

# Socio-demographic factors associated with early sexual experience among South African female youth

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## Research article

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# Abstract

Early sexual experiences affect the sexual and reproductive health of young persons because they put them at the risk of risky sexual behaviours including multiple sexual partners and inconsistent condom use. As a consequence, early sexual experiences increase the risk of unintended pregnancies and STIs, including HIV/AIDS. There has been limited research on the prevalence and socio-demographic determinants of early sexual experience in South Africa. Thus, this study aimed to fill the void by assessing the socio-demographic factors that are associated with early sexual experience among South African female youth using the 2016 South Africa Demographic and Health Survey (SADHS). Results showed that female youth with secondary (HR: 0.69, CI: 0.61-0.77) and higher (HR: 0.47, CI: 0.41-0.54) education had lower hazard risk of early sexual experience compared to those who had no education and primary education. Female youth between the ages of 25-34 (HR: 0.70, CI: 0.65-0.74) had hazard lower risk of early sexual experience compared to those from poor wealth index. Belonging to "other" population group reduced the hazard risk of early sexual experience among female youth compared to those belonging to African population group (HR: 0.87, CI: 0.77-0.98). Programs should target high-risk groups to delay early sexual initiation.

## Background

Early sexual experience which is usually defined as having sexual intercourse at or before the age of 14 years contribute to unintended adolescent pregnancies (Baumgartner et al, 2009; Durowade et al., 2017; Pettifor et al., 2009). The initiation of sexual intercourse is an important life event for both male and females and it is an indicator of both physical and psychological development (Singh, Wulf, Samara & Cuca, 2000). Although, sexual intercourse is not necessarily a risky behaviour but it may pose threats to health and well-being when it occurs at an early age (Madkour et al., 2010). Besides being a determinant of unintended pregnancies, early sexual experience exposes young people to many sexual and reproductive health problems.

Youth who begin early sexual activities are more likely to practice risky behaviours such as multiple sexual partners and inconsistent or non-use of condoms (Kassahun, Gelagay, Muche, Dessie & Kassie, 2019). As a consequence, early sexual experience increase the risk of sexually transmitted infections (STIs), including HIV/AIDS (Pettifor et al., 2009). In addition, early sexual experience increases the risk of unwanted pregnancies, unsafe abortion, early childbirth, and psychosocial problems (Baumgartner et al, 2009; Durowade et al., 2017). Also early sexual experience may truncate educational opportunities which can extend to increased rate of poverty (Mazengia and Worku, 2009).

Age at first sexual experience varies from place to place and among different individuals, and is often due to different factors. In the United States, the mean age at first sexual experience was noted to be 14 years (Cavazos-Rehget al., 2009). Among Jamaicans, the mean age at first sexual experience was noted to be 11 years among the girls and 15 among the boys (Ekundayo et al., 2007). Similarly, a greater (54%) proportion of pregnant youth in Jamaica than of their never-pregnant counterpart reported their age at

first time experience to be 14 years (Baumgartner et al, 2009). Among Nigerian adolescents aged 15-19 years, a fifth of them were found to have initiated sexual activities (Fatusi and Blum, 2008). A study in Ghana indicated that age at first sexual experience increased from 16 years in 1988 to 18 years in 2014 (Amoateng and Baruwa, 2018).

In South Africa, studies have reported age at first sexual experience (Pettifor et al., 2009; Zuma et al., 2010). These studies have focused specifically on young males and females between the ages of 15-24. Among South African youth, most (84.4%) young women aged 18-24 years reported having initiated sexual activities (Pettifor et al., 2011). Out of the South African youth that have ever had sexual intercourse, 59% were female and about 39% of them had initiated sexual intercourse by the age of 16 years and below (Zuma et al., 2010). Young people who reported their first sexual experience indicated their sexual debut with an older partner and were in most cases a coerced sexual intercourse (Pettifor et al., 2009). Also, condoms are less likely to be used at sexual debut (Zuma et al., 2010).

Given the potential role of early sexual experiences in increasing the risk of unwanted pregnancies and HIV infection, understanding the socio-demographic factors that are associated with this event is needed to enhance behavioural intervention programs. Further, previous studies on age at first sexual experience in South Africa have mainly focused on sexual behaviours of both male and female youth between the ages of 15-24 years with little attention to those between the ages of 25-34 years. In addition, a few studies have reported the specific relationship between socio-demographic factors and early sexual experience using a national representative data of the South African Demographic and Health Survey.

In this study, we describe the rate and prevalence of early sexual experience among female youth, we also describe the mean age at first sexual experience according to selected socio-demographic characteristics and lastly, we examine the relationship between socio-demographic factors and early sexual experiences among the female youth. This is the first paper to offer insights into South African female youths' first sexual experience using the South African Demographic and Health Survey data. For the purpose of this study, early sexual experience is defined as any sexual intercourse at or before the age of 14 years.

