

Original Research Article

FACTORS ASSOCIATED WITH SEXUAL BEHAVIOUR AMONG ADOLESCENTS IN CHIPATA DISTRICT, ZAMBIA

Abstract

The purpose of this study was to determine factors associated with sexual behaviour among adolescents. The study used the quantitative research method using a cross-sectional study design. Participants in this study included 225 adolescents comprising 113 females and 112 males aged 15 -19 years. The study was conducted in Chipata District of Eastern Zambia. Participants were selected by using simple random sampling. The findings show a varied difference in the sexual behavioural practices among the adolescents. The results showed that female youths were more likely to report having had more than one sexual partner. Logistic regression analysis identified education level, religion, drinking alcohol as strong predictors of having two or more partners among the respondents. The analysis indicates that education was another strong determinant of having one sexual partner among the respondents. Respondents in senior secondary school were 4.7 times more likely to have two or more partners as compared to their junior secondary school counterparts. Furthermore, respondents from Catholic faith were negatively associated with the likelihood of having two or more partners. Drinking alcohol was among the strong predictors of having two or more partners among the respondents. Those who drank alcohol were 2.2 times more likely to report having two or more partners as compared to those who did not drink. This suggests that interventions that seek to reduce the rate of HIV infection may need to focus on increasing risk perception among young people as a protective factor. Finally future interventions should also focus on assessing the role of social-cultural and economic factors on their possible influence regarding the sexual behaviours among the adolescents in Zambia.

Key words: Sexual behavior, Adolescents, Alcohol, Behavioural practices.

Introduction

Adolescence is regarded as a period of transition from childhood to adulthood [1]. It is a widely recognized stage of life which is acknowledged in various communities across the globe. There has been several debates regarding the age range of who an adolescent is based on particular cultures, contexts and nations. Sawyer [2] noted that while the United Nations Convention on the right of Children defined a Child as a person aged 0-18 years, they also categorised adolescence as a period between 10 and 19 years. However, Swarts [1] suggests that the age 10 to 24 years is more appropriate to the current trends of adolescent growth and the well-known knowledge about this phase of life. Most importantly is that several scholars generally agree that adolescence comes with its own challenges among the young people which includes the various forms of sexual behaviours. It is for this reason that this research aims at addressing the factors associated with the sexual behaviours among adolescents in Chipata district, which is in the Eastern Province of Zambia.

In Zambia, several research had shown that the majority of young people begin their sexual relations during adolescence. The ZDHS [3] reported that 54% of women aged between 15 and 24 years had sex before the age of 18 years, while only 26% of women between 15-24 years of age used a condom at their first sex. Similarly, 48% of men between 15-24 years had sex before age of 18 years, and only 25% of them used a condom at first sex. This often leads to risky sexual behavior resulting in early and unwanted pregnancies and childbirth, induced abortion as well as sexually transmitted diseases including HIV and AIDS [4,5]. This has resulted into an increased burden upon Zambia as a nation in its quest to find a lasting solution towards the HIV pandemic. The HIV and AIDS pandemic has been a devastating public health problem and has drastically hindered Zambia's economic development. HIV prevalence in adults aged 15-49 years was estimated at 12.3%, [6]. Therefore, early sexual initiation poses health risks for both young men and women. Most young adults who enter sexual relationships for the first time do not use any form of contraception, an act which potentially leaves them vulnerable to unintended pregnancies and unplanned parenthood [7]. There is no doubt then that the onset of adolescence age from 10 to 19 years brings about several vulnerabilities leading to unwanted sex or marriage, risks of unwanted pregnancies, unsafe abortions, sexually transmitted infections and other risks which come with child birth [7]. Furthermore, Oyedian [8] observed that a significant percentage of 43.9 of in-school adolescents in Ibadan did not know that their first sexual

encounter can result into pregnancy. Therefore, this is not only a challenge among adolescents in Zambia but also a struggle for most of the Sub-Saharan Nations. Further, a study on urban sexual behaviour survey found that men are considered higher status and women with low socio-economic status are limited in their ability to negotiate safe sexual relationships [9].

