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Descriptive analysis of men's sexual behaviour in sub-Saharan Africa: Simplicity-parsimony approach

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Abstract:

The interconnection between men's sexual behaviour as a contributor to burden of reproductive and sexual health diseases in sub-Saharan Africa are often presented with complex and sophisticated statistical analyses with little or no comprehension among the affected population that are mostly with little or no statistical literacy and education. The study adopted simplicity-parsimony idea as amalgam of simplicity and parsimony theories in analysing the trends and patterns of men's sexual behaviour in Ethiopia, Nigeria and Zambia, the three countries selected from Eastern, Western and Southern parts of sub-Saharan Africa. Demographic Health Survey male-recode datasets (2000–2014) were used. Simple descriptive statistical techniques at univariate and bivariate levels were conducted. The results highlighted that men's sexual behaviour are not the same in these regions. The men median sexual debut is 18 (Nigeria and Ethiopia) but 16 in Zambia. The median age at first cohabitation differs: 22 in Zambia and Ethiopia but higher in Nigeria. From 2000/2004 to 2010/2014, cohabitation practice reduced in Ethiopia across all ages but increased among men aged 25–29 (Zambia: 14.7–15.0%, Nigeria: 13.3–13.9%). There were declined in union-turnover in Ethiopia (–8.8%), Nigeria (–11.4%) and

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PUBLIC INTEREST STATEMENT

The study provided simplified empirical insights into the trends and patterns of men's median age at sexual debut, levels of cohabitation, multiple sexual partnership, prevalence of non-spousal sex, variations in the condom use, cumulative lifetime sexual life partners and frequency of union-turnover in Ethiopia, Nigeria and Zambia, and by extension, sub-Saharan Africa in general. Rather than encumbering the public with complex statistical techniques, and cut-off majority of the population that are not statistically literate or with low/no education, we adopted simplification of idea in tabular arrangements and pictures (graphs) that would require little or no interpretation. The study revealed men median age at first intercourse is 18 (Nigeria and Ethiopia) but 16 in Zambia. The study highlighted that the prevalence of non-use of condom and increase level of non-spousal sex could pose challenge in the fight against the wide spread of STDs/HIV and zero-AIDS deaths agenda in the region.

Zambia (−9.3%) including condom use; but non-spousal sex increased. The study concludes that the increase in non-spousal sex, non-condom use could have implications for STIs/HIV spread and zero-AIDS deaths agenda in the region. The authors suggest that policy decision-takers focus on non-spousal sex, non-use of condom, and union-turnover as crucial factors in the fight against STIs/HIV in sub-Saharan Africa.

Subjects: Gender Studies - Soc Sci; Gender Studies; AIDS & HIV; Reproductive Technology Medical Sociology; Risk; Health & Illness

Keywords: simplicity-parsimony; descriptive analysis; men sexual behaviour; union-turnover; condom use; non-spousal sex; STIs/HIV; AIDS; Ethiopia; Nigeria; Zambia

1. Background

Men sexual behaviour is an important contributor to the burden of reproductive health diseases in sub-Saharan Africa. It represents a fundamental factor in fertility, family sizes, conjugal stability and remains indispensable to other population dynamics and events (Bingenheimer, 2010; Harrison et al., 2008; Mah & Halperin, 2010; Wellings et al., 2006). As critical as men sexual behaviour is to public health, simple statistical analysis about their interconnections are rare, especially, as related to sub-Saharan Africa and particularly in outlets that are widely accessible. While there are innumerable studies and investigation on sexual behaviour, the savour of basic comprehension by the general public could be lost, due principally to complex and sophisticated statistical analyses used (Chen et al., 2018; Ellen et al., 2018; Ogbé et al., 2018; Spicker, 2018). The health consequences of sexual behaviour and its other social and economic implications are borne largely by population and societies characterized by lower socio-economic status prominent among which is lower educational attainment (Amoo et al., 2018, 2017; World Health Organization, 2016) with stark disadvantage on statistical knowledge. Besides, in sub-Saharan Africa, statistical education is, in most cases, a derivative of higher education, usually obtainable at high colleges or universities. Therefore, for countries with larger proportion of their (limited) educated population in lower education cadre, usually below university or higher colleges, flooding the databank or resources centres with complex statistics deprives overwhelming population the benefit of understanding and utilizing most health research outcomes. Simply put, complex statistical analyses increases the gap between the knowledge producers (researchers) and knowledge users (decision-takers) either at the home or community platforms, and more gap between researchers and national policy makers (Amoo, 2012; Ogbé et al., 2018; Uzochukwu et al., 2016). It is therefore expedient to profile men's sexual behaviour and present the same in manner that could be understandable by the majority of population whose lives and health are at risk.

There are quite a number of issues related to men sexual behaviour in sub-Saharan Africa that have not been exhaustively investigated and are mostly shrouded with secrecy. The issues of Polygyny, wife inheritance, virgin cleansing, inter-generational sex, marriage aspiration, frequent union, or partnership disruption are old, but increasing contextual issues in sub-Saharan Africa (Harrison & O'Sullivan, 2010; Langeni, 2007; Leclerc-Madlala, 2002; Leclerc-Madlala, 2009; Okeke, 2018). Specifically, the region is encumbered with myriads of demographic and health challenges majority which could be linked to men sexual behaviour. Today, marriage and child-fathering are not linked, and there are increasing number of unclaimed children or absent-fathers, status of early sexual initiation among men is increasing and, men's inflicted sexual domestic violence (e.g., raping, wife-battering, and so on) are on the rampage (Abrahams et al., 2004; Bearinger et al., 2007; Gupta & Mahy, 2003; Hindin & Fatusi, 2009; Madhavan et al., 2008; United Nations, 2013). Constant monitoring of men sexual behaviour with statistically understandable evidences could be necessary for improvement in sexual health and wellbeing of both men and women. This would

also help in the pursuit of STIs/HIV eradication and achievement of zero-AIDS deaths agenda in the sub-Saharan Africa region.