## Methods

### Literature review

A number of socio-demographic factors have been identified to be contributing to early sexual debut. For instance, education has been found to be a protective factor to early sexual experience because it tends to delay sexual intercourse to a later stage in life compared to those that are less educated (Amoateng and Baruwa, 2018). Youth with no education or less education are more likely to initiate early sexual intercourse (Asante, et al., 2018). This is because education provides youth with relevant information about sexual and reproductive health needs and also provides knowledge about their sexual needs and rights that may affect their future careers and opportunity (Asante, et al., 2018). On the contrary, the study of Tavares and colleagues (2009) on factors associated with early sexual initiation and condom use

among adolescents on Santiago Island, Cape Verde, and West Africa found that more schooling was directly associated with early sexual experience.

Most studies on youth's sexual initiation have focused on youth between the ages of 15-24. A study conducted in Ethiopia found that youth between the ages of 15-19 years were about four times more likely to start early sexual activities compared to youth between the ages of 20-24 (Bizu, Aderaw, & Kassa, 2015).

The protective effects of wealth against early sexual experience has been established (Asante, et al., 2018; Odimegwu and Somefun, 2017). Belonging to a rich household wealth index reduces the risk of early sexual experience (Odimegwu and Somefun, 2017). For example, the study of Shrestha et al., (2016) in Nepal found that belonging to a rich wealth index is associated with lower likelihood of early sexual activities. The assumption is that poverty may be a motivation for disadvantage females to having early sexual intercourse in order to have access to cash and gifts (Isiugo-Abanihe et al., 2012). The literature also suggest that young women who are working are significantly more likely than non-working young women to have early sexual experience (Rich & Kim, 2002). The finding of Rich & Kim (2002) assumed that working may give female youth the autonomy from parents and increase the likelihood of engaging in risky sexual behaviours.

Findings on the association between place of residence and early sexual experience has been inconsistent in previous studies. For instance, a study on the correlates of early sexual debut among sexually active youth in Ghana found that early sexual experience is significantly higher among youth residing in urban areas compared to youth in rural areas (Asante, et al., 2018). Youth in the urban areas maybe more exposed to urban lifestyles including media and internet activities which may influence their sexual behaviour (Asante, et al., 2018). On the contrary, the study of Odimegwu and Somefun (2017) in Nigeria found that being a female youth from a rural area increased the risk of early sexual activities. Another study also found that women staying in a rural area is more at risk of early sexual experience compared to those staying in urban area (Motsima & Malela-Majika, 2016).

Other socio-demographic variables have been documented to be associated with early sexual activities. For instance, a study on age at first sexual intercourse and multiple sexual partnerships among women in Nigeria found that married women are more likely to initiate first sexual intercourse compared to those who are not married (Yaya & Bishwajit, 2018). In another study, family structure such as; absence of both parents from home, lack of financial resources, living with grandparent or siblings-headed household were reported to be significantly associated with early sexual debut. However, sex of household head was not specified in the study (Pilgrim et al, 2014).

## **Data and Methods**

The data for the present study come from the individual files of women of reproductive ages of 15 to 49 years old of the 2016 South Africa Demographic and Health Surveys (SADHS). A total 9878 females were qualified to participate in the women individuals' interviews, however, 8514 females were effectively

interviewed with a response rate of 86%. Out of the 8514 women that were interviewed, 5605 women were between the ages of 15 and 34 years and therefore classified as youth for the present analysis.

## **Variables and measurement**

The outcome variable is early sexual experience. For the bivariate Chi-Square analysis, “early sexual experience” will be measured as having experience sexual intercourse at the age of 14 years or below (known as early sexual intercourse) and having sexual experience by age 15 and above. The explanatory variables of interest are age (measured as 15-24 and 25-34), education (measured as no education/primary, secondary and higher education), wealth index (measured as poor, middle and rich wealth index), marital status (measured as never married and ever married), place of residence (measured as urban and rural area), employment (measured as not working and working), province, and sex of household head (measured as male and female).

## **Analysis method**

The univariate analysis involves the use of such descriptive statistics as percentages and frequencies to look at the distribution of the variables individually. At the bivariate level, we use the Pearson Chi-Square statistics to examine the relationship between early sexual experience and each explanatory variable in the model because of the categorical nature of the predictor variables. The assumptions of Chi Square test are that the sample size must be large enough and cannot be used for correlated data. (See Formula 1 in the Supplementary Files)

For the bivariate Chi-Square analysis only, we restrict our analysis to female youth that have had sexual experience.

We use Kaplan-Meier estimates to estimate the sexual intercourse survival rate and determine the differences between early sexual experiences in each group of the selected socio-demographic variables. Finally, we use Cox proportional hazards model to identify the factors associated with the timing of first sexual intercourse.

The rationale for using Cox proportional analysis model is because of the retrospective history of sexual experiences of the female youth which follow the fundamental principle of survival analysis otherwise known as “event history analysis”. The event of interest in this study is age at first sexual experience. Thus, survival analysis is an appropriate method for describing time duration to occurrence of an event of an interest. Although all female youth in our sample are susceptible to the event but not everyone necessarily has experienced the event at the time of the survey. We calculate survival functions describing the probability of female youth having first sexual intercourse. Those remaining without having sexual intercourse are censored at their age at the time of the survey.

All statistical analysis were performed using Stata 15 version. Model fit was assessed using “goodness of fit test”. Results are interpreted by using hazard ratio and statistical significance is declared if P-value is less than 0.05 while confidence interval is set at 95%.

