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Women's awareness and practices regarding papanicolaou smear in the selected regional hospital of Limpopo Province, South Africa

Abstract

Background: In South Africa, approximately 3,680 women die of cancer every year and one in every 41 women will within their lifetime develop cancer of the cervix despite availability of screening programme that is in place; Papanicolaou smear.

Aim: The study assessed the awareness and practices of women attending regional hospital regarding Papanicolaou smear.

Methods and Materials: This quantitative study involved 500 respondents chosen conveniently from a total of 9868 outpatient women aged ≥18years from Tshilidzini regional Hospital. Questionnaires were used to collect data which were analysed using descriptive statistics and Pearson's correlation method.

Results: In this respect, 388 (77.6%) were aware of cancer of the cervix, 208 (41.6%) knew about its prevention whilst 382 (76.6%) also were aware of Papanicolaou smear. In terms of practices, the results show that 54 (10.8%) respondents took pap smear once in six months, 4 (0.8%) took Papanicolaou smear twice in the past six months and the majority 442 (88.4%) did not take a pap smear in the past six months. The results indicate that respondents had a tendency not to take a Papanicolaou smear within duration of six months as recommended, which shows poor practices. Furthermore, this study established a positive significant correlation between the practices *that cervical cancer can be diagnosed by Papanicolaou smear and ever heard about Papanicolaou smear ($r=0.405$; $p<0.01$).*

Conclusion: An intervention is, therefore, of significant in the department of health' initiative of raising Papanicolaou smears awareness and promotes practises among South African women.

Keywords: awareness, cervical cancer, papanicolaou smear, practises

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Introduction

Non- communicable disease is an area of public health's great concern, mostly cancer of the cervix, as per WHO is the most common cancer in women internationally, with more than 70% of cases occurring worldwide, South Africa included.[1] Women's lack of awareness towards this condition and availability of Papanicolaou (Pap) smear, poses a huge inconvenience in its prevention.

The previous research[2] indicated that despite the availability of screening programme in place, mortality rates due to cancer of the cervix related deaths among women still alarming. It was noted that illiteracy, unhealthy living conditions and environment should do with inadequate Pap smear uptake. In the study conducted in Turkey, found that literacy and age resulted in the frequency of Pap smear testing.[3] In South Asia, many women are reluctant to take Pap smear because of fear of pain.[2]

A recent study conducted in 2020 revealed that women consulted their doctors or health care facilities during advance stage of the disease.[4] This study revealed that women never undergo Pap smear because they don't want to expose their genitals for examination, and they don't want to hear the positive results. The findings further indicated that majority (31.4%) of respondents had never had a Pap smear done in the past; and minority (7,3 %) did not think about doing it and some of respondents did not perceive cancer of the cervix as a disease that exits. In the study that was conducted in Libreville-Gabon[5] indicated that only 126(27.9%) of them had heard of Pap smear test out of 414(91.6%) who indicated that they heard about cancer of the cervix.

Women in Somalia alluded that they are aware of Pap smear availability, but they developed a hesitancy on Pap smear because of the procedure associated with genitals exposure.[6] Literature[7] point out cultural beliefs and attitudes towards procedures may interfere with respondents' access and utilization of Pap smear. It is also interesting to note that despite availability of Pap smear, respondents are reluctant to come back for results which indicate poor practises.[8]

In South Africa, cancer of the cervix is alarming among women of all races, and approximately 4000 women die of cancer of cervix annually and majority of women in their life develop cancer of the cervix despite availability of screening programme that is in place.[9] One of the previous studies,[10] indicated that having a Pap smear done were related to 70% reduction of developing cancer of the cervix compared to those women who have never gone through screening, but among African women, this study[2] revealed that 60,5% have never been screened because of lack of awareness. The determinants of health ranging from economic status, illiterates, poverty, and beliefs about the illnesses cannot make it easy for South African women to consult health care facilities or seek early detection of cancer of the through Pap smear. As the female's population continues to rise amid widespread superstition in South Africa, especially in the Limpopo province, the researchers saw the need of conducting the research

to assess the awareness and practises of women utilising regional hospital regarding Pap smear.

Methodology

Study design

In this study, the researchers chose cross sectional design. The researchers collected data about awareness and practises of women at Tshilidzini regional hospital regarding Pap smear at one point in time.[11] Awareness and practises, about Pap smear were properly assessed and the correlation among variables examined.

Study site

The research was done at Tshilidzini hospital which is the only regional and referral hospital in the Vhembe district. This hospital serves as referral facility to all health facilities with a statistic of 400 patients seen in Outpatient Department daily, which include Pap smear. Tshilidzini is a 600 bedded hospital, and it has 687 health care workers.

