



ISSN Print: 2394-7500
ISSN Online: 2394-5869
Impact Factor (RJIF): 8.4
IJAR 2024; 10(8): 36-40
www.allresearchjournal.com
Received: 23-05-2024
Accepted: 27-06-2024

K Rachiipeni Clara
M.Sc. Nursing Student,
Department of Medical
Surgical Nursing, St. John's
College of Nursing, Bangalore,
Karnataka, India

Reena Menon
Professor, Department of
Medical Surgical Nursing, St.
John's College of Nursing,
Bangalore, Karnataka, India

Dr. Premalatha TS
HOD, Department of
Gynecologic oncology, St.
John's Medical College
Hospital, Bangalore,
Karnataka, India

Corresponding Author:
K Rachiipeni Clara
M.Sc. Nursing Student,
Department of Medical
Surgical Nursing, St. John's
College of Nursing, Bangalore,
Karnataka, India

Effect of health education on cancers screening and its outcome among women living with HIV (WLHIV) attending ART centre: A quasi-experimental study

K Rachiipeni Clara, Reena Menon and Dr. Premalatha TS

DOI: <https://doi.org/10.22271/allresearch.2024.v10.i8a.11922>

Abstract

Background: Non AIDS defining cancers are a rising health concern among people living with HIV. Absence of an efficient screening programme is a major concern in developing countries; other challenges are low public awareness, and generally low health care seeking behavior among women. This study aimed to assess the effect of a health education program on willingness of WLHIV to undergo cancer screening.

Objectives: The purpose of the study is to raise awareness for the importance of cancer screening to detect the disease in its earliest stages and also encourage patients to lead healthy lifestyles for the effective prevention and management of cancers through informative education on HIV related cancers and the availability of screening facilities.

Materials and Methods: A quasi experimental research design was adopted in which health education was given to 78 subjects selected by convenience sampling technique. Structured questionnaire and checklist was used to collect data before and after intervention. Health education was given by the investigator to the subjects. Those subjects who were willing underwent cancer screening for breast, cervix, oral cavity and skin.

Results: The findings of the study revealed that willingness to undergo cancer screening increased from 51.3% to 87.2% after health education which was statistically significant ($p < 0.001$). 17(25%) availed cancer screening of which (25%) availed breast cancer screening and cervical cancer screening, 25.4% availed oral cancer screening and skin cancer screening. Of those screened two subjects (11.8%) were diagnosed to have early signs of cancer.

Conclusion: The study revealed that health education was effective in improving willingness for cancer screening among WLHIV. Health care workers need to develop educational programs for PLHIV in order to increase the awareness and influence them to avail the benefit of screening facilities for early detection of cancers.

Keywords: Non-AIDS defining cancers, people living with HIV (PLHIV), cancer screening

Introduction

Human immunodeficiency virus (HIV) is a virus that attacks immune system, making a person more susceptible to various infections and diseases ^[1]. HIV infection increases the risk for cancer and HIV associated cancer is found as one of the leading causes of death for HIV patients ^[2]. People with HIV/AIDS are more likely to develop AIDS defining cancer (ADC), including Kaposi sarcoma, Non-Hodgkin lymphoma, and cervical cancer while less likely to develop Hodgkin lymphoma, Angiosarcoma, anal cancer, liver cancer, mouth and throat cancer, lung cancer, testicular, penile, colorectal and skin cancers. Although the relationship between HIV/AIDS and various cancers is not entirely understood, a compromised immune system is probably responsible ^[3]. With the introduction of highly active anti-retroviral therapy (HAART), HIV-positive patients' average life expectancies had increased and their immune systems have improved, which has resulted in a decline in the incidence of ADC. On the other hand, the prevalence of Non AIDS defining cancer (NADC) has increased among HIV-positive patients with Breast cancer as the most prevalent type of NADC among HIV- positive women ^[4]. Thus NADCs is a growing health concern for HIV-positive patients ^[5]. Studies revealed that HIV-infected people have an oncogenic oral Human Papillomavirus; HPV16 that causes more than 80% of HPV-associated oropharyngeal cancers ^[6]. Findings showed that people with HIV infection are more likely to

acquire certain malignancies including colorectal, renal, oral, breast, liver and skin cancers [17].

An estimated one million women worldwide are diagnosed with breast cancer each year, and more than 410,000 passed away from the disease. India has an incident rate of 22.9 per 100,000 people, which is one-third lower than in western nations. In India, breast cancer accounts for 17.2% of all cancer deaths in women and 22.2% of all new cancer diagnoses. India's urban breast cancer rate is three times greater than its rural rate. According to reports, HIV-positive patients experience breast cancer at an earlier age than non-HIV-positive patients, and their cases are more aggressive, less receptive to treatment, more metastatic, and more likely to experience chemotherapeutic adverse effects [8].

