

# **JUSTIFICATION OF PHYSICAL INTIMATE PARTNER VIOLENCE AMONG MEN IN SUB – SAHARAN AFRICA: A MULTINATIONAL ANALYSIS OF DEMOGRAPHIC AND HEALTH SURVEY DATA**

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## **Abstract**

### **Introduction**

Violence against women is considered a human rights violation, with intimate partner violence (IPV) viewed as its most important component. IPV includes physical, sexual, emotional, and psychological violence, or any combination of these acts. IPV is prevalent in all societies, but the level and degree of its acceptability vary widely. Rates of IPV in sub-Saharan Africa are high, although little is known about men's attitudes toward the justification of IPV.

### **Methods**

The study made use of data from the male file of the most current Demographic and Health Survey (DHS) conducted in 27 countries in sub-Saharan Africa. Men aged 15-64 were used (N=170,361). Binary logistic regression models were used to examine the relationship between the independent variables and justifying at least one form of physical IPV.

### **Results**

Overall, 33% of men in this sample reported that at least one form of physical IPV was justified, ranging from a high of 67% in Guinea to a low of 12% in Malawi. Results showed that justification of physical violence varied by country. The odds of justifying IPV for at least one of the five situations ranged from 0.42 (OR= 0.42, CI= 0.36 – 0.51) in Malawi to 4.86 (OR=4.86, CI= 4.45 – 5.32) in Guinea compared to men in Burkina Faso. Education (no education [OR=2.80, CI=2.53-3.10]), wealth status (poorest [OR=1.58, CI=1.46-1.72]), place of residence (rural residence [OR=1.13, CI=1.06-1.21]), marital status (married men [OR=0.88, CI=0.83-0.92] separated men [(OR=1.16, CI=1.04-1.30)], occupation (Employed men [OR=1.23, (CI=1.17-1.30)], and age (men aged 55-64 [OR=0.78, CI=0.74-0.82]) predicted justification of physical IPV among men in sub-Saharan Africa.

### **Conclusion**

This study finds that men's justification of IPV against women in sub-Saharan Africa is substantial, although not universal across nations. Policies and interventions should be geared towards breaking the societal norms that affirm women's vulnerability in the society. Advocacy to stop physical intimate violence against women should be strengthened by NGO's, civil groups and government agencies.

### **Keywords**

Justification, Physical Intimate Partner Violence, Men, sub-Saharan Africa

## **Introduction**

Intimate partner violence (IPV), is used to refer to sexual, physical, emotional, and psychological violence, or any amalgamation of these acts [Bazargan – Hejazi, Medeiros, Mohammadi, Lin, Dalal, 2013], is a human rights violation. While IPV is prevalent in all societies, but the level and degree of its acceptability vary greatly [Steinbrenner, 2016]. IPV is widely prevalent in sub-Saharan Africa [Devries et. al., 2013; Gracia – Moreno et. al., 2005], with an overall prevalence of 36%, which exceeds the global average of 30% [Gracia – Moreno et. al., 2013]. More women in Africa are victims of lifetime intimate partner violence (45.6%) than women somewhere in the world [Gracia – Moreno et. al., 2013]. However, the prevalence of IPV varies from one country in Africa to another and over time, indicating that IPV is dependent on contextual factors and is mutable [Jewkes, 2002; Johnson, Ollus & Nevala, 2008; True, 2012].

IPV has numerous adverse outcomes for victims, including poor psychological health and adverse reproductive health effects, including poor birth outcomes [Campbell, 2002] and sexually transmitted infections. This includes an increased risk of Human Immunodeficiency Virus (HIV) transmission. The relationship between IPV and HIV has emerged in several studies across Africa [Burgos – Seto et. al., 2014; Dunkle et. al., 2004; Durevall & Lindskog; 2015].

Women who accept as true that IPV is tolerable and normative are more likely to take responsibility themselves for the violence and to experience long-term mental health problems, and they are also less likely to report the violence to civil authorities or other family members [Neville et. al., 2004]. Justification of IPV by people other than the perpetrator or survivors shape responses to the violence. People who regard IPV as a cultural norm tend to have a more positive attitude towards the action and have less empathy and support for victims [Paylou & Knowles; 2001; West & Wandrei, 2002]. Attitudes toward and beliefs about IPV are therefore associated not only with its prevalence but also how communities respond to the violence [Tran, Nguyen & Fisher; 2016]. Attitudes about IPV are determined by multiple factors, including social norms around traditional gender roles and these attitudes and beliefs have been shown to be transmitted from generation to generation, perpetuating the justification and societal sanctioning of IPV [Flood & Pease, 2009].