2. The theory of simplicity-parsimony

The study is premised on simplicity-parsimony idea that was conceptualized for this study as amalgam between the extant theory of simplicity and the law of parsimony. While the simplicity idea emphasises that the mind seeks the simplest available interpretation of observations, the law of parsimony centres on simpler solutions as the best problem-solving principle (Baker, 2013; Feldman, 2016; Hoffmann, 2003; Hoffmann et al., 1996). As simplicity approach indicated that human minds are more aroused by situation that appear simple, the parsimonious endorses absence of complexity in phenomena analyses. This amalgam concept (simplicity-parsimony) expatiates that simple solutions and presentation are likely to be effective than complex ones; and that hypothesis with fewer assumptions are also effective tests to provide solution to a given problem (Baker, 2013; Dessalles 2017; Hoffmann, 2003; Hoffmann et al., 1996). In other words, these theories position that, how much a given phenomenon is explained with smaller variables or fewer assumptions determines its truest description and constitutes the best approach (Bhattacharjee, 2012; Pelz, n.d.; Vandekerckhove et al., 2015). In this study, attempts were made to avoid complex assumptions by the way of any hypothesis or complexity of analysis that might demand controlling for variables. A simple but empirical situation analysis is hereby provided on the trends and patterns of sexual behaviour among men in sub-Saharan Africa using national data from Ethiopia, Nigeria and Zambia.

Generally, in behavioural research, the essence of every study is to contribute to knowledge, communicate to target population, enhances policy formulation and causes a change in the society through expected sustenance (or proposed change) of certain behaviour or practices. Effective statistical communication comes through simple statistical analysis (Kreinovich et al., 2020; Scott, 2018). Besides, data are more auction-able to people if descriptive statistics are employed. Complex statistical outcomes could cut-off majority of the population who ordinarily would have needed the results for personal, family wellbeing and development and vital decisions for the community. Developing countries are characterized with much population with lower education (United Nations Children's Fund [UNICEF], 2016). This could explain why fertility rate remained high despite numerous studies on family planning (Population Reference Bureau [PRB], 2008, 2010, 2015, 2019; Wusu & Amoo, 2016). While the study considered men's sexual behaviour as a sexual and health risks, it assumes the continuing existence of certain behavioural practices despite tested hypothesis-confirmed research outcomes could be due to complexity inherent in such outputs.

In sub-Saharan Africa (SSA), among the men, the practice of marrying many wives (polygyny), unchecked measures of sex outside marriage, multiple sexual partnership practice, overlapping or concurrent sexual relationships (with more than one person per time), and higher cumulative lifetime sexual partner including masculinity are major characteristics (Awusabo-Asare & Annim, 2008; Bingenheimer, 2010; Harrison et al., 2008; Mah & Halperin, 2010; Odiboh et al., 2020; Olanrewaju et al., 2019). While girls married shortly after puberty, the median age at first sex for men in 2017/2018 was reported at 17.8 (Nigeria) and 16.4 year (Uganda) (Owonikoko et al., 2018; Renzaho et al., 2017). As at 2015, it range from 17.6 in Kenya, 18.4 (Liberia), 19.6 (Sierra Leone) to 20.8 in Ethiopia compared to 22.6 in India (Nwokocho & Ajayi, 2015). Another report for 0 SSA countries has indicated a seemingly declining trend 18.1 (2004), 18.2 (2010) and 17.9 in 2015 (Melesse et al., 2020), in the face of another earlier report of 16.9 (for Mozambique), 19.6 (Ghana) and between 18 and 19 for both Latin America and the Caribbean (Khan & Mishra, 2008; Tenkorang & Maticka-Tyndale, 2008). While complex analysis of issues pertaining to these sexual behaviour could be good for statistical literate decision-takers, it could cut off the real men involved in the practices.

For a very long time, Africa men often have on the average between two and three concurrent partnerships that possibly overlaps for months or years (Halperin & Epstein, 2004). Concurrent sexual partnerships among men in age 15–49 years were as high as 55% in Lesotho, 36% in Cote D'Ivoire, Lusaka and Zambia shared 22% which was compared unfavourably to 3%, 2% and 3% in Philippine, Singapore and Thailand, respectively (Mah & Halperin, 2010; Morris & Kretzschmar, 2000). In 2019, from clusters study that involved sub-Saharan Africa migrant men in Portugal, 56.5% in one cluster reported both occasional and regular partners while in another cluster 74% only had occasional partners but all engaged in commercial sex (Dias et al., 2019). In another study that involved 139 427 men, the prevalence of paid sex among men in sub-Saharan Africa was reported at 4.3% while Mozambique had the highest proportion (Seidu et al., 2019).

Although, the notion that sexual behaviour impacts on population dynamics has remained a popular global assertion, simple analysis of its nature and spread are relatively scarce in the literature. The achievement of safe sex is paramount in the pursuit of fulfilling sexual health, quality of life and wellness, and can enhance the delivery of healthy economic productivity and development (Wellings et al., 2006). This knowledge is crucial to prevention of STIs in SSA and could provide better insight into required interventions to curb other demographic consequences of unwanted pregnancy, abortion, large family sizes, violence against women or achievement of zero-AIDS deaths. It may therefore be worthwhile to attempt to examine the trends and patterns in men sexual behaviour and practices in the face of formidable STIs/HIV, AIDS epidemics and volume of deaths from these infectious diseases (Agyei-Mensah, 2005; Mayaud et al., 2020; Odiboh et al., 2020; Olanrewaju et al., 2019; UNICEF & World Health Organization, 2013).