Cervical cancer prevention (CCP) in developing countries face several major challenges, including the absence of efficient screening programmes for identifying and treating precancerous conditions of the cervical region, low public awareness, and generally low health care seeking behavior among women⁶. In addition, both among HIV-positive patients and the general population, there is a direct rise in morbidity and mortality as a result of postponing cancer treatment. In many populations, cancer screening has been shown to be an effective technique of preventing and controlling the disease [12].

Objectives of the study

1. To compare the willingness to avail cancer screening facilities among WLHIV before and after a health education module.
2. To determine the association of willingness to undergo cancer screening with selected baseline variables.
3. To identify the outcome of screening test among WLHIV willing for cancer screening.

Hypothesis of the study

H₁

There will be a significant difference in the willingness to avail cancer screening test before and after health education module at 0.05 level of significance.

H₂: There will be an association between willingness to avail screening with selected Baseline variables at 0.05 level of significance.

Methodology

A quantitative evaluation research approach was considered more suitable for the present study. A quasi experimental study design was adopted for the study. After obtaining institutional Ethical clearance the study was conducted at the ART Centre. The sample size was estimated based on previous study mean 20.5 and SD 2.2 of baseline knowledge with 5% of precision as well 95% confidence interval. In the study, 78 married WLHIV attending ART centre aged 21 years and above were included, whereas WLHIV previously diagnosed with cancer or undergoing cancer therapy or undergone screening within the last one year or undergone hysterectomy were excluded. Structured questionnaire and checklist was used to collect data before and after intervention. Health education was given by the investigator in ART centre using power point presentation for 30 minutes in groups of four or five subjects per group. The education included the risk factors, causes, prevention and screening. Post-test willingness was assessed using the same checklist. After obtaining written consent those WLHIV willing to undergo screening were screened by a doctor, which included clinical breast examination, VIA, inspection of oral cavity and inspection of the skin in the Gynecological oncology department.

Data analysis and statistical analysis

The data analysis and the interpretation of the study included descriptive and inferential statistics. Frequency and percentage distribution were used to describe the demographic variables of the subjects and screening outcome. McNemar's test was used to analyze the willingness to undergo screening test before and after health education. Fisher's exact test was used to analyze the association of demographic variables with the willingness to undergo screening test after health education.

Results

Table 1: Frequency and percentage distribution of WLHIV according to baseline

Sl. No.	Demographic variables	variables	frequency	percentage
1.	Age in years	21 - 30	8	10.3
		31 - 40	22	28.2
		41 - 50	42	53.8
		51 - 60	5	6.4
		61-70	1	1.3
2.	Educational qualification	Illiterate	11	14.1
		Till 10th	36	46.2
		Under graduate	30	38.5
		Post graduate	1	1.3
3.	Occupation	Employed	26	33.3
		Self employed	4	5.1
		Home maker	48	61.5
4.	Annual family income in Rupees	Below 50000	24	30.8
		60000 - 150000	36	46.2
		160000 - 250000	10	12.8
		Above 250000	8	10.3
5.	Marital status	Married	45	57.7
		Widow	28	35.9
		Separated	5	6.4
6.	Parity	Nulliparous	11	14.1
		Primiparous	27	34.6

		Multiparous	40	51.3
7.	History of breast feeding	Yes	46	59.0
		No	32	41.0
8.	Use of tobacco	Yes	2	2.6
		No	76	97.4
9.	Use of alcohol	Yes	2	2.6
		No	76	97.4
10.	Family history of cancers	Yes	12	15.4
		No	66	84.6

Table 1: (continue)

Sl. No.	Demographic variables	variables	frequency	percentage
1.	Previous history of screening	Yes	4	5.1
		No	74	94.9
2.	HPV vaccination	Yes	00	00.0
		No	78	100.0
3.	Duration of HIV diagnosis	< a year	4	5.1
		1 - 5 years	14	17.9
		6 - 10 years	29	37.2
		> 10 years	31	39.7
4.	Duration of ART	<a year	4	5.1
		1 - 5 years	21	26.9
		6 - 10 years	34	43.6
		> 10 years	19	24.4
5.	Adherence to ART	Yes	74	94.9
		No	4	5.1
6.	CD4 count	< 500	18	23.1
		500 - 1000	43	55.1
		> 1000	17	21.8
7.	Any co-morbidities	Yes	11	14.1
		No	67	85.9
8.	Awareness of the need for cancer screening among WLHIV	Yes	7	9.0
		No	71	91.0
9.	Previous information on HIV related cancers	Yes	6	7.7
		No	72	92.3