Population and sample size

The study target population was 9868 women served at the outpatient department. Sample size was estimated at n=500. Convenient sampling method was employed to select the respondents. Respondents of 18 years and above consented to participate in the study.

Instrument and data collection method

Questionnaire which was structured employed for collect data. The questionnaire contained close-ended questions to assess awareness and practises among women of 18 years and older at Tshilidzini hospital regarding Pap smear and cervical cancer. The questionnaire was initiated in English and to cater respondents who prefer their vernacular language, the questionnaire translated into Tshivenda language. The language expert was the one who did the translation, and it was back translated into English to ensure that it maintain the initial content. Awareness and practices among women about cancer of the cervix prevention were assessed. The questionnaires were designed to get the relevant information from the respondents on time decided by the management of the hospital to ensure that routine is not disrupted

To ensure reliability the instrument was pre-tested, 500 respondents who met inclusion criteria were invited at Tshilidzini hospital. The women who participated in the pre-testing of the instrument were not included in the main study. Once ethical clearance is obtained the information sheet will be provided to the professional nurses to inform lactating mothers about the study. Women who met criteria, from 18 years, who brought their infants for immunization at Tshilidzini hospital that agreed to take part in the study were aided to fill in the instrument.

Data analysis

Before data analysis, the researcher scrutinized all the questionnaires for completeness, consistency, and plausible values. Data were cleaned, coded, and entered an excel spreadsheet. After entering data into an Excel spreadsheet, the statistical package for social sciences (SPSS) version 22 was used to analyse data. Demographic variables and attitude scores were summarised using descriptive summary measures and correlations. Categorical variables will be presented as proportions, graphs, and table.

Ethical consideration

Ethical clearance certificate was issued by the University of Venda for the research to be carried out. Permission to conduct the study was requested from the Limpopo provincial department of health and the management of the hospital. Before the data collection process, participants were informed about the aim of the study, its significance, and the method which will be used to collect data. Those who were willing to be part of the study were requested to give written consent (Brink, *et al*., 2012). Confidentiality, privacy and voluntary participation of the respondents were also respected.

Results

About five hundred respondents aged between 18 to 60 years participated in the study. Table 1 shows, out of 500 women, 37 (7.4%) were under the age of 20, 258 (51.6%) were between 20 to 30, 91(18.2%) were in 30's to 40's, 61 (12.2%) were in the age of 40 to 50 and 53 (10.6%) were aged over 50. Per marital status, literacy, and employment status, 231 (46.2%) were staying alone, 100 (32%) married, 12 (2.4%) never had any formal education, almost 1 in 3 (59.6%) grade 12 certificate whilst 52 (10.4%) are staying home mothers. Per family history of cancer of the cervix, a proportion (n=438; 87.6%) of the respondents alluded that they previously had cancer of the cervix.

Table 1 Respondents Socio-demographic characteristics

Variable	Frequency (n)	Percentage (%)
Age (years) 18-20	37	7.4
20-30	258	51.6
30-40	91	18.2
40-50	61	12.2
Above 50	53	10.6
Marital Status Single	231	46.2
Married	100	32
Divorced	21	4.2
Widowed	22	4.4
Living together	66	13.2
Educational Level Never schooled	12	2.4
Up to grade 7	78	15.6
Up to grade 12	298	59.6
College certificate	63	12.6
Diploma	33	6.6
Degree	16	3.2
Occupational Status Housewife	52	10.4
Self-employed	11	2.2
Skilled	73	14.6
Student	121	24.2
Unemployed	145	29
Unskilled	98	19.6
Family History	438	87.6
No	62	12.4
Yes		

Respondent's Awareness about pap smear

Table 2 indicate the responses of the respondents regarding cervical cancer awareness and screening. In this regards, 388 (77.6%) were familiar with the diseases, 208 (41.6%) knew about its screening whilst 382 (76.6%) also were aware of prevention.

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Table 2 Cervical cancer screening related Awareness

Variables	Yes n(%)	No n(%)
Awareness of cervical Cancer (disease)	388 (77.6)	112 (22.4)
Screening of cervical cancer	208 (41.6)	292 (58.4)
Pap smear awareness	382 (76.6)	117 (23.4)

It was imperative to assess whether respondents knew that cancer of the cervix could be diagnose by Pap smear, as awareness can influence practises. The results in Table 3 depicts that 254 (50.8%) were not aware that cancer of the cervix can be diagnosed using Pap smear whilst 246 respondents (49.2%) were aware that Pap smear could be used to diagnosed cancer of the cervix (Table 4).

