

## Knowledge of Cervical Cancer Screening among Women Attending a Rural Hospital in Limpopo Province of South Africa

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**ABSTRACT** Cervical cancer continues to be a significant cause of morbidity and mortality, particularly in the developing world, due to a lack of effective population screening and knowledge. The study assessed cervical cancer screening knowledge among women attending two health facilities in Limpopo province of South Africa. It also determined the relationships between awareness of cervical cancer and other variables. A quantitative approach was adopted. Data were analysed using the Statistical Package for Social Sciences (SPSS, Version 22). The study established that almost 3 out of four (n=388; 77.6%) participants were aware of cervical cancer but 292 (58.4%) did not know that it was preventable. Furthermore, being aware of cervical cancer and knowing that it can be prevented were found to be statistically significant ( $r=0.453$ ;  $p<0.01$ ). The study, therefore, recommends that the health workers at all primary health care levels should intensify cervical cancer campaign among women who visit their facilities.

### INTRODUCTION

Cervical cancer is a malignant disease of the cervix usually occurring in the 5<sup>th</sup> or 6<sup>th</sup> decade of life at a mean age of 54 years (AbdAllah et al. 2016). Globally, cervical cancer is the second most common cause of cancer-related deaths (World Health Organization (WHO) 2009; Assoumou et al. 2015), and it is responsible for approximately 250,000 annual deaths, most of which occur in developing countries (WHO 2002). In this regard, knowledge about cervical cancer can arouse health seeking behaviour which is very important in the prevention and cure of any health condition.

The incidence of cervical cancer has been controlled in developed countries due to the widespread use of cervical cancer screening systems, especially the systemic use of the Papanicolaou cytology (Pap smear) (Cronje 2005; Assoumou et al. 2015). According to the National Cancer Registry Tables (2001), developing countries spend only five percent of their resources on cancer, thus leading to higher incidence and mortality rates in these countries. Inadequate knowledge about cervical cancer and awareness of Pap smear as screening have been reported in a number of studies (Assoumou et al. 2015; Jain et al. 2016; AbdAllah et al. 2016). In a cross-sectional study carried out among un-

dergraduate nursing students at nursing colleges at Khartoum State Universities - Sudan, AbdAllah et al. (2016), found that whilst about half (49.9%) of the participants have no complete information about the Human Papilloma Virus vaccine, only 1.7 percent have knowledge of cervical cancer preventive measures.

Like many other developing countries, South Africa faces a heavy burden of cervical cancer in as far as women's health is concerned, especially Black South African women. The reported prevalence of cervical cancer for black women in South Africa is 40 per 100 000 women, and it is envisaged that at least 1 in 23 black women will develop cervical cancer in their life time whilst a total of 6061 new cases of cervical cancer is registered annually (Megevand et al. 2003). In 1999 alone, 5 203 new cases were reported, representing seventeen percent of all female cancers for that year (Statistics South Africa 2008). About eight-four percent of all women having cervical cancer in 1998-1999 were African women (Kawanga et al. 2004).

According to AbdAllah et al. (2016), the key aspect of prevention is early detection of pre-cancerous conditions through Pap smear. To this end, the South African Department of Health, introduced the National Guidelines (2000) for cervical cancer screening programme (Kawanga et al. 2004). Approximately 500 patients are seen

daily at Tshilidzini Hospital, with women constituting fifty-three percent of the patients but only 16.2 percent access cervical cancer screening annually. This indicates an underutilization of the programme. Thus access to cervical cancer screening does not reach the majority of women who need it. A successful cervical cancer control programme requires a high coverage rate of above eighty percent. This rate has, however, not been achieved at Tshilidzini Hospital. The majority of women attending Tshilidzini Hospital who develop the disease seek treatment much later when it is at an advanced stage which treatment is no longer effective. High incidence of cervical cancer is associated with lack of knowledge of cervical cancer screening and attitudes of women.

Although cervical cancer screening is an effective method for the reduction of the incidence and mortality of the malignancy, the unfortunate observation on the ground is that the screening attendance rate at Tshilidzini Hospital has been far from satisfactory. Hence, this study sought to access the knowledge regarding cervical cancer screening among women attending rural health facilities in Limpopo province of South Africa.