3. Methods and materials

The study used representative datasets from Demographic Health Survey (DHS) from 2000 to 2014 across selected sub-Saharan African (SSA) countries. In this study, only the male recode-datasets were used. The data selection followed the procedures adopted by Amoo et al (2017 and 2018). The surveys were grouped into 3-Waves: Wave-1 covered surveys between 2000 and 2004; Wave-2 data were drawn across 2005 to 2009 while the Wave-3 covered dataset between 2010 and 2014. Three countries were selected across sub-Saharan Africa regions with each one representing the Western, Eastern and Southern regions, namely: Ethiopia, Nigeria and Zambia, respectively. The selection process was guided by the availability of at least three sets of data that fall within the waves defined. Specifically, for Ethiopia data, 2000, 2005 and 2011 datasets were selected. For Nigeria, datasets used were that of 2003, 2008 and 2013 while the set of data for Zambia featured 2002, 2007 and 2014. Thus, wave-1 therefore consists of 2000, 2002 and 2003 datasets. Wave-2 has 2005, 2007 and 2008 datasets while 2011, 2013 and 2014 datasets were used for Wave-3. The files in each wave were grouped together and the three groups were then combined into a single file. In the final data file, only variables of interest were retained while others were dropped (Amoo, 2017; Amoo et al., 2018). Analysis were split by countries and then by waves to show the trend across the years and for different countries.

4. Data analysis procedures

All available indicators (variables) of men sexual behaviour were analysed as guided by the Integrated Demographic Health Survey Data Classification (Amoo et al., 2017; Macro & National Population Commission, 2014; Wellings et al., 2006). These variables are: marital status, living arrangement, age at first sex, age at first cohabitation, number of spouses/sexual partners, frequency of sex, ever paid for sex, use of condoms and, number of children fathered, among others. The authors intended to present without statistical rigour, simple descriptive explanation of the trends and patterns of men's sexual behaviour in sub-Saharan Africa taking into consideration the massive statistical disadvantaged population. Therefore, we employed univariate descriptive statistics that are presented in frequency tables and means and median statistics used where necessary. Specifically, these statistics are to present the respondents' background information, highlight the trends in men's sexual behaviour across the years of study (2000–2014) and to illustrate figuratively where necessary.

5. Ethical considerations

Permission was sought from Measures DHS, ICF Macro, Calverton, Maryland, USA, the organisation that collated the data and made the datasets freely available (with respondents identifiers completely removed) for users worldwide. The survey exercises were approved by the Institutional Review Board of ICF Macro and also country specific ethics-based committees. International standards of data collections were employed and all participants gave informed consent. In addition, all information collected was also accorded the right confidentiality.

6. Results

Table 1 presents the demographic and social characteristics of the men in Ethiopia, Nigeria and Zambia. The men's mean age and median age across the region are 30.5 years and 29 years, respectively. The age distribution demonstrates a gradual decline in the proportion of under aged (≤ 19 years) compared to the next older age and subsequent older ages. Those that are under-25 years were more than half (52.1%) of the total sample. In Zambia, the proportion in age 20–24 years decreased progressively from 16.5% in the 2000/2004, to 15.2 in the second wave of the survey (2005–2009) and to 13.1% in the last survey period (2010–

Educational attainment in Nigeria and Zambia relatively depicted normal curve shape taking off with lower proportion in 'no-formal-education' cadre, reaches peak at primary and secondary education levels and declined to lower percentages at higher/tertiary level. Except in the last survey regime when Ethiopia education data distribution followed a normal curve pattern, hitherto, the percentage with primary education is far lower to those who were not educated in the 2000/2004 and 2005/2009 survey periods (Table 1). However, the proportion with secondary and tertiary education increased tremendously from one wave to another in both Nigeria and Zambia.

The proportion never-in-union (single or never married) increased towards 2010/2014 survey period compared to a decline trend between 2000/2004 and 2005/2009, notably in Ethiopia and Nigeria (Table 1). The proportion married and living with partner increased across the survey periods in Ethiopia. The number increased between the first and second survey exercise in Nigeria and thereafter declined to 49.3% with 7.3% change (decline) from the previous record of 56.6%. The proportions married in Zambia were 58.2%, 55.8% and 55.7% in 2000/2004, 2005/2009 and 2010/2014, respectively (Table 1). In addition, the percentage of men separated, divorced and once married but living-alone declined progressively across all the survey periods. Similarly, unemployment decreased with 1.9%, 6.6% and 8.0% in Ethiopia, Nigeria and Zambia between 2000/2004 and 2010/2014. Analogous of this trend was also observed in the case of professional occupation and clerical services. The proportion of men in the farming business declined in Ethiopia and Nigeria but Zambia recorded a growth in this statistic.

The proportion of men who have fathered one to two children increased in Ethiopia and Nigeria but decreased by 0.3% in Zambia in the last survey (2010/2014). The percentage of men with more than 6 children declined in Nigeria and Ethiopia, while in Zambia, the proportion fell by 3.6% between 2000/2004 and 2005/2009 but it increased greatly to 17.2% in 2010/2014. However, percentage of men who have not fathered any child increased in Nigeria and Ethiopia but decreased in Zambia. Overall, the proportion of men with three children and above declined in Ethiopia and Nigeria by 1.1% and 7.7% while Zambia gained an additional 0.5%.

While the proportions of men aged ≤ 19 years that are cohabiting increased in Ethiopia, a decline was reported for Nigeria and Zambia. The proportion of men (aged ≤ 24 years) who cohabited declined in Zambia from 46.9% (2000/2004) to 43.0% (2005/2009) and 41.2% in 2010/2014. It increased initially in Nigeria from 29.9% (2000/2004) to 31.5% (2005/2009) and later fell to 25.1% in 2010/2014 (Table 2). In Ethiopia, the percentage declined by 2.8% between 2000/2004 and 2005/2009 but later increased by 4.6% in 2010/2014 (Table 2).

