Original Article

Knowledge about Cervical Cancer Prevention and Screening in Women with Cervical Cancer Attending Gynecological Services in Southern Mozambique

AV Nhangave, BLC Evaristo[1], D Osório[2], A Muhiwa[2], E Nacarapa[2], JM Ramos[3], I Munyangaju[2]

Research Department, Gaza Provincial Research Nucleus, Provincial Health Directorate, Xai-Xai – Gaza Province, Mozambique, [1]Business Administration and Management, Gwaza Muthini Higher Institute of Management and Entrepreneurship, Vila de Marracuene, Maputo Province, Mozambique, [2]Clinical Research, Tinpswalo Association, Vincentian Association to Fight AIDS and TB, F2C3+JPR Av. De Trabalho, Chokwe, Gaza Province, Mozambique, [3]Department of Clinical Medicine, Alicante General University Hospital and University Miguel Hernandez de Elche, Avinguda de la Universitat d'Elx, Elche, Alicante, Spain

Received: 16-Dec-2022;
Revision: 30-Sep-2023;
Accepted: 09-Oct-2023;
Published: 04-Dec-2023

Abstract

Background: Mozambique has high rates of cervical cancer and cancer-related deaths among women. A high rate of refusal and low acceptance of treatment is observed among cervical cancer patients. The extent of their knowledge of the disease is unknown. **Objectives:** To assess knowledge about this disease (prevention, risk factors, and the possibilities of early diagnosis) in women with cervical cancer attended in gynecological services in Gaza province, Mozambique. **Materials and Methods:** This cross-sectional study took place in the city of Xai-Xai at the Provincial Hospital of Xai-Xai (HPXX) in the southern province of Gaza (Mozambique). Non-probability convenience sampling was used. Eligible patients (women) aged 35–50 years, diagnosed with cervical cancer and followed at the HPXX in the second quarter of 2021 (n = 60), took part in the survey during their scheduled consultations. Descriptive statistics were calculated using SPSS statistical software (version 16). **Results:** The study included 60 women, 39 (65%) HIV positive. More than half (55.0%) believed that having a single sexual partner was an effective form of prevention; 50.0% reported that excessive alcohol consumption and having many sexual partners could cause the disease, and 46.7% affirmed that having many children increased the risk. Thirty-eight (63.3%) women reported that early diagnosis of cervical cancer was important for receiving prompt treatment, and 54 (90.0%) said regular visits to the gynecologist were important for an early diagnosis. Thirty-five (58.3%) mentioned acetic acid screening as a diagnostic test. **Conclusions:** There are significant gaps in awareness of cervical cancer among high-risk groups.

Keywords: *Cervical cancer, early detection of cancer, female, gynecology, health knowledge, HIV, Mozambique*

Introduction

Cervical cancer is a silent disease that often has no early symptoms; detecting and treating lesions in the precancerous stage can prevent the disease altogether. The standard screening method is by cytology, or Pap smear. Squamous cell atypia is the most common epithelial abnormality detected using this technique.[1,2]

Access this article online

Quick Response Code:

Website: www.njcponline.com

DOI: 10.4103/njcp.njcp_893_22

Address for correspondence: Dr. I Munyangaju, Tinpswalo Association, Vincentian Association to Fight AIDS and TB, F2C3+JPR Av. De Trabalho, Chokwe, Gaza Province, Mozambique.
E-mail: imunyangaju@gmail.com

How to cite this article: Nhangave AV, Evaristo BL, Osório D, Muhiwa A, Nacarapa E, Ramos JM, *et al.* Knowledge about cervical cancer prevention and screening in women with cervical cancer attending gynecological services in Southern Mozambique. Niger J Clin Pract 2023;26:1616-20.