Although some studies in sub-Saharan Africa have attempted to understand factors associated with justification of IPV among women [Darteh & Amo – Adjei, 2012; Doku & Asante, 2015; Okenwu – Emegwa, Lawok & Jansson, 2016; Husnu & Mertan, 2017; Cools & Kotsadam, 2017], factors associated with such justification among men have not received the same level of attention in research. Uthman, Lawoko and Moradi (2010) looked at gender disparities in attitudes towards IPV against women using data available from Demographic and Health Surveys (DHS) in 17 sub-Saharan African countries between 2003 and 2007. They found from their meta-analysis that women were more likely to justify IPV than men. The current study

aims to build on this previously conducted work and assess factors associated with the justification of IPV among men in sub-Saharan Africa using data from current Demographic and Health Survey (DHS) of 27 countries.

## **Methods**

### ***Data***

This study used data from the male file of the most current Demographic and Health Survey (DHS) conducted in 27 countries in sub-Saharan Africa. DHS are nationwide surveys collected across developing countries in Africa and Asia. DHS interviewed men 15- to 64-years old. DHS permits for cross-country comparison due to following equivalent standard procedures from sampling, questionnaires, training of field staff, data collection, cleaning, coding and analysis. DHS employs a stratified, two-stage sampling technique. The first stage involves the selecting of points or clusters (enumeration areas [EAs]). The second stage is the sampling of households enumerated in each cluster or EA using a systematic approach. All men between the ages 15 – 64 who were usual residents of selected households or visitors who slept in the household on the night before the survey were interviewed. For the purpose of this study, the total sample consisted of 170,361 men who had data on attitudes towards physical intimate violence. Men who partook in the survey gave oral and written consent. Ethical approval was given by ICF International institutional review board and by individual national institutions review board. Authorization to use the dataset was approved from MEASURE DHS after the submission of a concept note. The dataset is accessible to the public at [www.measuredhs.org](http://www.measuredhs.org). Countries used for this study were only countries which had their current DHS from not later than 2010. Twenty-seven countries were identified and used for the study. These countries are Burkina Faso (2010), Benin (2011 – 2012), Burundi (2011), Cameroon (2011), Chad (2014 – 2015), Comoros (2012), Congo DR (2013 – 2014), Cote d’voire, (2011 – 2014), Ethiopia (2011), Gabon (2012), Ghana (2014), Gambia (2013), Guinea (2012), Kenya (2014), Lesotho (2014 – 2015), Liberia (2013), Malawi (2010), Mali (2012 – 2013), Mozambique (2011), Namibia (2015), Nigeria (2013), Rwanda (2014 – 2015), Sierra Leone (2013), Senegal (2010 – 2011), Togo (2013 – 2014), Zambia (2013 – 2014) and Zimbabwe (2015).

## *Definition of variables*

### *Dependent variable*

The dependent variable used for this study was the justification of physical intimate partner violence. The dependent variable resulted from the questions “sometimes a husband is annoyed or angered by things that his wife does. In your opinion, is a husband justified in hitting or beating his wife in the following situations?” Five situations were identified: if she goes out without telling him? (yes, no), if she neglects the children? (yes, no) if she argues with him? (yes, no), if she refuses to have sex with him? (yes, no), if she burns the food? (yes, no) [Doku & Asante, 2015]. The ‘No’ responses were coded ‘0’ and the ‘Yes’ responses were coded ‘1’. An index was generated for all the yes and no responses with scores ranging from 0 to 5. The score 0 was labelled as “no” and 1 to 5 was labelled as “yes”. A dummy variable was generated with ‘0’ score being males who answered no for all the five situations and ‘1’ if the males had answered at least one yes for the five situations of justifying IPV.

### *Independent variables*

The independent variables, chosen based upon previous literature, consist of: urban/rural residence, age, wealth status, education, religion, occupation, marital status, Residence was coded as rural and urban. Age was categorized as: 15-24; 25-34; 35-44, 45-54; 55-64; wealth status was derived from household ownership of a diversity of assets and categorized as poorest, poorer, middle, richer, richest. Level of education and partner’s education was categorized as no education, primary, secondary, higher. Religion was recoded as Christian, Muslim, Other. Occupation was recoded as unemployed, employed. Marital status was coded never married, married, living with partner, widowed, divorced, and separated.

### *Data Analysis*

Descriptive and inferential statistical analyses were conducted using the version 13 of Stata. Descriptive figures are presented in percentages by countries. The dependent variable, the justification of physical IPV, was dichotomous in nature captured as 0= “no” and 1= “yes”. A discrete choice model was employed to show how the independent variables are related to the dependent variable. Specifically, binary logistic regression was employed given that this technique is based on the assumption that the outcome variable should be dichotomous in nature and data should not have outliers. The analysis looked at the odds ratio and 95% confidence interval and applied sampling weights to account for unequal sampling probabilities biases to generate results that are representative within and across countries.