## METHODOLOGY

### Study Design

In this study a cross-sectional descriptive design in the quantitative paradigm was employed by the researchers to assess the knowledge regarding cervical cancer screening among women attending Tshilidzini Hospital in Limpopo province of South Africa. This design and approach were adopted because they allowed variables to be quantified whilst at the same time allowing data to be collected at one point in time (Brink 2008; Burns and Grove 2009). Thus, the knowledge regarding cervical cancer screening was assessed and the relationships among variables were also determined.

### Study Setting

The study was conducted in Tshilidzini Hospital and Tshilidzi Gateway clinic which operates within the hospital. The hospital is one of the 4 hospitals in Vhembe District of Limpopo province. It serves as a referral institution for 28

health facilities. The sub-district comprises 2 primary district hospitals, 16 clinics, 2 health centres and 8 mobile clinics. The hospital was chosen because it runs both outpatient and inpatient services, with an average of approximately 310 patients seen in out-patients department daily. It has a good information management system in place that enables the capturing and retrieval of relevant information with some degree of accuracy and reliability. Tshilidzi Gateway clinic operates within the hospital and attends to non-emergency services. This clinic caters for all types of primary health care services.

### Population and Sampling

The target population for the study comprised all 9868 people aged 18 year and over served by Tshilidzini hospital outpatients department. Based on this figure, a minimum sample size of  $n=384$  was calculated using Slovin's formula  $[n=N/(1+Ne^2)]$  where  $n$  and  $N$  denote the sample and population sizes respectively with  $e = 0.01$  as the margin of error (Burdess 2010). However, the researchers decided to increase the sample size to 500 to make up for non-responses and also to make the sample more representative. To select the participants, a convenient sampling approach was used.

### Instrument and Data Collection Approach

Knowledge regarding cervical cancer screening was assessed using structured open and close-ended questionnaires. The instrument was developed by gathering information from a wide range of relevant literature on variables of interest in line with the specific objectives so as to ensure its validity. The questionnaire was written in English and given to a language expert to translate it into Tshivenda. It was translated back into English by a language expert to ensure that it retains its original content. The questionnaire was pre-tested using 50 patients above the age of 18 years from another hospital. According to Grimm (2010), pre-testing is an absolute necessary step in survey research because it ensures that all kinds of errors that are associated with the survey research get reduced. Hence, the pre-test results were used to improve and enhance the original instrument so that quality data were gathered.

The study was conducted during the month of June, 2013. All women above the age of 18 years attending Tshilidzini hospital that consented to participate in the study were assisted in answering the questionnaire at a convenient venue arranged and provided by the hospital authorities for the purpose of this study.

### Ethical Consideration

Ethical clearance (Project no. SHS/14/ph/06/1605) for the study was obtained from University of Venda Ethics Committee. Permission to conduct the study was obtained from Department of Health Limpopo Province and the Management of Tshilidzini Hospital. Informed consent of participants was obtained after the study and its objectives were explained to them. To further maintain confidentiality no form of identifiers were in the questionnaires and participants were informed that they could withdraw from the study at any stage if they so desired without any penalty.

### Data Analysis

All the questionnaires returned were coded and data entered on a spread sheet. The Statistical Package for Social Sciences (SPSS) version 22 was used to analyse the data. Processed data were presented using frequency distribution tables. Analysis involved simple statistics and correlations. Statistical significance was set at  $p < 0.01$ .

## RESULTS

### Demographics

A total of 500 women participated in the study with an age range of 18 to 60 years. As shown in Table 1, of the 500 participants, 37 (7.4%) were below the age of 20, 258 (51.6%) were in the range 20 to 30, 91 (18.2%) were in the age range 30 to 40, 61 (12.2%) aged between 40 to 50 and 53 (10.6%) were aged above 50. Regarding marital status, education and employment status, 231 (46.2%) were single, 100 (32%) married, 12 (2.4%) never had any formal education, almost 1 in 3 (59.6%) had up to grade 12 certificate whilst 52 (10.4%) are housewives. As far as family history of cervical cancer is concerned, an overwhelming pro-

portion ( $n=438$ ; 87.6%) of the participants reported having history of cervical cancer.