# Results

Table 1 provides the rate of early sexual experience among female youth, as well as the summary statistics for selected socio-demographic variables for the survey. From the Table, 7.2% of South African female youth had their first sexual experience by the age of 14 years. The majority (52%) of the respondents are between the ages of 15-24 years and those aged 25-34 years constitute 48% of the sample. Eight percent (7.7%) of the women have no education and primary education, 82.6% have secondary education and 9.6% have tertiary education.

Female youth residing in urban areas constitute 55% while those in rural areas comprise 45% of the sample. Almost 90% (88.3%) of the sample are black African, while 11.7% belong to other population groups. Many of the female youth (44.7%) are in the poor household wealth index, 23.2% are in the middle household wealth index and 32.1% are in the rich household wealth index. Seventy-three percent of the female youth have never been married, while about a third (27%) are ever married.

The KwaZulu-Natal province has the highest percentage of female youth (17.2%), followed by Mpumalanga province (13.4), Eastern Cape province (12.1), Limpopo province (12.9), Gauteng province (10.0%), North West (10.3%), Free State (9.9%), Northern Cape (7.9%) and Western Cape (6.9%). Table 1 also shows that the majority of the youth (76.5%) are not working and 23.5% working. Regarding sex of household, most of the female youth (57.6%) report living in households headed by females and 42.4% report living in households headed by males.

**Table 1 Percentage distribution of South Africa female youth by socio-demographic characteristics**

	Frequency	Percentage
<b>Age at first sex</b>		
Below 15 years	4259	92.1
15 years and above	330	7.2
<b>Age</b>		
15-24	2913	52.0
25-34	2682	48.0
<b>Education</b>		
No education and primary	435	7.7
Secondary	4630	82.6
Higher	540	9.6
<b>Place of residence</b>		
Urban	3088	55.1
Rural	2517	44.9
<b>Race</b>		
African	4951	88.3
Others	654	11.7
<b>Wealth index</b>		
Poor	2508	44.7
Middle	1298	23.2
Rich	1799	32.1
<b>Marital status</b>		
Never married	4090	73.0
Ever married	1515	27.0
<b>Employment status</b>		
Not working	4288	76.5
Working	1317	23.5
<b>Province</b>		
Western cape	389	6.9
Eastern cape	679	12.1
Northern cape	440	7.9
Free state	555	9.9
KwaZulu-Natal	965	17.2
North west	544	9.7
Gauteng	558	10.0
Mpumalanga	753	13.4
Limpopo	722	12.9
<b>Sex of household head</b>		
Male	2379	42.4
Female	3226	57.6

## Median age at first birth

Figure 1 presents the median age at first sexual intercourse according to the socio-demographic characteristics of female youth. Female youth in the age group 15-19 years experienced earlier (16)

sexual intercourse compared to female youth between the ages of 25-34 years whose median age at first sexual intercourse is 18 years. Figure 1 also shows the effect of education on age at first sexual intercourse. There is a gradient increase in median age at first sexual intercourse from 16 years among female youth with no education/primary education to 18 years among female youth with higher education. The median age at first sexual intercourse is 17 years for female youth residing in urban areas compared to 16 years among female youth residing in rural areas. The median age at first sexual intercourse is 17 years for black African female youth and female youth belonging to other race groups. There is no difference in the median age at first intercourse in regard to the gender of the head of the household as it remains at 17 years.

Figure 1 shows that median age at first sexual experience is 16 years among female youth from poor wealth index and 17 years for female youth from middle and rich wealth index. With regards to employment status, the median age at first sexual experience is 16 years for female youth that are not working and 17 years for female youth that are working. Figure 1 shows that median age at first sexual experience is 17 years for all female youth across all provinces except for Eastern Cape and Limpopo province where the age at first sexual experience is 16 years.

Figure 2 presents the survival estimate of age at first sexual experience among South African female youth. According to Figure 2, the median age at first sexual intercourse among the female youth is 17.0; it shows that by age 14 about 8% have had sexual experience.

Figure 3 presents the survival estimate of age at first sexual experience according to selected socio-demographic characteristics. Probability of sexual experience was higher among female youth between the ages of 15-24 years. From the graph, almost 25% of female youth between the ages of 15-24 have had sexual experience at the age of 14 years compared to less than 20% of female youth between the ages of 25-34 years. Considering education, female youth with no education and primary education have higher probability of having engaged in sexual intercourse than female youth with secondary or higher education i.e. at the age of 14, nearly 35% of female youth with no education and primary education have had sexual experience.

The probability of early sexual experience is higher among female youth living in rural areas. Similarly, early sexual experience is higher among female youth belonging to African population. Female youth from poor wealth index have higher early sexual experience. At age 14, more than 20% of female youth from poor households had initiated sexual intercourse. Early sexual experience was higher among female youth that are never married. Unemployed female youth that are not working have higher early sexual intercourse compared to female youth working. With regards to Province, female youth from the Eastern Cape Province have the highest rate of early sexual experience compared to other provinces.

