

Does Having a Living Child Increase Women's Risk of Intimate Partner Violence? Evidence from 2008-2013 Nigeria Demographic and Health Surveys

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Abstract

This study examined the relationship between number of living children and intimate partner violence. This was with the view to ascertaining whether having living children or not having a living child was associated with increased risk of intimate partner violence among currently married women in Nigeria. The study analyzed data from 2008-2013 Nigeria Demographic and Health Surveys. The binary logistic regression was applied. Results showed that women who had two or more living children were 20.5% more likely to experience intimate partner violence compared with women who had no living child (OR=1.205; CI: 0.993-1.461). The study concluded that having living children increase women's risk of intimate partner violence in Nigeria. Women experiencing intimate partner violence should seek psychosocial counselling to reduce the incidence of intimate partner violence that may arise from childbearing.

Keywords: Intimate partner violence, living child, childless, women, children, Nigeria

Introduction

In Nigeria, and other parts of sub-Saharan Africa, fertility though declining, remain at high levels. Across the world, all the twelve countries with highest total fertility rates are in sub-Saharan Africa, with no sub-Saharan African country in the league of the ten countries with lowest total fertility rates in the world (Population Reference Bureau [PRB], 2015). One of the reasons why fertility has remained high in sub-Saharan Africa is the socio-cultural demand for large family size. The influence of family and

community on couples' family size decisions described in earlier research (Caldwell & Caldwell, 1987; Fapounda & Todaro, 1988), persists in many parts of sub-Saharan Africa, in spite of changing socio-economic structures, and implementation of national family planning programs (Cleland, Ndongwa & Zulu, 2011). In sub-Saharan African countries where fertility transitions have been observed, stall within the transitions have also been observed (Ezeh, Mberu & Emina, 2009).

Fertility, thus, remain an important component of African social structures, particularly, the marriage system. In virtually all Nigerian communities, childbearing is the main goal of marriage, and contributes to marital satisfaction (Onyishi *et al.*, 2012). Apart from providing old age security to parents, children also have some economic roles, such as working on family farms or assisting in family business. In many urban areas of Nigeria, child labour, such as street hawking, though improper and illegal in some cities, is widely perceived as part of economic contributions of children to family income and survival (Omokhodion & Uchendu, 2010). Unlike in more developed countries of Europe and North America, voluntary or involuntary childlessness is widely resented and not yet accepted as a reproductive behavior in Nigeria (Ibisomi & Mudege, 2014). Most married women in Nigerian communities also do not believe that their marriages are secured without producing children. Some do patronise 'baby factories' to exchange money for a child in order to become more socially relevant in the community (Makinde *et al.*, 2015). Many who had to remarry either due to lost of a partner or marriage dissolution, often have to bear more children regardless of previous number of children, in order to secure their new union.

Research evidence confirms that marital unions experiencing inability to produce children often ends in dissolution (Kalmijn & Poortman, 2006; Sultan, 2010). Nevertheless, many women suffer involuntary childlessness in sub-Saharan Africa (Larsen *et al.*, 2010; Hammarberg & Kirkman, 2013; Inhorn & Patrizio, 2015), with little or no access to assisted reproductive technologies (Inhorn, 2009; Ola, 2012). Such childlessness may result either from inability to have a live birth after years of being sexually active, and not using contraceptives (Larsen, 2005). It may also result from experiencing child mortality (Boerma & Mgalla, 1999). More often than not in Nigeria and other sub-Saharan African countries, married women who are yet to have a living child are pressurised to have one, stigmatised, and experienced several types of marital discord, such as mental stress, sexual dysfunction, isolation or exclusion, and intimate partner violence (Ofowwe & Agbontaen-Eghafona, 2009; Fledderjohan, 2012).

Intimate Partner Violence (IPV) is the most disturbing of the marital discord experienced by women who are yet to have a living child, because it not only endangers women's sexual and reproductive health like other

consequences of marital discord, it may also lead to permanent disability (that further hinder ability to have a live birth) or death. Intimate partner violence refers to any behaviour by a current or former partner in a marital union or intimate relationships that causes physical, psychological or sexual harm to any of the partner in the union or relationship (United Nations [UN], 2012; World Health Organization [WHO], 2013). IPV is not only widespread across the world, it has become a major public health issue (Head *et al.*, 2014), leading to non-fatal and fatal outcomes among women, who are the main victims of IPV (Devries *et al.*, 2011; Jina & Thomas, 2013; Pereira, Vieira & Magalhaes, 2013). Though, IPV has also been reported against pregnant or parous women (Devries *et al.*, 2010; Bessa *et al.*, 2014), but intimate partner violence against women who are yet to have a living child deserve more attention in Africa, because it aggravates the psycho-social problem of women who are already in a socially and economically disadvantaged situation. Such women may need both bio psychosocial and professional medical expertise to overcome the situation (Van den Broeck *et al.*, 2010).