Table 3 Cancer of the cervix screening using Pap smear

Pap smear could be used to diagnose cancer of the cervix	Frequency (n)	Percentage (%)
No	254	50.8
Yes	246	49.2
Total	500	100

Table 4 Correlation between variables regarding cervical cancer awareness

Ever heard about cancer of the cervix?	Pearson's rho (r)
Are you aware that cervical cancer is preventable?	0.453**
Have you ever heard about Pap smear?	0.779**
Have ever had a Pap smear done?	0.358**
Can cancer of the cervix be diagnosed through Pap smear screening test?	0.382**
What is your marital status?	0.212**
What is your age?	0.292**

Knowledge of cancer of the cervix is feebly associated to the respondent's marital status ($r=0.212$; $p<0.01$) meaning marital status is among the shaky influent factors for women's awareness of cancer of the cervix. Which means, married respondents are less likely to be knowledgeable about cancer of the cervix. Also, it is indicated that awareness of cancer of the cervix is weakly linked to the respondents' age ($r=0.292$; $p<0.01$).

Practises of women regarding Pap smear

Practices among women regarding cancer of the cervix screening are important indicators for health care prevention and intervention. In this study, various responses to questions were collated to gain a better insight into the health care practices of respondents about the Pap smear.

The results in Table 5 indicate the practises, number of Pap smears taken by the respondents within a six-month period.

Table 5 Frequency of Pap smear in six months (n=500)

Rate	Frequency	%
1	54	10.8
2	4	0.8
None	442	88.4
Total	500	100

The results show that 54 (10.8%) respondents took Pap smear once in six months, 4 (0.8%) took Pap smear twice in the past six months and the majority 442 (88.4%) did not take a Pap smear in the past six months. The results indicate that respondents had a tendency not to take a Pap smear within duration of six months as recommended. This includes women who were aware of the importance of taking a Pap smear. The respondents may be lacking motivation to take a Pap smear.

Question 24 required respondents to indicate the last time they took a Pap smear. The results in Table 6 are based on the data obtained from the respondents. The data was categorised for processing purposes and to ease evaluation.

Table 6 Last time a Pap smear was taken by respondents (n=500)

Period	Frequency	%
2000-2005	7	1.4
2006-2010	26	5.2
2011-2013	92	18.4
2014	46	9.2
Not done	329	65.8
Total	500	100

The results show that some respondents did take a Pap smear, but at varying time intervals. Some respondents (7; 1.4%) took the test during the previous 8 years, 26 (5.2%) at least in the previous 4 years, others 92 (18.4%) at least in the previous year and 46 (9.2%) respondents in the current year. Most the respondents 329 (65.8%) have never taken a Pap smear. The results show a lack of practice in Pap smear among the study sample. Although the previous results indicated a positive attitude towards Pap smear, the results indicated a serious lack of Pap smear practice by the respondents. Only those respondents who indicated that they took a Pap smear were considered and observed that most the respondents 113 (66.1%) took Pap smear at the clinic, 9 (5.3%) at a gynaecologist, 11 (6.4%) at a general practitioner, 9 (5.3%) at a hospital and the remainder 29 (17.0%) could not remember where they took the Pap smear. The main provider of Pap smear seems to be the clinics and hospitals.

Respondents were asked whether they went back to collect their results after the testing. Table 8 shows the results of the processed data (Table 7).

Table 7 Distribution of places where Pap smear was done (n=171)

Place	Frequency	%
Clinic	113	66.1
Gynaecologist	9	5.3
General Practitioner	11	6.4
Hospital	9	5.3
Cannot remember	29	17
Total	171	100

The results in Table 8 indicate that 30 (17.5%) of respondents did not collect their results, which indicated poor practises, while 120 (70%) collected their results. The remainder 21 (12.3%) could not remember whether they collected their results. It could be deduced that most of the respondents know their cancer of the cervix results.

Question 27 was intended to check the frequency of taking a Pap smear among the respondents. The respondents were supposed to select from a given list of options. The results in Table 9 show how this question was answered.

Table 8 Respondents' indication on collection of results (n=171)

Indication	Frequency	%
No	30	17.5
Yes	120	70.2
Cannot remember	21	12.3
Total	500	100

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Table 9 Frequency of Pap smear taken by respondents (n=500)

Response	Frequency	%
Don't know	363	72.6
Once in 2 years	8	1.6
Once in 3 years	6	1.2
Once in a year	120	24
Once in life	3	0.6
Total	500	100

The results show varied responses, most of which show, lack of knowledge on the frequency of taking a Pap smear. Only 120 (24%) of respondents were correct in the frequency of once a year. Most the respondents 363 (72.6%) did not give any clue on the frequency of Pap smear. Generally, these results show a lack of practical knowledge on the frequency of pap smear among the respondents. The results also clearly indicate that few individuals go for Pap smear, poor practises.

