

# CERVICAL CANCER: SOUTH AFRICAN WOMEN'S KNOWLEDGE, LIFESTYLE RISKS AND SCREENING PRACTICES

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## ABSTRACT

The purpose of the study was to survey knowledge, lifestyle risks and screening practices of women living in a resource-poor community in Tshwane, South Africa. Convenience sampling was used to select the sample (N=299) and self-reported data were collected using structured interviews.

A pre-tested self-developed structured interview schedule served as a data collection instrument. Knowledge of cervical cancer and its risks was very low as 95.0% (n=284) of the sample mentioned they had never heard about cervical cancer and only 3.0% (n=9) mentioned that a Pap smear could help to prevent cervical cancer. Screening uptake was low as only 18.1% (n=54) of the respondents indicated that they had had Pap smears done previously. Women's lifestyle risks in terms of the age of their sexual debuts, sexually transmitted infections (STIs) and smoking were low, but were outweighed by the number of lifetime sexual partners and the absence of condom use. Lack of screening practices added to the risks, but the greatest risk was the lack of knowledge about cervical cancer as a disease, self-protection against this cancer and their inability to recognise the danger signs.

Women cannot prevent any disease, nor use available screening opportunities, if they have never heard about it. Having a national programme for the prevention of cervical cancer would serve no purpose without increasing women's knowledge about cervical cancer and the potential benefits of cervical screening, as well as the accessibility of such services.

**Keywords:** Knowledge of cervical cancer, cervical cancer screening uptake, cervical screening practices, lifestyle risks, prevention of cervical cancer in South Africa.

## INTRODUCTION AND BACKGROUND INFORMATION

Cervical cancer is the second most common global cancer amongst women. Every year approximately 510 000 women are newly diagnosed and 288 000 die from cervical cancer, according to the World Health Organization (WHO, 2010). Developing countries host more than 80% of women suffering from this disease. An estimated 78 879 women living in Africa will be diagnosed with cervical cancer annually, whilst 61 671 will die from this disease which translates into a higher incidence to mortality ratio than those of the developed world (Denny, 2010:70).

Furthermore, cervical cancer is the most common HIV and AIDS-related cancer in women (Bower, Mazhar & Stebbing, 2006:2417) and therefore the most common cancer in women living in sub-Saharan Africa (SSA) (WHO & International Union Against Cancer, 2005:5). According to the South African Medical Research Council (MRC, 2008) cervical cancer was responsible for the deaths of 3498 South African women during 2000. Accurate statistics about the number of South African women diagnosed with and dying from cervical cancer annually in South Africa, are unknown due to the failure to maintain the pathology-based cancer registry (Denny, 2010:70). However, Denny (2010:70) found that cervical cancer was the leading cancer from 1998 to 2002, amongst South African women living in 10 magisterial districts in the Eastern Cape Province of South Africa and responsible for 33.8% of all cancers in women.

Cervical cancer has various causes. However, infection with the human papillomavirus (HPV), the most common infection of the reproductive tract, is the biggest risk for causing cervical cancer. Nearly all (99%) cervical cancers are linked to persistent infection with one of the oncogenic HPV genotypes. Many external factors, increasing chances of acquiring the virus and promoting its oncogenic effect, are widespread throughout Africa. The long-term use of oral contraceptives, smoking and multiparity can double and even triple the risk of women infected with oncogenic type HPV to develop cervical cancer (Schiffman, Castle, Jeronimo, Rodriguez & Wacholder, 2007:894). STIs, other than HPV, which are linked to cervical cancer, are also endemic to SSA and include HIV, gonorrhoea, chlamydia trachomatis and herpes simplex type 2 (Anorlu, 2008:43).

