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Moremi, Lemphi Mayoyo

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THE RELATIONSHIP BETWEEN EXPOSURE TO SOUL CITY EDUCATIONAL PROGRAMME AND KNOWLEDGE AND PRACTICES OF SOUTH AFRICAN WOMEN AGED 16 – 65 YEARS ON CANCER OF THE CERVIX.

Lemphi Mayoyo Moremi

SUPERVISOR:

Dr. Sue Goldstein

Soul City Institute for Health and Development Communication (SC IHDC)

A Research report submitted to the School of Public Health, Faculty of Health Sciences, University of the Witwatersrand Johannesburg, in partial fulfilment of the requirements for the degree of Master of Science (Med) in the field of Epidemiology and Biostatistics.

September, 2009

DECLARATION

I, **Lemphi Mayoyo Moremi** declare that this research report is my own work. It is been submitted for the degree of **Master of Science in Medicine in the field of Epidemiology and Biostatistics** in the University of Witwatersrand, Johannesburg, South Africa. This research report has not been submitted before for any degree or examination at this or any other university.

Signature: _____

_____ day of _____ 2009

DEDICATION

This research report is dedicated to my late parents and sister who during their time on earth made me who I am today. May their souls rest in peace. The report is also dedicated to the remaining members of my family for their support and encouragement the entire duration of my study. Above all I dedicate this report to Almighty God for His protection and guidance throughout my entire life.

ABSTRACT

Background: Soul City Institute for Health and Development Communication (SC IHDC), a Non Governmental Organisation (NGO) set up to promote health through media tackled cervical cancer in 2006. The Soul City cervical cancer educational programme was developed and broadcasted on South African Broadcasting Cooperation (SABC1) television and radio stations across the country. This paper assesses the relationship between exposure to educational programme and knowledge and practise of South African women on cervical cancer.

Objective: To investigate if there is an association between exposure to Soul City educational programme on cervical cancer and knowledge and practice of South African women in relation to cervical cancer.

Methods: An analytical cross sectional study design was employed. Secondary data from a Soul City study was used and all South African women aged 16 – 65 years who enrolled into the 2006 leg of the study were included. The data was analysed using Stata 9 utilising logistic regression models.

Results: There were 1013 women aged between 16 and 65 years in this study and the average age was 35 years. Most women lived in metropolitan areas (53%), were employed (41%), had secondary education (74%) and had knowledge about cervical cancer and Pap smear (>50%). Lack of knowledge about cervical cancer and Pap smear was observed amongst rural residents (>60%), illiterate women (>54%), and Black South African women (>54%). Generally, participation in cervical screening was low among these women. The

majority of women had never been screened for cervical cancer in the past (49%) as well as in the previous 12 months (79%). However, a higher proportion of women aged 30 years and above had been for cervical screening test in the past (59%). Although many women aged 30 years and above had been screened sometime in the past, more than three quarters of them were not screened in the last 12 months. Low uptake of Pap smear in 2006 was observed amongst rural residents (6%), older women (9%), illiterate (4%), Coloured (20%) and Black (20%) South African women. Overall knowledge about cervical cancer and Pap smear was associated with exposure to Soul City educational programme on cervical cancer through different media more especially television. Women who watched Soul City on television were more likely to have knowledge about cervical cancer (OR = 1.97, and 95% CI = (1.12; 3.47)) and Pap smear (OR = 2.08, and 95% CI = (1.24; 3.47)) than those who did not watch the programme. Participation of women aged 30 years and above in cervical cancer screening in 2006 was not associated with exposure to the Soul City educational programme.

Conclusion: The study findings suggest that Soul City educational programme is associated with knowledge about cervical cancer and Pap smear. There was no evidence that exposure to Soul City educational programme was associated with participation in cervical cancer screening in 2006.

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ABBREVIATIONS

HIV: Human Immunodeficiency Virus

AIDS: Acquired Immune Deficiency Syndrome

HPV: Human Papillomavirus

CI: Confidence Interval

OR: Odds Ratio

NGO: Non Governmental Organization

SC IHDC: Soul City Institute for Health and Development Communication

SABC: South African Broadcasting Cooperation

Chapter One: Introduction

1.1: Background

Invasive cervical cancer is the most common causes of cancer morbidity and mortality in South African women. It is the second most common form of cancer amongst South African women (1, 2). According to the South African National Guidelines on Cervical Cancer Screening Programme, approximately 1 in 41 women in South Africa will develop cancer of the cervix within their lifetime (3). Cancer of the cervix is associated with previous infection with a sexually transmitted virus called Human Papillomavirus (HPV), high parity, and long term use of hormonal contraceptives (4, 5). Age is, however, the best predictor of cervical cancer. That is, the risk of developing cervical cancer increases as women get older (3).