Respondents were asked to indicate difficulties they faced in taking a Pap smear. Data was collected through Question 28 of which the results are summarised in Table 10. Although respondents cited various difficulties for not taking a Pap smear, the majority 347 (69.4%) indicated that they were not aware about Pap smear, 103 (20.6%) respondents indicated that they lacked time. Procedure, privacy, and staff attitude seem to be less of the constraints on the respondents' part. The importance of awareness and time availability seem to be emphasised by respondents.

Table 10 Difficulties in taking a Pap smear (n=500)

Difficulty	Frequency	%
Don't like procedure	47	9.4
Lack of knowledge	347	69.4
Lack of privacy	2	0.4
Lack of time	103	20.6
Staff attitudes	1	0.2
Total	500	100

To check why respondents were not taking Pap smear as sought in Question 13, a cross-tabulation was made between Questions 13 and 28. Table 11 shows the outcome of the cross-tabulation.

The results in Table 11 corroborate those in Table 10, that is, lack of awareness and time are significant difficulties that respondents must overcome to take a Pap smear.

Data was processed further through cross-tabulations of some selected questions. Cross-tabulation is a statistical process that summarises categorical data. In this study cross-tabulations were intended to find how respondents answered certain related questions. The results for cross-tabulations are shown in the tables that follow

The results in Table 12 show the cross-tabulation of level of education and the taking of a Pap smear.

Table 11 Cross-tabulation of taking a Pap smear and difficulties experienced (n=500)

		Q28 What difficulty do you have with doing a pap smear?					
		Do not like procedure	Lack of awareness	Lack of privacy	Lack of time	Staff attitude	Total
Q13 Have you ever had a pap smear done?	No	0	306	0	31	1	340
	Yes	15	73	0	72	0	160
	Total	15	373	0	103	1	500

Table 12 Cross-tabulation of taking a Pap smear and level of education (n=500)

		Q32 Level of education						
		College certificate	Degree	Never schooled	Technicon diploma	Up to grade 12	Up to grade 7	Total
Q13 Took pap smear	No	29	8	10	14	233	46	340
	Yes	34	8	2	19	65	32	160
	Total	63	16	12	33	298	78	500

The results show a mixed reaction to the taking of Pap smear with respect to the level of education. There is no clear pattern on the influence of education on the respondents' taking a Pap smear. Therefore, taking of a Pap smear is independent of the respondents' level of education.

To find the link between the effect of age on taking a Pap smear, Questions 13 and 29 were cross-tabulated (Table13). The results show that none of the respondents below the age of 20 took a Pap smear, only 62 of 258 in the age range 20 to 30 took a Pap smear, 40 out of 91 in the age range 30 to 40 also took a Pap smear, while 31 out of 61 in the age range 40 to 50 underwent a Pap smear, and 27 out of 53 aged above 50 also took a Pap smear at some time. The results indicate that age is of significance in the prevention of cancer of the cervix.

Relationships between some variables of the study

The result of the study revealed that there is a relationship between awareness and practices regarding cancer of the cervix and prevention and socio-demographic information at $p \leq 0.05$, these findings are concurred with the research done in Iran[12] which concluded that respondents were more likely to participate in cancer of the cervix prevention when they are aware about the diseases and the consequences.

Table 13 Effects of age on taking a Pap smear (n=500)

SS		Q29 Age range (years)					
		Below 20	20 – 30	30 – 40	40 – 50	Above 50	Total
Q13 Took pap smear	No	37	196	51	30	26	340
	Yes	0	62	40	31	27	160
	Total	37	258	91	61	53	500

Pearson's rho® correlation coefficient was employed as the descriptive statistic to describe the relationship of the association between awareness and variables, with $p<0.01$ and $p<0.05$ taken as the statistically significant levels. SPSS statistical package (version 22) was used to measure the correlations.

Table 2 depicts relationships between variables. Different unit of measures of statistical significance ($p<0.01$) for variables were discovered. More specifically, the belief that cancer of the cervix can be detected by Pap smear indicated true significant correlation with ever heard about Pap smear ($r=0.405$; $p<0.01$) and having ever had a Pap smear done ($r=0.487$; $p<0.01$)

Discussion

This study assessed the awareness and practices of respondents utilising a referral hospital about cancer of the cervix prevention. Awareness and practises play an integral role in health seeking behaviours of women and how people view the world around them. Related with these results,[6] indicated that women in Somalia developed a hesitancy on taking cancer of the cervix prevention procedure due to the embarrassment associated with female genital exposure and the issue of cultural environment that undermine and relegate the role and dignity of women.