Table 1. Socio-demographic profile of men in Ethiopia, Nigeria and Zambia (2000–2014) in percentages

Selected variables	Ethiopia			Nigeria			Zambia		
	W1	W2	W3	W1	W2	W3	W1	W2	W3
Age group									
< 20 years	38	38.4	36.6	38.1	32.1	37.7	38.3	38.1	38.2
20–24 years	14.1	13.8	16.1	14.3	15.8	15.9	16.5	15.2	13.1
25–29 years	10.7	12.6	11.9	11.9	13.2	13.6	12.9	14.5	12.8
30 years and above	37.3	35.3	35.4	35.6	38.9	32.7	32.4	32.2	35.8
Place of residence									
Urban	26.1	27	29.9	42	33.1	41.2	32.1	43.6	46.2
Rural	73.9	73	70.1	58	66.9	58.8	67.9	56.4	53.8
Education									
No formal Education	48.7	40.3	31.5	21	23.6	19.3	5.4	4.6	3.8
Primary Education	29.5	32.3	47.3	25.7	21.0	17.2	54.1	46.0	40.5
Secondary Education	18.5	23.1	11.5	41.2	41.9	48.3	35.2	41.8	47.5
Higher Education	3.2	4.3	9.7	12.1	13.5	15.2	5.3	7.6	8.2
Religion									
Christianity	46.7	49.3	44.4	31.8	51.1	51.7	96.1	96.6	97.8
Islam	12.7	14.5	15.7	18.6	46.8	46.9	0.4	0.4	0.7
Others (Traditional)	40.6	36.2	39.9	49.6	2.1	1.4	3.5	3.0	1.4
Marital Status									
Never in union	40.5	40.8	40.1	46.5	41.5	49.1	36.7	39.2	40.1

(Continued)

Table 1. (Continued)

Selected variables	Ethiopia			Nigeria			Zambia		
	W1	W2	W3	W1	W2	W3	W1	W2	W3
Age group									
Married/Living with partner	55.0	55.2	56.2	51	56.6	49.3	58.2	55.8	55.7
Separated	4.5	4.0	3.7	2.6	1.9	1.6	5.1	5.0	4.2
Occupation									
Unemployed	10.8	13.7	8.5	27.3	15.2	20.7	26.7	18.9	18.7
Professional	4.6	4.0	5.9	11.0	7.2	9.3	4.0	5.2	5.1
Clerical/Services/Sales	9.3	10.2	12.0	14.1	13.2	14.5	0.5	13.5	15.8
Farming	64.6	62.3	60.0	28.5	38.8	27.0	45.5	38.8	41.7
Skilled manual	8.2	5.8	10.8	15.2	22.4	24.0	21.8	19.8	14.3
Unskilled manual	2.5	4.0	2.8	3.9	3.2	4.5	1.4	3.7	4.4
Children fathered									
No Child	47.0	45.6	46.0	49.7	45.5	52.5	38.7	40.1	39.8
1-2 Children	14.4	15.6	16.3	13.4	14.7	15.6	18.1	17.5	17.2
3-4 Children	11.9	13.3	12.9	10.7	12.9	13.1	13.1	16.1	14.2
5-6 Children	10.0	10.5	10.0	8.6	9.8	8.2	11.7	11.5	11.5
7 Children and above	16.7	15.0	14.8	17.6	17.0	10.7	18.4	14.8	17.2
Wealth Status									
Poor wealth status	na	35.7	35.1	34.8	38.8	32.7	na	32.4	35.0
Middle wealth status	na	14.6	15.3	19.0	19.8	20.4	na	20.2	21.0

(Continued)

Table 1. (Continued)

Selected variables	Ethiopia			Nigeria			Zambia		
	W1	W2	W3	W1	W2	W3	W1	W2	W3
Age group									
Rich wealth status	na	49.7	49.6	46.2	41.4	46.9	na	47.3	44.0
Total	100	100	100	100	100	100	100	100	100

Source: DHS (2000–2014). na = not available, W1, W2, W3 = Wave 1, 2 and 3, respectively

Table 2. Sexual behaviour among men in Ethiopia, Nigeria and Zambia (2000–2014) in percentages

Selected variables	Ethiopia			Nigeria			Zambia		
	W1	W2	W3	W1	W2	W3	W1	W2	W3
Age at first sex									
Never had sex	27.5	30.6	29.6	23.3	21.9	27.7	9.9	14.0	13.7
< 20 years	32.3	25.3	19.7	33.4	33.6	29.9	69.4	65.7	63.7
20–24 years	11.1	16.3	10.1	16.3	16.7	16.0	13.3	13.2	14.2
25–29 years	2.2	4.6	2.4	4.9	5.1	3.9	3.1	2.2	2.7
30 years and above	2.4	0.9	0.4	1.8	1.8	1.1	1.0	0.4	0.6
At 1st Union	24.4	22.3	37.9	20.4	21.0	21.3	3.3	4.6	5.1
Median age (year)	18	18	13	18	18	18	16	16	16
Age at first cohabitation									
< 20 years	15.8	15.4	18.0	12.1	11.0	8.2	12.4	12.5	11.2
20–24 years	24.5	22.1	24.1	17.8	20.5	16.9	34.5	30.5	30.0
25–29 years	13.4	12.1	12.5	14.7	15.8	15.0	13.3	13.6	13.9
30 years and above	5.8	5.7	5.3	9.0	11.1	10.8	3.1	4.2	4.8
Never cohabited/NR	40.5	44.8	40.1	46.5	41.5	49.1	36.7	39.2	40.1
Cohabitation (excluding never-cohabited)									
< 20 years	26.6	15.4	18.0	12.1	11.0	8.2	12.4	12.5	11.2
20–24 years	4.1	22.1	24.1	17.8	20.5	16.9	34.5	30.5	30.0
25–29 years	22.6	12.1	12.5	14.7	15.8	15.0	13.3	13.6	13.9