## **Bivariate analysis**

Table 2 shows the results of the bivariate analysis of early sexual experience and the selected socio-demographic variables in the study. The results in table 2 show that early sexual experience among South



African female youth is 50.6% among female youth between the ages of 15-24 and 49.4% among female youth between the ages of 25-34. Early sexual experience is lowest (4.9%) among youth with higher education while early sexual experience is highest among female youth with secondary education (80.6%). Fifty-seven percent of female youth in the poor household wealth index have early sexual experience, followed by 23.3% of female youth in high household wealth index while early sexual experience is lowest for female youth in the middle wealth index (20%).

Almost 80% (79.7%) of the unemployed female youth initiate sexual intercourse early, while 20.3% of employed female youth have early sexual experience. Early sexual experience is highest (29.1%) among female youths residing in the Eastern Cape Province, followed by 13.6% of female youth in the Mpumalanga Province, 12.1% female youth in KwaZulu-Natal, 9.4% of female youth in Gauteng, 7.6% female youth in North West, 7.3% female youth in both Western Cape and Free State, 7% female youth in Limpopo and 6.7% in Northern Cape.

There is an insignificant relationship between early sexual experience and place of residence. Specifically, the table shows that 55.8% female youth residing in rural areas have early sexual experience while 44.2% of female youth in urban have early sexual experience. Similarly, there is no significant relationship between early sexual experience and race, as table 2 shows that 92.1% of black African female youth have early sexual experience while 7.9% of female youth belonging to “other” population group have early sexual experience. Moreover, there is an insignificant relationship between early sexual experience and marital status. The table shows that 67.6% of never married female youth have early sexual experience compared to 32.4% of ever married female youth. Forty-two percent of female youths living in household headed by males have early sexual experience compared to 57.6% of female youth living in households headed by females. However, the result shows an insignificant relationship between early sexual experience and gender of household head.

**Table 2: Bivariate result showing Chi-square analysis of early sexual experience by socio-demographic variables of South Africa female youth**

	Early sexual experience (= $\leq 14$ )	Late sexual experience (= $\geq 15$ )	P-value ( $\chi^2$ )
<b>Age</b>			
15-24	50.6	41.5	0.00 (10.4)
25-34	49.4	58.5	
<b>Education</b>			
No education and primary	14.6	7.2	0.00(33.0)
Secondary	80.6	81.5	
Higher	4.9	11.3	
<b>Place of residence</b>			
Urban	55.8	54.9	0.77 (0.09)
Rural	44.2	45.1	
<b>Race</b>			
African	92.1	89.1	0.08 (3.0)
Others	7.9	10.9	
<b>Wealth index</b>			
Poor	56.7	45.1	0.00 (16.6)
Middle	20.0	24.3	
Rich	23.3	30.6	
<b>Marital status</b>			
Never married	67.6	67.0	0.83 (0.04)
Ever married	32.4	33.0	
<b>Employment status</b>			
Not working	79.7	71.7	0.00 (9.81)
Working	20.3	28.3	
<b>Province</b>			
Western cape	7.3	6.4	0.00 (88.8)
Eastern cape	29.1	11.7	
Northern cape	6.7	7.9	
Free state	7.3	9.7	
KwaZulu-Natal	12.1	16.3	
North west	7.6	10.5	
Gauteng	9.4	10.6	
Mpumalanga	13.6	14.3	
Limpopo	7.0	12.6	
<b>Sex of household head</b>			
Male	42.4	42.6	0.96 (0.00)
Female	57.6	57.4	

## Multivariate analysis

Table 3 shows the results for both the unadjusted and adjusted hazard ratios for the effect of socio-demographic characteristics on early sexual experience among female youth. The unadjusted analysis shows that the hazard of early sexual experience is 32% lower among female youth between the ages of 25-34 years compared to female youth between the ages of 15-24 years. After controlling for other socio-demographic variables in the adjusted analysis, the magnitude of the association decreased as female youth between the ages of 25-34 years have 30% lower hazard risk of early sexual experience compared to female youth between the ages of 15-24 years.

The Unadjusted hazard ratio and adjusted hazard ratio show that female youth with no education and primary education have higher hazard risk of early sexual experiences relative to those with secondary and higher education. Specifically, the table shows that unadjusted hazard ratio hazard risk of early sexual experience is 31% and 56% lower among female youths with secondary and higher education respectively compared to women with no education and primary education. The adjusted hazard ratio also shows that the hazard of early sexual experience are 31% and 53% lower among female youth with secondary and higher education respectively compared to female youth with no education and primary education.

The hazard risk of early sexual experience is statistically significant with place of residence in the unadjusted analysis. But after controlling for the presence of other variables in the model, an insignificant association is noted between early sexual experience and place of residence; female youth residing in rural areas have 12% hazard risk of having early sexual experience compared to female youth residing in urban areas although as indicated, this is statistically insignificant.

Table 3 shows that race has a significant effect on sexual experience of female youth in both the unadjusted and adjusted analysis. The hazard risk of early sexual experience is 21% lower among youth belonging to the “other” race group compared to black African youth. After controlling for other variables used in the study, the hazard risk of early sexual experience is 13% lower among female youth belonging to the “other” race group compared to their African counterparts.