Studies in Nigeria and elsewhere have associated not having a living child with intimate partner violence. While fewer of these studies analyzed both childless and parous women (e.g. McCloskey *et al.*, 2005; Koenig *et al.*, 2006; Uwaoma, Osita-Njoku & Madukwe, 2012), most of these studies focused solely on infertile women (Ardabilly *et al.*, 2011; Aduloju *et al.*, 2015; Iliyasu *et al.*, 2016; Ozgoli *et al.*, 2016; Yildizhan *et al.*, 2016). This creates a knowledge gap for three reasons. One, it is not all women who have no living child that are infertile. Some may have had at least a child in the past, but may have experienced child mortality. Two, childlessness is best measured in relation to women who have reached the end of their reproductive life span, because some who are presently childless may still have a child before the end of their reproductive age. It is thus, preferable to examine number of living children among women who are still within the reproductive life span. Three, all women who have been married for reasonable length of time, but involuntarily without a living child, may be exposed to marital discord, including partner violence, and not just infertile women. Clear understanding of the association between number of living children and partner violence, thus, require assessment of the risks of intimate partner violence among women who had at least a living child, and women who had no living child. This study attempts to fill this knowledge gap by raising the research question: does having or not having a living child increase women's risk of intimate partner violence?

The objective of the study was to examine the relationship between number of living children and intimate partner violence. This was with the view to ascertaining whether having living children or not having a living

child was associated with increased risk of intimate partner violence among currently married women in Nigeria. The study improves understanding of the underlying causes of intimate partner violence by providing empirical-based information on a likely cause of intimate partner violence in the country. In addition, it is important to explicitly examine association between number of living children and intimate partner violence in Nigeria because there is little public health support for women experiencing lack of a living child in Nigeria, as existing intervention is beyond the reach of most childless women (Federal Ministry of Health [FMoH], 2010).

Materials and Methods:

Context

The study was conducted in Nigeria, the seventh most populous country in the world, and most populous country on the African continent (PRB, 2015). Fertility is high in Nigeria, particularly, in Northern Nigeria. However, based on estimates from the 2013 Nigeria Demographic and Health Survey (NDHS), fertility is gradually declining in the country with a total fertility rate of 5.5 per woman as at 2013, compared with 5.7 per woman in 2003 and 2008. Among currently married women in Nigeria, the mean number of children ever born is 4.0 in 2013, with mean number of living children of 3.32, indicating that some of the women have been affected by child mortality. Voluntary childlessness is very rare in Nigeria. In 2013, only 3% of all women had not borne at least a child, but 8.9% of currently married women had no living child. Current estimates of intimate partner violence in the country show that 25% of ever-married women had ever experienced at least one type of partner physical, sexual, or emotional violence, with 19% of them experiencing partner violence in the last 12 months preceding the 2013 NDHS. The NDHS further revealed that among all women of reproductive age, women who had no living child had experienced more partner physical violence since age 15 years, compared with women who had children (National Population Commission [NPC] & ICF International, 2014).

The prevalence of intimate partner violence and other gender-based violence is expected to reduce by the enforcement of a recent legislation (Violence Against Persons [Prohibition] Act of 2015), that criminalises major forms of gender-based violence in the country (Onyemelukwe, 2016). Nonetheless, a number of population, gender and health policies and programmes are being implemented in the country to reduce extent of partner violence, and improve women's sexual and reproductive health. These include National Policy on Population for Sustainable Development (NPC, 2004), Revised National Health Policy (FMoH, 2004), and National Gender Policy (Federal Ministry of Women's Affairs and Social

Development [FMWA & SD], 2006). Though, the population and health policies targets providing essential services to address fertility challenges of childless individuals and couples, medical counselling is the key formal assistance that is widely accessible to women and couples who had fertility problems, because assisted reproductive techniques are too expensive for majority of people who need them (FMoH, 2010). In the absence of medical assistance, individual and couples have access to child adoption in the country, but general attitude to child adoption is still poor in Nigeria (Omosun & Kofoworola, 2011).