## Results

### *Background characteristics of respondents.*

The background characteristics of respondents are shown in Table 1. Approximately a quarter (24.6%) of respondents were within the richest wealth status and 38.6% of respondents had secondary education. A majority were Christians (63%) and employed (83%). Thirty-six percent of respondents were aged 15 – 24 years, 48% were married, and more than half (60%) were from rural areas (see Table 2). The majority of the respondents do not read newspapers or magazine at all (61%) or listen to radio at least once a week (53%) (see Table 1).

### *Justification towards physical intimate partner violence*

Table 2 shows selected information from men from 27 sub-Saharan Africa countries. The general prevalence of justifying at least one form of physical IPV is 33% and this ranges from 67% in Guinea to 12% in Malawi (see Table 1). Overall, 17% of respondents justified physical violence when partners go out without telling them and this ranged from 46% in Guinea to 6% in Malawi. Generally, 21% of respondents justified physical violence when partners neglect the children and this was the most common in Guinea (52%) and rarest in Benin (6%). In all countries, 18% of respondents justified physical violence when partners argue with them, and this ranged from 46% in Guinea to 5% in Rwanda (see Table 2). In all, 12% of respondents justified physical violence when partners refuse to have sexual intercourse with them and this was rarest in Namibia (3%) and most common in Mali (35%) (see Table 2).

### *Multivariate analysis*

Table 3 illustrate that the poorest men in our sample had the highest likelihood of justifying IPV than those with the highest wealth status. Among the five reasons that men could indicate would justify IPV, burning food had the highest odds ratio, at 2.42. Men with no education were more likely than better educated men to justify IPV, with arguing with him as the strongest predictor. Rural men had a higher likelihood of justifying IPV than men from urban residence, with arguing with him having the highest odds ratio of 2.72 among the five reasons that men could indicate would justify IPV (see Table 3).

Employed men with no education were more likely than better educated men to justify IPV, with neglects of the children (OR=1.15, CI=1.10 – 1.19) as the strongest predictor. Muslim

men had a higher likelihood of justifying IPV compared to Christian men, with refusal to have sexual intercourse with him (OR=1.49, CI= 1.43 – 1.56) the strongest predictor among the five reasons that men could indicate would justify IPV (see Table 3).

Whereas Men who were separated were more likely than never married men to justify IPV, with refusal to have sexual intercourse with him as the strongest predictor. married men had a lesser likelihood of justifying IPV compared to never married men (see Table 3). Older men had a lesser likelihood of justifying IPV than younger men among sample men. For instance, men aged 55 – 64 years had a lesser likelihood of justifying IPV compared to those aged 15 – 19 years. with refusal to have sexual intercourse with him having the highest odds ratio of 0.68 among the five reasons that men could indicate would justify IPV (see Table 3).

Results showed that justification of physical violence varied by country. The odds of justify IVP for a least of the five situations ranged from 0.42 (OR= 0.42, CI= 0.36 – 0.51) in Malawi to 4.86 (OR=4.86, CI= 4.45 – 5.32) in Guinea compared to men in Burkina Faso (see Table 3).

## **Discussion**

The aim of the present study was to assess the factors associated with the justification of IPV among men in sub-Saharan Africa using data from the most current Demographic and Health Survey (DHS) of 27 countries. Our study found that approximately a third of men in sub-Saharan Africa justify physical IPV for at least one reason. Similar findings were obtained by Rani, Bonu and Diop-Sidibe (2004) and Uthman, Lawoko and Moradi (2010), who in their studies revealed that men in sub-Saharan Africa were less likely than surveyed women to justify IPV. The reason could be that in sub-Saharan Africa, cultural norms create an environment where traditional gender roles make IPV seem normative and often lead to situations where women are consistently more likely to justify IPV compared to men [Rani, Bonu and Diop-Sidibe ,2004]. Whereas some countries like Malawi [Mellish, Settergren,Sapuwa, 2015] and Ghana [Institute of Development Studies (IDS), Ghana Statistical Services (GSS) and Associates (2016)] have laws strict laws against domestic violence others such as Guinea do not have laws that directly address physical domestic violence [Institute of Development Studies (IDS), Ghana Statistical Services (GSS) and Associates (2016)] reports show citizens in Guinea remains strongly influenced by customs that promote male domination over women. These individuals tolerate physical violence as an accepted way of correcting a wife by the husband