There is a statistically significant effects between early sexual experience and wealth index in both the unadjusted and adjusted hazard proportional regression analyses. Female youth from the middle and high wealth index have 8% and 22% lower hazard risk of early sexual experience respectively compared to female youth from poor wealth index. After adjusting for the other variables in the model, female youth in middle wealth index households is rendered insignificant however, the adjusted hazard ratio for the category “rich wealth index” indicates that female youth from rich wealth index household have 16% lower hazard risk of have early sexual experience compared to female youth from poor wealth index household.

With respect to employment status, as expected, female youth that are working have lower hazard risk (HR: 0.79, CI: 0.74-0.84) risk of early sexual experience compared to female youth that are not working. However, after controlling for the presence of other variables in the adjusted analysis, the association between early sexual experience and employment status is rendered insignificant.

The hazard risk of early sexual experience is lower among ever married female youth compared to never married female youth (HR: 0.91, CI: 0.85-0.96). However, the relationship is insignificant after controlling for other factors in the model.

A significant association is noted in both the unadjusted and adjusted analysis with regards to province of residence. Table 3 shows that female youth from the Eastern Cape have 39% higher hazard risk of having early sexual experience compared to female youth from the Western Cape. The unadjusted hazard ratio in table 3 also shows that female youth from North West have 17% higher hazard risk of early sexual experience compared to female youth from Western Cape.

Female youth from Mpumalanga and Limpopo have 20% and 16% higher hazard risk of early sexual experience compared to female youth from the Western Cape. However, after controlling for other variables in the model, only one category (Kwazulu-Natal) shows significant result. The adjusted hazard analysis shows that female youth from KwaZulu-Natal province have 28% lower hazard risk of early sexual experience compared to female youth from the Western Cape province.

**Table 3: Unadjusted and adjusted Hazard risk of early sexual experience among female youth using SADHS 2016**

	Unadjusted analysis		Adjusted analysis	
	Hazard ratio	(95% CI)	Hazard ratio	(95% CI)
<b>Age</b>				
15-24	1		1	
25-34	0.68	0.65-0.73*	0.70	0.65-0.74*
<b>Education</b>				
No education and primary	1		1	
Secondary	0.69	0.62-0.78*	0.69	0.61-0.77*
Higher	0.44	0.38-0.50*	0.47	0.41-0.54*
<b>Place of residence</b>				
Urban	1		1	
Rural	1.12	1.05-1.19*	0.99	0.91-1.07
<b>Race</b>				
African	1		1	
Others	0.79	0.71-0.87*	0.87	0.77-0.98*
<b>Wealth index</b>				
Poor	1		1	
Middle	0.92	0.86-0.99*	0.99	0.92-1.07
Rich	0.78	0.73-0.83*	0.92	0.84-0.99*
<b>Marital status</b>				
Never married	1		1	
Ever married	0.91	0.85-0.96*	0.99	0.92-1.08
<b>Employment status</b>				
Not working	1		1	
Working	0.79	0.74-0.84*	0.94	0.88-1.01
<b>Province</b>				
Western cape	1		1	
Eastern cape	1.39	1.23-1.58*	1.05	0.91-1.21
Northern cape	1.02	0.81-1.29	0.87	0.69-1.10
Free state	1.06	0.90-1.24	0.87	0.73-1.03
KwaZulu-Natal	0.91	0.81-1.02	0.72	0.63-0.82*
North west	1.17	1.01-1.35*	0.92	0.76-1.08
Gauteng	1.05	0.95-1.17	0.89	0.78-1.00
Mpumalanga	1.20	1.05-1.37*	0.98	0.84-1.14
Limpopo	1.16	1.01-1.32*	0.91	0.78-1.06
<b>Sex of household head</b>				
Male	1		1	
Female	1.02	0.96-1.08	0.99	0.93-1.06
Prob> F				

## Discussion

The present study sought to make a contribution to the existing body of knowledge regarding the socio-demographic factors that impact early sexual experience among female youths in South Africa, using the 2016 South Africa Demographic and Health Survey data. The study found that 7.2% of female youth between the ages of 15-34 years started sexual intercourse at the age of 14 years. The study found gender of household head had no significant association with early sexual experience.

Female youth between the ages of 25-34 years had lower hazard risk of early sexual experience compared to female youth between the ages of 15-24 years. A possible explanation of this relationship is that younger youth (less than 25 years) are more exposed to social media than their older counterparts; those who are more active on social media could partake in more sexual risky behaviours such as early sexual intercourse because they may find themselves vulnerable to pressures or unanticipated risk opportunities (Landry et al., 2017). In addition, exposure to pornography among these younger youths can also play a major role in predisposing them to early sexual experience (Kassahun et al., 2019).

Female youth with little or no education was found to be associated with early sexual experience in our study. Specifically, the hazard of early sexual experience was found to be lower among female youth with secondary and higher educations compared to those with no education and primary education. This finding is consistent with the finding by Amoateng and Baruwa (2018) on changes in the timing of sexual intercourse in Ghana, and the study of Stephenson et al. (2014) in Burkina Faso, Ghana, Malawi, and Uganda. This is because females with higher education tend to delay sexual intercourse to a later stage in life in order to pursue their educational goals. Moreover, the effect of better education on early sexual experience can be interpreted in terms of better knowledge of the possible risks that are associated with early sexual initiation.