Literature on HIV and AIDS and sexual behavior in sub-Saharan Africa also confirm that most young people in Africa are sexually active and tend to initiate sex at a fairly young age ranging from 14.4 to 16.2 years for males and 15.1 to 16.6 for females [10]. They tend to have multiple sexual partners whom they engage with in unprotected sex and their relationships do not often last long [10]. The study on sexual behavior in Lusaka indicated that only 27% of females (15-19 years) used a condom at last sex and that 40 % of sexually experienced males had never used a condom [9]. This poses a problem for females as they have less control of their sexual behavior because of being economically disadvantaged compared to males and may fall prey to males who approach them for sexual transactions.

Despite encouraging increases in comprehensive knowledge and improved HIV-related attitudes and practices [11], the early sexual debut among adolescents holds the potential of exposing them to HIV infection as indicated above most especially where higher risk partners or multiple partners are involved with less use of condoms. The lack of awareness and other social pressures and power imbalances can also conspire to put the health of adolescents at risk. Among adolescent girls, aged 15–19 years, in sub-Saharan Africa, a higher percentage of girls (13%) than boys (9%) had sex before the age of 15 years [12]. It seems like the economic status of any particular nation plays a major role when it comes to the adolescent's early engagement into sexual misconducts. Research has shown that in most low- and middle-income countries, early sexual introduction is common, for instance almost 30% of adolescent girls aged 15–19 years in Central African Republic and adolescent boys in Malawi and Lesotho reported having first sexual intercourse before they were 15 years old [13]. Similarly, more than 10% of girls and boys in Madagascar, Cameroon, Uganda, Kenya, Guyana, Sao Tome, Principe, Senegal, Rwanda, Tanzania, and Kiribati have had early sexual engagement [14].

In addition to HIV risk factor, early sexual activity is associated with early marriage and early childbearing across the world [15]. This often curtails education and other opportunities for

adolescent girls to reach their full potential. Research has shown that in low- and middle-income countries, 90% of births to adolescents are within their early marriages [16]. The most common adolescent births occur within marriage in Asian and North African countries, as well as sub-Saharan African, Latin American and Caribbean countries which accounts for 70 to 80 percent [16].

The World Health Organization (WHO) reports an estimated 16 million births in girls aged 15–19 years and 2 million births in girls younger than 15 years each year [13]. Worldwide, 20% of adolescent girls have given birth and entered parenting by the age of 18 years, whereas in the least developed countries, as many as 1 in every 3 adolescent girls is a mother by the age of 18 years [13]. More than 1 in 4 women aged 20–24 years in sub-Saharan Africa has had given birth before 18 years of age [16]. And in 3 countries with the highest prevalence of early childbearing—Guinea, Mali, and Niger—around 10% of women give birth before 15 years of age. However, a lower proportion of adolescent girls than boys reported having had multiple sexual partners across nearly all countries, which ranged from 9% in Congo and Gabon to 16% in Jamaica [16]. There seems to be less use of condoms in most of these countries falling short of the 2001 United Nations Assembly Special Session (UNGASS) target of 95% condom use among those who reported to have had multiple sexual partners. However, a survey data in some countries showed substantial improvements in this indicator [17]. The years between 2000 and 2012, recorded an increase of 10 or more percentage in condom use among adolescents aged 15–19 years who reported multiple sexual partners [16]. This occurred in 9 of 22 low- and middle-income countries among adolescent girls and in 10 of 19 countries among adolescent boys [15].

