

Original Research Article

Knowledge, Utilization, Challenges and Factors Associated with Cervical Cancer Screening among Female Doctors and Nurses at a Tertiary Hospital in Tanzania: A Cross Sectional Study

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Article History

Received: 18.05.2025

Accepted: 24.06.2025

Published: 27.06.2025

Journal homepage:

<https://www.easpublisher.com>

Quick Response Code

Abstract: **Background:** Cervical cancer is the leading gynecological malignancy in Tanzania accounting 59.1 new cases per 100,000 women (age-standardized to the world population) and mortality of 42.7 deaths per 100,000 (age-standardized to the world population) in 2018. Despite this burden, the cervical cancer screening uptake is not effective. Currently, the proportion of cervical cancer screening is 11% in Tanzania among women but there is limited data of cervical cancer screening uptake among female health care workers especially doctors and nurses whom screening tendency among them might influence more screening uptake to the community since they are good messengers for disseminating health information to the community. The aim of this study was to assess the knowledge of cervical cancer, utilization, challenges, and factors associated with cervical cancer screening among female doctors and nurses. **Methods:** This was a hospital-based analytical cross-sectional study, conducted at Muhimbili National Hospital (MNH) from 1st August to 31st November 2021. The semi-structured self-administered questionnaires were used to collect data on knowledge of cervical cancer, screening uptake and challenges toward cervical cancer screening. These data were self-report. The factors associated with cervical cancer screening uptake were assessed using a multivariate robust poisson regression model. A $P < 0.05$ was considered statistically significant. **Results:** A total number of 221 participants were involved in the study, 81.4% had good knowledge of cervical cancer and the proportion of self-reported utilization of cervical cancer screening was 29.9% (95% CI:23.9% – 36.4%). Lack of self-motivation toward screening (58.8%), tight work schedules (50.2%), and lack of perceived risk factors for cervical cancer (29.9%) were some of the challenges mentioned observed. The adjusted prevalence ratio (aPR) in the multivariate robust Poisson regression model revealed a lower level of education was associated with less likelihood to screen for cervical cancer compared to an advanced University level of education (cPR:0.54, 95% CI=0.33-0.91) with a P 0.02. **Conclusion:** The study demonstrated good knowledge of cervical cancer among female doctors and nurses at MNH with poor uptake of cervical cancer screening. On-job training about the significance of cervical cancer screening and special screening program for health care providers are recommended.

Keywords: Cervical Cancer, Cervical Cancer Screening, Cervical Cancer Screening Utilization.

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INTRODUCTION

Cervical cancer is the second most common gynecological malignancy in developed countries and the leading gynecological malignancy in low resource countries like Tanzania responsible for high mortality and morbidity to women [1, 2]. Tanzania has been reported to record 9792 new cervical cancer cases and 6695 cervical cancer-related deaths annually with 58,552,845 residents (July 2020 estimates) [3]. The higher prevalence of cervical cancer cases in Tanzania is associated with a high prevalence of Human Papilloma Virus (HPV) and Human Immunodeficiency Virus (HIV) co-infection [4].

Cervical cancer screening refers to the standardized application of a test to the cervix of an individuals who have not yet clinically presented with symptoms [5]. Cervical cancer screening coverage of > 80% is effective in cervical cancer prevention by 91% if screening is done every 3 years [1]. In Tanzania, the guideline of 2011 recommends Visual Inspection with Acetic acid (VIA), Papanicolaou smear test (Pap) smear, HPV testing as the cervical cancer screening methods depending on the level of health facility, presence of qualified staff and availability of the test at the particular health facility [1]. The recommended age of screening is 30 to 49 years of age for all women except for HIV positive women who are to start cervical cancer screening at 25 years [1-6]. The screening interval is 3-years when VIA or Pap are used, and it is 5 to 10 years when HPV testing is used [6]. Cervical cytology is recommended for older women above 50 years if screening is indicated, this is due to squamocolumnar junction retraction toward the endocervix which can result in poor exposure to the transformation zone [7].