Our study found that men with poorer wealth status and lower levels of education were more likely to justify physical IPV compared to those with highest socioeconomic position. This finding is consistent with the findings of Uthman, Lawoko and Moradi (2009), Abeya (2015) and Waltermaurer (2013), who also identified lower socio-economic status to be associated with higher justification of IPV by men. Likewise, research has found that individuals with lower socio-economic status have a more favorable attitude towards IPV than individuals with higher

socio-economic status [Taylor, Xia, Do, 2017]. Like other socio-economic statuses, the acceptance rates of IPV among people living in urban areas indicating that social justification of IPV against women is in general higher in rural than urban areas as found in a previous study by Tran, Nguyen and Fisher (2016). A possible explanation could be that people in the lowest socioeconomic position (living in poverty and having low education) might be exposed in childhood to maltreatment, including witnessing violence perpetrated by their fathers against their mothers and may hold on to some negative cultural beliefs, and have fewer opportunities to know about rights to safety and global norms about gender equity and thereby be more likely to accept IPV against women [Tran, Nguyen & Fisher, 2016]. This may also be due to stress. People with fewer means may experience higher stress and injure their partners more. Unfortunately, the DHS does not ask questions about a history of witnessing violence, and so we are not able to test this given data restrictions. Research also shows that when people live in areas of high poverty, they tend to be more tolerant of crime and violence [Sampson & Wilson, 1995].

Our study revealed that younger men were less likely to justify IPV compared to older men. Our finding corroborates the findings of previous studies [Okenwa – Emegwa, Lawok & Jansson, 2016; Khawaja, Linos & El – Roeiheb, 2008; Abramsky et. al., 2011; Waltermaurer, 2013]. The likely explanation could be that young men are more aggressive in general, and that many of them become less aggressive as the testosterone levels decline as they get older. Another possibility is that there is an increasing trend in the attitudes towards violence. Another possibility is that there is an increasing trend in the attitudes towards violence, and that as these men age, they will continue to hold IPV as justified. This could be explained by the social learning theory, which suggests young people accept physical abuse of women as punishment for bad behaviour [Tran, Nguyen & Fisher, 2016]. For instance, in homes where IPV is common, children may learn how to justify IPV from their fathers and as they grow, they may develop the tendency to justify any incident of IPV. This tendency is likely to result in a more positive attitude towards IPV, which is likely to reduce as they grow to understand the effects of IPV through the acquisition of more reliable information from their environment. Our finding confirms the findings of Uthman, Lawoko and Moradi (2009), who also found that in most countries in sub-Saharan Africa, never married men were more likely to justify IPV than those who were married. The reason could be that those who are married are influenced by their status as husbands (and potentially fathers) to reduce their tolerance for violence against their partner.

Another key finding was how occupation status influences justification of IPV among men in sub-Saharan Africa. Our finding that men who are employed are more likely to justify IPV compared to those who are unemployed is consistent with the findings of Khawaja, Linos and El-Roueiheb (2008) who found that men in the labor force have greater independence and this may lead them to react through violence and the justification of wife beating. Similar findings were also obtained by Gennari, Giuliani and Accordini (2017), in a qualitative study where it was identified that the men who are employed are more likely to justify IPV compared

to those who are unemployed because justification of violent behaviors against women is connected to the need for social control. Contrary view was also found by Uthman, Moradi and Lawoko (2009) and Linos and colleagues (2010) who established in their works that unemployed men were more likely to justify IPV. This need for social control makes men who are employed justify IPV on the basis that women are in considered less socially competent and capable of dealing with the outside world and violence against them seems justifiable.

There are several limitations to this research worth noting. DHS data are based on self-report and the survey methodology does not allow for the measurement of actual behavior. Thus, given the possibility of social desirability bias, these data may not be entirely accurate representations of physical IPV prevalence. In addition, DHS data do not include an assessment of whether respondents witnessed IPV in their childhoods for all countries, a variable that could be a strong predictor of positive attitudes toward IPV as an adult. Finally, these data only ask about physical IPV, so the estimates are likely an under-estimate of all IPV experienced and justified by these respondents.

Nonetheless, the strengths of our findings are rooted in the study design: a multi-country analysis of data that were rigorously collected using standard methodologies, yielding comparable samples across 27 countries, reflecting a sample size of more than 170,000 men. This is also a rare look at the male perspective on IPV, which is critically important to understand if we are to address the issue.

## **Conclusion**

In summary, our study examined the factors that are associated with the justification of physical intimate partner violence among men in sub-Saharan Africa. We found the overall prevalence of justifying physical intimate partner violence for at least one reason was high. However, there were some important variations across countries, with the prevalence being lowest among men from Malawi and highest among men from Guinea. Wealth status, education, place of residence, marital status, occupation and age were found to be associated with justification of physical intimate partner violence among men in sub-Saharan Africa. This study contributes to the limited literature on men's justification of physical intimate violence against women in sub-Saharan Africa. Policies and interventions should be geared towards breaking the societal norms that affirm women's vulnerability in the society. Advocacy on physical intimate violence against women should be strengthened by non-governmental organizations, civil groups and government agencies.

