Background

Even though the adolescent fertility rate is declining around the world, adolescent childbearing remains common in many countries, particularly in sub-Saharan Africa. Nigeria, with an estimated population of 160 million (NPC, 2014), is second to South Africa in the number of people living with HIV/AIDS worldwide, representing 9 percent of the global burden of the disease (NPC, 2014). About 20,000 girls under the age of 18 give birth daily in developing countries. Early childbearing poses serious consequences to the health and development of young girls (Goli, Rammohan, & Singh, 2015).

Risky sexual behaviour can be viewed in the context of the number and types of partnerships, sexual acts, and orientation. Other elements of risky sexual behaviour include early age at first sexual intercourse, multiple sexual partners, unprotected sexual intercourse with 'at risk' sexual partners, and untreated sexually transmitted diseases (Akwara, Madise, & Hinde, 2003). Globally, most people initiate sexual activity during adolescence. Rates are highest in sub-Saharan Africa, where based upon an 11- country study more than half of all adolescents aged 15-19 years are sexually experienced. The age at first sex of young people is deeply rooted with various personal and social meanings. It redefines one's identity from child to developing teenager and re-evaluates key interpersonal relationships, including those with peers, parents and sexual **i**ntimates.

Ethnic groups are defined as a community of people who share cultural and linguistic characteristics including history, tradition, myth, and origin. With about 170 million people, Nigeria is Africa's most populous country. It is home to about 374 ethnic groups and English is the chosen official language. Although most of the ethnic groups are tiny, three ethnic groups constitute somewhere between 50 percent of the population. The other minority ethnic groups which include; Kanuri, Edo, Ijaw, Ibibio, Ebira, Nupe, and Tiv make up the rest (Mustapha, 2006). These three major ethnic groups are differentiated not only by region, but also by religion and life-style.

Ethnographic and epidemiological studies have confirmed that adolescent sexual behaviour vary from prevention to liberalism across different cultural groups (Westbrook, 1963). Particular ethnic practices may increase the likelihood of HIV infections among young women, for instance, the practice of early marriage in some ethnic groups' increases likelihood of infections obstetric fistula.

Research has shown that Yoruba and Igbo girls tend to marry in the third decade of life, while early marriage, before age 16 years, is common among the Hausa/Fulani ethnic groups (FMOH, 2006). This has been shown to increase younger age at first birth, and increased maternal mortality within these ethnic groups (Ujah, Uguru, Aisien, Sagay, & Otubu, 1999). The Hausa/Fulani ethnic groups also have a higher proportion of illiterate adults and less access to healthcare (Mustapha, 2006)

The relationship between ethnic origin and health outcomes is well documented (Antai, 2011; Babalola & Fatusi, 2009; Macbeth & Shetty, 2000; Williams, Neighbors, & Jackson, 2003). Arguably, the ethnic origin of an individual per se does not influence health outcomes, but rather the socio-economic characteristics of ethnic groups (Jatrana, 2003). Ethnicity may influence sexual behaviour through cultural beliefs and practices. For example, the practice of levirate marriage, where a dead man's widow is forced to remarry to one of his brothers, is still being practised in some areas of sub-Saharan Africa, despite the high prevalence of HIV (Kalinda & Tembo, 2010; Peterman, 2012). In addition, the pressure to conform to cultural beliefs and practices may override concerns about HIV infection. This study is based on the subcultural hypothesis which holds that female sexual behaviour is shaped by subgroup expectations and norms. This explanation upholds that variations in adolescent sexual behaviour are mainly due to cultural norms and practices peculiar to particular groups. Another explanation for this hypothesis is the patriarchal system that exists in many part of Africa. It holds that males are in a position of power and authority and sanctions may be severe for females for engage in non-marital sexual behaviour (Goethals, 1971).

