

Cervical cancer screening among adolescent girls in Lesotho: Levels and determinants

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Background. International guidelines have discouraged screening of young women under the age of 21 for cervical cancer. However, a high screening rate is still evident among adolescent girls in Lesotho.

Objective. To explore the levels and determinants of cancer screening among adolescent girls in Lesotho.

Methods. This cross-sectional study used secondary data from the 2014 Lesotho Demographic and Health Survey collected from 1 542 adolescent girls aged 15 - 19 years. Descriptive statistics, the chi-square test and a binary logistic regression model were used to analyse the data.

Results. Despite recommendations that adolescents should not screen for cervical cancer, results show that 15% of adolescent girls in Lesotho attend screening services. Adolescent girls from rural areas are less likely to screen than those from urban areas (odds ratio (OR) 0.22, 95% confidence interval (CI) 0.07 - 0.68; $p=0.009$). Marital status and level of education were significantly associated with cervical cancer screening among respondents; however, age at first sex was not statistically associated with screening among adolescent girls.

Conclusion. With reference to international guidelines, the screening rate for cervical cancer is high among adolescents in Lesotho. Future studies should focus on why adolescents in Lesotho still screen for cervical cancer despite international recommendations discouraging screening before the age of 21.

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Sub-Saharan Africa is reported to have the highest incidence and mortality rates for cervical cancer. Approximately 70% of the world's burden of cervical cancer is in developing countries.^[1] In 2017, Mboumba Bouassa *et al.*^[2] reported that the incidence rate of cervical cancer in sub-Saharan Africa was increasing, with 75 000 new cases being reported. Reports in Lesotho indicate that there are approximately 35 new cases per 100 000 women per year.^[3] Moreover, cervical cancer ranks as the leading cause of female cancer deaths in Lesotho.^[4] There is little information regarding cervical cancer screening in Lesotho and one study that did focus on cervical cancer screening in the country, focused only on screening among women older than 20 years.^[5] The screening rate for cervical cancer among adolescent girls in Lesotho is therefore not known.

A number of studies refer to international guidelines discouraging screening of women under the age of 21 for cervical cancer.^[6-8] In 2002, the American Cancer Society recommended that cervical cancer screening should start at age 21.^[9] However, despite this recommendation studies show that in some areas, including Lesotho, cervical cancer screening continues to be performed in adolescents.^[4,10-12] Continued screening among adolescents may be associated with psychological and emotional consequences these girls are not prepared for.^[13] Understanding levels of cancer screening among adolescent girls can therefore help to inform policy implementations regarding adolescent health. This study aims to explore the levels and determinants of cancer screening among adolescent girls in Lesotho, in order to serve as a guide to policy makers in light of current international recommendations.

Adolescents are considered to have a lower risk of being diagnosed with cervical cancer. A study by Henrique *et al.*^[14] showed cytological abnormalities in adolescents to be approximately 2.6%. The authors consequently recommended that adolescents should not be screened, as such abnormalities are rare among young women. In keeping with such recommendations, Datta and Saraiya^[15] excluded women under 21 years from their study on cervical cancer screening among women who attended sexually transmitted disease clinics. However, despite

these recommendations, some studies still include adolescents in their research. For example, a study conducted in Argentina reported that most screening services recommend starting Pap tests among girls between the age of 15 and 18 years.^[16] The authors further reported that health professionals in Argentina advise women to be screened when they become sexually active, regardless of age.^[16] The study also showed that socioeconomically disadvantaged girls have a lower chance of being screened. Similarly, in a study among women between the ages 16 and 21 years at a US academic institution, it was found that low socioeconomic status was associated with lower testing rates.^[10] The authors also found that young women who were sexually active requested Pap tests.^[10]

Moreover, a study among adolescent girls in Mozambique found that education level was associated with knowledge of cervical cancer prevention.^[17] That study also found that married adolescent girls were more likely to be aware of cervical cancer prevention than single adolescent girls.^[17] Furthermore, Francis *et al.*^[18] note that access to medical care in developing countries is limited outside urban areas.