Cultural norms, such as early marriage and polygamous marriages, also increase the risk for cervical cancer. In polygamous marriages the risk increases as the number of wives increase (Anorlu, 2008:42). In SSA monogamous marriages are also potentially polygamous as the nature of the marriage transaction gives men exclusive sexual rights to their partners. However, married women do not necessarily have the same rights and have increased risks of STIs, caused by their husbands' extramarital affairs (Hattori & Doodoo, 2007). In South Africa, marriage is not a prerequisite for being sexually active as AbdoolKarim (2001:195), in a study conducted in Kwa-Zulu Natal, reported that only "a few" sexually active women were married. Socio-economic factors also influence the incidence of cervical cancer and poverty, endemic in SSA, adds to the risk. In a

population with a high HPV infection rate, the ramifications of poverty such as poor social conditions, high parity and poor hygiene, are linked to cervical cancer (Anorlu, 2008:43). Furthermore, women living in resource-poor communities tend to be unaware of cervical cancer and cervical screening services (Denny, 2005:1206).

Cervical cancer develops slowly, having a 10 to 20 year natural history of mild dysplasia before progressing to invasive cancer (WHO, 2006:37). This long natural history makes cervical cancer relatively easy to prevent and provides the rationale for screening (WHO, 2006:37; Alliance for Cervical Cancer Prevention, 2004:3). In 1999, the South African National Department of Health (CANSa, 2008) adopted a National Cancer Control Policy which includes a national programme for cervical cancer screening. This programme targets women aged 30 and older, and enables asymptomatic women to have three free Pap smears at nurse-led primary healthcare (PHC) clinics during their lifetime (Department of Health, 2000). The screening programme's goal was to screen 70% of women above the age of 30, within 10 years after implementing the policy. However, according to Gakidou, Nordhagen and Obermeier (2008:0864), only 20% of the target population had been screened by 2008. This low screening uptake is supported by the City of Tshwane's (2009:24) annual report (for July 2008 to 30 June 2009), indicating that only 4% of the target population had been screened in that area.

### **Research problem**

In South Africa, cervical cancer screening is available at PHC clinics. However, screening uptake is low. Cancer prevention involves more than just screening as the latter calls for motivation based on knowledge about the disease and its causes, how it can be prevented, the early warning signs and the importance of early diagnosis and treatment (WHO, 2012).

## **RESEARCH METHODOLOGY**

### **Setting**

The setting for this study was a specific resource-poor area situated in the Tshwane Metropolitan Municipality approximately 45 km north of Pretoria, South Africa. The population of this area is rapidly growing due to an influx of people building informal dwellings and accounting for an unknown number of residents who live there. During a community assessment conducted in 2008 (Maree & Wright in Maree & Ferns, 2008:7), the community comprised 703 households hosting a total population of 2533 of whom 1230 were at least 20 years old. The total number of females aged 20 and older was 673, and 452 women were at least 30 years old. Poverty was widespread as more than half the adult population was unemployed and 75% of these persons were living below

the poverty index of 2 US\$ per day. Approximately 30% of the population, aged 20 and older, were illiterate having completed less than eight years of formal education. Housing consisted primarily of informal dwellings with only 2.2% having running water in their houses, whilst the rest had access to running water by means of taps in their yards (57.5%) or by communal taps (40.3%). Sanitation was provided most commonly in the form of pit latrines (50.7%) or flush toilets (36.8%) in the yards of the dwellings, with only 2.1% having water closets inside their houses. Approximately 10% of dwellings did not have toilets necessitating these inhabitants to share toilets with other households whilst less than 1% of households had no access to toilets. As this was a new settlement, the nearest PHC clinic was not within walking distance (5km) and the only form of public transport operating in the area was minibus taxis charging more than R16 (2 US\$) for return transport to the nearest PHC clinic.

### ***Research design and recruitment strategy***

A survey was conducted and all women reporting for screening at the cervical and breast cancer screening clinic during 2008 were recruited for the study. Convenience sampling was used to select 299 women meeting the study's inclusion criteria, namely being older than 18, sexually active and willing to participate.

### ***Data collection and analysis***

Using structured interviews allowed all women, irrespective of their literacy levels, to participate in the study. The structured interview schedule, based on a literature review, contained both open and closed-ended questions, enabling the collection of biographic data as well as information about women's knowledge of cervical cancer, lifestyle risks and cervical cancer screening behaviours. The instrument was pre-tested by interviewing 10 women living in a similar area in Tshwane. No problems were experienced during the pre-test and no changes were made. The information collected during the pre-test was not included in the study. One researcher collected the data during 2008, with the support of a trained field worker who assisted with language issues. The purpose of the study was explained to every respondent whereafter informed consent was obtained. Once the structured interview had been conducted, each interviewed woman received health education on cervical and breast cancer and had the opportunity to ask questions. The data were analysed using the SPSS version 14 computer program and are presented as descriptive statistics.