Condoms are one of the most efficient means available to reduce sexual transmission of HIV, yet their use remains abysmally low in several countries with high HIV prevalence. Survey data from 2006 to 2012 show that condom use among adolescents aged 15–19 years who reported multiple sexual partners in the last 12 months before the survey was at least 60% or more in only 2 countries among adolescent girls and in 20 countries among adolescent boys [17]. Recent survey data show that having multiple sexual partnerships among adolescent boys, 15–19 years, is common in both low and high HIV prevalence countries, up to 39% in Jamaica and 18% in

Mozambique [17]. In most countries, adolescent girls were less likely than boys to use condoms in their most recent sexual experience among those who reported multiple sexual partners [18]. Condom use is also much less common among adolescents in poorer households and in rural areas [19].

However, condoms are most effective at reducing risk if they are used consistently over time, and this indicator was limited as a proximate measure of consistency of use [18]. Increasingly, survey researchers are using additional indicators to better assess the consistency of young people's reported condom use [20]. National surveys provided some evidence of a trend over time towards later age at first sex, first marriage and first birth, although changes were often limited to sub-groups of adolescents such as gender, urban/rural, education and wealth [21]. Condom use appeared to be increasing but overall levels of use remained low [22]. Less educated females were significantly more likely to report having had sex at an early age. In most countries, the proportion of 15- to 19-year-olds reporting sex before the age of 15 significantly decreased over time [23]. Among females, in most of countries (8/14), reports of sexual activity were significantly more common for those with higher levels of education [24]. This however, was not the case with Madagascar and Tanzania, the opposite trend was seen. Among never-married males, no consistent pattern was seen and sex in the past year was significantly associated with higher levels of education in only 3 out of 14 countries [24].

Countries reporting the highest levels of early marriage did not always report the highest levels of early childbearing and vice versa. Importantly, however, this analysis was unable to determine the sequence of these events. It was possible that the high rates of early sex and pregnancy in West Africa mainly happened after marriage, and this may represent a different type of risk than early sex and pregnancy out-of-wedlock there or elsewhere [25]. Males aged 15–19 years were more likely than females to report more than one partner in the previous 12 months in all countries surveyed [25]. Nonetheless, one promising finding of this review was a decrease in reported multiple partners among males in four countries and among females in two countries [26]. Risks associated with various types of partnerships have been the subject of intense debate in the field of HIV prevention [26]. The characteristics of partners and partnerships can be challenging to measure for many reasons, including social desirability bias, limited recall

accuracy and difficulties semi-literate populations may have calculating large numbers or averages [11].

Methodology

The study used the quantitative research method with the application of a cross-sectional study design. Participants in this study included 225 adolescents comprising 113 females and 112 males aged 15 -19 years. The study was conducted in a rural district of Chipata in Eastern Zambia. Participants were selected by using simple random sampling. A structured interview questionnaire was used to collect data from participants. The questionnaires were written in English but also translated in vernacular whenever necessary during interviews. A Data analysis Statistical Package for Social Sciences version 12 (SPSS v 12) was used for data analysis. To find out various factors affecting sexual behavior, cross tabulations were used to examine the relationship between the number of partners which individual participants had sex with in view of their socio-economic variables. For statistical analysis, chi-square tests of independence were conducted at the bivariate level and the differences were determined at $P < 0.05$ and $P < 0.01$ significance levels. Secondly, factors influencing number of partners having sex were analyzed using logistic regression analysis. The result of the logistic regression models was converted into odds ratios, which represented the effect of a one-unit change in the explanatory variable on the indicator of having sexual behavior.

Ethical Considerations

The nature and purpose of the study was explained to the research participants. Participants were assured of anonymity and confidentiality, and no name was entered in the questionnaires. A unique numbering system was applied to represent each individual. Participants were also informed on their freedom to withdraw from the study at any time without facing any repercussions.