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Table 1: *Background characteristics of respondents.*

Explanatory factors	Frequency N=170,361	Percentage (%)
<b><i>Country</i></b>		
Burkina Faso, 2010	6,869	4.0
Benin, 2011 – 2012	4,878	2.9
Burundi, 2011	4,113	2.4
Cameroon, 2011	6,776	4.0
Chad, 2014 - 2015	4,484	2.6
Comoros, 2012	1,889	1.1
Congo DR, 2013 – 2014	8,046	4.7
Cote d'voire, 2011 – 2014	4,904	2.9
Ethiopia, 2011	13,648	8.0
Gabon, 2012	5,392	3.2
Ghana, 2014	4,339	2.6
Gambia, 2013	3,570	2.1
Guinea, 2012	3,632	2.1
Kenya, 2014	12,418	7.3
Lesotho, 2014 – 2015	1,857	1.1
Liberia, 2013	3,935	2.3
Malawi, 2010	7,061	4.1
Mali, 2012 – 2013	3,469	2.0
Mozambique, 2011	3,889	2.3
Namibia, 2015	4,215	2.5
Nigeria, 2013	16,517	9.7
Rwanda, 2014 – 2015	6,115	3.6
Sierra Leone, 2013	6,838	4.0
Senegal, 2010 – 2011	4,795	2.8
Togo, 2013 – 2014	4,383	2.6
Zambia, 2013 – 2014	14,075	8.3
Zimbabwe, 2015	8,258	4.9
<b>Wealth status</b>		
Poorest	27,580	16.2
Poorer	31,084	18.3
Middle	32,926	19.3
Richer	36,874	21.6
Richest	41,897	24.6
<b><i>Education</i></b>		
No education	35,418	20.8
Primary	54,704	32.1
Secondary	65,784	38.6
Higher	14,455	8.5

**Table 1 Continued**

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<b>Age</b>		
15 – 24	61,405	36.1
25 – 34	46,847	27.5
35 – 44	35,130	20.6
45 – 54	21,320	12.5
55 – 64	5,659	3.3
<b>Religion</b>		
Muslims	51,221	30.1
Christians	107,891	63.3
Others	11,249	6.6
<b>Occupation</b>		
Unemployed	28,202	16.6
Employed	142,159	83.4
<b>Marital status</b>		
Never married	69,787	41.0
Married	82,235	48.3
Living with partner	12,113	7.1
Widowed	991	0.6
Divorced	2,086	1.2
Separated	3,150	1.9
<b>Residence</b>		
Urban	68,879	40.4
Rural	101, 482	59.6

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Table 2: Justification towards physical intimate partner violence among men in Sub – Saharan African countries

Country	Weighted N	Goes out without telling him	Neglects the children	Argues with him	Refusal to have sexual intercourse with him	Burns food	At least one reason
		(%)	(%)	(%)	(%)	(%)	(%)
Burkina Faso, 2010	6,869	17.2	19.2	19.9	10.5	6.8	33.2
Benin, 2011 – 2012	4,878	7.3	5.9	8.0	4.5	3.9	14.2
Burundi, 2011	4,113	20.9	30.6	18.1	19.6	6.7	43.2
Cameroon, 2011	6,776	21.0	27.8	17.2	7.8	8.8	37.4
Chad, 2014 - 2015	4,484	28.0	36.6	22.7	24.8	27.8	49.9
Comoros, 2012	1,889	6.3	7.0	6.2	7.3	2.6	15.6
Congo DR, 2013 – 2014	8,046	32.0	39.0	41.4	23.5	14.9	59.6
Cote d’voire, 2011 – 2014	4,904	22.0	28.2	25.1	11.7	12.1	40.8
Ethiopia, 2011	13,648	25.3	29.8	25.5	21.6	21.6	44.3
Gabon, 2012	5,392	14.0	28.0	19.4	6.0	6.5	38.5
Ghana, 2014	4,339	6.6	8.2	5.9	4.8	2.7	12.4
Gambia, 2013	3,570	20.0	18.2	11.0	19.0	5.9	31.9
Guinea, 2012	3,632	45.8	52.1	45.7	29.4	23.2	66.5
Kenya, 2014	12,418	18.6	26.9	20.4	9.9	4.5	35.8
Lesotho, 2014 – 2015	1,857	15.2	23.7	24.0	9.0	5.7	35.8
Liberia, 201	3,935	14.9	14.9	18.3	4.1	2.7	24.5
Malawi, 2010	7,061	5.5	6.2	5.6	5.0	3.1	12.4
Mali, 2012 – 2013	3,469	33.0	36.6	32.4	34.7	17.4	55.6
Mozambique, 2011	3,889	6.0	7.1	7.9	8.5	0.9	18.8
Namibia, 2015	4,215	9.4	13.5	8.8	2.7	4.2	20.6
Nigeria, 2013	16,517	13.4	13.9	13.1	11.3	7.9	24.7
Rwanda, 2014 – 2015	6,115	6.5	11.3	5.1	6.3	1.6	16.8
Sierra Leone, 2013	6,838	20.0	22.3	24.5	9.7	5.1	34.1
Senegal, 2010 – 2011	4,795	12.3	13.8	16.1	12.2	7.9	23.9
Togo, 2013 – 2014	4,383	9.4	11.5	9.7	4.8	5.5	17.3
Zambia, 2013 – 2014	14,075	15.6	19.1	19.4	10.7	7.2	30.6
Zimbabwe, 2015	8,258	17.4	17.8	13.7	6.0	5.7	32.2
All Countries (total)	170,361	17.4	21.3	18.4	12.0	8.6	32.7