Beliefs, superstitions, and behaviours are the warning to control the disaster caused by cancer of the cervix, hence influencing practises. This belief among women has a positive significance on level of literacy but can influence and worsens the situation of cancer of the cervix in the low economic status societies in Africa and Asia. It was obvious when the previous research[13] alluded that woman in South Africa who are unaware about cancer of the cervix and Pap smear tend to live under poor living condition. Another study,[2] also alluded that among women from South Asian, there is a strong relationship that cancer of the cervix is painful, and embarrassment thus influence their behaviour towards taking part in cancer of the cervix screening.

The previous study7 argues that lack of awareness of cancer of the cervix prevention programme may hinders women's using of the programme. This may be the cause of negative attitudes as pointed[1] in the study done previously which indicated that women seek medical attention to cancer of the cervix when the disease is in the advance stage.

Lak of awareness of Pap smear availability and anxiety towards the diseases around the world is alarming and there is a high rate of cervical cancer cases diagnosed in advanced stage and, increased mortality discovered in the same communities. A research study conducted among women at a Kenyan teaching hospital indicated that they were suffering from fear of negative outcome of Pap smear. Low economic status were common factors that contribute to the low uptake cervical cancer screening practises.[14] Painful procedure and exposure of genitals were found to be the common barriers in Malaysian and Ghanaian women.[15]

This study revealed low utilization of Pap smear among the respondents. This predisposes the South African women to cervical cancer thus encouraging its spread as Pap smear assists in the early detection. The health seeking behaviour is related to lack of awareness of infection as Pap smear is the only procedure of detecting cancer of the cervix. The study[16] conducted in sub-Saharan Africa revealed lack of awareness of the disease. The literature[17] indicated that lack of awareness of the diseases, perceptions and cultural beliefs also hinders respondent's practises towards cancer of the cervix screening through Pap smear. The findings indicated negative attitudes about the diseases due to lack of awareness. Poor practises might be due to low social-economic status and cultural beliefs of the respondents. Beliefs on screening may hinder necessary precautionary measures. A south African study[18] revealed a relationship between cultural beliefs and health seeking behaviours. In this study, the findings revealed that the respondents' level of knowledge about cancer of cervix influenced their practises. One of the previous studies[19] established a relationship between awareness and practises toward Pap smear. A recent study[20] argued that awareness of cervical cancer could encourage good practises. Per the study findings[21] on the awareness of cervical cancer is related with frequency utilization of Pap smear which lead to mortality reduction, treatment adherence and a positive health seeking behaviour.

In South Africa, cancer of the cervix prevention, Pap smear is free according to the South African National Department of Health policy. Per this policy every woman, 30 years and older are entitled for free Pap smear every 5 years, however the uptake is still very low. This study revealed that culture, perceptions, and lack of awareness of cervical cancer blamed for about a third of the participants stating that they either strongly agreed or agreed that they were afraid of taking Pap smear. These results concurred with the researchers[10] who alluded in their study that South Africans women were familiar with Pap smear and its necessity. The research conducted[2] among Gabonese women revealed poor practises which include reasons for not taking Pap smear were ignorant, financial constraints and fear of diagnosis. This study revealed the relationship on how cervical cancer can be diagnosed and awareness about Pap smear, therefore health education and promotion, and initiatives of raising cancer of the cervix awareness campaign among South African women was recommended. A Nigeria study[22] recommended better infrastructure, financial and human resources to enhance practises hence cervical cancer screening in South Africa is free.

Limitation of the study

a. The study was limited to Tshilidzini Hospital in Vhembe District of Limpopo Province; and as such, the findings cannot be generalised to all districts of Limpopo Province.

b. The study used structured questionnaires which were limiting the respondents who wished to elaborate more on might have limited respondents' personal views.

Conclusion

The study revealed lack of awareness and poor practises about Pap smear among women. An intervention is needed at all public health care facilities and extends to the communities.

Recommendations

Cancer of the Cervix is curable if detected earlier, therefore the following recommendations were made:

i. Pap smear awareness programme at Public Health Care Settings and extend to the communities must put in place.

ii. Department of Health must develop Health Education Programmes to cascades information, regarding the importance of Pap smear among women.

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Conflicts of interest

No conflict of interest declared.

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