Results

Sample Characteristics

The majority of the respondents were in the age of 15 (57.8 of males and 51.7% of females). 52% of males and 48% of females had completed junior secondary school and 48% of males and 52% of females had completed senior secondary school level of education. The sample further indicates that majority of the respondents were from catholic (40% of males and 35% of females) and Pentecostal (40% of males and 33% of females) faiths. (See Table 1)

Table 1. Sample Distribution

		Male%	Female %
Age of the respondents			
	15	57.8	51.7
	16-19	25.2	26.3
	19+	16.8	22.0
Educational level			
	Junior Secondary	52.3	48.3
	Senior Secondary	47.7	51.7
Religious Denomination			
	Catholic	40.2	34.7
	Anglican	0.9	6.8
	SDA	18.7	25.4
	Pentecostal	40.2	33.1
Number of sexual partners have had in the last six months			
	None	9.3	1.7
	One	79.4	80.5
	Two	8.4	15.3
	Three or more	2.8	2.5
Age at first sex			
	15	30.8	32.2
	16-19	46.7	35.6
	19+	7.5	11.0
Had drunk alcohol			
	No	28.0	21.2
	Yes	72.0	78.8
Had sexually transmitted diseases in the last three months			
	No	99.1	95.8
	Yes	0.9	4.2

Patterns of Sexual Behaviour

Majority of youths reported having had at least one partner for the last six months (79% of males and 81% of females) and most of the youths had begun their sexual activity before the age 19 years. Most of the youths reported having drunk alcohol in the last three months (72% of males and 79% of females) and four percent of females reported having had sexually transmitted diseases during the last three months.

Overall, about 18% of the respondents had one partner. The results show that males (22.4%) were more likely to have one sexual partner as compared to their female counterparts (14.4%). Regarding educational level, those with junior secondary education (27.4%) were more likely than those with senior secondary education to have one sexual partner. Moreover, respondents who did not drink alcohol were more likely to have one partner as compared to those who drank alcohol (drink; 15.3%, do not drink; 27.3%). Respondents who had discussed HIV prevention with someone were more likely (29.2%) to have one partner in comparison with partners who had not discussed HIV with someone (15.3%). 81.8% of the respondents had two or more partners. The results show that females (85.6%) were more likely to report having two or more partners as compared to their male counterparts (77.6%). Regarding educational level, those with senior secondary education (91.1%) were more likely than those with junior secondary education (72.6%) to have two or more partners. Respondents who drank alcohol (84.7%) were more likely to have two or more partners as compared to those who did not drink alcohol (72.7%). (See table 2)

Table 2. Percentage of number of sexual partners in the past six months

Characteristics	One partner	Two or more partners	N
Sex			
Male	22.4*	77.6*	107
Female	14.4	85.6	118
Age			
<16	17.9	82.1	123
16-19	20.7	79.3	58
19+	15.9	84.1	44
Educational level			
Junior Secondary	27.4**	72.6**	113
Senior Secondary	8.9	91.1	112
Religion			
Pentecostal	23.9	76.1	88
SDA	12.0	88.0	50

Catholic	16.1	83.9	88
Drinks alcohol			
No	27.3**	72.7*	55
Yes	15.3	84.7	170
Have discussed HIV prevention with someone			
No	15.3*	84.7	177
Yes	29.2	70.8	48
	18.2	81.8	225

*** Significant at $P < 0.01$; ** Significant at $P < 0.05$ * Significance at $P > 0.05$.

Factors Affecting Sexual Behavior

The present study used linear logistic regression analysis to identify factors influencing sexual behaviour by considering socio-demographic factors. The results of the logistic regression show that education level, religion, drinking alcohol and having an HIV discussion with someone were strong predictors of having two or more partners among the respondents. Education was a strong determinant of having one sexual partner among the respondents. Respondents in senior secondary school were 4.7 times more likely to have two or more partners as compared to their junior secondary school counterparts. Furthermore, respondents from catholic were negatively associated with the likelihood of having two or more partners. Drinking alcohol was among the strong predictors of having two or more partners among the respondents. Those who drank alcohol were 2.2 times more likely to report having two or more partners as compared to those who did not drink. Having discussed HIV with someone was among the significant factors that influenced respondents' likelihood of having two or more partners. Those who had discussed HIV with someone were 3.2 times more likely to report having two or more partners as compared to those who did not have an HIV discussion with someone.