Strategies to prevent cancer of the cervix are available in most countries and the most effective preventive strategy is cervical screening. In South Africa, Papanicolaou smears (Pap smears) are most commonly used to detect early cervical abnormalities (4, 6). National Guidelines for Cervical Cancer Screening Programme, which recommends free screening and follow up in local clinics and hospitals, are available in South Africa. The guidelines recommend three pap smears per lifetime with a 10 year interval between each smear, commencing at not earlier than the age of 30 years.

1.2: Statement of the problem

Despite government's efforts to reduce the incidence and mortality of cervical cancer in South Africa by providing free screening programme in local clinics and hospitals, high mortality rates are still reported annually. Several studies in South Africa have shown that women's participation in cervical cancer screening programmes is low (7–9). This is mainly due to lack of knowledge about cervical cancer and the prevention programmes available in South Africa. It has been proven that cervical cancer educational programmes through media can improve knowledge about cervical cancer and uptake of screening interventions (10, 11). Therefore, urgent community – based educational programmes to sensitise the whole South African population about cervical cancer and the importance of screening programme have been recommended (8, 12, 13).

Soul City Institute for Health and Development Communication (SC IHDC), a Non Governmental Organisation (NGO) set up to promote health through the media, decided to tackle the issue of cancer of the cervix and hence developed an educational series on cervical cancer. Soul City disseminates health information across South Africa through carefully researched and tested drama which is broadcasted on South African Broadcasting Cooperation (SABC1) television and radio stations. In 2006 Soul City educational drama was made up of thirteen episodes in mixed African languages and English. The drama was broadcasted on SABC1 television at 8.30 pm on Monday nights and a separate similar drama was broadcast on nine African language radio stations at different

times. In these dramas there was a story about a popular character getting cervical cancer and then going through treatment. This story evolved over time in more than four episodes. Soul City also developed a reproductive health booklet which had a story on issues related to cervical cancer. The booklet was distributed to the South African communities across the country (850 000 copies) as an insert in newspapers (the national Sunday Times, IsiZulu newspaper in Kwazulu natal and an Afrikaans newspaper in Western Cape). Some additional copies were distributed by Soul City's partners such as Mothers to Mothers. The Soul City educational series on cervical cancer has ended therefore there was a need to assess its relationship with the knowledge and practise of South African women on cervical cancer hence the importance of this study.

1.3: Justification of the study

High incidence and mortality rates due to cervical cancer in South African are partly related to lack of knowledge about cancer of the cervix and the available preventive strategies. Lack of knowledge on cervical cancer is also attributed to lack of information and poor educational programmes. Unfortunately much of the literature in South Africa concentrates on the risk factors associated with cervical cancer and issues regarding participation in cervical cancer screening programmes (1, 5, 9, 13, 14). Knowledge about cervical cancer and preventive strategies in general has not been well studied.

Soul City dealt with cervical cancer in 2006. However, the role of media in disseminating information about cervical cancer in South Africa has not been assessed. This study investigates the association between exposure to Soul City educational programme and knowledge and practices of South African women towards cancer of the cervix.

1.4: Literature Review

Cancer of the cervix is the most common cancer in women worldwide and it constitutes 23.3% of all cancers in women (15). It is the leading cause of cancer deaths among women in developing countries (16). According to the available literature, approximately 80% of the 500,000 new annual cases of cervical cancer occur in developing countries and age adjusted incidence rates greater than 40 per 100,000 are reported in some countries in Southern Africa (4).

The burden of cervical cancer is also felt in South Africa. In South Africa, cervical cancer is responsible for significant cancer related morbidity and mortality among women (1,2). Approximately 5000 new cases of the disease are reported every year and this constitutes 16.7% of all cancers reported every year in South Africa (17). Cervical cancer is the second most common form of cancer amongst South African women and the commonest amongst black women (18). It is also the leading cause of cancer related deaths in South African women, accounting for around 1500 deaths every year (2, 17–19). According to the South African

National Guidelines on Cervical Cancer Screening, approximately 1 in 41 women in South Africa will develop cancer of the cervix within their lifetime (3).