Screening for cervical cancer among adolescent girls appears to be variable. For example, Kruzikas *et al.*^[19] found that the rate of Pap smear testing was 3.8% for the age group 11 - 18 years, whereas a study from Nova Scotia reported that 45% of women aged 15 - 19 years have had a Pap test.^[20] Reports show that in Lesotho women under the age of 20 continue to be screened for cervical cancer.^[4]

Methods

This study used secondary data from the individual recode file of the 2014 Lesotho Demographic and Health Survey (DHS). The study population was adolescent girls (15 - 19 years) and the sample size for this study was 1 542. Statistical software (Stata version 14) was used for statistical analysis, which included descriptive statistics, bivariate analysis and multivariate analysis. Frequency distributions were used to describe the sociodemographic characteristics of the adolescent girls in this study. Bivariate analysis involved chi-square cross-tabulations to consider the relationship between cervical

cancer screening and sociodemographic characteristics of the study population. As the outcome variable (cervical cancer screening) is dichotomous, a binary logistic regression model was used during multivariate analysis to examine the association between cervical cancer screening and other independent variables.

The rate of cervical cancer screening was assessed based on the responses (Yes/No) to the question whether a respondent has ever had a Pap smear, as included in the DHS. The independent variables considered in this analysis included: place of residence (urban/rural); highest level of education (primary/higher); marital status (never in union/ever married); a three-category household wealth index (poor/middle/rich); and age at first sex (never had sex/8 - 14 years/15 - 19 years). The wealth index tertile was used as a proxy for socioeconomic status while age at first sex was used as a proxy for sexual history.

Table 1. Weighted frequency and percentage distribution of sociodemographic and socioeconomic characteristics of adolescent girls in Lesotho, DHS 2014

Characteristics	n (%)
Urban	449 (31.2)
Rural	991 (68.8)
Primary	403 (27.9)
Higher	1037 (72.1)
Marital status	
Never in union	1 175 (81.6)
Previously/currently married	265 (18.4)
Poor	482 (33.5)
Middle	478 (33.2)
Rich	480 (33.3)
Age at first sex (years)	
Never had sex	780 (54.2)
8 - 14	86 (6)
15 - 19	574 (39.8)
Cervical cancer screening attendance	
No	281 (84.8)
Yes	50 (15.2)

As the study used secondary data, no ethical approval was required. However, the survey protocol was reviewed and approved by the Research and Ethics Committee of the Lesotho Ministry of Health and the Institutional Review Board of ICF International.^[21]

Results

More than two-thirds of the respondents (69%) resided in rural areas, compared with 31% who lived in urban areas (Table 1). The majority of the respondents (72%) had completed or were enrolled for higher education, while 28% had completed only primary education. The vast majority (90%) of respondents were unemployed. Most of the respondents (82%) had never been in union, while 18% were or have been. The respondents were almost equally distributed across the income categories defined for this study (34% rich, 33% poor, 33% middle class). More than half of the adolescents (54%) have never had sex, while 40% became sexually active between 15 and 19 years of age; only 6% became sexually active between the age of 8 and 14 years. Results showed that 85% of the respondents had never had a Pap smear.

Table 2 shows the analysis of cervical cancer screening among adolescent girls in Lesotho. The analysis shows that 22% of adolescent girls with a primary education have undergone screening compared with only about 10% of those with a higher education. Results also show that attending screening is not differentiated according to place of residence. In addition, 27% of adolescent girls who attended screening are or have been married, compared with 9% who have never been in a union. A similar proportion of girls from poor and middle-class households (~15%) attended screening, whereas 7% from rich households reported having had a Pap smear.

Table 3 shows the results from the logistic regression model. Adolescent girls from rural areas were significantly less likely to attend screening than those in urban areas (odds ratio (OR) 0.22, 95% confidence interval (CI) 0.07 - 0.68; $p=0.009$) while controlling for other variables. Adolescent girls with a higher education were significantly less likely to have a Pap smear than those with a primary education (OR 0.24, 95% CI 0.08 - 0.68; $p=0.008$) when other variables were controlled. Moreover, respondents who have been or are married were significantly more likely to attend a Pap test than those who have never been in a union (OR 7.08, 95% CI 2.17 - 23.12; $p=0.001$) while controlling for other variables.