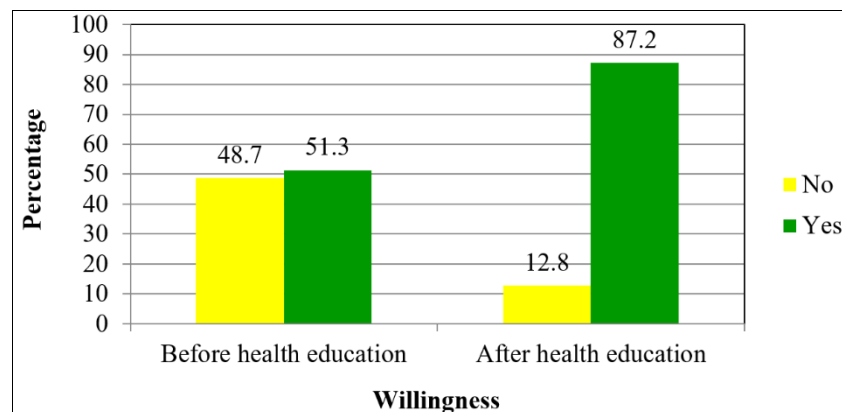


Fig 1: Diagram showing the willingness of WLHIV to avail cancer screening facilities before and after health education.

Table 2: Association between willingness to undergo cancer screening with demographic variables using Fisher's exact test. n=78

Demographic variable	Willingness to avail cancer screening - Pre test				Test of significance	p Value	Willingness to avail cancer screening - Post test				Test of significance	p Value
Educational qualification	No		Yes				No		Yes			
	f	%	f	%			f	%	f	%		
Illiterate	3	27.3	8	72.7	7.358	0.039	1	9.1	10	90.9	1.259	0.910
Till 10th	15	41.7	21	58.3			4	11.1	32	88.9		
Under graduate	20	66.7	10	33.3			5	16.7	25	83.3		
Post graduate	0	0.0	1	100			0	0.0	1	100		
Duration of ART					0.687	0.922					8.325	0.025
< a year	2	50.0	2	50.0			1	25.0	3	75.0		
1 - 5 years	11	52.4	10	47.6			6	28.6	15	71.4		
6 - 10 years	15	44.1	19	55.9			1	2.9	33	97.1		
> 10 years	10	52.6	9	47.4			2	10.5	17	89.5		

S – Significant, NS- Not Significant

Table 3: Frequency and percentage distribution of subjects who underwent cancer screening for various cancers.

	Willingness to avail cancer screening		Done		Not done		Positive		Negative	
	f	%	f	%	f	%	f	%	f	%
Clinical breast examination	68	87.2	17	25	51	75	1	5.9	16	94.1
VIA	68	87.2	17	25	51	75	2	11.8	15	88.2
Oral examination	67	85.9	17	25.4	50	74.6	0	0	17	100.0
Skin examination	67	85.9	17	25.4	50	74.6	0	0	17	100.0

Discussion

The study showed that most of the subjects (53.8%) belong to the age group of 41-50 years with mean age of 41.5 years, similar study findings in Chengalpattu district showed that major participants (44.5%) were women aged 40-59 years^[9]. Majority (46.2%) has attended schooling till 10th standard which was similar to a study conducted in Northern Tanzania showed that majority of the subjects (61.5%) had their primary education^[10]. 61.5% were home makers which were similar to a study done at Addis Ababa where majority of the subjects (52.42%) were housewives^[11]. Similarly a study done in Karnataka, India, showed that majority (59.4%) were housewife^[12]. Most of the subjects (46.2%) annual incomes were Rs. 60000 – Rs. 150000, a similar study done in Ethiopia where majority of the subjects (54.09%) has an annual income of less than or equal to Rs. 1,800^[13]. 57.7% subjects were married and living with their spouse which was similar to a study conducted at Northern Tanzania where majority of the subjects (49.6%) were married and living with spouse^[10]. 51.3% are multiparous with 59% history of breast feeding. Majority of the subjects (97.4%) does not use tobacco and alcohol. 84.6% have no family history of cancers. Majority of the subjects (94.9%) have no previous history of cancer screening. All the subjects (100%) have not taken HPV vaccination. Most of the subjects (39.7%) were diagnosed with HIV for duration of more than 10 years. 43.6% have been taking ART for duration of 6-10 years. Majority of the subjects (94.9%) adheres to ART. Most of the subjects (55.1%) have a CD4 count between 500-1000. 85.9% does not suffer from any co-morbidity. With regards to knowledge majority of the subjects (91%) were not aware of the need for cancer screening among WLHIV and majority of the subjects (92.3%) has no previous information on HIV related cancers. Similar study conducted at Ethiopia showed that majority of the subjects (50.87%) was multiparous, 52.04% were diagnosed with HIV for more than 5 years while 33.6% had CD4 counts were more than 500 cells/mm³ and 36.6% of the subjects reported lack of knowledge about cervical cancer and its screening^[13].