Cancer of the cervix is associated with a sexually transmitted virus called Human Papillomavirus (HPV) (4, 5). Existing evidence indicates that almost all individuals become infected with HPV within 2 – 5 years of initiating sexual activity (20). Women who have ever had sex are therefore at risk of developing cancer of the cervix. Women may be infected with HPV in their teenage years when they start sexual activity. Progression of the disease from precursor lesion to cancer of the cervix is slow and may take as long as 10 – 20 years before the disease becomes invasive (3, 21). Although the risk of developing cervical cancer is higher in women infected with HPV, not every woman with HPV actually develops cervical cancer. It has been shown that only around 5% of the women with HPV develop cervical cancer later in life (22). The role of other sexually transmitted infections like HIV is still unclear. Age is the best predictor of high risk of cervical cancer infection. The risk of developing cervical cancer increases as women get older and is highest amongst women over 35 years of age (3). Cancer of the cervix is also associated with high parity and long term use of hormonal contraceptives (more than 5 years) (23). Sexual behaviours such as early initiation of sexual intercourse and history of multiple sexual partners are also associated with cancer of the cervix (24). Smoking may also influence development of cervical cancer (22).

Cervical cancer is a preventable cancer if detected at an earlier stage. Strategies to prevent cancer of the cervix are available in most countries and the most effective preventive strategy is cervical screening. Since Human Papillomavirus (HPV) has been identified as the necessary cause of cervical cancer, recent development of HPV vaccines offers great potential for primary prevention of cervical cancer (20). Research has however, emphasised the importance of secondary cervical cancer prevention in the sense that not all HPV types can be treated by the available HPV vaccines (25). Papanicolaou smears (Pap smears) are the most commonly known secondary preventive strategies used to detect early cervical abnormalities in most developing countries including South Africa (4, 6).

Evidence exist that effective community based screening programmes have significantly decreased the incidence and mortality of cervical cancer in developed countries by up to 80%. The incidence and mortality due to cervical cancer were reduced to 3.8 and 1.6 per 100,000 women respectively in Finland after the implementation of sophisticated cervical cancer screening programme (26).

Contrary to this, incidence and mortality of cervical cancer are still high in developing countries mainly due to ineffective cervical screening programmes, low participation and lack of knowledge about cervical cancer and the screening programmes (7). Barriers to implementation of effective screening programmes

have been identified. In South Africa these include: staff resistance to the national policy; gaps in staff knowledge with regards to cervical cancer, the screening policy and management of clients with cervical abnormalities; low smear adequacy; a lack of standardized terminology for reporting cytology results; inconsistent client management guidelines; poor record-keeping; poor referral and feedback systems; lack of client education materials, poor client knowledge, beliefs and attitudes towards screening and low cervical screening coverage (7, 14, 27). A study carried out at King Edward VIII hospital in South Africa among women with different socioeconomic backgrounds indicated that 64.7% and 54% of women with lower socioeconomic background had no knowledge about cervical cancer and screening services respectively. This study demonstrated that general education and specific knowledge about cervical screening are the most important factors to decide whether a screening policy will fail or succeed (7). Communication between healthcare workers and patients is also vital. In the above mentioned study, lack of knowledge about cervical cancer and screening services was attributed to failure on the part of healthcare workers to disseminate information to patients regarding cervical cancer and the importance of screening (7). Similarly, a study carried out in Ghana amongst different groups of well educated women revealed that Pap smear use in Ghana is very low despite adequate knowledge about cervical cancer and Pap smear. Thirty-seven percent (37%) and 39% of women in that study had sufficient knowledge about cervical cancer and Pap smear respectively but only 8.5% had undergone cervical screening (6). In this study it was found that greater

knowledge about cervical cancer and Pap smear among well educated women was not translated into uptake of cervical cancer screening. Beliefs and attitudes towards cervical screening also play an important role in influencing women to go for screening. Evidence exists that women tend to seek medical health care only when they are sick or when home – based traditional interventions fail. Women also believe that cervical screening is associated with sexually transmitted infections. It has been found that women in South Africa associate positive cervical screening tests with HIV/AIDS (27).

Despite the availability of cervical screening facilities and free provision of the services in South Africa, participation in cervical cancer screening is still very low. A multi – centre study in South Africa revealed that 80% of women had never had Pap smear (8). Another study conducted in Free State province found that only 4.1% of the women in that province were screened (9) hence an indication of decline in the uptake of cervical screening. The King Edward VIII hospital study found that only 27.3% of women had gone for cervical screening. The study also indicated that 14.7% of the women with higher social and educational background had undergone cervical screening despite adequate knowledge about cervical cancer and screening services (7).