### ***Validity and reliability***

The structured interview schedule was based on a literature review and pre-tested by conducting interviews with 10 women who were excluded from the actual study.

Conducting structured interviews prevented selection bias based on literacy and ensured structural coherence throughout all interviews. The questionnaire was in English. However, two fieldworkers who could speak the local languages were trained and supervised to assist with translations when required. The research team comprised three specialist nurses; two nurses were registered oncology nurses and had completed an additional programme in cervical cancer screening while the third member specialised in nursing research. The inputs from these three nurse specialists comprised expert opinions about cervical cancer and nursing research.

#### Ethical considerations

Ethical approval was obtained from the Ethics Committee of the Tshwane University of Technology. The community living in the specific resource-poor community also approved the study by means of their community leaders who were consulted by the researchers. During the study, the ethical principles of informed consent, anonymity and confidentiality, beneficence and privacy were maintained. This was accomplished because every respondent provided informed consent and no name was entered on any interview schedule. Only the researchers and the statistician had access to the raw data which would be destroyed after the acceptance of the research report. Interviews were conducted privately and every respondent received health education about cervical and breast cancer at the conclusion of each interview.

## **RESEARCH RESULTS**

Out of all (100.0%; N=299) respondents, 53.5% (n=160) were up to 29 years old, whilst 46.5% (n=139) were 30 years of age or older; the mean age being 31 years. Most interviewed women (93.6%; n=280) were unemployed, despite the fact that 73.9% (n=221) completed grades 11 or 12 or had some tertiary education. More than a quarter (26.1%; n=78) of the interviewed women of all age groups were illiterate. The general characteristics of the sample are presented in table 1.

**Table 1:** Respondents' general characteristics (N=299)

Variable	n	%	Variable	N	%
Age group			Marital status		
20 to 29	160	53.5	Married	86	28.8
30 to 39	102	34.1	Single	205	68.6
40 to 49	22	7.4	Divorced / widowed	8	2.7
50 to 59	12	4.0	Employment status		
60 and older	3	1.0	Employed	19	6.4
Education level			Unemployed	280	93.6
Never went to school	17	5.7	Personal monthly income (Rand)		
Up to grade 7	61	20.4	0 to 2400	297	99.3
Grades 8 to 12	207	69.2	2401 and more	2	0.7
Tertiary education	14	4.7			
Literacy level					
Illiterate	78	26.1			
Literate	221	73.9			

Knowledge of cervical cancer was very low as 95.0% (n=284) of the respondents mentioned that they had never heard about cervical cancer, only 1.0% (n=3) knew cervical cancer was cancer of the cervix (the mouth of the womb), whilst another 1.0% (n=3) described cervical cancer as either cancer of the vagina or uterus. Knowledge about women, who are at risk of developing cervical cancer, was also low as only 8.0% (n=24) of the respondents were willing to tell who they thought was at risk of developing this disease; 'only women', 'sexually active women' and 'everyone' were mentioned. When asking these 299 women how they could protect themselves from getting cervical cancer, only 3.0% (n=9) mentioned having a Pap smear could prevent cervical cancer, whilst only one woman (0.3%) mentioned using a condom when having sex and limiting sexual partners. No woman mentioned that not smoking and preventing STIs, including HIV, could serve as protective measures against cervical cancer.

With regards to the warning signs of cervical cancer, most respondents (93.3%; n=279) were unable to identify a single warning sign. A smelly vaginal discharge and vaginal bleeding was identified by 3% (n=9), 1.7% (n=5) identified post coital bleeding and 1.0% (n=3) mentioned back pain. Similarly, knowledge about prevention and screening was very low. The majority of the women (96.3%; n=288) had no idea of prevention and 96.3% (n=288) did not know who should be screened.