The higher burden of cervical cancer new cases and the number of deaths yearly are due to unstable cervical cancer screening practices, lack of resources, high prevalence of the oncogenic HPV subtypes, and a relatively higher rate of HIV co-infection [2]. Other challenges in Tanzania, include traditional risk factors associated with sexual behaviors, lower education, low doctor-to-patient ratio, and living in rural areas [2-8]. Also, fewer cytopathologists and lack of equipment and trained personnel to perform colposcope directed biopsy also contribute to the burden [3]. By 2018 only 11% of women aged 30-50 years were reported to have been screened in Tanzania [9]. It was observed that some women were reluctant about the idea of cervical cancer screening despite showing higher knowledge of cervical cancer screening [10]. To date Tanzania offers cervical cancer screening services in 136 out of 169 Districts. It is projected to have 6447 facilities with a coverage rate to 35% offering cervical cancer screening by the year 2020 to 2024 [9].

The study done among female nurses in Mount

Meru region hospital in Tanzania 2011 revealed that less than half of the nurses had adequate knowledge of cervical cancer whereas the utilization of cervical cancer was 15.3% [11]. In 10 years, there have been number of revolutions of health sector in Tanzania including increase numbers of trained nurses and doctors, introduction of cervical cancer screening guidelines, and screening centers and extensive use of internet services that could have boosted the knowledge and utilization of screening services to both health care providers and community. Currently, little is known about factors contributing to low utilization of cervical cancer screening among females with adequate knowledge and the current uptake of cervical cancer screening services. Therefore, this study aimed to assess knowledge of cervical cancer, utilization, challenges and factors associated with cervical cancer screening among female doctors and nurses who are working at Muhimbili National Hospital (MNH).

MATERIALS AND METHODS

Study Design and Data Collection

A cross-sectional analytical study was conducted at MNH from August to November 2021. MNH is a tertiary and teaching hospital for Muhimbili University of Health and Allied Sciences (MUHAS) in Tanzania comprising of Upanga and Mloganzila branches. It is located in Dar-es-Salaam city with an estimated population of 7.4 million [12]. The study population were female doctors and nurses working at MNH. A convenient sampling technique was employed where all-female doctors and trained nurses aged 30 to 49 years and who consented to participate were recruited. The inclusion criteria were being female doctor and trained nurse working at MNH including in-service students. We excluded nursing attendants because their training and job allocation is not directly to patient care so they could not be compared with doctors and trained nurses. The ethical clearance for this study was obtained from the MUHAS Institution Review Board (MUHAS-REC-08-2021-800) and the data was collected according to Helsinki declaration 1964. The sample size was calculated using a simple population formula, $n = (z^2 p (1-p))/\epsilon^2$, by making the assumption that: n = sample size, z = standard normal deviate set at 1.96 (for 95% level of confidence), ϵ = margin of error (0.05), and p = proportion of cervical cancer screening uptake = 15.3% from previous study [11]. This was done to get the minimum number of participants for power of study but all participants who met inclusion criteria and consented to participate were involved making a total of 221 participants.

The sample distribution of 42 doctors and 179 nurses, who were sampled from four major departments: Obstetrics and gynecology 82 participants, internal medicine 65 participants, pediatrics 33 participants and surgery 41 participants. One hundred and sixty-two

(73.3%) participants were from MNH-Upanga and 59 (26.7%) participants were from MNH-Mloganzila.

The data were collected using a self-administered semi structured questionnaire that was partly adapted from a study done by Heena *et al.*, 2019 in Saud Arabia [13], and modified by the principal investigator to answer the objectives. Pre-testing of the questionnaire was done for three days to find out areas of improvement preceding the data collection process. The pretest was done on 20 nurses and 5 doctors at Muhimbili Orthopedic Institute (MOI) who met some of the inclusion criteria. Some changes including more clarity of the questions and some response items were added to make it more convenient for participants.

The questionnaires were disseminated by either the principal investigator or researcher assistant during working hours (8:00 am to 3:00 pm) in the working places including wards, clinics and offices. The eligible participants who verbally agreed to participate in the study were provided with consent forms to read and sign to verify their participation. The signed consent forms were collected and the questionnaire was provided to them, thereafter the filled questionnaires were collected back by the investigator or researcher assistant. The questionnaire comprised three parts, first part included the social demographic characteristics where the age, parity, duration of working in years, the department, and the working campus.