Table 3 : Logistic regression model showing the relationship between background characteristics and Justification of physical intimate partner violence among men in Sub – Saharan African countries, 2010 – 2016

Explanatory variables	Goes out without telling him	Neglects the children	Argues with him	Refusal to have sexual intercourse with him	Burns food	At least one
	AOR (CI)	AOR (CI)	AOR (CI)	AOR (CI)	AOR (CI)	AOR (CI)
<b>Country</b>						
Burkina Faso, 2010	Ref	Ref	Ref	Ref	Ref	Ref
Benin, 2011 – 2012	0.54***(0.48 – 0.61)	0.30***(0.27 – 0.35)	0.45***(0.40 – 0.51)	0.53***(0.45 – 0.62)	0.56***(0.47 – 0.66)	0.41***(0.37 – 0.44)
Burundi, 2011	1.63***(1.46 – 1.81)	1.98***(1.80 – 2.17)	1.04***(0.93 – 1.16)	2.99***(2.66 – 3.36)	1.04(0.88 – 1.22)	1.71***(1.57 – 1.86)
Cameroon, 2011	1.90***(1.73 – 2.10)	2.03***(1.85 – 2.22)	1.17**(1.06 – 1.29)	1.12*(0.99 – 1.28)	1.54***(1.34 – 1.76)	1.58***(1.46 – 1.71)
Chad, 2014 - 2015	2.41***(2.19 – 2.65)	2.80***(2.56 – 3.06)	1.53***(1.39 – 1.68)	3.14***(2.83 – 3.50)	5.06***(4.50 – 5.69)	2.42***(2.23 – 2.63)
Comoros, 2012	0.40***(0.32 – 0.49)	0.34***(0.28 – 0.42)	0.29***(0.23 – 0.36)	0.68***(0.55 – 0.83)	0.32***(0.23 – 0.45)	0.41***(0.37 – 0.46)
Congo DR, 2013 – 2014	3.40***(3.11 – 3.72)	3.28***(3.02 – 3.57)	4.24***(3.90 – 4.61)	4.59***(4.14 – 5.09)	2.61***(2.31 – 2.94)	4.03***(3.74 – 4.35)
Cote d'voire, 2011 – 2014	1.77***(1.61 – 1.95)	1.88***(1.72 – 2.05)	1.68***(1.54 – 1.80)	1.61***(1.43 – 1.80)	2.04***(1.80 – 2.32)	1.70***(1.57 – 1.83)
Ethiopia, 2011	2.18***(2.01 – 2.36)	2.06***(1.91 – 2.22)	1.67***(1.55 – 1.80)	2.86***(2.61 – 3.14)	3.90***(3.51 – 4.33)	1.83***(1.71 – 1.95)
Gabon, 2012	1.27***(1.13 – 1.43)	2.37***(2.14 – 2.63)	1.65***(1.48 – 1.84)	1.07(0.91 – 1.24)	0.93(0.79 – 1.10)	1.87***(1.70 – 2.05)
Ghana, 2014	0.54***(0.47 – 0.62)	0.51***(0.46 – 0.58)	0.39***(0.34 – 0.44)	0.74***(0.63 – 0.86)	0.46***(0.38 – 0.56)	0.41***(0.37 – 0.46)
Gambia, 2013	1.63***(1.46 – 1.81)	1.21***(1.09 – 1.35)	0.65***(0.57 – 0.72)	2.34***(3.25 – 4.05)	1.02(0.87 – 1.20)	1.23***(1.13 – 1.34)
Guinea, 2012	4.98***(4.52 – 5.48)	5.39***(4.91 – 5.91)	3.86***(3.51 – 4.23)	3.63***(3.25 – 4.05)	4.01***(3.54 – 0.53)	4.86***(4.45 – 5.32)
Kenya, 2014	2.00***(1.84 – 2.18)	2.14***(1.98 – 2.32)	1.57***(1.45 – 1.70)	1.91***(1.72 – 2.11)	0.92(0.81 – 1.04)	1.58***(1.48 – 1.70)