Table 3. Logistic Regression Analysis data of socio-economic and demographic variables on youths who reported having had sex with two or more sexual partners

Variables	Beta (β)	Standard Error (SE)	Exp (β)	Significant level (P)
Sex				
Male				
Female	0.3116	0.3840	1.3656	0.4171
Age				
<16				
16-19	-0.4715	0.4535		

	19+	0.3900	0.5690	0.6241	0.2985
Educational level					
	Junior Secondary				
	Senior Secondary	1.5487	0.4307	4.7055	0.0003
Religion					
	Pentecostal				
	SDA	-0.7392	0.5352	0.4775	0.1673
	Catholic	-0.7897	0.4421	0.4540	0.0740
Drinks alcohol					
	No				
	Yes	0.7198	0.4424	2.2027	0.0230
Have discussed HIV prevention with someone					
	No				
	Yes	0.1536	0.4954	3.1997	0.0032

Discussion

In determining whether adolescents were involved in sexual activities, the research findings showed overwhelming involvement of adolescents in sexual activity (93%). There was also a higher percentage of females involved in sexual activity than males, with a small marginal difference. Additionally, most adolescents (40.9%) said they had sex between ages 16 and 19 which is also strongly indicated in the literatures above. The ZDHS [19] for example reported that 56% of women aged between 15 and 24 years had sex before the age of 18 years while 51% of men between 15-24 years had sex before age of 18 years. Several studies in sub-Saharan Africa have also documented high and increasing pre-marital sexual activities among this very important group of people [4].

What is however, of greater concern, is the high proportion of respondents who had sex before the age of 16 similar to the findings by WHO [12]. This placed them at greater risk of contracting sexually related infections. They also risked psychological problems because should they be infected at such a young age they would lack adequate social and psychological mechanisms to deal with their infection. Additionally, sexual intercourse at the age of 15 is by law defilement in Zambia which attracts a prison sentence so this sad situation calls for urgent intervention. Moreover early sexual debut exposes the adolescents over time to higher chances of

contracting HIV, especially where higher risk partners or multiple partners are involved, and condom use is less likely to be considered. The lack of awareness and other social pressures and power imbalances can also conspire to put the health of adolescents at risk [16]. In the report by WHO [12] adolescent girls, aged 15–19 years, in sub-Saharan Africa, were more likely than boys to have sex before the age of 15 years. In West and Central Africa, 16% of girls had sex before the age of 15 years compared with 7% of boys, and in South Asia, 8% and 3% of girls and boys, respectively, had sex before the age of 15 years. This was similar to what was found in this study where 16% girls compared to 14.7% boys said they had sex before the age of 16.

Regarding the factors associated with adolescent indulgence in sexual activity, the study found that initiation into sexual activity was a major factor, with 33.3% of respondents giving it as a reason. This was followed by curiosity (27.7%), a need for goods and services (5.6%), intoxication (7.1%), and finally accidental indulgence after experimenting with touching (4.7%). This implies that the external social environment was a significant determinant of sexual behaviour leading to indulging in to sex. Furthermore the individual's economic status was also a determinant of one's sexual behaviour. In exchange for goods and services, girls especially would engage in sexual activity, most often without protecting themselves. In sub-Saharan Africa, studies conducted in urban poor communities of Kenya and Ghana have reported early ages at first sex, multiple sexual partnerships, teenage pregnancies, and youth resolving some of their unintended pregnancies with induced abortions [27].