Data and Sample

The study analysed data from 2008 and 2013 NDHS. The reason for combining the two surveys was the small proportions of currently married women who had no living child in each round of the surveys. The surveys were conducted using the survey methodology designed for the Demographic and Health Survey (DHS) program in developing countries. Essentially, the methodology involves sampling through a two-staged process of randomly selecting clusters first, and thereafter randomly selecting households (ICF International 2012). Both the 2008 and 2013 NDHS were implemented by the National Population Commission. Detail designs of the surveys have been published (NPC & ICF International, 2009; NPC & ICF International, 2014). Some of the women covered in the surveys were excluded from the current study. The inclusion criteria used was having been included in the domestic violence module, being currently married, not currently pregnant, and being aged 25-49 years. This age group was focused to ensure that most of the women had been married for reasonable length of time, based on current national median age of first marriage of 18.1 years (NPC & ICF International, 2014). The weighted sample size was 24,066 women.

Dependent variable

The dependent variable was intimate partner violence. The three types of intimate partner violence measured in the NDHS were physical, sexual, and emotional violence. The information was collected by asking women to provide a 'yes' or 'no' response to each measure of specific partner violence. With respect to partner physical violence, women were asked if their current or former male partner had ever pushed, shook, or threw something at them; slapped; twisted their arm or pulled their hair; punched them with fist or with something else; kicked, dragged, or beat them up; tried to choke or burn them; threatened or attacked them with a knife, gun, or any other weapon with the aim of hurting them. With respect to partner sexual violence, women were asked whether their male partner had

ever physically forced them to have unwanted sex or physically forced them to perform other unwanted sexual acts. In respect of partner emotional violence, women were asked to affirm whether their male partner ever said or did something to humiliate them in the presence of others; threatened to hurt or harm them or someone close to them; or insult them or make them feel bad about themselves (NPC & ICF International, 2014). Measures of each type of violence were combined to form two categories of 'ever' or 'never' experienced physical, sexual, and emotional violence. A single variable showing women who had ever or never experienced at least one type of partner violence was then derived by combining the three types of partner violence. Women who experienced at least one type of partner violence were grouped as 'ever' experienced, with code '1', while women who had never experienced any partner violence were grouped as 'never' experienced, with code '0'. The outcome of interest in the study was ever experienced at least one type of partner violence.

Independent variables

The main independent variable was number of living children. The variable was re-coded into three categories. The first category was 'no living child'. This group of women are not necessarily infertile. They refer only to currently married women who were yet to have a living child as at the time of the survey. The second category was 'one living child', while the third category was 'two or more living children'. Other variables are included in the study to assess changes in partner violence as other variables in the social environment are added to the analyses. The other independent variables analyzed are six women's individual characteristics, and six household characteristics. The individual characteristics are education, age, age at first marriage, interparental violence, attitude to wife-battery, and pregnancy termination. All these variables have been associated with partner violence in previous studies on domestic violence (Stephenson *et al.*, 2006; Boyle *et al.*, 2009; Okenwa, Lawoko & Jansson, 2009; Abasiubong *et al.*, 2010; Abramsky *et al.*, 2011; Antai & Adaji, 2012). The household characteristics are household wealth, type of marriage, place of residence, geographic region, partner alcoholic consumption, and household decision-making. These variables are used for statistical control in the study. The variables have also been associated with intimate partner violence in previous research (Foran & O'Leary, 2008; Mapayi *et al.*, 2011; Bamiwuye & Odimegwu, 2014).

Household decision-making was derived by combining women's response to participation in decisions, about their own health care, large household purchase, and visits to friends/relatives. Decision-making in which only the male partner had the final say was defined as 'male

dominated’, while others are defined as ‘not male dominated’. Women’s grouping into ‘polygynous’ or ‘monogamous’ unions was based on whether their male partners had at least one other wife or not. Extended family characteristics and community variables were not analysed in the study, though some of the characteristics have been associated with partner violence in previous studies (Stephenson *et al.*, 2006; Clark *et al.*, 2010; Antai & Adaji, 2012). The exclusion of community characteristics was based on the fact that in the DHS datasets, community characteristics are often generated from individual characteristics, which sometimes create collinearity among the independent variables. In addition, the study analyzed more women and partner characteristics based on the assumption that the male partner is more important than other community members or features. As rightly observed by Kelly *et al.* (2012), if the male partner does not abuse his spouse, other family and community members are less likely to abuse her.