Ethnic concentration in a particular community can influence an adolescent's decision to engage in protective sexual behaviour. Therefore understanding the extent to which ethnicity explains differences in adolescent sexual behaviour is important. This study specifically seeks to explore the relationship between ethnicity (ethnic diversity or homogeneity) and adolescent sexual behaviour in Nigeria. The study seeks to test the hypothesis that ethnic diversity is positively and significantly associated with the sexual behaviour of adolescents.

The study will contribute to the body of knowledge on how ethnicity and gender differences influence higher-risk sexual behaviour among adolescents. The objective is to help planners and policymakers in government agencies and NGOs develop substantive, alternative policy interventions to address risky adolescent sexual behaviour and its consequences. Factors that

influence sexual risk behaviours differ greatly between males and females and majority of studies existing have not separated the two groups. This study aims to fill that gap.

Data and Methods:

The data sets used in this study were the 2003, 2008 and 2013 NDHS surveys, pooled together to maximise the sample sizes of adolescents. Separate analysis was conducted for females and males. This is based on the premise that gender differences in norms for sexual behaviour exist and factors associated with sexual relations vary by sex. Studies have found that, in general, males tend to have more sexual partners than females, and they also tend to use condoms less frequently than women during vaginal intercourse. In other words, at any given adolescent age, risky sexual behaviour is more likely among males than among females. Our study sample amounted to 10,787 females and 4,058 males. The survey collected information on various demographic and health indicators, including individual characteristics, marriage and sexual activity, family planning knowledge and use, and HIV/AIDS-related knowledge, attitudes and behaviour.

a) Outcome variables

The risky sexual practices among adolescents may include having multiple sexual partners, early sexual debut, engaging in unprotected sexual intercourse, and engaging in sex with older partners. Indicators of risky sexual behaviour in this study were measured by three outcome variables namely: age at first sex and number of sexual partners in the year preceding the survey and contraceptive use. Age at first sex is a measured looking at the age at which respondents initiate sex. This outcome was derived from the question "how old were you when you had sex for the first time?" This is a continuous variable.

The number of sexual partners in the year preceding the survey was derived from the question "in the past year, how many people, if any, have you had sexual intercourse with?" It is included in the analysis as a dichotomous variable coded '1' if a man or a woman reported involvement with multiple sexual partners in the past 12 months prior to the survey and '0' otherwise. The focus is on the number of sexual partners because multiple and concurrent partnerships constitute the key mechanism through which STIs and HIV infections are spreading across sub-Saharan Africa. Having multiple recent partners is associated with disease risk for at least two reasons: first, it reflects the increased likelihood of encountering a sexually transmitted pathogen through having multiple potential exposures,

and second, it may reflect an increased probability of choosing a partner with an infection through a riskier pattern of partner recruitment (Uchudi, Magadi, & Mostazir, 2012).

Previous research suggests that self-reported condom use may be subject to recall bias caused by telescoping (i.e., assigning events to the recall period that occurred prior to or after that period) (Ostrow & Kesseler, 1993; Shew et al., 1997). To minimize recall bias, a common practice is to use "the last time sex occurred" as that period (CDC, 2003), (Younge, 2008). Therefore, the dependent variable, condom use at last intercourse was analysed to facilitate recall. Condom use was deduced from the question "Used a condom the last time had sex in the last 12 months?" The 12-month reference period is useful for capturing the most recent behaviours and minimized recall errors (Akwara et al., 2003). Adolescents were coded '1' if they reported use of condom at last sexual intercourse and '0' otherwise.

The key independent variable in this study is ethnicity. Of the 374 identifiable ethnic groups in Nigeria, three major ethnic groups exist which include the: Hausa/Fulani, Igbo and Yoruba. The Hausa/Fulani were categorized as one group in this study because the three tribes share a common language; common antecedent and common set of customs and values (Adedini, Odimegwu, Imasiku, & Ononokpono, 2015), the other minority ethnic groups were grouped as one and they were regarded as 'others' in this study.