Lifestyle risks for developing cervical cancer were explored and included age at onset of sexual activity, number of lifetime sex partners, history of STIs, smoking and the use of condoms. Ten percent of the respondents (n=30) reported that their sexual debuts had occurred by the age of 15; 81.9% (n=245) indicated 16 to 19 years and 8.0% (n=24) reported that this happened at or after the age of 20; the median age of the women's reported sexual debuts was 17.5 years. Of respondents 29.1% (n=87) indicated they had a single lifetime sex partner whilst 60.2% (n=180) reported having two to four, 9.7% (n=29) reported between 5-14 sex partners and 1.0% (n=3) indicated 15 and more sex partners. The average number of sexual partners was 3.2. Of the respondents 55.2% (n=165) reportedly had more than five sexual partners and 6.0% (n=18) were younger than 30 years of age.

With regards to the history of STIs, 88.6% (n=265) denied ever having had such an infection whilst 9.7% (n=29) admitted that they had had such an infection, with the rest (1.8%; n=5) being unsure. Of the 29 respondents who reported having had STIs, 62.1% (n=18) were at least 30 years old. None of the respondents reported using condoms.

There was a low incidence of tobacco use as only 4% (n=12) of the interviewed women indicated that they smoked or sniffed tobacco. It was primarily women aged 50 and older who smoked.

Screening uptake was also low as only 18.1% (n=54) of the respondents indicated having had a previous Pap smear done, with 14.0% (n=42) who did so during the previous three years. Screening uptake in the previous three years in terms of age and literacy level is presented in table 2.

**Table 2:** Screening uptake during the previous 3 years in terms of age and literacy level (N=299)

Age group	N	Screened during the previous 3 years	
		N	%
20 to 29	160	12	7.5
30 to 39	102	20	19.6
40 to 49	22	7	31.8
50 to 59	12	1	8.3
60 and older	3	1	33.3
Literacy level			
Illiterate	78	14	17.9
Literate	221	28	12.7

## Discussion

Despite the existence of the South African National Guidelines on Cervical Cancer Screening (Department of Health, 2000), only a small percentage of respondents had been screened. This finding is not exceptional as according to Gakidou, Nordhagen and Obermeier (2008:0864) only 20% of the target South African population had been screened. The exact reason for this undesirable situation is unclear. However, during 2009, the WHO (2009:6) stated that South Africa had a weak healthcare system resulting in cytology-based screening failing to reach the majority of women. The WHO furthermore questioned the use of cytology-based screening given the situation of South Africa's healthcare systems. Denny (2006:344) is, however, of the opinion that South Africa has the capacity to develop an effective cytology-based screening programme but warns this would not only need significant political will, but also the allocation of considerable resources for the development of skills and infrastructure. Denny further advocates for the use of visual inspection with acetic acid (VIA) as an alternative screening approach in under-resourced areas, parallel with the development and expansion of cytology services. Not having access to screening, together with a shortage of human and material resources, could have contributed to the low rate of screening found in this study.

The current study's finding that some of the women were screened before the age of 30 was interesting. According to Kawonga and Fonn (2008:34), these screenings are "misplaced" and do not contribute to the realisation of high coverage rates. Sibiyi and Grainger's (2010:21) study, exploring registered nurses' perceptions of the cervical screening programme in primary healthcare (PHC) clinics, reported that nurses appreciated that free screening services should be provided to women who meet the criteria, but were of the opinion that sexually active women should be included from the ages 20 to 25. The nurse respondents also indicated that 30 years of age for the first Pap smear is too late due to the high incidence of HIV and AIDS.

The women in this study lacked knowledge of cervical cancer which is similar to the findings of various other studies (Denny, Quinn & Sankaranarayanan, 2006:S3/72; Maree, 2010; Maree & Wright, 2010:194; Van Schalkwyk, Maree & Mwinituo, 2008:14). Other researchers (Sibiyi & Grainger, 2010:20) found that nurses accepted requests for screening from sexually active women, and repeated STIs, as criteria to take Pap smears. Women who lack knowledge may not be able to request Pap smears and therefore might never have a single Pap smear done during their lives. According to Rosenberg (2003) the odds of women who had a single Pap smear to develop cervical cancer is 70% less compared to women who had never had a Pap smear done. As STIs might be rare in certain populations, these women might also not be offered cervical screening tests if they do not suffer from STIs.