Globally, cervical cancer is one of the top cancers in women, and more than 95% of cases are due to human papillomavirus (HPV). In 2020, there were an estimated 604,000 new cases and 342,000 deaths, 90% of which occurred in low- and middle-income countries. Women who are HIV positive have six times the risk of developing cervical cancer compared to those who are HIV negative.[1]

In Mozambique, cervical cancer is the main cause of cancer and cancer-related death in women, with 5325 new cases and 3850 deaths in 2020. The crude incidence rate in Mozambican women is 33.1 cases per 100,000.[3-5] Given that Mozambique is one of the poorest nations in the world, with 60% of the population living in extreme poverty (with less than USD 1.90 a day),[6] the cervical cancer screening program, launched by the Ministry of Health in 2009, is based on simple and low-cost visual inspection with acetic acid (VIA).[7,8] The national screening program is aimed at women aged 30–55 years old, and when indicated treatment with cryotherapy follows. Loop electrosurgical excision is offered at provincial hospitals to women with advanced or high-grade cervical abnormalities.[3,9]

There have been reports in parts of Mozambique of frequent refusals, low acceptance of treatment, and limited knowledge about cervical cancer in the target screening group.[7,8,10] This study aims to evaluate knowledge about cervical cancer (prevention, risk factors, and the possibilities of early diagnosis) in women with cervical cancer. The findings from this study will inform educational campaigns aimed at increasing cervical cancer awareness and adherence to early and regular screening among target groups.

Materials and Methods

Study design and population

This cross-sectional study took place in the city of Xai-Xai at the Provincial Hospital of Xai-Xai (HPXX) in the southern province of Gaza (Mozambique). It is a tertiary level referral hospital that operates 24 hours a day, equipped with various specialist services, including gynecology. Ethical clearance for this study was obtained from the Institutional Committee on Bioethics for Health in Gaza province (Comité Institucional de Bioética para Saúde de Gaza, IRB00002657) with reference number 81/CIBS-Gaza/2021. Details of the study were explained to each participant, who gave informed consent before taking part. Participation was voluntary, and women were free to drop out at any time with no consequences. Women did not receive any incentives for their participation. The study was conducted according to the principles of the Helsinki Declaration.

Non-probability convenience sampling was used. Eligible patients were women diagnosed with cervical cancer, either in the HPXX gynecology service or its peripheral health units (as long as they were being followed at the HPXX). All women being followed for cervical cancer in the second quarter of 2021 (n = 60) took part in the survey during their scheduled consultations.

Data collection and analysis

Trained study staff administered a semi-structured open-ended questionnaire to participants, covering demographic characteristics, obstetric history, knowledge on prevention, and early treatment of cervical cancer. Data collection was carried out individually, in a closed room where the women were comfortable and confidentiality could be protected.

Open Data Kit (ODK) software was used to collect data. Data were entered into an Excel database (Microsoft) and cleaned to ensure consistency. Descriptive statistics were calculated using SPSS statistical software (version 16).

Results

All 60 women being followed in the gynecology consultation in HPXX from April to June 2021 were included [Table 1]. Their mean age was 42.2 years (standard deviation 4.5), and they had an average of five children. Most were referrals from peripheral districts (mainly Chibuto and Manjacaze), employed as domestic workers, and had a primary level education. The women who presented at the consultation were between 35 and 50 years; the investigators consulted the clinic registers and noted that this was the trend in the past 2 years.

Table 1: Participant characteristics (*n*=60)

Variables	Frequency
Age in years, mean (SD)	42.2 (4.5)
N of children, mean (SD)	5.0 (2.0)
N of pregnancies, mean (SD)	5.0 (2.0)
Origin, *n* (%)	
Chibuto	19 (31.7)
Manjacaze	18 (30.0)
Xai-Xai	11 (18.3)
Chicumbane	7 (11.7)
Chokwe	3 (5.0)
Bairro 4 de Inhamisso	1 (1.7)
Macia	1 (1.7)
Occupation, *n* (%)	
Domestic worker	30 (50.0)
Trade	21 (35.0)
Formal employment	9 (15.0)
Education level, *n* (%)	
Primary level	32 (53.3)
Secondary level	28 (46.7)

Table 2: Results of an open-ended knowledge survey in relation to cervical cancer, in women seen at the gynecology consultation at Xai-Xai Provincial Hospital, April–June 2021 (*n*=60)