Place of residence was found to be significantly associated with early sexual experience in the unadjusted analysis in our study. Although, one would expect that contextual differences could result in socialization that renders youth to initiate early sexual activities than others but our findings shows no significant effect of place of residence on early sexual experience after controlling for other variables. Our finding contradicts the findings of Odimegwu and Somefun (2017) in Nigeria, and the findings of Motsima and Malela-Majika (2016) in Lesotho. The insignificant finding in the adjusted hazard regression could be result of the fact that the effect of place of residence is confounded by other socioeconomic factors that affect early sexual experience.

The present study also found that there is an effect of race of female youth on early sexual experience. Specifically, black African female youth have higher hazard risk of experiencing early sexual intercourse compared to their counterparts in other race groups. Similarly, the study found that province of residence has effect on early sexual experience, although, only the province of KwaZulu-Natal remained significant after controlling for other factors. A plausible explanation could be due to a function of differential cultural values and norms in the different provinces.

Consistent with previous studies in Ghana by Asante, et al., (2018), Nigeria by Odimegwu and Somefun, and in Nepal by Shrestha et al., (2016), this study found that female youth from poor wealth index households have higher hazard risk of early sexual experience. A possible explanation for this could be that female youth from disadvantaged backgrounds might have a need for transactional sex which predisposes them to early sexual activities. Both marital status and employment status have statistically significant effect on early sexual experience in the unadjusted analysis; their effects are washed away

after adjusting for the effects of the other factors in the model. Similarly, the gender of the head of a household has no effect on the timing of sexual debut by female youth in South Africa.

## **Conclusion**

Sexuality and sexual attitudes and behaviours anywhere in the world are enmeshed in the socio-cultural organisation of a society, that is, its religion, tradition, culture, economics and even politics. In most sub-Saharan African societies, nowhere is this interface between sexuality and culture is manifest than in the domain of the family system. The extended family system in most societies in the region is defined by early, universal marriage and the presence of a large number of children.

This norm of early family formation pattern in the region has been amply demonstrated by the finding of the present study that a significant proportion of South African female youth initiate sexual intercourse before the age of 15 years and that early sexual experience is more peculiar to groups in terms of education, wealth index, race, and province. Within the context of the factors that emerged as significant predictors of the timing of early sexual debut, it is clear that while sexual attitudes and behaviours are changing in South Africa in the direction of delay in sexual debut, the pace of this change is being dictated by certain cultural values and norms.

## **Policy implications**

The findings of this study have underscored the need for policies to promote the need for delaying sexual activities more among specific groups. Targeted intervention aimed at delaying sexual experience will help prevent sexual risk behaviours, unintended pregnancy and STIs, including HIV. We found that female youth with secondary and higher education were found to delay sexual experience in our study. Therefore, education can be used as a strategy to delay sexual activities. In addition, health programmes can be integrated into the education syllabus and be closely monitored. Parents, guardians and communities should make sexuality an open discussion topic and discourage early sexual activities.

## **Limitations and Strengths**

While the present study sought to make a contribution to the existing body of knowledge, some limitations should be considered when interpreting the results of the study. First, the possibility of bias in reporting of sexual behaviour due to social desirability. Second, recall bias in regard to age at first sexual experience, especially among the older youth might have contributed to reporting bias. Third, our results do not allow for causal interpretation. Fourth, the analysis includes only females between the ages of 15-34, hence the findings cannot provide the scenario for the entire female population. These limitations notwithstanding however, this study provides important insights on sexual behaviour among South African female youth who have ever experienced sexual intercourse; this is the first study to show the effect of socio-demographic factors on early sexual experience using the national representative sample from the 2016 SADHS.

# Abbreviation

AIDS: Acquired Immune Deficiency Syndrome

CI: Confidence Interval

HR: Hazard Ratio

HIV: Human Immunodeficiency Virus

SADHS: South Africa Demographic and Health Survey

STIs: Sexually Transmitted Infections

# Declarations

## Ethical approval

This research used secondary data which was obtained through the permission of DHSprogram.org.

## Consent for publication

Not applicable

## Availability of data and materials

The dataset analysed in the current study can be found in the DHS Program repository, [https://dhsprogram.com/data/dataset/South-Africa\\_Standard-DHS\\_2016.cfm?flag=1](https://dhsprogram.com/data/dataset/South-Africa_Standard-DHS_2016.cfm?flag=1)

## Conflict of interest

None declared.

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## Author's contributions

Ololade Baruwa and Prof. Yaw Amoateng were involved in the entire process of the manuscript. All authors approved the submission of this manuscript.