There were very few variations regarding the reasons why adolescents continued to indulge in sex after the first sexual experience. New ideas such as trying to keep a partner faithful, for enjoyment and failure to control sexual desires were brought out. While these were more internal, intervention would also require efforts to change mind-sets induced by culture in these societies. Other determinants found based on logistic regression were sex, education level, religion and having an HIV discussion with someone which were strong determinants of having one partner among the respondents. Logistic regression analysis showed that age predicted a strong likelihood of having one sexual partner. Respondents who were 19 years were negatively associated with likelihood of having one partner. For religion, catholic faith was negatively associated with the likelihood of having one partner among the respondents, senior secondary school education was also negatively associated with strong likelihood of having one sexual

partner among the respondents. Additionally, having discussed HIV with someone was among the significant factors that influenced respondents' likelihood of having one partner. Those who had discussed HIV with someone were 3.2 times more likely to report having one partner as compared to those who did not have such a discussion with someone.

Conclusion

Findings of this research highlight that, levels of sexual activity among adolescents in Chipata District of Zambia were very high. It also found that external factors such as social- economic environmental factors were significant determinants of sexual behaviours. The psychological disposition of an individual such as whether they were intoxicated also determined why an individual would either indulge in sex or not and whether they would protect themselves during sexual intercourse. The economic status of individuals was also a determinant of one's sexual behaviour. In exchange for goods and services, girls especially would engage in sexual activity, most often without protecting themselves. In addition there was poor knowledge on HIV and pregnancy prevention, particularly, the fact that one can fall in either of these circumstances at first sexual experience. Most adolescents did not know that it was possible to get HIV or fall pregnant at first sexual encounter and therefore were likely not only to engage in sexual activity, but also not to protect themselves during the process.

This study recommends that a specific focus on adolescent sexual reproductive health is required. These efforts should among others concentrate on increasing the knowledge of adolescents and improving their attitudes and behaviours towards sexual behaviour. However, for adolescents to undergo such a transformation, a lot of effort is required more especially towards bridging the gap between males and females in their comprehension of sexual reproductive health behaviours. If this pattern is not changed, the HIV prevalence will continue to rise especially among the adolescents. Therefore, for success to be scored in this fight, devising sustainable sex education programs that seek to address the social-cultural and socio-economic barriers and misconceptions about HIV and AIDS are also needed. Such programmes may include increased information, communication and education on comprehensive correct knowledge, positive attitude and behaviour towards HIV and AIDS such as HIV testing and condom use whenever they have sex with their partners. These need to be targeted at specific

groups as highlighted in the study findings starting from primary schools onwards to secondary education in order to instil within a young age the socially and culturally acceptable behaviours for increased HIV and AIDS prevention.

Future research with a bigger and more comprehensive participant base is recommended to assess the socio- economic and cultural factors affecting adolescents in their sexual behaviours.

References

1. Swartz, S.G. 2012. Adolescence. Retrieved Online, On 18th March 2021. <https://www.researchgate.net/publication/301687781>.
2. Sawyer, S.M., Azzopardi, P.S., Wickremarathne, D, & Patton, G. 2018. The age of adolescence. Retrieved on 18th May, 2021. [http://dx.doi.org/10.1016/S235-4642\(18\)30022-1](http://dx.doi.org/10.1016/S235-4642(18)30022-1).
3. Zambia demographic health survey, Macro International, Maryland, CSO; 2014.
4. World Health Organization. Contraceptive Research and Development Project (CONRAD). Safety of Nonoxynol-9 When Used for Contraception: Report from WHO/CONRAD Technical Consultation, October 2001. Geneva: World Health Organization and CONRAD, 2002.
5. World Health Organization. Global Health Sector Strategy On Sexually Transmitted Infections, 2016–2021. 2016
6. Global AIDS monitoring 2020: indicators for monitoring the 2016 United Nations Political Declaration on HIV and AIDS. Geneva: UNAIDS; 2019 (https://www.unaids.org/sites/default/files/media_asset/global-aids-monitoring_en.pdf, accessed 23 June 2020).
7. Warriner IK and Shah IH, eds., Preventing Unsafe Abortion and its Consequences: Priorities for Research and Action, New York: Guttmacher Institute, 2006.
8. Oyediran. K.A., Ishola, G.P., & Feyisetan, B.J. (2002). Factors affecting ever-married men's contraceptive knowledge and use in Nigeria. *J. biosoc. Sci.* 34, 497–510.
9. T.Kusanthan and K Suzuki, Zambia Urban Sexual Behaviour and Condom Use Survey, 1999, Research Department, PSI.
10. Richter, B.D., Baumgartner, J.V., Wigington, R., & Braun, D. P.(1997). How much water down a river need?", *Freshw Biol*, 37, 231-249.
11. Sujit D Rathod, Benjamin H Chi, Thankian Kusanthan, Batista Chilopa, Jens Levy, Izukanji Sikazwe, Peter Mwaba, Jeffrey SA Stringer, Trends in all-cause mortality during