Table 2. Sociodemographic and socioeconomic characteristics of adolescent girls screened for cervical cancer in Lesotho, according to data from the Demographic and Health Survey, 2014

Characteristics	Did not attend (N=309), n (%)	Attended (N=42), n (%)	p-value
Place of residence			0.914
Urban	113 (88.3)	15 (11.7)	
Rural	196 (87.9)	27 (12.1)	
Highest level of education			0.007
Primary	45 (77.6)	13 (22.4)	
Higher	264 (90.1)	29 (9.9)	
Marital status			0.000
Never in union	259 (91.5)	24 (8.5)	
Previously/currently married	50 (73.5)	18 (26.5)	
Household wealth index			0.097
Poor	81 (85.3)	14 (14.7)	
Middle	109 (85.2)	19 (14.8)	
Rich	119 (92.9)	9 (7.1)	
Age at first sex (years)			0.212
Never had sex	158 (90.3)	17 (9.7)	
8 - 14	18 (78.3)	5 (21.7)	
15 - 19	133 (86.9)	20 (13.1)	

Table 3. Association between cervical cancer screening among adolescent girls in Lesotho and other socioeconomic and sociodemographic characteristics, according to data of the Demographic and Health Survey, 2014

Variables	aOR (95% CI), (N=351)	p-value
Place of residence		
Urban*	1	
Rural	0.22 (0.07 - 0.68)	0.009
Highest level of education		
Primary*	1	
Higher	0.24 (0.08 - 0.68)	0.008
Marital status		
Never in union*	1	
Previously/currently married	7.08 (2.17 - 23.12)	0.001
Household wealth index		
Poor*	1	
Middle	1.32 (0.47 - 3.68)	0.599
Rich	0.37 (0.07 - 1.93)	0.235
Age at first sex (years)		
Never had sex*	1	
8 - 14	0.74 (0.10 - 5.47)	0.768
15 - 19	0.44 (0.13 - 1.49)	0.188

aOR = adjusted odds ratio; CI = confidence interval.

*Reference category.

Discussion

This study focused on the levels and determinants of cervical cancer screening among adolescent girls in Lesotho. Our results show that a high percentage of adolescent girls in Lesotho continue to receive screening services, contrary to international recommendations. This may be problematic, considering possible psychological and emotional complications associated with such screening.^[13] Our results also show that adolescent girls living in rural areas were less likely to attend screening compared with their urban counterparts, as also found in an earlier southern African study.^[18] Moreover, level of education was found to be significantly associated with cervical cancer screening. Adolescent girls with a higher education were found to be less likely to screen for cervical cancer, which could suggest that they are better informed about the possible negative implications associated with cervical cancer screening at young ages.^[13]

Respondents who have been or are married were significantly more likely to attend screening than those who have never been in a union. This may suggest that, similar to the situation in Argentina,^[16] health practitioners in Lesotho encourage women to screen for cervical cancer when they become sexually active, regardless of age. Marriage has been used as a proxy for sexual activity.^[22] Our results show no association between socioeconomic status and screening rate, in contrast to some other studies.^[10,16] Furthermore, no association was found between age at first sex and cervical cancer screening, unlike the findings from a study in which cervical cancer screening among adolescents increased with a sexual history.^[10]

Study limitations and strengths

As this was a cross-sectional study, causality could not be inferred. The question asking respondents to report their age when they first had sex was prone to sexual desirability because sexually active younger adolescents may be likely to report themselves as never having had sex. Despite these limitations, this study sheds light on an overlooked study area and therefore can contribute to the literature on cervical cancer screening among adolescent girls. It may help to inform policy decisions or recommendations regarding cervical cancer screening among adolescents in Lesotho.

Conclusion

A large proportion of adolescent girls in Lesotho continue to be screened for cervical cancer despite international recommendations against screening at a young age. The screening rate appears to be influenced by specific sociodemographic factors, namely marital status, place of residence and level of education. Both health practitioners and adolescent girls should be educated about the implications of starting screening before the age of 21. Further research among local health practitioners is warranted to evaluate whether their knowledge of and attitude to cervical cancer screening among girls agree with internationally recommended guidelines. Future studies to examine the reasons for continued screening and specifically the association with certain sociodemographic factors are recommended.

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