the lower wealth quintiles.

Education was also found to be significantly associated with the use of maternal healthcare services and this is consistent with the findings of Furuta and Salway (2006), Sipsma et al. (2014), Adeoye (2015), Bhandari et al. (2017), Fawole and Tiruneh et al. (2017), Duah and Adisah-Atta (2017). This finding can be explained by the fact that better educated women have access to more information either through the mass media or social media compared to less educated women. Employment status or labour force participation was also found to have a significant association with maternal healthcare services and this is supported by the findings of Sebayang et al., (2017), where it was found in Myanmar that adolescent mothers with a high level of labour force participation had higher odds of attending ante-natal care services compared to older women. This might probably be due to the fact that women who are engaged in labour force are better exposed to information from colleagues at work on the importance of maternal healthcare services or that they have the financial capability to cater for financial costs associated with receipt of health services.

Conclusion

This study examined the relationship between women autonomy and utilization of maternal healthcare services (antenatal care and facility delivery) among young ever-married women in Nigeria. The findings of the study have revealed low level of maternal healthcare utilization among young ever-married women in Nigeria, with a high proportion of young women not attending antenatal visits while pregnant and not using the health facilities for delivery of their children. Women autonomy was found to be significantly associated with use of maternal healthcare services among young ever-married women in Nigeria. Other factors revealed that household wealth index, employment status, level of education, place of residence, distance to health facility and exposure to mass media also contributes to antenatal care use and facility delivery. Based on these findings, it is recommended that women should be empowered financially and educationally to ensure they possess the knowledge of the benefits of maternal healthcare and have the financial strongholds to back decisions to use such services. Also, sensitization programs should be targeted to household and community structures to enhance knowledge of the benefits of maternal healthcare and facility delivery as this will ensure household and community barriers such as permission from husband or mother in-laws and other community norms are addressed. Finally, government and programs should adopt strategies that encourage women to utilise maternal healthcare services; this could be in the form of active referrals using community resource persons, social protection schemes such as provision of transportation vouchers and integrated community outreaches by skilled health workers.

Ethical consideration

The Nigerian Demographic and Health Survey (DHS)

data used for the study was downloaded from the website of MEASURE DHS after a written request was submitted to the DHS ICF MACRO and permission was granted to use

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CONFLICT OF INTERESTS

The authors have not declared any conflict of interests.

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