(Continued)

Table 2. (Continued)

Selected variables	Ethiopia			Nigeria			Zambia		
	W1	W2	W3	W1	W2	W3	W1	W2	W3
Age at first sex	9.7	5.7	5.3	9.0	11.1	10.8	3.1	4.2	4.8
30 years and above									
Median age (year)	22	22	22	24	24	24	22	22	22
Number of wife/partner									
No wife	45.0	44.8	43.8	49.0	43.4	50.7	41.8	44.2	44.3
One wife	49.3	51.5	52.3	39.4	45.4	41.0	52.5	51.5	51.5
Two or more wives	5.7	3.7	3.9	11.6	11.1	8.3	5.7	4.4	4.1
Number of union									
Only one	36.0	na	41.5	32.7	37.9	36.9	38.7	41.0	42.2
Two times or more	23.5	na	18.4	20.8	9.5	14.0	24.6	15.5	17.7
NR/Never in Union	40.5	na	40.1	46.5	52.6	49.1	36.7	43.5	40.1
Frequency of union									
Only one	60.5	na	69.3	61.1	80.0	72.5	61.2	72.6	70.5
Two times or more	39.5	na	30.7	38.9	20.0	27.5	38.8	27.4	29.5
Recent sexual activity									
Never had sex	27.5	30.6	29.6	23.3	21.9	27.7	9.9	14.0	13.7

(Continued)

Table 2. (Continued)

Selected variables	Ethiopia			Nigeria			Zambia		
	W1	W2	W3	W1	W2	W3	W1	W2	W3
Age at first sex									
Active in last 4 weeks	44.5	45.8	46.4	46.8	49.7	48.6	54.5	53.7	58.0
Not active in last 4 weeks	28.0	23.7	24.0	29.8	28.4	23.6	35.6	32.3	28.2
Number of sexual partner (+ wife)									
No sexual partner	85.3	92.3	91.8	73.7	79.8	78.6	66.4	72.4	71.9
Only one partner	10.7	6.6	6.9	17.6	15.8	17.2	24.5	22.5	22.6
Two or more partners	4.0	1.1	1.2	8.7	4.4	4.2	9.1	5.1	5.5
Total life sexual partners									
Only one partner	na	na	32.2	na	21.8	21.0	na	12.5	11.5
Two or more partners	na	na	38.0	na	55.6	51.0	na	73.3	74.6
No sexual partner	na	na	29.7	na	22.6	28.0	na	14.2	13.9
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0

Source: DHS (2000–2014). na: not available, W1, W2, W3 = Wave 1, 2 and 3, respectively

The median age at first sex is 18 year for Nigeria across all survey periods. It was 18 for Ethiopia between 2000 and 2009 but reduced to 13 years in 2010/2014 (Table 2). The median age for Zambia was 16 years across the survey periods (2000–2014). The median age at first cohabitation is 22 years for Ethiopia and Zambia but a bit higher in Nigeria. Men with more than one wife/partner decreased in both Nigeria and Zambia but increased slightly in Ethiopia by 0.2% (2010/2014) when compared with the statistic of 2005/2009 (see Table 2). The frequency of union (i.e. union-turnover) above one time (≥ 2) decreased in Ethiopia, though the variable was not captured in the second wave of the survey in Ethiopia. This rate decreased to 20.0% in Nigeria by 2005/2009 and later increased to 27.5% by 2010/2014 (Table 2). Stable union (those who recorded only one-time union) increased in Ethiopia and Zambia though increased at first in Nigeria from 32.7% to 37.9% between 2000/2004 and 2005/2009 but later declined to 36.9% by 2010/2014 with a change of 1.0%.

The proportion of men that were sexually active in the last 4 weeks preceding the surveys increased across the region. The proportion of men with more than one cumulative life-time sexual partners (CLTSP) increased in Zambia, decreased in Nigeria while it remained constant (38.0%) in Ethiopia as at 2010/2014 (Table 2). On the average, apart from individuals who had their first sex experience at their first union, over 60% of the men in Zambia have had sex before they attained their 20th birthday (Table 2). Relatively, 3 out of 10 men had the same experience before they reach 20 years in Nigeria while 25% of Ethiopia men have had sex by their 19th years. The result of the analysis revealed that most men had sexual experience before they attained 25th anniversary (Table 2).

Level of awareness of any method of contraceptive was overwhelming and increased progressively across the years surveyed in the countries studied (Table 3). Virtually all men have heard about STIs, HIV and AIDS. Those who have screened for HIV increased tremendously in Ethiopia, Nigeria and Zambia from 2000/2004 to 2010/2014, though at the second wave 2005/2009, the number decreased in Nigeria (Table 3). The percentage of men with STIs, genital discharge and genital ulcer increased generally after the second survey period in Ethiopia and Nigeria though there is not such data in 2010/2014 survey for Zambia. Genital ulcer increased in Ethiopia, remained the same in Nigeria and currently decreased by 0.4% in Zambia (Table 3).