The findings showed before health education that 40 subjects (51.3%) were willing to undergo cancer screening but after the health education 68 subjects (87.2%) were willing to undergo cancer screening. Statistical test using McNemar's test was done and it showed statistical significance at p value <0.001. It was found that before health education majority only few (30.8%) were willing to undergo breast cancer screening test but after health education majority (87.2%) of the WLHIV were willing to undergo breast cancer screening. While for VIA, 35.9% were willing to undergo screening test before health education but after health education majority (87.2%) of the subjects were willing to undergo screening test. With regard to oral examination, 11.5% were willing to undergo screening test before health education but after health education majority (85.9%) of the subjects were willing to

undergo screening test. While for skin examination, 14.1% were willing to undergo screening test before health education but following health education majority (85.9%) of the subjects were willing to screening. The study is supported by a study conducted at Guilin, Iran where the significant increase in willingness to undergo cervical cancer screening in the experimental group following educational intervention from 18.75% to 78.75% ($p < 0.001$)^[7].

Although 68 (87.17%) were willing to undergo screening for cervical, breast, and 67 (85.89%) were willing to undergo screening for oral cancer and skin cancer. Of the total willing subjects only 17 (21.78%) patients underwent cancer screening which is lower than the result of study in Chengalpattu district which showed that the percentage of screening rate was 31.1% after health education^[9]. Similarly in Guilin, Iran, where the uptake of cervical cancer screening (pap smear) increased significantly after the intervention in experimental group (78.7%) and in control group (22.5%) with p value <0.001^[7]. The remaining cited reasons for not undergoing screening such as being unable to leave household duties, being committed to other work, having family issues and not having the support of their husbands, having financial difficulties, and being afraid of the outcome, most commonly cited reasons were - the absence of any symptoms, lack of time to wait for the screening as they come from distant place to the centre, fear of the outcome, lack of approval from husband and some due to stress from family problems. Assuming that baseline variables of the subjects could probably influence the willingness to undergo cancer screening attempts was made to find the association of selected baseline variables. The study showed statistical significant association with respect to educational qualification before health education but there was no statistically significant association after the health education probably because health education was effective and evened out willing across all subjects irrespective of educational qualification. With respect to duration of ART, WLHIV with longer duration showed higher willingness to undergo cancer screening with p value 0.025 after health education. Similar study done in Ethiopia showed that educational status has high significance with cervical cancer screening and subjects who are diagnosed with HIV for more than 5 years and those who have CD4 count less than 500 cells/mm³ were more likely to be screened at $p < 0.05$ level of significance^[13].

In the study two (11.8%) subjects were detected with early signs of cervical cancer showing aceto white area advised for routine examination. One subject found to have both breast and cervical cancer signs was referred to oncology department for further investigation and routine cervical cancer screening, the other subject detected with early signs of cervical cancer was advised for routine screening. A similar study conducted in Chandigarh where 90% of the participants performed oral examination after health

education and one case of sub mucosal fibrosis was identified ^[16].

Strength and Limitation of the study

Strength: The investigator herself conducted the teaching in the language understandable to the subjects using audio visual aids, and subsequently followed up their willingness telephonically and accompanied those subjects who were willing to undergo screening for the procedure. Cancers among WLHIV is an area needing awareness which the investigator has made an attempt to address through this study.

Limitation: Subjects, though willing for screening were unable to actually undergo screening within the time frame of the study due to the various factors such as family inconveniences, prior engagements and for financial reasons. This could have affected the outcome of the study. Participants screened after the study period was not accounted for in the outcome of the study.

Conclusion

The study aimed to evaluate the effectiveness of health education on cancers in WLHIV attending ART Centre of SJMCH. Total 78 subjects participated in the study; the subjects were assessed for willingness with a check list before and after the health education on cancers. The willing subjects were sent for cancer screening at oncology department and outcomes of the screening were obtained.

Ethical statement

Institutional Ethical committee (IEC) of the institute has approved the study entitled as effect of health education on cancers screening and its outcome among women living with HIV (WLHIV) attending ART centre- A quasi-experimental study.