Survey questions	*n* (%)
Q1: How can cervical cancer be prevented?	
No alcohol consumption	1 (1.7)
No smoking and no alcohol consumption	1 (1.7)
Not having many sexual partners	10 (16.7)
Having one sexual partner	33 (55.0)
Always using condoms	14 (23.3)
Using condoms and being faithful	1 (1.7)
Q2: What causes cervical cancer?	
Excessive alcohol consumption and having many sexual partners	30 (50.0)
Failure to use condoms	2 (3.3)
Having many children	28 (46.7)
Q3: Why is early diagnosis of cervical cancer important for women's health?	
To receive early treatment	38 (63.3)
To prevent severe forms of the disease	4 (6.7)
For better treatment and follow-up	18 (30.0)
Q4: How can you get an early cervical cancer diagnosis?	
Listen to the health "palestras" in the health center	1 (1.7)
Follow medical recommendations	2 (3.3)
Regular visits to the gynecologist	54 (90.0)
Actively participate in the "palestras" in the health center	3 (5.0)
Q5: What tests are used to diagnose cervical cancer?	
Ultrasound	13 (21.7)
X-ray	12 (20.0)
VIA	35 (58.3)
Q6: Do you use any contraception? What type?	
Yes	46 (76.7)
Implant	19 (41.3)
Depo injection	22 (47.8)
Pill	5 (10.9)
Intrauterine device	0
Tubal ligation	0
No	14 (23.3)
Q7. What comorbidities associated with cervical cancer have you had?	
HIV	39 (65.0)
Sexually transmitted infection	19 (31.7)
HPV	2 (3.3)

HIV: Human immunodeficiency virus, STI: sexual transmitted infection, HPV: human papillomavirus, VIA: acetic acid screening, Palestras: daily health education seminars at the health facility

In the survey [Table 2], over half (55.0%) the women affirmed that having a single sexual partner was an effective form of preventing cervical cancer. A substantial proportion of respondents reported that cervical cancer could be caused by excessive alcohol consumption and having many sexual partners (50.0%), or by having many children (46.7%). Thirty-eight women (63.3%) believed that early diagnosis of cervical cancer was important in order to receive prompt treatment, and 54 (90.0%) responded that regular visits to the gynecologist were necessary for an early diagnosis. When asked about co-morbidities 39 (65.0%) women reported being HIV positive, 19 (31.7%) disclosed a history of a sexually transmitted infection, and two revealed that they had been diagnosed with HPV.

When the women were asked about which tests could diagnose cervical cancer, most (n = 35, 58.3%) could name VIA. However, none mentioned the Pap smear, and 25 (41.7%) answered with the wrong tests. Forty-six (76.7%) women were using some form of family planning: 22 used depo injections and 19, contraceptive implants [Table 2].

Discussion

This study highlights the continued gaps in knowledge and education surrounding the topic of cervical cancer

among at-risk groups. Our results are consistent with previous studies showing a lack of awareness of risk factors, prevention, screening services, and HPV infection.[8,11] Women referred to the gynecology service in HPXX usually have ailments that cannot be managed at the primary healthcare level, and they are generally referred by a primary care health professional. They should have received counseling and education on sexual reproductive issues, including cervical cancer, in that setting. The results of this study thus show a need to introduce or strengthen health education in the peripheral health units and in the community.[12]

Most women were using some form of contraception, suggesting regular attendance at their health center (e.g., depo injections are given every three months); these visits represent an opportunity to strengthen women's knowledge and awareness of cervical cancer and to perform cervical cancer screening, especially given that most participants were aware that early diagnosis was important for receiving early treatment.

Women living with HIV are at higher risk of developing cervical cancer than their HIV-negative counterparts.[13] More than 60% of the women in our study were HIV positive. Again, this highlights the fact that women with HIV, among the most at-risk groups in cervical cancer prevention, have significant gaps in knowledge, making it difficult for them to protect themselves. This finding contradicts another study in northern Mozambique in adolescents and young girls, which showed high levels of awareness about cervical cancer.[10]

As previously reported, our cohort showed a lack of knowledge about HPV.[10] This may be explained in part by the diagnostic challenges for HPV in Mozambique due to lack of equipment, supplies, and skilled personnel.[14] These shortages are particularly alarming as the country is beginning to slowly introduce HPV vaccination campaigns.[15] There is an urgent need for strong community campaigns in order to increase community knowledge of cervical cancer and HPV prevention and subsequently increase uptake of the HPV vaccine among the target population.