The second part had questions for assessment of knowledge of cervical cancer, and cervical cancer screening utilization. Participants' knowledge of cervical cancer was assessed by listing questions related to risk factors, number of sexual partners, early sexual intercourse, HPV infection, cigarette smoking, and other vulnerable factors in women. Questions under the five items asking about risk factors, vulnerability, signs and symptoms, prevention, and ways of screening for cervical cancer were also included. For each item, the participants were asked to choose one of the three options: "Yes," "No," or "Don't know." The scale was then dichotomized such that "Yes" was regarded as 1 and No/Don't know as 0. A total knowledge score for all the

items was obtained by adding up (maximum score of 20). The overall score was then graded as poor knowledge (score of 0–4), fair knowledge (score of 5–10), and good knowledge (≥ 11) out of 20 [13].

The third part included items on different cervical cancer screening challenges. Data were sorted and checked daily by the principal investigator or research assistant for their completeness and consistency upon collecting the questionnaire from the participant. In case of any missing information or inconsistency, the researcher was asking the participant to make the necessary adjustment upon collecting them.

Data Management and Analysis

Data were analyzed using IBM SPSS statistic (version 27; Chicago, IL, USA) after data cleaning. Descriptive statistics for categorical variables and mean (\pm SD) or median (IQR) for numerical variables were used to describe the social demographical characteristics of the study participants. Participants' knowledge on cervical cancer was analyzed by adding together the total score from the specified items.

Bivariate analysis which involved cross-tabulation and chi-square/fissure exact was used to assess the crude association between independent and dependent variables. The multivariable robust Poisson regression model was used to control confounders and all independent variables with a p-value of less than 0.2 in the chi-square, were included in the model. Any variable which showed the association for screening for cervical cancer with a p-value < 0.05 multivariable analysis using prevalence ratio (PR) and 95% confidence interval (95% CI) was considered to be independently associated with cervical cancer screening.

RESULTS

A total number of 250 nurses and doctors working at MNH were approached to participate in the study from 1st August to 31st November 202. Six nurses and four doctors refused to participate, ten questionnaires were lost and nine were not filled. A total of 221 (92.1%) questionnaires were collected and analyzed.

Table 1: Social demographic characteristics of participants (N=221)

Characteristics	n (%)
Age in years	
30 – 40	167 (75.6)
41 – 49	54 (24.4)
Marital status	
Un married	44 (20.0)
Married	176 (80.0)
Number of pregnancies	
0	24 (10.9)
1 – 2	97 (43.9)
>2	100 (45.2)
Parity	
0	32 (14.5)

Characteristics	n (%)
1 – 2	114 (51.6)
>2	75 (33.9)
Designation	
Doctor	42 (19.0)
Nurse	179 (81.0)
Education	
Diploma	97 (43.9)
Bachelor	98 (44.3)
Advanced university level	26 (11.8)
Working experience	
< 5	55 (25.0)
5 - 10	81 (36.8)
>10	84 (38.2)

Table 1 shows the social demographic characteristics of the study participants where the Median age (IQR) (years) of participants was 36 (32,40)

and Median experience (IQR) (years)=10 (4,13). About 80% of participant were married with at least one child and 81% among them were nurses.

Table 2: Participants' knowledge on cervical cancer (N=221)

Items for the knowledge scale about cervical cancer	Frequency (%)	95% CI
Risk factor		
Multiple sexual partners	188 (85.1)	79.7 – 89.5
Early sexual intercourse	166 (75.1)	68.7 – 80.7
HPV infection	189 (85.5)	80.2 – 89.9
HIV infection	137 (62.0)	55.2 – 68.4
Cigarette smoking	103 (46.6)	39.9 – 53.4
Ever used COCs for more than 5 years	92 (41.6)	35.1 – 48.4
Vulnerability		
Women aged over 50 years	154 (69.7)	63.2 – 75.7
Reproductive age women	119 (53.8)	47.0 – 60.6
Signs and symptoms		
Vaginal bleeding	181 (81.9)	76.2 – 86.7
Smelling vaginal discharge	175 (79.2)	73.2 – 84.3
Contact vaginal bleeding	136 (61.5)	54.8 – 68.0
Prevention		
Avoid multiple sexual partners	202 (91.4)	86.9 – 94.7
Avoid early sexual intercourse	190 (86.0)	80.7 – 90.3
Screening and treat	200 (90.5)	85.8 – 94.0
Avoid or quit cigarette smoking	133 (60.2)	53.4 – 66.7
HPV vaccination	175 (79.2)	73.2 – 84.3
Method(s) of cervical cancer screening		
Pap smear	200 (90.5)	85.8 – 94.0
Visual inspection with acetic acid	171 (77.4)	71.3 – 82.7
HPV DNA test	123 (55.7)	48.8 – 62.3
Liquid-based cytology	89 (40.3)	33.7 – 47.1
Level of knowledge based on the total score		
Poor (score of 0 – 4)	3 (1.4)	0.3 – 3.9
Fair (score of 5 - 10)	38 (17.2)	17.2 – 22.8
Good (score of 11-20)	180 (81.4)	75.7 – 86.3