7. Non-spousal sexual relationship and the use of condom

The study assessed condom use among men who have sex with non-spouse and those who have tested or not tested for HIV status. The chart analysis of the cross tabulations between these variables revealed that the proportion of men who have sexual relationship with non-spouse increased in Ethiopia, Nigeria and Zambia across the survey years. The percentage of men who did not use condom in their last sex with non-spouse increased from 31.7% in 2000/2004, by more than 20% in 2005/2009 to 53.2% and subsequently to 63.1% in 2010/2014 (Figure 1). Similar patterns were obtained from Nigeria and Zambia data results. In Nigeria, the numbers of men who had sex with non-spouse increased from 39.3% to 45.0% and 52.9% in 2000/2004, 2005/2009 and 2010/2014 respectively (Figure 1). The chart for Zambia also indicated a rise from 33.0% to 40.5% and 43.4% in 2000/2004, 2005/2009 and 2010/2014 respectively.

Generally, non-use of condom with non-spouse increased from 2000/2004 to 2010/2014. The prevalence of non-condom use that was 68.3% in Ethiopia during 2000–2004 dropped to 38.7% (Figure 2). The rate declined from 60.7% in Nigeria to 47.1% while it was from 67.0% in 2000–2004 to 56.6% in 2010–2014. Specifically, the proportional change is more conspicuous in Ethiopia (43.3%), Nigeria (22.4%) and Zambia (15.5%). Among the men who have not participated in HIV screening, the result of the analysis revealed that condom-use is on the declining. In Ethiopia, condom-use among this category of men, decreased gradually from 7.7% in Wave-1 to 6.1% in Wave-2 and finally to 4.9% in Wave-3. Nigeria shared similar experience in this regard with Ethiopia. Specifically, in Nigeria, the rate lessens to 15.1% from

Table 3. Awareness of sexually transmitted infection among men in Ethiopia, Nigeria and Zambia (2000–2014)

Selected variables	Ethiopia, (%)			Nigeria, (%)			Zambia, (%)		
	W1	W2	W3	W1	W2	W3	W1	W2	W3
Knowledge of Contraceptive									
No method	15.1	9.4	2.2	9.0	12.4	5.7	2.1	1.2	0.5
Modern methods	83.7	90.1	97.7	90.2	86.8	93.6	97.9	98.8	99.4
Other methods	1.2	0.5	0.1	0.8	0.8	0.7	0	0	0.0
Ever heard STIs									
No	5.1	3.3	1.3	2.2	7.2	3.9	0.9	0.4	0.2
Yes	94.9	96.7	98.7	97.8	92.8	96.1	99.1	99.6	99.8
Ever heard AIDS									
No	6.9	4.2	1.4	2.7	8.3	4.5	1.3	0.5	0.4
Yes	93.1	95.8	98.6	97.3	91.7	95.5	98.7	99.5	99.6
Had any STIs									
No	98.9	99.5	99.4	98.0	98.9	98.7	96.1	96.8	96.8
Yes	1.1	0.5	0.6	2.0	1.1	1.3	3.9	3.2	3.2
Total	100.0	100	100	100.0	100.0	100	100	100	100
Had genital discharge									
No	98.8	99.3	98.8	97.7	98.3	97.3	96.6	97.5	na
Yes	1.2	0.7	1.2	2.3	1.7	2.7	3.4	2.5	na
Had genital ulcer									
No	99.0	99.7	99.4	99.2	99.1	99.1	95.9	96.7	97.1
Yes	1.0	0.3	0.6	0.8	0.9	0.9	4.1	3.3	2.9

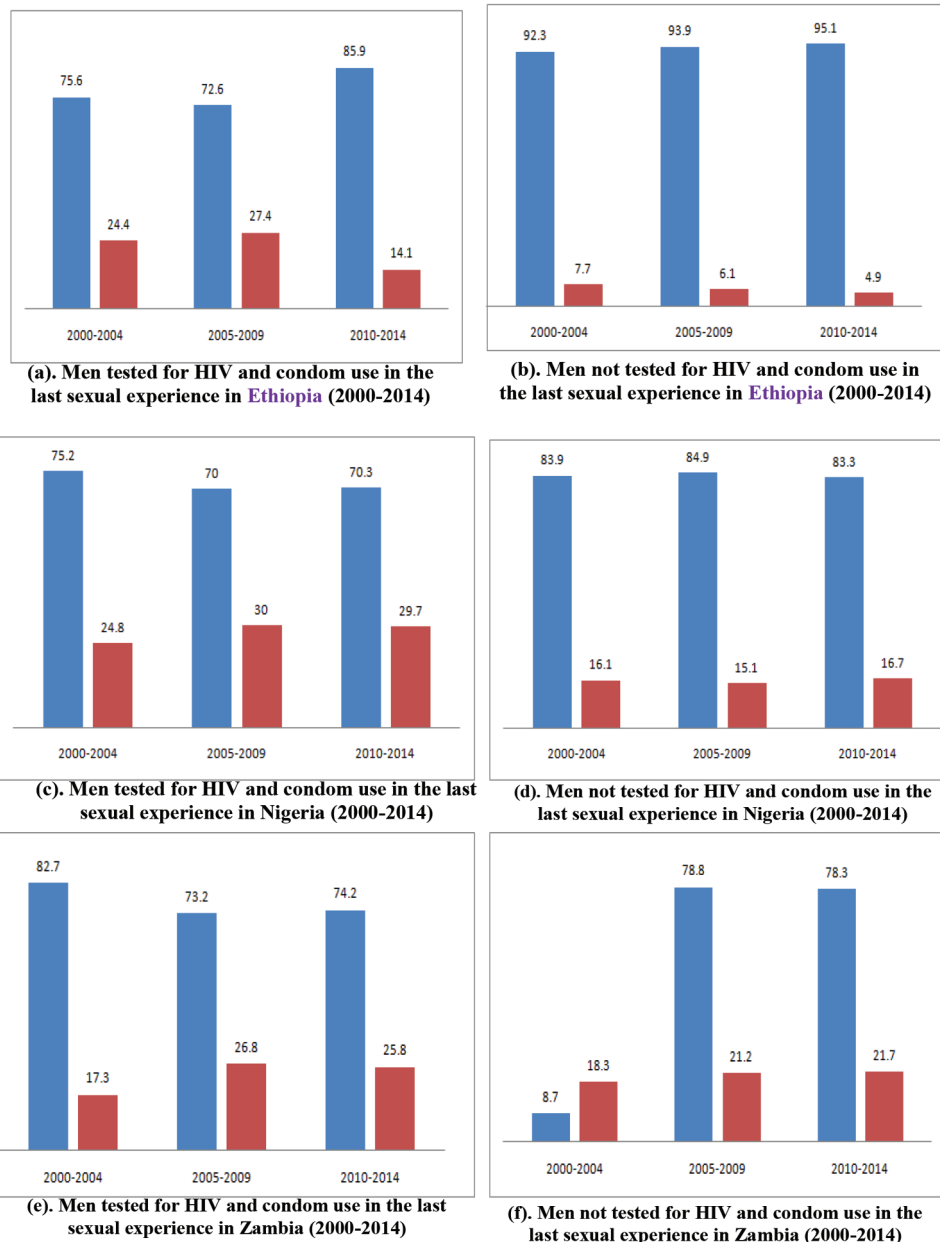
(Continued)