Data Analysis

Data were analyzed at three levels with the use of Stata (version 14). At the univariate level, respondents’ socio-demographic profile, and prevalence of intimate partner violence are described using frequency distribution and percentages. At the bivariate level, unadjusted binary logit coefficients are used to describe the relationship between the independent and dependent variables. The regression coefficients showed whether the relationship was positive or negative with 95% confidence interval. At the multivariate level, odds ratios of adjusted binary logistic regression are used to further examine association between the research variables. The Stata *logistic* command was used to fit the binary logistic regression model (StataCorp, 2015) in four nested models. Model 1 included only number of living children, while Model 2 was based on number of living children and women’s individual characteristics. Model 3 was based on number of living children and household characteristics. The full model (Model 4) included all the independent variables.

Ethical considerations

Authorization to download and analyse the datasets was granted by MEASURE DHS. The respondents analyzed in the study are anonymous. The analysis performed was not linked to specific individuals, households or communities, hence findings from the study was not offensive or injurious to any individual, household or community.

Results

Univariate analyses

Table 1 presents the socio-demographic profile of respondents. The majority of respondents had two or more living children. The proportion of respondents without a living child was 4.3%, while less than one-tenth of respondents had only one living child. Nearly half of respondents had no formal education. Secondary education was the dominant educational level attained among educated respondents. Slightly more than a quarter, and slightly more than one-fifth of respondents were in the younger age groups of 25-29 years and 30-34 years respectively, but more than half of respondents were in the advanced reproductive age of 35-49 years. The dominant age group at first marriage was age group 15-19 years. However, slightly more than a quarter of respondents entered marital union less than fifteen years old. The majority of respondents did not witness interparental violence, but slightly less than one-tenth of respondents witnessed interparental violence. The majority of respondents believed that wife-battery was not justified, while slightly less than a quarter believed that wife-battery was justified if wife refuses to have sex with the male partner. The majority of respondents had never terminated a pregnancy, while less-than one-fifth of respondents had ever terminated a pregnancy.

Household wealth was nearly evenly distributed among respondents, though the highest proportions of respondents were in the 'richest' household wealth category. More than one-third of respondents reside in the urban areas of the country, while slightly less than two-thirds of respondents reside in the rural areas of the country. Respondents from the north-west geo-political zone of the country were dominant in the sample. Decision-making in the majority of respondents households' was male dominated, though decision-making in slightly more than one-third of the households was not male dominated. Slightly more than one-fifth of respondents reported that their male partner consumes alcohol, while the majority reported otherwise. The dominant type of marriage among respondents was monogamy. However, a substantial proportion of respondents are in polygynous unions.

Table 1: Socio-demographic Profile of Respondents

Variable	Number of Women	Percentage	Characteristic	Number of Women	Percentage
Number of living children			Household wealth quintile		
No living child	1,044	4.3	Poorest	4,978	20.7
One living child	1,947	8.1	Poorer	4,705	19.6
Two or more living children	21,075	87.6	Middle	4,328	18.0
Education			Richer	4,583	19.0
None	10,775	44.8	Richest	5,472	22.7
Primary	5,250	21.8	Place of residence		
Secondary	5,871	24.4	Urban	9,083	37.7

Higher	2,170	9.0	Rural	14,983	62.3
Current age (years)			Geographic region		
25-29	6,188	25.7	North-central	3,389	14.1
30-34	5,362	22.3	North-east	3,425	14.2
35-39	4,901	20.4	North-west	7,241	30.1
40-44	3,911	16.2	South-east	2,361	9.8
45-49	3,704	15.4	South-south	3,029	12.6
Age at first marriage (years)			South-west	4,622	19.2
Less than 15	6,217	25.8	Household decision-making		
15-19	9,366	38.9	Not male dominated	8,982	37.3
20-24	5,331	22.2	Male dominated	15,084	62.7
25 and above	3,152	13.1	Partner alcoholic consumption		
Interparental violence			Does not drink	19,094	79.3
Did not witnessed	21,766	90.4	Drinks	4,972	20.7
Witnessed	2,300	9.6	Type of marriage		
Attitude to wife-battery			Monogamy	15,353	63.8
Not justified	18,431	76.6	Polygyny	8,713	36.2
Justified	5,635	23.4			
Pregnancy termination					
Ever terminated	3,722	15.5			
Never terminated	20,344	84.5			
Total	24,066	100.0	Total	24,066	100.0

Source: Based on 2008-2013 Nigeria Demographic and Health Surveys

Table 2 presents the prevalence of partner violence among respondents. Parous women compared with women who had no living child, had experienced more partner physical violence. For instance, parous women with two or more living children had higher prevalence of being ever slapped, and being ever kicked by male partners compared with women who had no living child. Likewise, women with one living child had higher prevalence of being ever pushed, and being ever punched by the male partner compared with women who had no living child. Parous women compared with women who had no living child had experienced at least one type of partner physical violence more than women who had no living child. However, women who had no living child had higher prevalence of being ever tried to strangled, being ever threatened with harm, and arm being ever twisted by male partner, compared to parous women.