**Table 1: Socio-demographic characteristics**

| Variable                   | Frequency (n) | Percentage (%) |
|----------------------------|---------------|----------------|
| <i>Age (years)</i>         |               |                |
| 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           |
| <i>Marital Status</i>      |               |                |
| Single                     | 231           | 46.2           |
| Married                    | 100           | 32             |
| Divorced                   | 21            | 4.2            |
| Widowed                    | 22            | 4.4            |
| Living together            | 66            | 13.2           |
| <i>Educational Level</i>   |               |                |
| 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            |
| <i>Occupational Status</i> |               |                |
| House wife                 | 52            | 10.4           |
| Self-employed              | 11            | 2.2            |
| Skilled                    | 73            | 14.6           |
| Student                    | 121           | 24.2           |
| Unemployed                 | 145           | 29             |
| Unskilled                  | 98            | 19.6           |
| <i>Family History</i>      |               |                |
| No                         | 438           | 87.6           |
| Yes                        | 62            | 12.4           |

### Participant's Knowledge about Cervical Cancer Screening

Table 2 depicts the responses provided by participants about their knowledge regarding cervical cancer screening. In this respect, 388 (77.6%) were aware of cervical cancer, 208 (41.6%) knew about its prevention whilst 382 (76.6%) also were aware of pap smear.

**Table 2: Cervical cancer screening related knowledge**

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

It was also important to find out whether respondents knew that a Pap smear could be used

to diagnose cervical cancer. The results in Table 3 indicate that 254 (50.8%) did not know that cervical cancer can be diagnosed using pap smear whilst 246 respondents (49.2%) were aware that cervical cancer could be diagnosed using pap smear.

**Table 3: Cervical cancer screening using pap smear**

| <i>Cervical cancer can be diagnosed using Pap smear</i> | <i>Frequency (n)</i> | <i>Percentage (%)</i> |
|---------------------------------------------------------|----------------------|-----------------------|
| No                                                      | 254                  | 50.8                  |
| Yes                                                     | 246                  | 49.2                  |
| Total                                                   | 500                  | 100                   |

### Relationships between Knowledge of Cervical Cancer and Related Variables of the Study

In this study, Pearson's rho ( $r$ ) correlation coefficient was used as the descriptive statistic for expressing the magnitude (strength of the relationship) and direction of the association between knowledge and other related variables, with  $p < 0.01$  and  $p < 0.05$  as the statistical significant levels. Table 4 presents the correlation between awareness of cervical cancer and related questions that participants responded to in the instrument. Though the results show positive correlations between the participants' awareness of cervical cancer and related questions, the strongest positive and significant relationship was between being aware of cervical cancer and being aware of pap smear ( $r = 0.779$ ;  $p < 0.01$ ). This implies that women who are aware of cervical cancer are more likely to have knowledge of a Pap smear. The result also indicates that the

**Table 4: Correlation between some variables pertaining to cervical cancer**

| <i>Related Questions</i>                                           | <i>Ever heard about cervical cancer?</i><br><i>Pearson's rho (r)</i> |
|--------------------------------------------------------------------|----------------------------------------------------------------------|
| Do you know 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 cervical cancer be diagnosed through Pap smear screening test? | 0.382**                                                              |
| What is your marital status?                                       | 0.212**                                                              |
| What is your age?                                                  | 0.292**                                                              |

\*\*Correlation is significant at the 0.01 level (2-tailed)

\*Correlation is significant at the 0.05 level (2-tailed)

awareness of cervical cancer is weakly linked to the marital status of the participants ( $r = 0.212$ ;  $p < 0.01$ ) which means marital status is among the weakest influential factors for women's awareness of cervical cancer. In other words, married women are less likely to be aware of cervical cancer. Furthermore, the table also indicated that awareness of cervical cancer is weakly linked to the age of the respondents ( $r = 0.292$ ;  $p < 0.01$ ).