In an attempt to reduce the incidence and mortality of cervical cancer by more than 60% within the available resources in South Africa, National Guidelines on Cervical Cancer Screening Programme were developed. The guidelines

recommend free provision of the cervical screening programme in local clinics and hospitals. The success of the programme in South Africa is still doubtful due to low participation of women at higher risk (4, 7–9). Some of the areas in South Africa had even experienced deterioration in cervical cancer screening services (9). Generally lack of knowledge about cervical cancer and prevention programmes is one of the main factors which contributed to lower participation rates in screening programmes (7, 12). Lack of knowledge was also brought about by lack of planned community educational programmes on cervical cancer (4, 12, 28). Most of the studies conducted in South Africa recommended urgent community – based educational programmes in order to sensitise the whole South African population about cervical cancer and the importance of the screening programme (8, 12, 13).

Some studies have proven that cervical cancer educational programmes through media can successfully improve knowledge about cervical cancer and uptake of screening interventions. The study conducted in Honduras has shown that radio broadcast improved knowledge and screening behaviour amongst Honduran women (10). The radio broadcast increased the proportion of women who were familiar with the term cervical cancer (91% after broadcast versus 78% before broadcast, $p = 0.0004$), who could identify means of preventing cervical cancer (79% versus 69%, $p = 0.001$) and who understood the purpose of Pap smear (61% versus 46%, $p = 0.0001$). Older and under screened women were successfully recruited for screening via radio. The proportion of women aged 30

and above who attended the organised screening activities increased from 64% prior to radio broadcast to 74% afterwards (p = 0.02). Another study in North Carolina found that women who received the education program exhibited a greater knowledge about cervical cancer prevention (OR = 2.18, 95% CI = (1.08-4.39)) and were more likely to have reported having had a Pap smear within the past year (OR = 2.06, 95% CI = (1.14-3.72)) than women who did not receive the program (11).

Unfortunately, the effect of media on the knowledge about cervical cancer and prevention strategies in South Africa has not been well studied. This study seeks to bridge this gap.

1.5: Aim of the study

The aim of the study was to determine if there is an association between exposure to Soul City educational programme on cervical cancer and knowledge and practice of South African women in relation to cervical cancer.

1.6: Objectives of the study

1.6.1: Main objective: To investigate the relationship between exposure to Soul City educational programme and knowledge and practices of South African women related to cervical cancer.

1.6.2: Specific objectives:

- To describe the knowledge and practices of South African women on cervical cancer and Pap smear.
- To describe the general access and exposure to media.
- To establish the proportion of South African women who were exposed to Soul City educational programme on cervical cancer.
- To determine the association between exposure to Soul City educational programme and knowledge about cervical cancer and Pap smear among women in South Africa.
- To investigate the association between exposures to Soul City educational programme and having had a Pap smear among women in South Africa.

Chapter Two: Materials and Methods

2.1: Description of the primary dataset and sampling strategy

The primary study was a national survey that investigated several health problems such as HIV/AIDS, cancer of the cervix and sexual risky behaviours among adults 16 – 65 years with items dealing with knowledge, attitudes, social norms, interpersonal communication and practices. The survey also measured exposure to Soul City and Soul Buddyz products over time and audience reception. This was a nationally representative survey conducted in three phases; 2004, 2005 and 2006. The survey was conducted after the Soul City educational programme has ended.

A disproportionate stratified clustered multi-stage probability sampling method was use to select the sample. The sample was stratified according to provinces and socio-economic categories. Socio – economic categories were derived from the Census '96 figures according to the area (rural traditional/commercial farming areas/semi-rural/urban), dwelling type (10 types of dwelling) and metropolitan/non-metropolitan. The first stage of sampling was the selection of enumeration areas with a probability proportional to size using systematic sampling from a random starting point. In the second stage residential sites or stands within the selected enumeration areas were selected based on random selection, or where no maps and lists were available, on systematic or "serial" sampling with a random starting point (each stand in the EA was numbered and

every n^{th} household was selected). The third stage was the selection of a household on sites where more than one separate household exists. This occurred randomly. The fourth and final stage of selection was that of respondents within the selected households. The respondent within the drawn household was selected using a random grid technique.

Participants were asked to voluntarily participate in the survey and informed consent was sought. The questionnaire was developed for this survey and it was pilot tested to check for validity and reliability. It was also translated into all local languages in South Africa. Data collection was done by trained interviewers using face-to-face interviews and the interviews were conducted in a private place using the language suitable for the respondent (see appendix 7.1). Overall 1566 adults were enrolled into the 2006 survey. This study utilized the 2006 survey data and the respondents were female adults only as there were no questions on cancer of the cervix in the previous studies.

2.2: Study design

This was an analytical cross sectional study utilising existing secondary data from a Soul City national survey where the association between exposure to Soul City educational programme and knowledge and practices on cervical cancer was assessed. However, descriptive analysis was also carried out to describe knowledge of women in South Africa on cervical cancer and Pap smear. Practice of women in South Africa towards Pap smear was also described.