Participants believed that risk factors for cervical cancer included excessive alcohol consumption, multiple sexual partners, and having many children. These results are in keeping with another study in Zambezia province in northern Mozambique,[7] which further showed that knowledge about cervical cancer screening was significantly associated with willingness to be screened, and that the higher the parity, the less likely they were to be screened (odds ratio 0.80, 95% confidence interval 0.63 to 1.01, $P = 0.056$). Such evidence underlines the importance of well-designed and targeted education campaigns, especially for high-risk groups like women living with HIV.

Most of our participants were referrals from centers that were an average of 50 km away from HPXX. A majority had a primary school education and were domestic workers. Under these circumstances, efforts to improve cervical cancer services and uptake may be hampered by distance and transport costs, so these barriers should be considered when designing strategies. Campaigns should take a community approach to reach remote areas and populations with limited access to health facilities, for example, using mass media and targeted campaigns coupled with HPV vaccinations.[10,12]

Patients who presented at the cervical cancer follow-up consultations were between the ages of 35 and 50. This was a trend observed in that clinic for the past years. Studies show that globally, there is increased incidence of cervical cancer in the age group 15–49 years especially in regions with a high sociodemographic index.[16] A study by Arbyn *et al.* (2018) analyzed data from various countries to estimate the incidence and mortality of cervical cancer, and they found that the incidence starts increasing after the age of 25 years. They further found that in high-income settings, peak incidence is at 40 years, but in lower-income settings, incidences continue to increase well into ages 55–69 years. They argue that the average age of cervical cancer diagnosis is 53 years (range: 44–68 years).[17] The continued rise of incidence in lower income countries reflects gaps in prevention strategies (screening, vaccination) and early diagnosis.[17,18] This may be the case for what we observed in our study in Gaza province, that prevention strategies are not reaching younger women.

This study has some limitations, including a small sample size and short recruitment period. Moreover, the semi-structured questionnaire was not exhaustive, and participants were women referred to a tertiary health facility, with a relatively limited age range and a similar profile, which limits the generalizability of the findings. A larger study including adolescents and younger as well as older women (and men) would be needed to evaluate knowledge on cervical cancer across the spectrum of at-risk groups in a high prevalence setting such as Mozambique. This evidence could further inform and strengthen prevention and treatment strategies.

Conclusion

Despite significant advances in prevention and treatment, significant gaps in awareness of cervical cancer remain in high-risk groups. There is an urgent

need for community-centered and targeted education strategies about cervical cancer so that high-burden settings such as Mozambique can benefit from recent advances in HPV vaccinations and cervical cancer diagnosis.

Ethics approval and consent to participate

Ethical approval was obtained from the Institutional Committee on Bioethics for Health in Gaza province (Comité Institucional de Bioética para Saúde de Gaza, IRB00002657) with reference number 81/CIBS-Gaza/2021. Written consent was obtained from the participants enrolled in the study. The study was conducted according to the principles of the Helsinki Declaration.

Acknowledgement

The authors would like to thank the participants and the health facility teams that contributed to the success of the study. The authors are equally grateful to Meggan Harris for the English review services.

Financial support and sponsorship

Nil.

Conflicts of interest

There are no conflicts of interest.