Table 2: Percentage distribution of respondents by ever experienced intimate partner violence according to number of living children

Types of intimate partner violence	Number of living children		
	No living child	One living child	Two or more living children
Physical violence			
Ever pushed, shook, or threw something	4.5	5.1	5.1
Ever slapped	9.8	10.0	11.1
Ever punched with fist or something else	3.2	3.3	3.2
Ever kicked, dragged or beaten up	3.8	4.3	4.6
Ever tried to strangle, choke or burn	1.6	1.1	0.9
Ever threatened with knife, gun, etc	1.6	1.1	1.1
Ever twisted arm or pulled hair	3.4	2.8	3.1

At least one physical violence	10.5	11.6	12.8
Sexual violence			
Ever physically forced to have sex	2.9	3.3	3.2
Ever forced to perform other sexual acts	1.9	1.6	1.7
At least one type of sexual violence	3.1	3.7	3.6
Emotional violence			
Ever humiliated in presence of others	10.0	9.7	11.5
Ever threatened to hurt or harm	4.9	5.7	5.3
Ever insulted or made feel bad	12.7	11.8	14.7
At least one emotional violence	16.7	15.3	19.4
At least one partner violence	20.9	20.8	24.6

Source: Based on 2008-2013 Nigeria Demographic and Health Surveys

Parous women compared with women who had no living child had higher prevalence of being ever forced to have sex when not wanted, but women who had no living child had higher prevalence of being ever forced to have other sexual acts by male partner compared with parous women. Parous women had higher prevalence of experiencing at least one type of partner sexual violence compared with women who had no living child. Women who had two or more living children had higher prevalence of all types of partner emotional violence compared with women who had no living child. However, women without a living child had higher prevalence of being ever insulted by their male partners, as well as higher prevalence of experiencing at least one type of partner emotional violence compared with women who had one living child. Overall, women with two or more living children had higher prevalence of experiencing at least one type of spousal violence compared with other women.

Bivariate analyses

Table 3 presents the bivariate relationships between the dependent and independent variables. Number of living children had mixed relationship with partner violence. The relationship was negative when women had one living child, but significantly positive when women had two or more living children. Women's education also had mixed relationship with number of living children. The relationship was significantly positive at primary and secondary educational levels, but negative at higher educational level. Maternal age and number of living children are negatively related, but the relationship was significant only when maternal age reaches age 45-49 years. Age at first marriage and partner violence had mixed relationship. The relationship was positive at age groups 15-24 years, but negative at age 25 years or older. Interparental violence and partner violence are significantly positively associated. Likewise, attitude to wife-battery and partner violence are significantly positively associated. Pregnancy termination and partner violence are significantly negatively associated. Household wealth and partner violence are positively associated, but the association was without

statistical significance when household wealth attains the ‘richest’ category. Place of residence and partner violence are positively associated. Except in the south-east zone of Nigeria, geographic region and partner violence are negatively associated. Household decision-making was negatively associated with partner violence. Partner alcoholic consumption and type of marriage are positively associated with partner violence.

Table 3: Unadjusted regression coefficients showing bivariate relationships between number of living children and independent variables