2.3: Study population

The study population was all South African women aged 16–65 years who enrolled into the 2006 leg of the study. Males were excluded from this study since they would not provide any information regarding practices towards cervical cancer screening.

2.3.1: Inclusion criteria: Women of all races aged 16 – 65 years from the 2006 survey.

2.3.2: Exclusion criteria: All males of all age groups and women aged < 16 years were excluded from this study.

2.4: Sample size calculation

The primary data consisted of both males and females aged 16 – 65 years but the target population for this study was females aged 16 – 65 years only. Sample size for this study was not calculated since the study was utilising secondary data and all data for women 16 – 65 years were included. The sample size of 1013 women aged 16 – 65 years gave the power of 93.9%.

2.5: Study variables

The study variables were categorised into two groups: possible outcomes and explanatory variables.

2.5.1: The Outcomes for this study were:

i. **Knowledge about cancer of the cervix**: Knowledge about cervical cancer was split into two categories (yes and no). Participants classified as having knowledge about cervical cancer (yes) were those who have heard about cervical cancer and have answered the question about who is at risk of getting cervical cancer correctly. Those classified as lacking knowledge about cervical (no) were those who have not heard about cervical cancer and those who have heard about cervical cancer but answered the question about who is at risk of getting cervical cancer incorrectly.

ii. **Knowledge about Pap smear**: This variable was also categorised into two parts (yes and no). Participants were classified as having knowledge about Pap smear if they have heard about Pap smear and have either answered both questions about what Pap smear is and who should have Pap smear correctly or have answered one of them incorrectly. Those who were classified as lacking knowledge about Pap smear were those who have never heard about pap smear at all and those who have heard about

pap smear but answered both questions about what pap smear is and who should have pap smear incorrectly.

iii. **Practices towards Pap smear:** Participants who were considered to have gone for cervical cancer screening (Yes) were women aged 30 years and above who had Pap smear in the last 12 months. Women aged 30 years and above who never had Pap smear in the last 12 months were classified as those who had not gone for screening tests (No).

2.5.2: The Explanatory variables of interest were:

i. **Exposure to Soul City educational programme through television:** This variable was classified into three categories, the unexposed, low and highly exposed. Unexposed participants were those who did not watch Soul City on television in 2006. Participants who were classified as lowly exposed were those who watched Soul City in 2006 but watched less than 5 episodes. The highly exposed group were those who watched Soul City on television in 2006 and watched 5 or more episodes. The number of episodes seen was used to determine the extent of exposure to cervical cancer series since there were no other questions to measure this. The assumption made was that those who watched less than five episodes could have missed the cervical cancer series but those who watched five or more episodes were more likely to see the message on cancer of the

cervix. The questionnaire did not ask exactly which episodes were watched.

ii. **Exposure to Soul City educational programme through radio**: This variable had three categories (unexposed, low and highly exposed). The highly exposed group were participants who listened to Soul City on radio in 2006 and listened to 5 or more episodes. Participants who were classified as lowly exposed were those who listened to Soul City in 2006 but listened to less than 5 episodes. Unexposed group were those who did not listen to Soul City in 2006. This classification was also based on the assumption that the more episodes listened to, the more likelihood of hearing the message about cervical cancer.

iii. **Exposure to Soul City reproductive health booklet:** This variable was classified into two categories, unexposed and exposed. The exposed group were participants who mentioned that they had read Reproductive Health booklet (Yes) whereas the unexposed group were those who had not read the booklet (No).

iv. **Socio-demographic variables:** The variables were employment status, level of education, age, race, language and type of residential area. These variables were all transformed into standard categories used on the primary survey. The employment status was divided into four groups namely: student, unemployed (including those looking and not looking for jobs), pensioner/Housewife and employed (including those working in informal sector and self employed). Level of education had three groups.

These were none/primary, secondary and tertiary. Participants with none or primary education were grouped together because few participants (<1%)) were illiterate. Age, the only continuous variable in this study was categorized into groups using a 10 year interval. Language was classified into six categories. The five categories were the most spoken languages in South Africa and the other category included all other languages. Race was also categorized into four groups namely: African, Coloured, Asian and Whites. Type of residential area was categorised into three groups, rural (comprising of scattered, farm and village), town and metropolitan (including both formal and informal).

v. **General media access and exposure:** General access to media was also assessed. The variables were: how often was the newspaper/magazines read, how often they listened to the radio and watched television. The frequency of reading newspapers/magazines, listening to the radio and watching television were divided into four categories namely: every day, once – 4 times a week, once – 3 times a month and never/hardly ever.