Table 2 shows the participants level of knowledge of cervical cancer based on the risk factors, vulnerability of cervical cancer, signs and symptoms, prevention, and methods of cervical cancer screening where by 81.4% of participants had good knowledge and 18.6% had fair knowledge.

Proportional Self-Reported Cervical Cancer Screening Utilization

The proportion of self-reported cervical cancer screening utilization among female doctors and nurses working at MNH was found to be low (29.9% (95% CI 23.9% – 36.4%)).

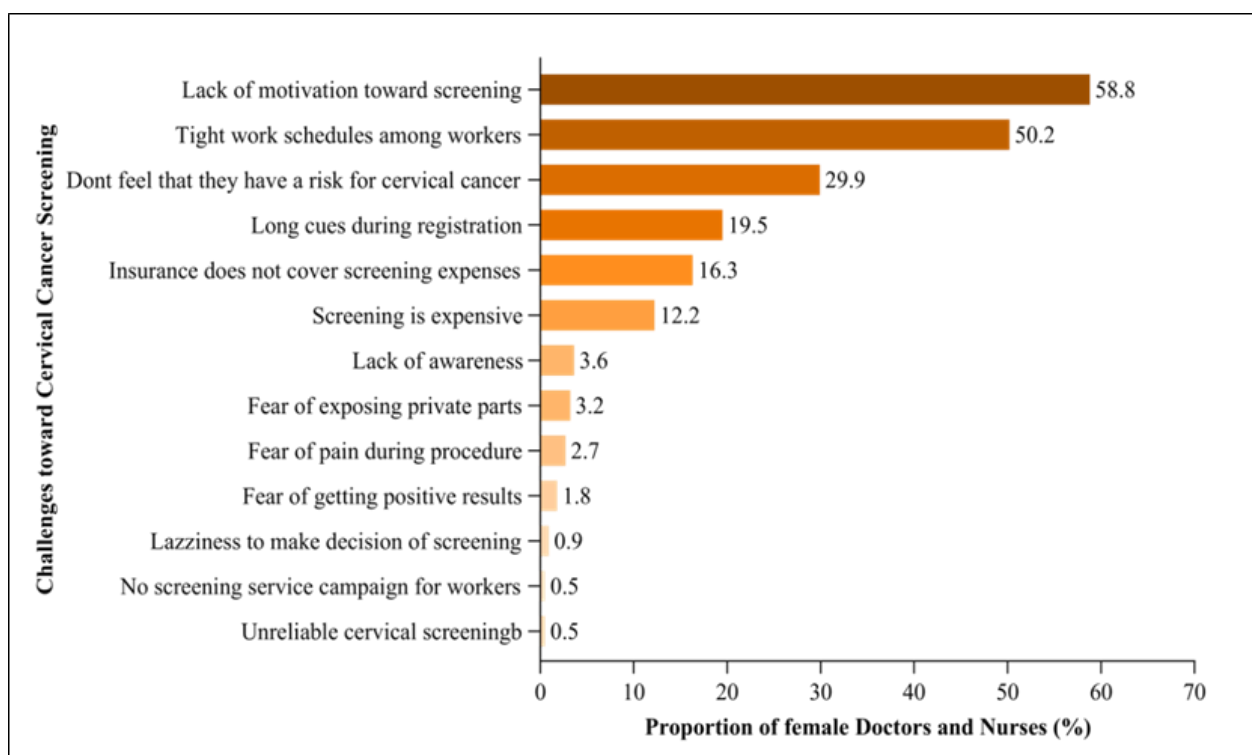


Figure 1: The challenges that participants face toward cervical cancer screening

Figure 1 shows the challenges that participants face toward cervical cancer screening where by 58.8% of participants lacked motivation toward cervical cancer screening, 50.2% reported high tight work schedules, 29.9% of participants believed being health provider they lack risk for cervical cancer and other challenges were also reported as seen on the figure 1.