Variable	Coeff.	p> t	95% CI	Characteristic	Coeff.	p> t	95% CI
Number of living children				Household wealth			
No living child ^{ref}	-	-	-	Poorest ^{ref}	-	-	-
One living child	-0.010	0.929	-0.222 0.203	Poorer	0.316	<0.001	0.174 0.457
Two or more living children	0.206	0.027	0.024 0.388	Middle	0.467	<0.001	0.307 0.627
Education				Richer	0.314	<0.001	0.151 0.476
None ^{ref}	-	-	-	Richest	0.132	0.125	-0.036 0.302
Primary	0.530	<0.001	0.420 0.640	Place of residence			
Secondary	0.435	<0.001	0.318 0.552	Urban ^{ref}	-	-	-
Higher	-0.131	0.156	-0.311 0.050	Rural	0.099	0.126	-0.028 0.228
Age (years)				Geographic region			
25-29 ^{ref}	-	-	-	North-central ^{ref}	-	-	-
30 -34	-0.058	0.254	-0.158 0.042	North-east	-0.022	0.833	-0.227 0.183
35-39	-0.052	0.356	-0.163 0.058	North-west	-0.768	<0.001	-0.985 -0.551
40-44	-0.107	0.080	-0.227 0.013	South-east	0.053	0.615	-0.154 0.261
45-49	-0.253	<0.001	-0.378 -0.129	South-south	-0.002	0.981	-0.183 0.179
Age at first marriage (years)				South-west	-0.689	<0.001	-0.861 0.517
Less than 15	-	-	-	Household decision-making			
15-19	0.158	0.002	0.057 0.260	Not male dominated ^{ref}	-	-	-
20-24	0.323	<0.001	0.206 0.440	Male dominated	-0.115	0.018	-0.210 -0.020
25 and above	-0.101	0.167	-0.245 0.043	Partner alcoholic consumption			
Interparental violence				Does not drink ^{ref}	-	-	-
Not witnessed ^{ref}	-	-	-	Drinks	1.129	<0.001	1.026 1.231
Witnessed	1.167	<0.001	1.057 1.277	Type of marriage			
Attitude to wife-battery				Monogamy ^{ref}	-	-	-

Not justified ref	-	-	-	Polygyny	0.071	0.120	-0.018 0.159
Justified	0.450	<0.001	0.347 0.553				
Pregnancy termination							
Ever terminated	-	-	-				
Never terminated	-0.488	<0.001	-0.586 -0.391				

Note: ref (reference category)

Multivariate analyses

Table 4 presents the multivariate results. In Model 1 and in the absence of other covariates of partner violence, women who had two or more living children were 22.9% more likely to experience partner violence compared with women who had no living child (OR=1.229; CI: 1.023-1.474). With the inclusion of women's individual characteristics in Model 2, the odds of partner violence was 15.5% higher among women who had two or more living children compared with women who had no living child (OR=1.155; CI: 0.954-1.397), but this was without statistical significance. In the model, the likelihood of partner violence was 55.4% higher among women who attained primary education (OR=1.554; CI: 1.385-1.743), and 48.3% higher among women who attained secondary education (OR=1.483; CI: 1.304-1.687) compared with uneducated women. Women aged 45-49 years were 18.8% less likely to experience partner violence compared with women aged 25-29 years (OR=0.812; CI: 0.712-0.926). The odds of experiencing partner violence was higher among women who married as young adults compared with women who married at other age at first marriage categories. Women who witnessed interparental violence were nearly three times more likely to experience partner violence compared with women who do not witnessed interparental violence (OR=2.859; CI: 2.557-3.195). The odds of partner violence were 67.1% higher among women who justified wife-battery compared with women who did not justify wife-battery (OR=1.671; CI: 1.503-1.858). Women who had never terminated a pregnancy were 36.6% less likely to experience partner violence compared with women who had terminated a pregnancy (OR=0.634; CI: 0.574-0.701).

Table 4: Odds ratios of binary logistic regression showing effects of number of living children and other factors on partner violence

Variable	Model 1		Model 2		Model 3		Model 4	
	Odds ratio	95% CI						
Number of living children								
No living child ref	1.000	-	1.000	-	1.000	-	1.000	-
One living child	0.990	0.801-1.205	0.924	0.742-1.151	1.026	0.826-1.275	0.963	0.771-1.203

Two or more living children	1.229**	1.023-1.474	1.155	0.954-1.397	1.277**	1.061-1.537	1.205**	0.993-1.461
Education								
None ^{ref}			1.000	-			1.000	-
Primary			1.554*	1.385-1.743			1.356*	1.200-1.534
Secondary			1.483*	1.304-1.687			1.410*	1.222-1.626
Higher			0.937	0.766-1.148			0.966	0.777-1.201
Age (years)								
25-29 ^{ref}			1.000	-			1.000	-
30-34			0.943	0.850-1.846			0.937	0.839-1.047
35-39			0.926	0.826-1.039			0.906	0.802-1.023
40-44			0.888	0.782-1.008			0.865**	0.756-0.990
45-49			0.812**	0.712-0.926			0.781*	0.681-0.897
Age at first marriage (years)								
Less than 15 ^{ref}			1.000	-			1.000	-
15-19			1.082	0.975-0.199			1.029	0.926-1.143
20-24			1.212**	1.068-1.375			1.175**	1.036-1.333
25 and above			0.884	0.752-1.040			0.845**	0.717-0.997
Interparental violence								
Not witnessed ^{ref}			1.000	-			1.000	-
Witnessed			2.859*	2.557-3.195			2.273	2.014-2.564
Attitude to wife-battery								
Not justified			1.000	-			1.000	-
Justified			1.671*	1.503-1.858			1.565*	1.403-1.747
Pregnancy termination								
Ever terminated ^{ref}			1.000	-			1.000	-
Never terminated			0.634*	0.574-0.701			0.667*	0.599-0.742