- the scale-up of an antiretroviral therapy programme: a cross-sectional study in Lusaka, Zambia, *Bull World Health Organ*. 2014 Oct 1; 92(10): 734–741.
12. World Health Organization. (2015). *World health statistics 2015*. Available at: <https://apps.who.int/iris/handle/10665/170250>.
 13. World Health Organization. (2013). *World health statistics 2013*. Available at: <https://apps.who.int/iris/handle/10665/81965>.
 14. World Health Organization(2000). *HIV*. Retrieved from <https://www.who.int/news-room/fact-sheets/detail/hiv-aids>.
 15. UNICEF (2013). *Children and AIDS*. 6th stocktaking report.
 16. UNICEF (2012). *A business case for options B and B+ to eliminate mother-to-child transmission of HIV by 2015: model methodology*. Available at: https://www.unicef.org/aids/files/hiv_Key_considerations_options_B.pdf.
 17. UNAIDS (2010). *Global Report: UNAIDS Report on the Global AIDS Epidemic*. Available at: <https://www.refworld.org/docid/4cfca9c62.html>.
 18. World Health Organization. (2004). *The World health report : Changing history*. Available at: <https://apps.who.int/iris/handle/10665/42891>
 19. ZDHS (2014). *Zambia Demographic and Health Survey 2013-14*.13Rockville, Maryland, USA. Available at: <https://www.dhsprogram.com>.
 20. Jama Shai, N , Jewkes, R., Levin, J., Dunkle, K., & Nduna, M. (2010). Factors associated with consistent condom use among rural young women in South Africa. *AIDS Care*, 22:11, 1379-1385. Accessed at: <http://dx.doi.org/10.1080/09540121003758465>.
 21. Mahy, M., & Gupta, N.(2002).Sexual Initiation Among Adolescent Girls and Boys: Trends and Differentials in Sub-Saharan Africa. *Archives of Sexual Behavior*, 32, 41–53.
 22. Cleland, J., & Ali, M.M. (2006). Sexual abstinence, contraception, and condom use by young African women: A secondary analysis of survey data. *Lancet*, 368, 1788-1783.
 23. World Health Organization. (2007). *The world health report 2007: a safer future*. Available at: <https://www.who.int/publications-detail-redirect/9789241563444>.
 24. Marston, C., & King, E. (2006). Factors that shape young people's sexual behavior: a systematic review. *Lancet*, 368,1581-1586.
 25. Plummer, M., & Wight, D. (2011). *Young People's lives and sexual relationships in rural Africa: Findings from a large qualitative study in Tanzania*. Lanham, MD: Lexington Books.

26. Magnani, C., Dalmaso, P., Biggeri, A., Ivaldi, C., Mirabelli, D., & Terracini, B. (2001). *Increased Risk of Malignant Mesothelioma of the Pleura after Residential or Domestic Exposure to Asbestos: A Case-Control Study in Casale Monferrato*. University of Florence, Italy. Retrieved at <http://ehpnet1.niehs.nih.gov/docs/2001/109p915-919magnani/abstract.html>.

UNDER PEER REVIEW