Source of funding

Nil.

Conflict of interests

None.

References

1. What are HIV and AIDS?. Hiv.gov; c2022 [cited 2022 Aug 3]. Available from: <https://www.hiv.gov/hiv-basics/overview/about-hiv-and-aids/what-are-hiv-and-aids>
2. Sinha S, Agarwal A, Gupta K, Mandal D, Jain M, Detels R, *et al.* Prevalence of HIV in patients with malignancy and of malignancy in HIV patients in a tertiary care center from North India. *Bentham Sci.* 2018;16(4):315-320. Available from: <http://dx.doi.org/10.2174/1570162X16666181018161616>
3. HIV/AIDS-Related Cancer - Introduction. *Cancer.net*; c2012 [cited 2022 Aug 3]. Available from: <https://www.cancer.net/cancer-types/hiv-aids-related-cancer/introduction>
4. Beachler DC, D'Souza G. Oral human papillomavirus infection and head and neck cancers in HIV-infected individuals. *Curr Opin Oncol.* 2013 [cited 2022 Aug 3];25(5):503-510. Available from: <http://dx.doi.org/10.1097/CCO.0b013e32836242b4>
5. Sigel K, Dubrow R, Silverberg M, Crothers K, Braithwaite S, Justice A. Cancer screening in patients infected with HIV. *Curr HIV/AIDS Rep.* 2011 Sep;8(3):142-152. Available from: <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC3307131>
6. Belglaiaa E, Souho T, Badaoui L, Segondy M, Prétet JL, Guenat D, *et al.* Awareness of cervical cancer among women attending an HIV treatment centre: A cross-sectional study from Morocco. *BMJ Open.* 2018 [cited 2022 Aug 3], 8(8). Available from: <http://dx.doi.org/10.1136/bmjopen-2017-020343>
7. Eghbal SB, Karimy M, Kasmaei P, Roshan ZA, Valipour R, Attari SM, *et al.* Evaluating the effect of an educational program on increasing cervical cancer screening behavior among rural women in Guilan, Iran. *BMC Womens Health.* 2020;20(1):149. Available from: <http://dx.doi.org/10.1186/s12905-020-01020-7>
8. Ruiz M, Davis H. Breast cancer in HIV-infected patients: A retrospective single-institution study. *J Int Assoc Physicians AIDS Care (Chic).* 2011 [cited 2022 Aug 3];10(1):30-34. Available from: <https://pubmed.ncbi.nlm.nih.gov/21368012>
9. Thahibanuibrhim I, Logaraj M. Impact of health education intervention in promoting cervical cancer screening among rural women of Chengalpattu district - The community-based interventional study. *Clin Epidemiol Glob Health.* 2021;12:100-107. Available from: <https://www.sciencedirect.com/science/article/pii/S2213398421002037>
10. Semango GP, Charles RM, Swai CI, Mremi A, Amsi P, Sonda T, *et al.* Prevalence and associated risk factors for Kaposi's sarcoma among HIV-positive patients in a referral hospital in Northern Tanzania: A retrospective hospital-based study. *BMC Cancer.* 2018;18(1):1258. Available from: <http://dx.doi.org/10.1186/s12885-018-5155-2>
11. Abu SH, Woldehanna BT, Nida ET, Tilahun AW, Gebremariam MY, Sisay MM, *et al.* The role of health education on cervical cancer screening uptake at selected health centers in Addis Ababa. *PLoS One.* 2020 [cited 2022 Aug 3], 15(10). Available from: <https://pubmed.ncbi.nlm.nih.gov/33027267>
12. Shadap A, Pais M, Prabhu A. A descriptive study to assess the knowledge on breast cancer and utilization of mammogram among women in selected villages of Udupi district, Karnataka. *J Health Allied Sci. NU.* 2014;4(4):84-87. Available from: <https://www.proquest.com/docview/1618068698>
13. Assefa AA, Astawesegn FH, Eshetu B. Cervical cancer screening service utilization and associated factors among HIV positive women attending adult ART clinic in public health facilities, Hawassa town, Ethiopia: A cross-sectional study. *BMC Health Serv. Res.* 2019 [cited 2022 Aug 3];19(1):847. Available from: <https://pubmed.ncbi.nlm.nih.gov/31744548>
14. Singh K, Sharma D, Kaur M, Gauba K, Thakur JS, Kumar R, *et al.* Effect of health education on awareness about oral cancer and oral self-examination in Chandigarh. 2017 Mar 23. Available from: <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC4850280>