Women's lifestyle risks were high. Reportedly only a few women had their sexual debuts at or before the age of 15, smoked and had STIs. The median age of the women's sexual debuts was similar to that of women worldwide (2005 Global Sex Survey, 2005). Whether the average number of lifetime sexual partners could influence the respondents' risk of developing cervical cancer is unclear. Even if the woman might only have one sex partner, her specific sexual partner might have many sex partners, as in South Africa cultural norms accept male infidelity and expect female monogamy (Albertyn, 2003:597). Polygamy increases the risk of cervical cancer two-fold and the risks increase with the man's number of wives or sexual partners (Anorlu, 2008:42). It was primarily women younger than 30 years of age who reported having had more than five lifetime sexual partners. Similar findings were reported by Pettifor, Measham, Rees and Padiant (2004:1998) about South African women aged 15 to 24 who had more than one lifetime sexual partner.

No woman reportedly used condoms. The exact role of condoms in the transmission of HPV is not clear. Frega, Stentella, De Ioris, Piazzè, Frambini, Marchionni and Cosmi (2003:127) maintain that condoms are the only barrier form of contraceptives which could protect HPV transmission. According to Burchell, Winer, De Sanjosé and Franco (2006:S3/59) condoms seem to protect against the development of high-grade lesions and invasive cervical cancer but failed to demonstrate its protective effect against HPV transmission - probably due to inconsistent use. Winer, Hughes, Feng, O'Reilly, Kiviat, Holmes and Koutsky (2006:2653) found that consistent condom use not only reduced the risk of cervical but also the risk of vulvovaginal HPV infection among newly sexually active women. Not using condoms highlights the dire position of many African women as asking their partners to use condoms could be regarded as being sexually available, ready for sex, overly dominant and non-conformist (Maharaj, 2001). South African women have almost no say in their sexual relationships (Albertyn, 2003:158) and are not in a position to insist on condom use due to cultural norms and the patriarchal system (Maree, 2010).

## **CONCLUSIONS**

Women's lifestyle risks in terms of the ages at their sexual debuts, STIs and smoking were low, but the number of lifetime sexual partners outweighed this low risk. Lack of screening practices added to the risks, but the greatest risk was the women's lack of knowledge of cervical cancer as a disease, self-protection against this cancer and the ability to recognise the signs. No woman can prevent any disease and use the available screening opportunities if she does not know about it. Having a national programme for the prevention of cervical cancer would continue serving no purpose unless women's lack of knowledge is addressed.

## RECOMMENDATIONS

Health education about HPV and cervical cancer should commence with sex education at schools. Young women should know that they can reduce their lifetime risk of cervical cancer by delaying their sexual debuts, avoiding STIs and getting treatment as soon as they recognise potential symptoms of STIs. It should be emphasised that this risk can also be reduced by limiting the number of one's lifetime sex partners, and by practising safer sex by using condoms regularly.

Nurses should teach women about the difference between HIV and HPV and the importance of using free cervical cancer screening services.

South African nurses, especially those working in PHC facilities, should receive regular in-service education about HPV and about performing cervical cancer screening tests effectively. Region-specific statistics about the number of cervical screens performed and the outcomes of these tests should be maintained throughout South Africa. Unless these cost-effective services are advocated and implemented, the availability of a national cervical cancer screening programme in South Africa remains relatively inaccessible and unavailable to women who do not know about these services.

## LIMITATIONS

The contextual nature of the study limits the application of the findings to the specific geographic study area. The self-report nature of the study could have led to socially desirable response bias and recall bias resulting in a low estimate of the women's awareness of cervical cancer and an under estimation of their lifestyle risks. It is also possible that the women under-stated their number of lifetime sexual partners.

## ACKNOWLEDGEMENTS

The authors would like to thank the Faculty of Science of the Tshwane University of Technology for funding this project.

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