Notes: ref (reference category), *p<0.001. **p<0.05

In Model 3, women who had two or more living children were 27.7% more likely to experience partner violence compared with women who had no living child (OR=1,277; CI: 1.061-1.537). With the exclusion of richest household wealth category, the odds of experiencing partner violence were

significantly higher among women as household wealth improves. The likelihood of experiencing partner violence was 23.8% higher among women in north-east zone of Nigeria compared with women in the reference category (OR=1.238; CI: 1.017-1.508). The odds were lower in all other zones of the country. Women whose male partners drinks alcohol were more than three times likely to experience partner violence compared with women whose male partners do not drink alcohol (OR=3.080; CI: 2.776-3.412). Likewise, polygynous women were 15.9% more likely to experience partner violence compared with monogamous women (OR=1.159; CI: 1.062-1.265).

In the full model, and with the inclusion of all independent variables in the model, there was little change in the pattern of association between the variables, compared with pattern observed in previous models. Number of living children remained significantly associated with the odds of partner violence. Women with two or more living children were 20.5% more likely to experience partner violence compared with women who had no living child (OR=1.205; CI: 0.993-1.461). In the model, the individual characteristics, namely, women's education, maternal age, age at first marriage, interparental violence, attitude to wife-battery, and pregnancy termination remained significantly associated with the likelihood of experiencing partner violence. Likewise, household characteristics, namely, household wealth, geographic region, partner alcoholic consumption, and type of marriage remained significantly associated with the likelihood of experiencing partner violence. Place of residence and household decision did not reveal significant effects on the odds of experiencing partner violence in the models.

Table 4 continued: Odds ratios of binary logistic regression showing effects of number of living children and other factors on partner violence

Variable	Model 1		Model 2		Model 3		Model 4	
	Odds ratio	95% CI	Odds ratio	95% CI	Odds ratio	95% CI	Odds ratio	95% CI
Household wealth								
Poorest ^{ref}					1.000	-	1.000	-
Poorer					1.346*	1.170-1.549	1.266**	1.098-1.459
Middle					1.435*	1.213-1.697	1.307**	1.108-1.543
Richer					1.308**	1.086-1.575	1.183	0.979-1.429
Richest					1.221	0.972-1.534	1.174	0.934-1.476
Place of residence								
Urban ^{ref}					1.000	-	1.000	-
Rural					1.072	0.929-1.237	1.054	0.915-1.214
Geographic region								
North-central ^{ref}					1.000	-	1.000	-

North-east					1.238**	1.017- 1.508	1.257**	1.037- 1.525
North-west					0.594*	0.476- 0.741	0.682**	0.549- 0.850
South-east					0.806**	0.649- 1.001	0.789**	0.634- 0.983
South-south					0.767**	0.641- 0.917	0.713*	0.597- 0.851
South-west					0.521*	0.438- 0.619	0.536*	0.451- 0.638
Household decision-making								
Not male dominated ^{ref}					1.000	-	1.000	-
Male dominated					1.042	0.943- 1.152	1.035	0.938- 1.141
Partner alcoholic consumption								
Does not drink ^{ref}					1.000	-	1.000	-
Drinks					3.080*	2.776- 3.412	2.744*	2.469- 3.050
Type of marriage								
Monogamy ^{ref}					1.000	-	1.000	-
Polygyny					1.159**	1.062- 1.265	1.185*	1.296

Notes: ref (reference category), *p<0.001. **p<0.05

Discussion

This study examined the relationship between number of living children and intimate partner violence in Nigeria. It improves upon previous studies that linked not having a living child and partner violence among only infertile women (Ardabilly *et al.*, 2011; Adulogu *et al.*, 2015; Iliyasu *et al.*, 2016; Ozgoli *et al.*, 2016; Yildizha *et al.*, 2016) by assessing the risks of partner violence among women with living children and women without a living child. This gives strength to the analyses. The study also draws strength from the quality of data analyzed. The analyzed data are nationally representative and presents a true picture of the links between number of living children and partner violence in Nigeria. Virtually all the independent variables analyzed in the study reveals significant association with partner violence in line with relationships observed in previous studies (Stephenson *et al.*, 2006; Boyle *et al.*, 2009; Okenwa *et al.*, 2009; Abasiubong *et al.*, 2010; Abramsky *et al.*, 2011; Antai & Adaji, 2012; Foran & O’Leary, 2008; Mapayi *et al.*, 2011).