Lesotho, 2014 – 2015	1.22**(1.06 – 1.42)	1.46***(1.28 – 1.66)	1.70***(1.49 – 1.93)	1.25**(1.04 – 1.50)	0.79**(0.63 – 0.99)	1.35***(1.21 – 1.51)
Liberia, 2013	1.04(0.93 – 1.17)	0.86**(0.77 – 0.95)	1.13***(1.02 – 1.26)	0.58***(0.49 – 0.69)	0.43***(0.35 – 0.53)	0.85***(0.77 – 0.93)
Malawi, 2010	0.34***(0.30 – 0.39)	0.31***(0.28 – 0.35)	0.28***(0.24 – 0.32)	0.59***(0.49 – 0.69)	0.42***(0.36 – 0.51)	0.31***(0.28 – 0.34)
Mali, 2012 – 2013	2.54***(2.30 – 2.81)	2.62***(2.39 – 2.88)	2.12***(1.93 – 2.33)	4.52***(4.06 – 5.04)	2.70***(2.36 – 3.07)	2.92***(2.68 – 3.19)
Mozambique, 2011	0.48***(0.42 – 0.56)	0.37***(0.32 – 0.42)	0.49***(0.43 – 0.56)	1.16**(1.01 – 1.34)	0.15***(0.11 – 0.21)	0.57***(0.52 – 0.63)
Namibia, 2015	0.63***(0.56 – 0.72)	0.66***(0.59 – 0.75)	0.45***(0.39 – 0.51)	0.33***(0.27 – 0.41)	0.54***(0.45 – 0.65)	0.55***(0.49 – 0.60)
Nigeria, 2013	1.11**(1.02 – 1.20)	0.87**(0.81 – 0.94)	0.83***(0.77 – 0.90)	1.45***(1.32 – 1.59)	1.30***(1.16 – 1.45)	0.88***(0.83 – 0.94)
Rwanda, 2014 – 2015	0.47***(0.41 – 0.53)	0.60***(0.55 – 0.67)	0.27***(0.24 – 0.31)	0.83**(0.72 – 0.95)	0.23***(0.18 – 0.29)	0.47***(0.43 – 0.51)
Sierra Leone, 2013	1.44***(1.32 – 1.58)	1.41***(1.30 – 1.55)	1.52***(1.39 – 1.65)	0.97(0.86 – 1.09)	0.65***(0.56 – 0.75)	1.24***(1.15 – 1.34)
Senegal, 2010 – 2011	0.94(0.85 – 1.05)	0.80***(0.72 – 0.89)	0.98(0.89 – 1.09)	1.36***(1.21 – 1.52)	1.31***(1.14 – 1.50)	0.80***(0.74 – 0.87)
Togo, 2013 – 2014	0.70***(0.62 – 0.79)	0.70***(0.63 – 0.79)	0.59***(0.52 – 0.66)	0.66***(0.57 – 0.78)	0.96(0.82 – 1.12)	0.55***(0.50 – 0.61)
Zambia, 2013 – 2014	1.49***(1.36 – 1.63)	1.34***(1.23 – 1.46)	1.52***(1.39 – 1.65)	1.93***(1.73 – 2.15)	1.26***(1.11 – 1.43)	1.26***(1.18 – 1.36)
Zimbabwe, 2015	1.53***(1.39 – 1.68)	1.10**(1.00 – 1.20)	0.95***(0.87 – 1.05)	0.87**(0.77 – 0.99)	0.87**(0.75 – 1.00)	1.23***(1.14 – 1.33)
<b>Wealth status</b>						
Poorest	1.80***(1.70 – 1.90)	1.66***(1.57 – 1.75)	1.75***(1.65 – 1.85)	1.97***(1.84 – 2.11)	2.42***(2.23 – 2.62)	1.72***(1.64 – 1.80)
Poorer	1.59***(1.51 – 1.68)	1.47***(1.40 – 1.55)	1.56***(1.48 – 1.65)	1.68***(1.57 – 1.80)	2.02***(1.87 – 2.19)	1.56***(1.49 – 1.63)
Middle	1.53***(1.45 – 1.61)	1.46***(1.39 – 1.53)	1.49***(1.41 – 1.57)	1.57***(1.47 – 1.68)	1.84***(1.70 – 1.98)	1.51***(1.45 – 1.58)