### DISCUSSION

The study assessed cervical cancer screening knowledge among women attending two health facilities in Limpopo province of South Africa; and it also assessed some relationships between awareness of cervical cancer and some variables. According to AbdAllah et al. (2016), cervical cancer is a preventable disease and a key aspect of prevention is early detection of precancerous conditions through screening. Linked to this is the question of how informed is the population at risk of cervical cancer. In the study setting, the two main health facilities (Tshilidzini Hospital and Tshilidzi Gateway Clinic) are public health institutions which offer free health education on a variety of diseases, including cervical cancer. Those participants who were found to access the facilities for screening services and education were mostly women aged between 20 and 50 years (see Table 1). Though a similar age group was reported by Campbell (2014), the concern is the low attendance by the older women ( $> 50$  years) who are purported to be at higher risk than those below 50 years (AbdAllah et al. 2016).

It is worth noting that out of the 500 participants, only 12 (2.4%) indicated that they never attended school which implies that an overwhelming proportion ( $n = 488$ ; 97.6%) of the participants had some form of schooling, at least up to grade 7. With such higher number of educated participants in the sample, it is not surprising to have over three-quarter of the participants being aware of cervical cancer (77.6%) and pap smear (76.6%). Though this encouraging result can be attributed to the health education offered at the facilities during their visits, only about half ( $n = 246$ ; 49.2%) of them knew that cervical cancer can be diagnosed using Pap smear. In a study among 452 Gabonese women, Assoumou et al. (2015) reported that, 91.6 percent (414/452) had heard about cervical cancer

and only 27.9 percent (126/452) had heard of Pap smear test.

Awareness or knowledge of a health condition is a function of many factors, including level of education, accessible and sources of information as well as environmental conditions and age. Therefore, being aware of a disease does not necessarily guarantee an in-depth information on a subject such as cervical cancer or Pap smear. Various sources of information can be crucial in health promotion and education among women regarding cervical cancer. Ayinde and Ogubode (2005) reported in their study that participants get information from radio, family and friends. This means that most of the women involved in this study had limited scope in getting information. In their investigation regarding reasons given for participants not undergoing Pap smear testing, Jia et al. (2013) listed them as follows: neglect (50%, 22/44), lack of financial resources (13.6%, 6/44), fear of discovering a serious disease (13.6%, 6/44) and deeming it unimportant (13.6%, 6/44), anxious feelings once the diseases was diagnosed (47.6%), no symptoms/discomfort (34.1%) and do not know the benefit of cervical cancer screening (13.4%), including ignorance (Campbell 2014). Notwithstanding various reasons given for avoiding screening, cervical cancer is a malignant disease which requires regular information sourcing so as to be safe and cautious. In their study among undergraduate nursing students at nursing colleges at Khartoum State Universities - Sudan, AbdAllah et al. (2016) reported that only 37.4 percent indicated that the mass media, such as Television, Radio, and the Internet were the major sources of information regarding cervical issues. This implies that social media which is rapidly assisting in information dissemination raising awareness is grossly under-utilised when it comes to issues pertaining to health.

Family history of cervical cancer can be a pre-disposing factor in being classified as one of those at risk. In the current study 62 (12.4%) of the participants had a history of cervical cancer in their families. Gebreegziabher et al. (2016) in their study established that attitude and work place of the participants were significantly associated with a history of cervical cancer screening practices with an adjusted odds ratio (AOR) of 3.023, ninety-five percent CI (1.134–8.059), and 3.424, ninety-five percent CI (1.080–10.853), respectively. Also in this study, significant rela-

tionship was established between being aware of cervical cancer and being aware of Pap smear ( $r=0.779$ ;  $p<0.01$ ). This implies that women who are aware of cervical cancer are more likely to have knowledge of a Pap smear. Furthermore, the result also indicated that the awareness of cervical cancer is weakly linked to the age of the respondents ( $r=0.292$ ;  $p<0.01$ ).

## CONCLUSION

The findings indicate that knowledge and awareness about cervical cancer, screening, Pap smear is still not satisfactory. The study further found significant association between being aware of cervical cancer and other variables.

## RECOMMENDATIONS

Cervical cancer is a preventable disease and as such the following recommendations are made:

- The Department of Health must develop programmes aimed at early detection of pre-cancerous conditions through the Papanicolaou cytology screening (Pap smear) at all primary health care facilities.
- Social media must be effectively employed to disseminate and encourage health seeking behaviours pertaining to cervical cancer issues among adult women.

## LIMITATIONS

The study was conducted only in Tshilidzini hospital and Gateway clinic in the Vhembe District of Limpopo province; and as such, caution must be taken when generalising the results.

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