2.6: Data Processing methods and Data Analysis

2.6.1: Data Processing methods

This study used secondary data from Soul City national survey conducted in 2006 and Intercooled Stata 9 statistical software was used to analyse the data. The analysis of the data utilised logistic regression models to describe the associations under investigations. The primary data was stored into Stata software. Since the primary data consisted of information from both males and females, the required data for this study was extracted into a new dataset. The outcomes and explanatory variables were generated as described in section 2.5 above. Preliminary analysis was carried out basically to clean the data.

2.6.2: Data Analysis

1. Socio – demographic characteristics of respondents such as type of residential area, employment status, age groups, education, language and race were described by calculating the frequencies and percentages. Age was further described by calculating the mean age and standard deviation.

2. Descriptive analysis using calculated frequencies and percentages was also used to describe knowledge about cervical cancer and Pap smear. Practices towards Pap smear and general access to media were also described by calculating frequencies and percentages. The relationships between socio – demographic characteristics and knowledge about

cervical cancer and Pap smear and cervical cancer screening were also assessed by using frequencies, percentages, chi–squares and p – values.

3. The proportion of women who were exposed to Soul City educational programme on cervical cancer was calculated. The frequency and percentage were used to describe this proportion.

4. The associations between exposure to Soul City educational programme and knowledge about cervical cancer and Pap smear (outcomes) among women in South Africa were assessed using univariate and multivariate logistic regression models. The crude and adjusted odds ratios as well as the corresponding 95% confidence intervals were estimated to assess these relationships. Multivariate logistic regression models were used to assess these relationships while adjusting for possible confounders such as socio – demographic characteristics and general access to media. The multivariate models were built by using stepwise selection method in which explanatory variables were introduced into the univariate model one by one but checking back to see if the previously selected variable(s) can be excluded. Since explanatory variables were categorised, the relationship between outcomes and individual categories were independently assessed while controlling for the confounding effect of other categories and other explanatory variables. For instance, the association between knowledge about cervical cancer (outcome) and high

exposure to Soul City education programme through television was investigated while adjusting for low exposure through television and socio – demographic variables. The final multivariate logistic regression models included explanatory variables which were significantly associated to the outcomes of interest. In a situation where some of the categories of the explanatory variables were found insignificant, effect modification was also assessed before dropping explanatory variables or considering them as confounders. The explanatory variable was considered a confounder when the interaction term was insignificant and there was a 10% change in the crude odds ratio.

5. The associations between practices towards Pap smear (outcome) and exposure to Soul City educational programme through television, radio and reproductive health booklet were determined using univariate and multivariate logistic regression models. The crude and adjusted odds ratios as well as the corresponding 95% confidence intervals were estimated. The multivariate models utilised stepwise selection method to adjust for confounding.

2.7: Ethical considerations

Participants were asked to voluntarily participate in the primary survey and informed consent was sought. Participants were also asked to sign the informed consent and only those who signed the consent form were interviewed. Data

collection was done by trained interviewers using face-to-face interviews and the interviews were conducted in a private place.The primary survey was approved by the Ethical Review Committee of South Africa. Even though this study utilised the secondary data, permission to use the data was sought from Soul City Institute for Health and Development Communication. The protocol for this study was also approved unconditionally by the Wits University Postgraduate and Human Research Ethics committees.

Chapter three: Results

This chapter is structured into two parts. The first part is the descriptive analysis in which the demographic characteristics of the participants, knowledge about cervical cancer and Pap smear, Pap smear uptake and exposure to Soul City educational programme through media are described using frequencies and percentages. This part also includes the description of general access to media. The relationships between socio – demographic characteristics and knowledge about cervical cancer and Pap smear and uptake of cervical cancer screening were investigated using frequencies, percentages, chi – squares and corresponding p – values. The descriptive analysis answers the first three objectives of this study.

The second part is the analytical component of this study which answers the last two objectives. In this part associations between cervical cancer screening, knowledge about cervical cancer and Pap smear and exposure to Soul City through media are investigated using unadjusted and adjusted odds ratios and 95% confidence intervals.

3.1: Descriptive Analysis

3.1.1: Socio – demographic characteristics of the respondents

Table 3.1.1 describes socio – demographic characteristics of the respondents. Age, the only continuous variable in this study was categorized into groups. In this survey, a total of 1013 women aged between 16 and 65 years were interviewed. More than half of those women resided in metropolitan areas and most of them were employed. There were more women in the age group 16 – 24 years than in the other categories. The average age of the participants was 35 years with a standard deviation of 13.7 years. Most of these women had secondary education and many of them spoke Afrikaans at their homes. The majority of the participants were Africans.