The study revealed that inability to have a living child did not increase women’s risk of experiencing partner violence. This finding is not consistent with the 2013 NDHS report that women who had no living child experienced more partner physical/sexual violence (NPC & ICF International, 2014). The inconsistency was however, permissible on the basis that the 2013 NDHS result was based on all women, but some women

are excluded from the present study. However, the finding was consistent with three previous studies. In the first study (McCloskey *et al.*, 2005), women with four or more children and women without a child both had elevated risk of partner violence. In the second study (Koenig *et al.*, 2006), it was reported that women who had no living child had lower likelihood of partner violence. In the third study (Nwaoma *et al.*, 2012), it was found that being childless was not a predictor of partner violence. This study may have found lower risk of partner violence among women who had no living child because of its focus on mainly women and partner characteristics.

Studies such as (Clark *et al.*, 2010), have shown that extended family members may be the major perpetrators of gender-based violence against women who are involuntarily childless. In most cases, if the male partner is tolerant and protective of his spouse, extended family or community members will not be able to ridicule or abuse the woman in spite of being childless (Kelly *et al.*, 2012). Our finding thus, suggests that Nigerian men may be tolerant and supportive of women who are yet to have a living child. This is an important behaviour change concerns that should be strongly emphasized in all marital counselling and infertility interventions in the country. It will be almost impossible for women to cope with or overcome the mental stress and societal pressure arising from demand for children without the support and cooperation of the male partner. Bearing in mind that in virtually all Nigerian communities, men have dominance over women's sexual and reproductive behaviours, infertility interventions whether medical or non-medical should target more male involvement. This could help to further reduce the incidence of intimate partner violence among women facing fertility challenges. However, such behaviour change concern should be enhanced by improving availability of assisted reproductive technologies such as fertility medication (to stimulate ovulation), in-vitro fertilization (IVF), and artificial insemination (AI) in both secondary and tertiary health care levels in the country.

The study further revealed that parous women particularly, women with two or more living children are exposed to higher risk of partner violence. This further confirms that other issues such as, economic stress and low education within the family may have more relevance in shaping incidence and prevalence of intimate partner violence than the number of living children. Previous studies have provided evidence that across the world, pregnant women are among the groups of women who suffer intimate partner violence (Devries *et al.*, 2010; Bessa *et al.*, 2014), indicating that desire for a child may not be the overriding reason why women face abuse within marital unions or intimate relationships. On the contrary, the number of living children may be a major reason why women remain in unions even if they experienced intimate partner violence. Most women will choose to

remain in a violent union if the safety of their children cannot be guaranteed by quitting the union, especially if the woman depends heavily on the male partner for economic resources. Accelerating the pace of economic empowerment among women is one viable means of ensuring that women in violent unions are able to decide quitting or remaining in a violent union without compromising their sexual and reproductive health.

This study has few limitations that could be improved upon in future studies. The data analyzed, though collected at two different time-points, was cross-sectional. This did not allow attempts to infer that number of living children cause or do not cause intimate partner violence. In addition, the data analyzed relates to the fertility-partner violence situation as at the time of the survey. The changes that have taken place in the country with respect to number of living children and partner violence are not captured in the analysis. The study assumed the trust worthiness of DHS data based on the standard methodology adopted in collecting the data, but in reality, data analyzed are based on self report. It is not impossible that some of the women may not have reported their exact experience of partner violence, which may have reduced the extent of partner violence among the respondents. Finally, future studies may adopt mixed method approach to unravel more reasons why partner violence was higher among parous women. Qualitative data was not collected for the present study because the objective was to assess extent of risks among women who had living children and those who had no living child.

Conclusion

Based on Nigeria DHS, this study provided empirical evidence that having living children increase women's risk of intimate partner violence. It is important that women experiencing any type of intimate partner violence seek psycho-social counselling to reduce the incidence of intimate partner violence that may arise from childbearing. Also, expanding medical services, particularly, assisted reproductive technologies will enhance the prospect of men, women, or couples who desire children but involuntarily childless, to not only achieve their desired fertility, but also reduce the potency of a possible cause of marital discord. Adequate enforcement of legislations against women, irrespective of their fertility status will also enhance the promotion of women's sexual and reproductive health in the country, particularly in the north-east geo-political zone.

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