	Richer	1.37***(1.45 – 1.61)	1.31***(1.25 – 1.37)	1.33***(1.27 – 1.39)	1.35***(1.27 – 1.43)	1.53***(1.43 – 1.64)	1.33***(1.28 – 1.38)
	Richest	Ref	Ref	Ref	Ref	Ref	Ref
<b>Education</b>							
	No education	2.54***(2.34 – 2.76)	2.22***(2.07 – 2.39)	2.72***(2.50 – 2.95)	2.64***(2.38 – 2.94)	2.44***(2.16 – 2.76)	2.43***(2.28 – 2.58)
	Primary	2.13***(1.98 – 2.30)	1.93***(1.80 – 2.06)	2.39***(2.21 – 2.58)	2.27***(2.05 – 2.50)	2.15***(1.91 – 2.41)	2.09***(1.97 – 2.21)
	Secondary	1.86***(1.73 – 2.01)	1.77***(1.66 – 1.88)	2.02***(1.88 – 2.17)	1.78***(1.62 – 1.97)	1.96***(1.75 – 2.19)	1.83***(1.74 – 1.93)
	Higher	Ref	Ref	Ref	Ref	Ref	Ref
<b>Age</b>							
	15 – 24	Ref	Ref	Ref	Ref	Ref	Ref
	25 – 34	0.83***(0.79 – 0.86)	0.81*** (0.78 – 0.84)	0.81***(0.77 – 0.84)	0.81***(0.77 – 0.86)	0.78***(0.73 – 0.82)	0.78***(0.75 – 0.80)
	35 – 44	0.74***(0.71 – 0.78)	0.69***(0.66 – 0.72)	0.71***(0.68 – 0.75)	0.76***(0.71 – 0.80)	0.66***(0.62 – 0.71)	0.67***(0.64 – 0.70)
	45 – 54	0.68***(0.64 – 0.72)	0.60***(0.57 – 0.63)	0.64***(0.61 – 0.68)	0.69***(0.65 – 0.74)	0.62***(0.57 – 0.67)	0.58***(0.55 – 0.60)
	55 – 64	0.67***(0.61 – 0.73)	0.56***(0.51 – 0.61)	0.58***(0.54 – 0.64)	0.68***(0.61 – 0.75)	0.61***(0.54 – 0.68)	0.51***(0.48 – 0.55)
<b>Religion</b>							
	Muslims	1.13***(1.09 – 1.18)	0.98(0.94 – 1.01)	1.13***(1.09 – 1.78)	1.49***(1.43 – 1.56)	1.05**(1.00 – 1.11)	1.00(0.97 – 1.03)
	Christians	Ref	Ref	Ref	Ref	Ref	Ref
	Others	1.19***(1.13 – 1.26)	1.19***(1.13 – 1.25)	1.15***(1.08 – 1.21)	1.25***(1.17 – 1.34)	1.25***(1.16 – 1.34)	1.18(1.13 – 1.24)
<b>Occupation</b>							
	Unemployed	Ref	Ref	Ref	Ref	Ref	Ref
	Employed	1.14***(1.09 – 1.19)	1.15***(1.10 – 1.19)	1.12***(1.08 – 1.16)	1.06**(1.01 – 1.11)	1.02(0.97 – 1.08)	1.15***(1.11 – 1.19)
<b>Marital status</b>							
	Never married	Ref	Ref	Ref	Ref	Ref	Ref
	Married	0.88***(0.85 – 0.92)	0.88***(0.84 – 0.92)	0.87***(0.84 – 0.91)	0.77***(0.74 – 0.82)	0.78***(0.73 – 0.82)	0.84***(0.81 – 0.87)
	Living with partner	0.95*(0.89 – 1.01)	0.94**(0.89 – 0.99)	0.95*(0.89 – 1.08)	0.76***(0.70 – 0.83)	0.84***(0.77 – 0.92)	0.90***(0.85 – 0.94)
	Widowed	0.72**(0.60 – 0.87)	0.86*(0.73 – 1.01)	0.71***(0.59 – 0.85)	0.70**(0.57 – 0.87)	0.91(0.72 – 0.92)	0.77*(0.66 – 0.89)
	Divorced	1.08(0.96 – 1.22)	1.13**(1.01 – 1.26)	1.11*(0.99 – 1.25)	1.15**(1.01 – 1.31)	1.08(0.92 – 1.26)	1.12(1.01 – 1.23)
	Separated	1.11**(1.01 – 1.23)	1.10**(1.00 – 1.21)	1.19***(1.08 – 1.31)	1.00 (0.89 – 1.13)	1.09(0.95 – 1.25)	1.16**(1.07 – 1.26)
<b>Residence</b>							
	Urban	Ref	Ref	Ref	Ref	Ref	Ref
	Rural	1.06**(1.02 – 1.10)	1.04***(1.03 – 1.11)	1.05**(1.02 – 1.09)	1.14***(1.09 – 1.19)	1.09**(1.04 – 1.15)	1.07***(1.04 – 1.10)

\*P<0.10 \*\*P<0.05 \*\*\*P<0.01

Ref= Reference Category