Table 3. (Continued)

Selected variables	Ethiopia, (%)			Nigeria, (%)			Zambia, (%)		
	W1	W2	W3	W1	W2	W3	W1	W2	W3
Knowledge of Contraceptive									
Total	100.0	100	100	100.0	100.0	100	100	100	100
Ever been tested for HIV									
No	95.9	92.0	57.5	85.0	85.3	77.1	86.6	76.7	34.8
Yes	4.1	8.0	42.5	15.0	14.7	22.9	13.4	23.3	65.2
Ever paid for sex									
No	85.6	98.7	93.3	89.0	na	95.5	78.4	na	87.1
Yes	14.4	1.3	6.7	11.0	na	4.5	21.6	na	12.9

Source: DHS (2000–2014). na: not available, W1, W2, W3 = Wave 1, 2 and 3, respectively

Figure 1. Non-spousal sexual relationship and condom use in Ethiopia, Nigeria and Zambia (2000–2014).

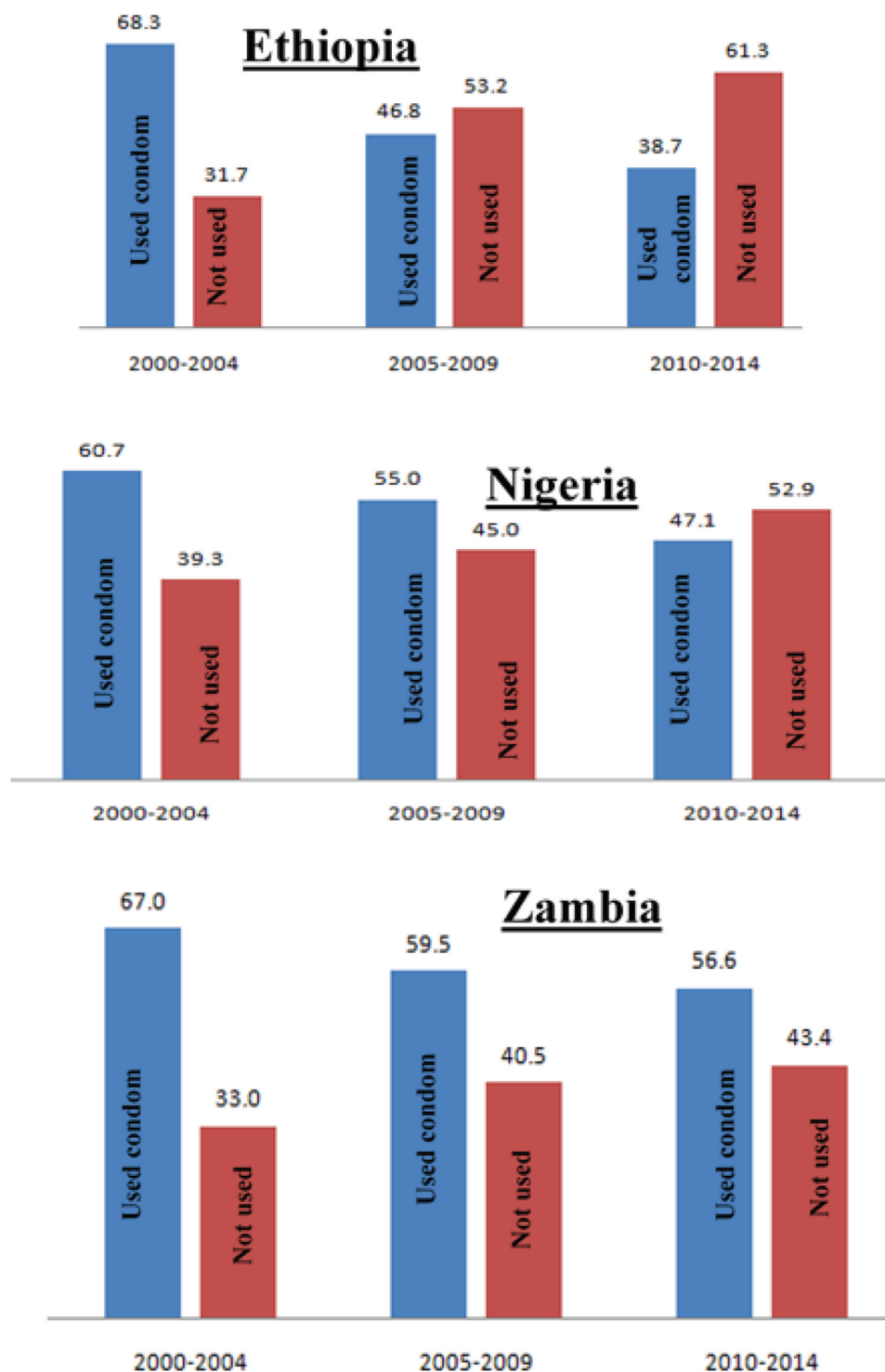


16.1% that was earlier observed in 2000/2004 though later appreciated to 16.7% in 2010/2014 (Figure 2). Zambia’s men who used condom notwithstanding that they have not confirmed their HIV statuses increased from 18.3% to 21.2% in Wave-2 and later to 21.7% in Wave-3 (Figure 2).