Table 3 shows factors associated with cervical cancer screening among participants where by participant age of 41years to 49 years, advanced education level and working experience of at least 10 years were significantly associated with cervical cancer screening.

Table 3: Factors associated with cervical cancer screening among female doctors and nurses at MNH. (N=221)

Ever screen for cervical cancer				
Variable		Yes n (%)	No n (%)	P-value
Age group (years)				
	30 - 40	42 (25.1)	125 (74.9)	0.007
	41 - 49	24 (44.4)	30 (55.6)	
Marital status				
	Not married	9 (20.5)	35 (79.5)	0.122
	Married	57 (32.4)	119 (67.6)	
Number of pregnancies				
	0	5 (20.8)	19 (79.2)	0.269
	1-2	26 (26.8)	71 (73.2)	
	>2	35 (35.0)	65 (65.0)	
Parity				
	Null parity	6 (18.8)	26 (81.3)	0.194
	1 - 2	33 (28.9)	81 (71.1)	
	>2	27 (36.0)	48 (64.0)	
Designation				
	Doctor	15 (35.7)	27 (64.3)	0.357
	Nurse	51 (28.5)	128 (71.5)	
Education				
	Diploma	24 (24.7)	73 (75.3)	0.044
	Bachelor	29 (29.6)	69 (70.4)	
	Advanced university level	13 (50.0)	13 (50.0)	
Working experience (years)				

	< 5	11 (20.0)	44 (80.0)	0.034
	5 - 10	21 (25.9)	60 (74.1)	
	>10	33 (39.3)	51 (60.7)	
Knowledge of Cervical cancer				
	Poor to Fair	14 (34.1)	27 (65.9)	0.507
	Good	52 (28.9)	128 (71.1)	

Table 4: Univariable and multivariable analysis of the factors associated with cervical cancer screening among female doctors and nurses at MNH. (N=221)

		Univariable analysis			Multivariable analysis		
Variable	Category	cPR	95% CI	P-value	aPR	95% CI	P-value
Age (years)	30 - 40	0.57	0.38 – 0.84	0.005	0.74	0.47 – 1.27	0.200
	31 - 49	Ref					
Marital status	Not married	0.63	0.34 – 1.18	0.147	0.76	0.37 – 1.57	0.457
	Married	Ref					
Parity	0	0.52	0.24 – 1.14	0.102	0.95	0.38 – 2.36	0.905
	1 - 2	0.80	0.53 – 1.22	0.305	0.91	0.60 – 1.37	0.653
	>2	Ref					
Education	Diploma	0.50	0.30 – 0.83	0.008	0.54	0.33 – 0.91	0.020
	Bachelor	0.59	0.36 – 0.97	0.036	0.83	0.49 – 1.39	0.472
	Advanced university level	Ref					
Experience	< 5	0.51	0.28 – 0.92	0.025	0.57	0.29 – 1.12	0.103
	5 - 10	0.66	0.42 – 1.04	0.073	0.78	0.47 – 1.29	0.334
	>10	Ref					
Key: cPR: crude Prevalence Ratio, aPR: adjusted Prevalence Ratio, CaCx: Cervical Cancer							

Table 4 shows the univariable and multivariable analysis of the factors associated with cervical cancer screening among participant where by in the multivariable, the diploma level of education was the only factor found to be associated with less likely to be screened for cervical cancer with aPR=0.54, 95% CI=0.33-0.91 and a *P* 0.02.

DISCUSSION

In this study it was found that majority of participants had good knowledge of cervical cancer but low level of cervical cancer screening uptake. Several challenges toward screening were reported mainly being lack of motivation and thinking that they don't have risk factors for cervical cancer. Also, a lower level of education was found significantly associated with less likely to utilize cervical cancer screening.

The higher level of knowledge might have contributed by their professional training, exposure through caring patients, continuous medical education, and informal self-learning. Comparable findings were observed in the study done in Ethiopia and Nigeria [14, 15], but it was dissimilar to the findings by Heena *et al.*, in Saud Arabia which revealed poor knowledge [13]. This is because cervical cancer is uncommon in Saud Arabia accounting for 2.2% of all cancer, hence the health care providers are not well informed about cervical cancer as compared to Sub-Saharan setting.