Table 3.1.1: Socio – demographic Characteristics of the respondents

Socio – demographics	n	(%)
Type of residential area		
Rural	187	(18.5)
Town	285	(28.1)
Metropolitan	541	(**53.4**)
Age group		
16 – 24	274	(**27.1**)
25 – 34	235	(23.2)
35 – 44	247	(24.4)
45 – 54	143	(14.1)
55 – 65	114	(11.3)
Age (mean, std)	**35.4**	**(13.7)**
Education		
None/Primary	182	(18.0)
Secondary	749	(**73.9**)
Tertiary	82	(8.1)
Employment		
Student/scholar	165	(16.3)
Unemployed	238	(23.5)
Pensioner/Housewife	192	(19.0)
Employed	418	(**41.2**)
Race		
African	566	(**55.9**)
Coloured	335	(33.1)
Asian	60	(5.9)
White	52	(5.1)
Language		
English	106	(10.5)
Afrikaans	338	(**33.4**)
Zulu	189	(18.7)
Sotho/Tswana	203	(20.0)
Xhosa	124	(12.2)
Others	53	(5.2)
Total	**1,013**	**(100)**

3.1.2: Description of Knowledge about Cervical cancer and Pap smear and Practice towards Pap smear.

The general knowledge of participants about cervical cancer and Pap smear was also investigated as shown in table 3.1.2 below. Uptake of cervical cancer screening was also described. More than half of women had knowledge about cervical cancer and Pap smear. The results also indicate that majority of women had never been screened for cervical cancer in the past as well as in the past 12 months. However, a higher proportion of women aged 30 years and above indicated that they had gone for cervical screening test in the past. Although many women aged 30 years and above have been screened sometime in the past, more than three quarter of them were not screened in the last 12 months.

Table 3.1.2: Description of Knowledge about Cervical Cancer and Pap smears and Practices towards Pap smear

Variables	n (%)
Knowledge about Cervical Cancer	
Yes	511 (**50.4**)
No	402 (39.7)
Don't know /Uncertain	100 (9.9)
Knowledge about Pap smear	
Yes	522 (**51.5**)
No	415 (41.0)
Don't know /Uncertain	76 (7.5)
Cervical Cancer Screening	
Ever Had Pap smear	
Yes	484 (47.8)
No	491 (**48.5**)
Don't know /Uncertain	38 (3.7)
Had Pap smear last 12 months	
Yes	179 (17.7)
No	798 (**78.7**)
Don't know /Uncertain	36 (3.6)
Total	**1013 (100)**
Ever Had Pap smear (aged >= 30 yrs)	
Yes	363 (**58.5**)
No	232 (37.3)
Don't know /Uncertain	26 (4.2)
Had Pap smear last 12 months (aged >= 30 yrs)	
Yes	130 (21.8)
No	467 (**78.2**)
Don't know /Uncertain	24 (3.9)
Total	**621 (100)**

3.1.3: Association between Knowledge about Cervical Cancer and Socio – demographic characteristics of participants.

Table 3.1.3 below gives the summary description of socio – demographic characteristics in relation to the knowledge of the participants about cervical cancer. The calculated chi – squares and corresponding p – values indicate that knowledge about cervical cancer was associated with all socio – demographic characteristics of the respondents. More than half of women who resided in metropolitan areas had knowledge about cervical cancer. Many women in rural areas did not know about cervical cancer. Furthermore, most of the women aged 16 – 24 years lacked knowledge about cervical cancer. The results also indicate that many women aged 35 years and above had knowledge about cervical cancer.

The majority of women who had tertiary education had knowledge about cervical cancer. Higher proportion of students lacked knowledge about cancer of the cervix. Lack of knowledge about cervical cancer was also observed amongst the Zulu and Sepedi/Setswana/Sesotho speaking participants. Most of the White women demonstrated higher knowledge about cervical cancer whereas lack of knowledge about cervical cancer was observed amongst the Africans.

Table 3.1.3: Association between Knowledge about Cervical Cancer and Socio – demographic characteristics of participants.