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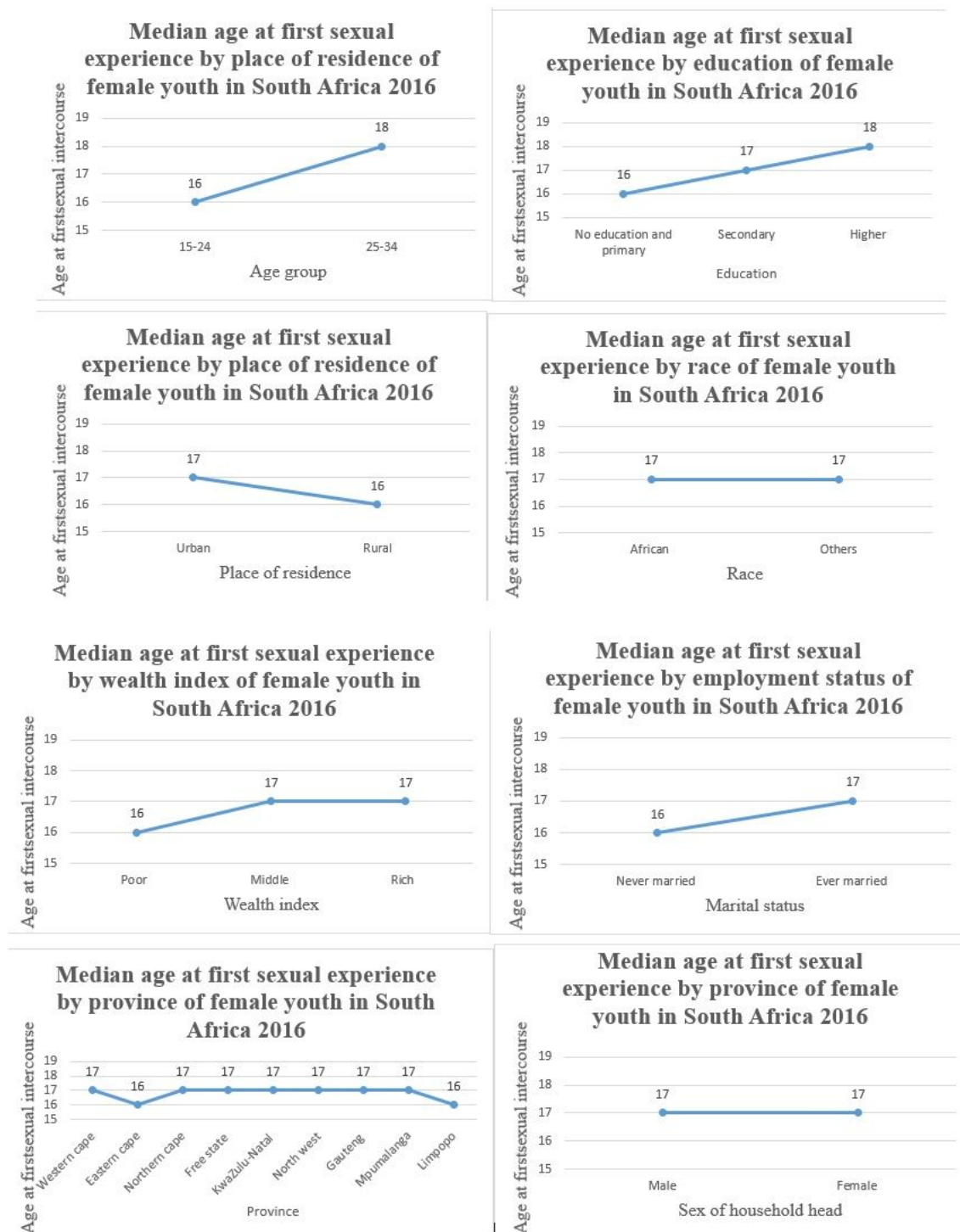


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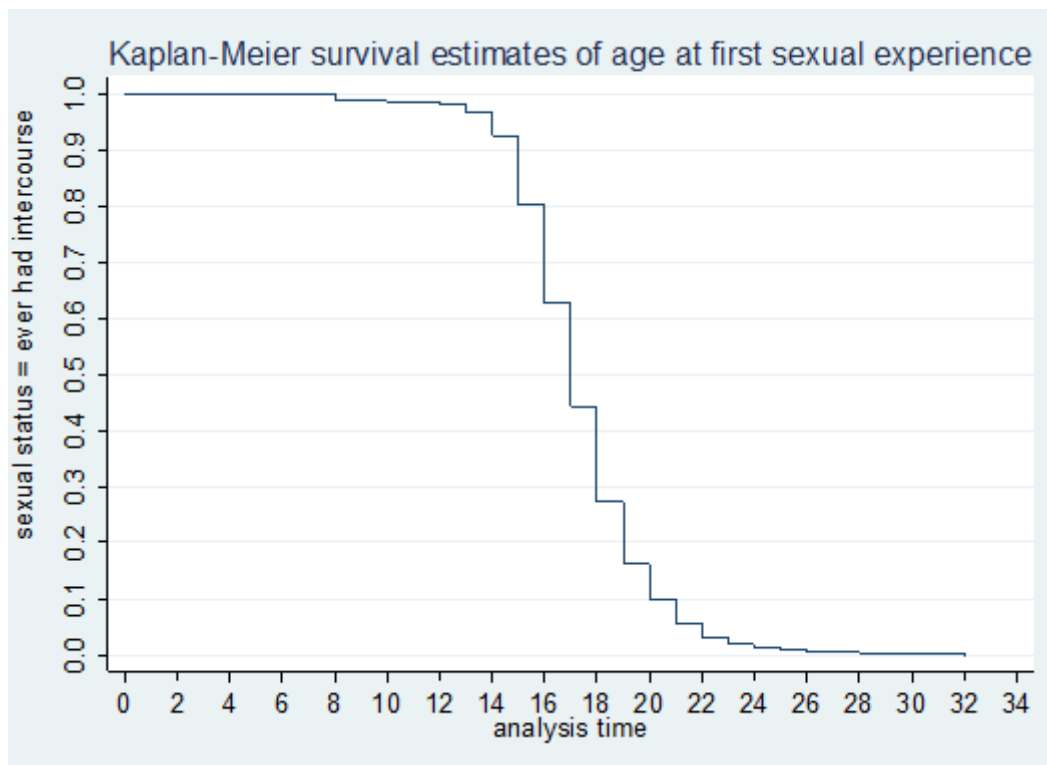
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# Figures