In addition, the findings in this study about the knowledge were different from a previous study done in

Tanzania 2011 by Urasa *et al.*, which showed poor knowledge of transmission of HPV, causes, risks, presentations, treatment, and prevention of cervical cancer [11]. The probable reason being the study setting was a Regional Referral Hospital and it involved only nurses with diplomas and certificates compared to this study which involved doctors and nurses and Diplomas being the lowest level of education. Furthermore, much improvement has been done over the past 10 years in Tanzania's health sector that could have led to a change in the picture.

The proportion of utilization of cervical cancer screening was found to be low among participants. This could be caused by poor self-motivation toward cervical cancer screening as it was pointed out by most of the participants and limited opportunity toward screening due to tight work schedule. However, the utilization of cervical cancer screening has increased a bit from the previous study done by Urasa *et al.*, in Tanzania [11]. This is because in 2011 the Ministry of Health in Tanzania developed the first cervical cancer screening guideline and in 2014 the well women clinic for cervical cancer screening at MNH was established so these efforts might have improved screening utility.

In the previous studies, the utilization of cervical cancer screening was low and the knowledge of cervical cancer among female health professionals was poor so the ratio of screening was proportional to the knowledge and availability of screening services [11], in this study the level of knowledge is high yet no much improvement in utilization of cervical cancer screening.

This study shows clearly that the problem of not screening is not only caused by the unavailability of the service or poor knowledge but also the existing behavior toward screening. This low utilization of cervical cancer screening was similarly observed in the previous study done in India, Cote d'Ivoire, Nigeria, and Uganda [16–20].

In this study, lack of motivation toward screening, tight work schedules, and the perception of not having risk for cervical cancer was reported as challenges against screening for cervical cancer. Participants lack self-motivation toward screening despite having good knowledge, hence the formal reminder from their employer or authorities is needed to motivate their cervical cancer screening practice. A study conducted in Nigeria also revealed that female health professionals believed to lack risk for contracting cervical cancer despite having good knowledge [15].

Other challenges reported includes screening service being expensive and health insurance not covering screening expenses. Public Health care workers in Tanzania are mandated to use National Health Insurance Fund (NHIF) which nowadays covers Pap-smear as investigation (exfoliative cytology) not as screening but only in referrals and tertiary hospitals. Also, VILI and VIA screening services are done for free of charge in all health facilities. Therefore, this information should be shared clearly to all health insurance beneficiaries to ensure access of the service. A similar challenge was reported in another study done in Nigeria [21].

Some participants reported that long queues during registration, lack of cervical cancer awareness, fear of exposing private parts, fear of pain during the screening procedure, fear of getting positive results, laziness to decide on screening, screening service being unreliable and no cervical cancer screening campaign for health workers. Similar challenges were pointed out by the studies done in Uganda and Ethiopia [20, 22]. The probable reason is the fact that the screening services involve exposure of the private parts which is very uncomfortable for an individual especially when she is not sick, hence on-going encouragement and the creation of a comfortable and privacy screening environment are required to motivate the utility of the service. Also, the introduction of HPV DNA testing with the self-sampling technique will mitigate this concern.

In this study, the level of education was observed to be associated with cervical cancer screening uptake, as it was found that participants with a diploma were less likely to utilize cervical cancer screening services compared to participants with advanced University education levels. This was contrary to the study done in Ethiopia where the level of education was not associated with cervical cancer screening uptake [22]. The difference may be due to the change of study setting, where the current study was conducted at the

tertiary and teaching hospital where medical personnel with advanced university education levels are found and were participated contrary to the study done in Ethiopia which involved all levels of public hospital at Mekelle town, Northern Ethiopia where this cadre may not be found at lower health facilities.

Most of the results were obtained from filed self-administered questionnaires which impose the potential risk of reporting bias. Also, this was quantitative study which limit the adequate assessment of challenges toward cervical cancer screening, hence qualitative study is recommended to further assess the challenges toward cervical cancer screening among female doctors and nurses. Information from this study is pivotal to Tanzania local needs in particular to inform the health sector that for past 10 years the knowledge of cervical cancer among doctors and nurses has improved and the uptake of cervical cancer screening is still low. The challenges reported will help in planning and implementing steps toward cervical screening uptake not only to health care workers but also to the rest of the community.

CONCLUSION

This study found that higher proportion of healthcare workers have good knowledge of cervical cancer but poor utilization of cervical cancer screening services. The qualitative study needs to be conducted to further assess the challenges associated with poor cervical cancer screening uptake.