References

1. World Health Organization. Cervical Cancer. WHO; 2022. Available from: https://www.who.int/news-room/fact-sheets/detail/cervical-cancer. [Last accessed on 2022 Sep 16].
2. Rezende MT. Comparison of cytopathological examinations of the cervix in the city of Ouro Preto-MG, submitted to external quality monitoring. 2017. 70 f. Dissertation (Master in Pharmaceutical Sciences) – School of Pharmacy, Federal University of Ouro Preto, Ouro Preto, 2017. Available from: http://www.repositorio.ufop.br/handle/123456789/7924. [Last accessed on 2022 Sep 12].
3. de Oliveira CM, Salcedo MMP, Monteiro E, Mariano A, Verdinho MJC, de Julião R AM, *et al.* HPV testing for cervical cancer screening in Mozambique: Challenges and recommendations. J Glob Health Rep 2022;6:e2022007.
4. Bruni L, Albero, G, Serrano, B, Mena, M, Collado, JJ, Gomes, D, *et al.* ICO/IARC Information Centre on HPV and Cancer (HPV Information Centre). Human Papillomavirus and Related Diseases in Mozambique. Summary Report 22 October 2021. Available from: https://hpvcentre.net/statistics/reports/MOZ.pdf. [Last accessed on 2022 Sep 13].
5. World Health Organization. Cervical cancer Mozambique 2021 country profile. WHO, 2021. Available from: https://www.who.int/publications/m/item/cervical-cancer-moz-country-profile-2021. [Last accessed on 2022 Sep 13].
6. Statista. Mozambique: Extreme poverty rate 2016-2025. Statista, 2022. Available from: https://www.statista.com/statistics/1243825/extreme-poverty-rate-in-mozambique/. [Last accessed on 2022 Sep 13].
7. Audet CM, Matos CS, Blevins M, Cardoso A, Moon TD, Sidat M. Acceptability of cervical cancer screening in rural Mozambique. Health Educ Res 2012;27:544–51.
8. Menendez YA, Cambaco O, Mindú C, Nhantumbo H, Uamusse T, Matsinhe G, *et al.* Lay knowledge of cervical cancer in Manhiça district, Mozambique: A qualitative study. Reprod Health 2020;17:130.
9. Osman N. S10.2 Cervical cancer screening: Benefits and challenges of HPV self-sampling in Mozambique. Sex Transm Infect 2021;97(Suppl 1):A14.
10. Bardají A, Mindu C, Augusto OJ, Casellas A, Cambaco O, Simbine E, *et al.* Awareness of cervical cancer and willingness to be vaccinated against human papillomavirus in Mozambican adolescent girls. Papillomavirus Res 2018;5:156–62.
11. Pierz AJ, Randall TC, Castle PE, Adedimeji A, Ingabire C, Kubwimana G, *et al.* A scoping review: Facilitators and barriers of cervical cancer screening and early diagnosis of breast cancer in Sub-Saharan African health settings. Gynecol Oncol Rep 2020;33:100605.
12. Ebu NI, Mupepi SC, Siakwa MP, Sampselle CM. Knowledge, practice, and barriers toward cervical cancer screening in Elmina, Southern Ghana. Int J Womens Health 2014;7:31–9.
13. Mohanty S, Gurram L, Chopra S, Mahantshetty U, Grover S. Cervical cancer treatment in HIV-positive patients: A survey of treatment practices in India. JCO Glob Oncol 2021;7:843–8.
14. Salcedo MP, Oliveira C, Andrade V, Mariano AAN, Changule D, Rangeiro R, *et al.* The Capulana study: A prospective evaluation of cervical cancer screening using human papillomavirus testing in Mozambique. Int J Gynecol Cancer 2020;30:1292-7.
15. Menéndez C, Casamitjana N, Bardají A, Lucas A, Munguambe K, Sevene E. Mozambique and the human papillomavirus vaccine: From recommendation to reality in two decades. ISGlobal. Available from: https://www.isglobal.org/en/healthisglobal/-/custom-blog-portlet/mozambique-y-la-vacuna-contra-el-papiloma-humano-de-recomendacion-a-realidad-en-dos-decadas. [Last accessed on 2022 Sep 16].
16. Yang M, Du J, Lu H, Xiang F, Mei H, Xiao H. Global trends and age-specific incidence and mortality of cervical cancer from 1990 to 2019: An international comparative study based on the Global Burden of Disease. BMJ Open 2022;12:e055470.
17. Arbyn M, Weiderpass E, Bruni L, Sanjosé S de, Saraiya M, Ferlay J, *et al.* Estimates of incidence and mortality of cervical cancer in 2018: A worldwide analysis. Lancet Glob Health 2020;8:e191–203.
18. Singh D, Vignat J, Lorenzoni V, Eslahi M, Ginsburg O, Lauby-Secretan B, *et al.* Global estimates of incidence and mortality of cervical cancer in 2020: A baseline analysis of the WHO Global Cervical Cancer elimination initiative. Lancet Glob Health 2023;11:e197–206.