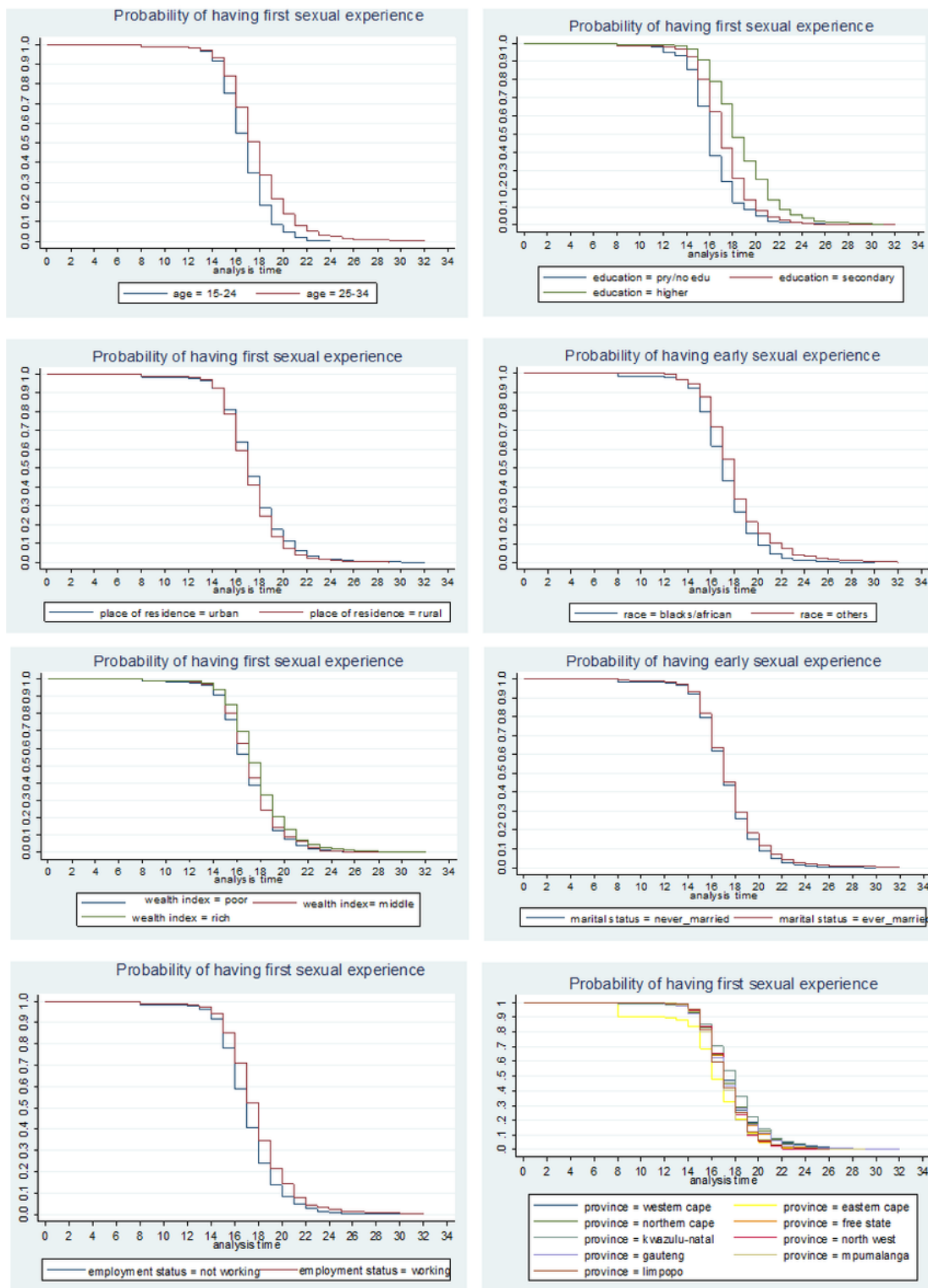
**Figure 1**

Median age at first sexual intercourse and socio-demographic characteristics of South African female youth



**Figure 2**

Survival estimates of age at first sexual experience.



**Figure 3**

probabilities of first sexual experience among South African female youth according to selected socio-demographic characteristics

## Supplementary Files

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