Abbreviation

MNH: Muhimbili National Hospital, MUHAS: Muhimbili University of Health and Allied Science; HIV: Human Immunodeficiency virus; HPV: Human Papilloma virus; Pap smear: Papanicolaou test; VIA: Visual Inspection with Acetic acid; SPSS: Statistical Package of Social Sciences; WHO: World Health Organization; NHIF: National Health Insurance Fund; VILI: Visual Inspection with Lugol's Iodine.

Acknowledgement

First and foremost, I return all glory and honor to my Lord and Savior Jesus Christ through whom all things are made possible. I wish to express my heartfelt gratitude to the Muhimbili National Hospital for allowing me to conduct my study harmoniously. I am very grateful for the cooperation I received from the administration, doctors, and nurses.

My sincere gratitude goes to the entire Obstetrics and Gynecology department including the MMED OBGYN class of 2019/2022 and Dr. Paulina Warae (research assistant). It was an absolute delight learning from each member and gaining the necessary skills needed at each step.

Author's Contributions

TTT: Participated with study conceptualization, methodology, investigation, writing original draft preparation, visualization.

BB: Supervision, Methodology, formal analysis, writing-review and editing of both draft and final manuscript.

PK: Formal analysis of the data.

PJW: Writing-review and editing of final manuscript.

FA: Writing-review and editing of final manuscript.

KANN: Editing, submission and publication process.

AM: Editing, submission and publication process.

HJM: Editing, submission and publication process.

Funding

This study was full funded by Tanzania government through the ministry of health as a part of its initiative to support postgraduate studies including dissertation. The funding institute did not involve in any step of this study.

Availability of Data and Materials

The data set generated during this study is available to the dissertation supervisor, hence it can be accessed on reasonable request. For more information, please contact Belinda Balandya at lindabsoft@gmail.com

Declarations

Ethical Approval and Consent to Participate

Ethical clearance of the study was obtained from MUHAS Senate of Research Publication Committee. Permission to conduct the study was obtained from MNH Authority. Only female doctors and nurses working at MNH who gave an informed consent were recruited to participate in the study. All participants were full informed about the research and their rights to participate or withdraw from the study. Privacy and confidentiality were assured to all study participants and the study findings will be widely disseminated to the stakeholders involved in this study.

Consent for Publication: Not applicable

Conflict of Interest: We declare that there was no conflict of interest in this study.

REFERENCE

- Ministry of Health and Social Welfare. Tanzania Service Delivery Guidelines for Cervical Cancer Prevention and Control. Dar es salaam; 2011.
- Runge AS, Bernstein ME, Lucas AN, Tewari KS. Cervical cancer in Tanzania: A systematic review of current challenges in six domains [Internet]. Vol. 29, Gynecologic Oncology Reports. Elsevier; 2019. p. 40–7. Available from: <https://doi.org/10.1016/j.gore.2019.05.008>
- Cooper EC, Maher JA, Naaseh A, Crawford EW, Chinn JO, Runge AS, et al. Implementation of human papillomavirus video education for women participating in mass cervical cancer screening in Tanzania. In: American Journal of Obstetrics and Gynecology [Internet]. Elsevier Inc.; 2021. p. 105.e1-105.e9. Available from: <https://doi.org/10.1016/j.ajog.2020.07.018>
- Chambuso RS, Shadrack S, Lidenge SJ, Mwakibete N, Medeiros RM. Influence of HIV/AIDS on cervical cancer: A retrospective study from Tanzania. J Glob Oncol. 2017;3(1):72–8.
- Sikora K. Cancer screening [Internet]. Vol. 48, Medicine (United Kingdom). Elsevier Ltd; 2020. p. 132–7. Available from: <https://doi.org/10.1016/j.mpmed.2019.11.013>.
- WHO. Guideline For Screening and Treatment of Cervical Pre-cancer Lesions for Cervical Cancer Prevention. Who. 2021. 115 p.
- WHO. Guidelines for screening and treatment of precancerous lesions for cervical cancer prevention. WHO Guidel [Internet]. 2013;60. Available from: http://www.who.int/reproductivehealth/publication/s/cancers/screening_and_treatment_of_precancerous_lesions/en/index.html
- Cunningham MS, Skrastins E, Fitzpatrick R, Jindal P, Oneko O, Yeates K, et al. Cervical cancer screening and HPV vaccine acceptability among rural and urban women in Kilimanjaro Region, Tanzania. BMJ Open. 2015;5(3):1–9.
- WHO. Costing the National Response to Cervical Cancer : United Republic of Tanzania , 2020 – 2024. Dodoma; 2020.
- Weng Q, Jiang J, Haji FM, Nondo LH, Zhou H. Women's knowledge of and attitudes toward cervical cancer and cervical cancer screening in Zanzibar, Tanzania: A cross-sectional study. BMC Cancer. 2020;20(1):1–12.
- Urasa M, Darj E. Knowledge of cervical cancer and screening practices of nurses at a regional hospital in Tanzania. Afr Health Sci. 2011;(1vaginal dischagr):48–57.
- McCurdy RJ, Schnatz PF, Weinbaum PJ, Zhu J. Contraceptive use in adolescents in sub-Saharan Africa: Evidence from demographic and health surveys. Conn Med. 2014;78(5):261–72.
- Heena H, Durrani S, Alfayyad I, Riaz M, Tabasim R, Parvez G, et al. Knowledge, Attitudes, and Practices towards Cervical Cancer and Screening amongst Female Healthcare Professionals: A Cross-Sectional Study. J Oncol. 2019;2019.
- Seyoum T, Yesuf A, Kejela G, Gebremeskel F. Utilization of Cervical Cancer Screening and Associated Factors among Female Health Workers in Governmental Health Institution of Arba Minch Town and Zuria District, Gamo Gofa Zone, Arba Minch, Ethiopia, 2016. Arch Cancer Res. 2017;05(04):4–9.
- OM, U KA, T AJ. Cancer of the cervix and cervical screening: Current knowledge, attitude and practices of female health workers in Sokoto, Nigeria. Int J Med Med Sci [Internet]. 2013;5(4):184–90. Available from:

- <http://www.academicjournals.org/IJMMS>
16. Shekhar S, Sharma C, Thakur S, Raina N. Cervical cancer screening: Knowledge, attitude and practices among nursing staff in a tertiary level teaching institution of rural india. *Asian Pacific J Cancer Prev*. 2013;14(6):3641–5.
 17. Tchounga BK, Jaquet A, Coffie PA, Horo A, Sauvaget C, Adoubi I, et al. Cervical cancer prevention in reproductive health services: Knowledge, attitudes and practices of midwives in Côte d'Ivoire, West Africa. *BMC Health Serv Res*. 2014;14(1).
 18. Eze GU, Obiebi IP, Umuago IJ. Perspectives of cervical cancer and screening practices among staff of a teaching hospital in South-South Nigeria. *J Cancer Res Pract* [Internet]. 2018;5(2):67–73. Available from: <https://doi.org/10.1016/j.jcrpr.2018.01.001>
 19. Ifemelumma CC, Anikwe CC, Okorochukwu BC, Onu FA, Obuna JA, Ejikeme BN, et al. Cervical Cancer Screening: Assessment of Perception and Utilization of Services among Health Workers in Low Resource Setting. *Int J Reprod Med*. 2019;2019:1–8.
 20. Mutyaba T, Mmimo FA, Weiderpass E. Knowledge, attitudes and practices on cervical cancer screening among the medical workers of Mulago Hospital, Uganda. *BMC Med Educ*. 2006;6:4–7.
 21. Awodele O, Adeyomoye AAA, Awodele DF, Kwashi V, Awodele IO, Dolapo DC. A study on cervical cancer screening amongst nurses in lagos university teaching hospital, lagos, nigeria. *J Cancer Educ*. 2011;26(3):497–504
 22. Gebreegziabher M, Asefa NG, Berhe S. Factors Affecting the Practices of Cervical Cancer Screening among Female Nurses at Public Health Institutions in Mekelle Town, Northern Ethiopia, 2014: A Cross-Sectional Study. *J Cancer Res*. 2016;2016:1–7.

Cite This Article: Timon T Theonest, Belinda Balandya, Andrew Maleko, Kessy A.N. Ngarawa, Peter Kunambi, Peter J Wangwe, Furaha August, Happiness j Mathew (2025). Knowledge, Utilization, Challenges and Factors Associated with Cervical Cancer Screening among Female Doctors and Nurses at a Tertiary Hospital in Tanzania: A Cross Sectional Study. *East African Scholars J Med Surg*, 7(6), 126-134.