8. Discussion

The study provided simplified empirical insights into the trends and patterns of men’s median age at sexual debut, revealed the level of cohabitation, multiple sexual partnership, prevalence of non-spousal sex, variations in men’s use of condom, including cumulative life-time sexual life partners and frequency of union-turnover in Ethiopia, Nigeria and Zambia and by extension, the region of sub-Saharan Africa. The study attempted not only to add to the limited literature currently existing on men sexual behaviour, but provided a 14 years wide-ranging descriptions of men sexual

Figure 2. Proportion of men with/without HIV test using/not using condom (2000–2014).



activities with numerous local but little international comparisons to sharpened the argument about men sexual behaviour in sub-Saharan Africa society. The adoption of simplicity-parsimony theory in the analysis and presentation of the results could make more men to be reached, which could be impossible if otherwise approach was employed (Baker, 2013; Dessalles et al., 2017; Hoffmann, 2003; Kreinovich et al., 2020; Scott, 2018; United Nations Children’s Fund [UNICEF],

2016). While the study is not disapproving the existence of linkages in men sexual behaviour and a wide variety of negative health outcomes such as STIs, HIV and AIDS, it highlighted that the patterns in men sexual behaviour are relatively not the same within the region of SSA.

A great insight from this study is the revelation on the level of non-spousal sexual relationship and increasing non-use of condom among men. In this current dispensation where STIs/HIV and AIDS are at the forefront among killer diseases in the region, non-use of condom and increase level of non-spousal sex could pose great challenge in the fight against the wide spread of STIs/HIV and AIDS in the region. This rising proportion of men that have sex with non-spousal partners should be given top priority among stakeholders in population, reproductive health, wellbeing and development. The proportion of men who have not tested for HIV is far higher and in contrary with only 36% recorded in report covering 2007/2011 by UNAIDS (UNICEF & World Health Organization, 2013).

The findings, among others, also revealed that the unchanging median age for certain country and a decline observed for Zambia are not all really close to the age at marriage. Notwithstanding, the finding in this study revealed an improvement on similar statistics of 16.9 estimated for Mozambique in 2008, and it also indicated a reduction from 19.6 estimated for Ghana in the same year (Khan & Mishra, 2008; Tenkorang & Maticka-Tyndale, 2008). The result demonstrated that SSA has just reached the position of Latin America (18.0) and Caribbean (19.0) that was attained some years ago (Khan & Mishra, 2008; Tenkorang & Maticka-Tyndale, 2008). The continuous decline in age at first intercourse signals possibility of (at least) early fatherhood that could engender school drop-out, unemployment, high burden of dependency, crime, in addition to other demographic and health challenges or social vices. These outcomes directly or indirectly portend danger to economic productivity and progress of a nation.

The steady reduction in the proportion of men without formal education and increased in men with secondary education signalled positive development and advancement in human capacity development across sub-Saharan Africa. The high union/partnership turnover and family living alone positioned SSA as “region of union instability”. While the rise in singles or never married are opened windows for increased risk sexual activities, it could also be a good factor for delay marriage, delayed childbearing and limited family sizes in the long-run. Although, the subject matter is on men sexuality, the decline in proportion of men in farming occupation in Nigeria and Ethiopia could also translate to reduction in the number of women and children require as helping hands on the farm (Wusu & Amoo, 2014, 2016) and eventually culminate in limited family size.

The extent of cohabitation, lower age at first sex, the proportion that were sexually active in the last four weeks and the proportion with higher cumulative life-time sexual partners underscore the level of sexual activity in the region. The trends revealed could enhance volatility of sexual activity. However, there would have been hope from the increase in the level of “never had sex” in country like Nigeria but since Ethiopia and Zambia demonstrated a decline, it may imply that the increase in “never had sex” is not sustainable in sub-Saharan Africa. The report however supported that the level of awareness on HIV, AIDS and STIs including knowledge of any method of contraceptive are increasingly higher in SSA but the lessons and the expected cautionary behaviour are not visible.

9. Conclusion and recommendations

Generally, the study provided a simplified and timely trend statistics that could be relevant in spurring initiatives to stem increase in multiple sexual partnerships, non-spousal sex and uplift condom use among men at both individual and corporate levels. It is also believed that the findings from this study would provide strong and credible basis for policy dialogues or decision on men’s sexual behaviour that are crucial in curbing the spread of STIs/HIV and improving the wellbeing of men and their partners. While the article heeds the important point that men sexual behaviour in sub-Saharan Africa displays differing patterns and that policies to address these should be country-specific, further study may be necessary to confirm individual socioeconomic and demographic factors that are determinants of men’s sexual behaviour in the region. The study

concludes that non-spousal sex, non-condom use are prevailing in the region examined and could have implications for STIs/HIV spread and zero-AIDS deaths agenda in the region. The authors therefore suggest that social health workers/personnel, policy-takers, governments and other stakeholders should focus on men's non-spousal sex, non-use of condom as crucial factors in the fight against deadly infections of STIs, HIV including AIDS deaths in sub-Saharan Africa.

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