Based on existing studies, we have identified some significant demographic and socioeconomic predictors of risky sexual behaviours. These variables include age, education level, employment status, religious affiliation, region and wealth status which is a proxy for household socio-economic status captured through a wealth index based on household possessions and amenities.

Other variables considered include HIV knowledge, exposure to mass media, family structure, self-reported age of sexual debut and . This study uses five variables to capture HIV related knowledge among men and women, these same variables have been widely used in other studies (Agarwal & de Araujo, 2012; Aggarwal & Rous, 2006; De Walque, 2006). HIV knowledge was deduced from questions such as : Knowing that consistent condom use during sexual intercourse and having just one uninfected faithful partner can reduce the chances of contracting HIV, knowing that a healthy-looking person can have HIV, and correctly rejecting the two most common local misconceptions about HIV transmission or prevention. (Such misconceptions usually include "AIDS transmitted by mosquito bites," and "A person can become infected by sharing food with a person who has AIDS"). Response

options were “yes” or “no.” The total AIDS knowledge score was computed from the correct responses to the knowledge questions; scores for the scale ranged from 0 to 16, with higher scores indicating higher AIDS knowledge.

Analysis

Separate analyses are performed for females and males. Descriptive statistics was carried out to examine characteristics of respondents, followed by an examination of bivariate associations between key outcomes of interest and respondents’ background characteristics. Multivariate logistic regression analyses are then conducted to test the hypotheses taking into account all control variables. All analyses are performed using Stata12 software. We apply sampling weights in all the analyses. The weight variable is the pre-existing sampling weight in the DHS datasets.

Preliminary Results

Table 1

Characteristics of Sample of Sexually Active Adolescents

Dependent variables	Females - (N=10,787)	Males - (N=4,058)
Condom use at Last sex		
No	80.40	51.84
Yes	19.60	58.16
Multiple Sexual Partner		
No	55.92	28.73
Yes	44.08	71.27
Age at First Sex	16	17
Independent Variables		
Ethnicity		
Others	46.72	53.92
Hausa/Fulani	19.87	6.99
Igbo	16.24	18.73
Yoruba	17.17	20.36
Age		
15-17	15.32	10.01
18-19	20.31	18.84
20-21	27.33	29.00
22-24	37.04	42.14
Religion		
Catholic	14.14	18.07
Other Christian	49.74	55.50
Muslim	34.59	24.95
Other	1.26	1.49
Region		
South West	19.73	23.71
North Central	13.80	21.19
North East	11.42	9.13

North West	17.19	4.86
South East	12.68	14.62
South South	25.18	26.49
Place of Residence		
Urban	38.90	42.64
Rural	61.10	57.36
Schooling		
< Secondary Level	36.79	16.09
Secondary and higher	63.21	83.91
Employment Status		
Unemployed	50.85	37.12
Employed	49.15	62.88
Wealth Status		
Poor	30.95	22.51
Middle	20.22	21.85
Rich	48.83	55.64
HIV Knowledge		
Low	17.37	5.89
Medium	28.17	26.78
High	54.46	67.33
Exposure to Mass Media		
No	56.84	37.33
Yes	43.16	62.67
Family Structure		
Male	76.72	83.47
Female	23.28	16.53
Self-reported age at sexual debut		
<=13 Early Adolescence	8.14	8.35
14-17 Middle Adolescence	57.00	44.02
18-24 late Adolescence	34.87	47.64

**Percentages and means are weighted; Age at first sex is shown in mean.

Table 2

Percentage Distribution of Risky Sexual Behaviour by Ethnicity

Ethnicity	**Condom use at last sex**		**Multiple sexual partners**	
	Females	**Males**	**Females**	**Males**
Others	19.10	42.75	51.85	74.59
Hausa/Fulani	1.20	22.31	2.93	37.84
Igbo	34.19	62.85	60.78	66.60
Yoruba	30.00	58.45	54.84	78.27

**Percentages are weighted