Socio - demographics	Knowledge about cervical cancer		Chi – squares and p– values	
	Yes (n, %)	No (n, %)	Chi - square	p - value
Type of residential area				
Rural	62 (36.0)	110 (**64.0**)	17.7	< 0.001
Town	137 (53.3)	120 (46.7)		
Metropolitan	262 (**54.1**)	222 (45.9)		
Age group				
16 – 24	73 (29.1)	178 (**70.9**)		
25 – 34	114 (55.3)	92 (44.7)		
35 – 44	148 (**65.2)**	79 (34.8)	70.8	< 0.001
45 – 54	77 (**58.3**)	55 (41.7)		
55 – 65	49 (**50.5**)	48 (49.5)		
Age (mean, std)	37.7 (12.3)	32.7 (14.4)	t = 5.6	< 0.001
Education				
None/Primary	68 (41.2)	97 (58.8)		
Secondary	334 (49.7)	338 (50.3)	28.2	< 0.001
Tertiary	59 (**77.6**)	17 (22.4)		
Employment				
Student/scholar	44 (29.5)	105 (**70.5**)		
Unemployed	96 (44.0)	122 (56.0)	50.2	< 0.001
Pensioner/Housewife	88 (51.5)	83 (48.5)		
Employed	233 (62.1)	142 (37.9)		
Language				
English	63 (**67.0**)	31 (33.0)		
Afrikaans	189 (**62.0**)	116 (38.0)		
Zulu	35 (22.3)	122 (**77.7**)	89.7	< 0.001
Sotho/Tswana	78 (41.7)	109 (**58.3**)		
Xhosa	61 (50.8)	59 (49.2)		
Others	35 (70.0)	15 (30.0)		
Race				
African	207 (40.4)	305 (**59.6**)		
Coloured	180 (60.0)	120 (40.0)	55.2	< 0.001
Asian	34 (65.4)	18 (34.6)		
White	40 (**81.6**)	9 (18.4)		

3.1.4: The relationship between Knowledge about Pap smear and Socio – demographic characteristics of participants.

Table 3.1.4 describes socio – demographic characteristics of the respondents in relation to the knowledge about Pap smear. The results indicated that socio – demographic characteristics of the respondents were significantly associated with knowledge about Pap smear. Many women in metropolitan areas had knowledge about Pap smear. However, most of women in rural areas did not know about Pap smear. Furthermore, lack of knowledge about Pap smear was observed amongst women aged 16 – 24 years. The results also indicate that many women aged 35 years and above had knowledge about Pap smear.

Women who had tertiary education demonstrated higher knowledge about Pap smear. Higher proportion of Zulu and Sepedi/Setswana/Sesotho speaking participants lacked knowledge about Pap smear. Most of the White women demonstrated higher knowledge about Pap smear whereas lack of knowledge about Pap smear was observed amongst the Africans.

Table 3.1.4: The relationship between Knowledge about Pap smear and Socio – demographic characteristics of participants.

Socio – demographics	Knowledge about Pap smear		Chi – squares and p– values	
	Yes (n, %)	No (n, %)	Chi - square	p - value
Type of residential area				
Rural	52 (29.6)	124 (**70.4**)		
Town	155 (58.7)	109 (41.3)	61.6	< 0.001
Metropolitan	315 (**63.4**)	182 (36.6)		
Age group				
16 – 24	92 (36.8)	158 (**63.2**)		
25 – 34	121 (58.2)	87 (41.8)		
35 – 44	157 (**67.1**)	77 (32.9)	53.4	< 0.001
45 – 54	88 (**63.8**)	50 (36.2)		
55 – 65	64 (**59.8**)	43 (40.2)		
Age (mean, std)	37.8 (12.8)	32.8 (14.3)	t= 5.8	< 0.001
Education				
None/Primary	75 (45.5)	90 (54.5)		
Secondary	401 (57.5)	296 (42.5)	8.9	0.011
Tertiary	46 (**61.3**)	29 (38.7)		
Employment				
Student/scholar	45 (29.2)	109 (**70.8**)		
Unemployed	113 (51.1)	108 (48.9)		
Pensioner/Housewife	111 (60.7)	72 (39.3)	66.2	< 0.001
Employed	253 (66.8)	126 (33.2)		
Language				
English	65 (**65.7**)	34 (34.3)		
Afrikaans	218 (**69.7**)	95 (30.4)		
Zulu	77 (45.8)	91 (**54.2)**	58.2	< 0.001
Sotho/Tswana	82 (43.4)	107 (**56.6**)		
Xhosa	49 (41.2)	70 (58.8)		
Others	31 (63.3)	18 (36.7)		
Race				
African	238 (45.6)	284 (**54.4**)		
Coloured	214 (68.4)	99 (31.6)		
Asian	35 (63.6)	20 (36.4)	50.1	< 0.001
White	35 (**74.5**)	12 (25.5)		

3.1.5: Association between Cervical Cancer Screening in women over 30 years and Socio – demographic characteristics of participants.

Participation of women aged 30 years and above in cervical cancer screening against socio – demographic characteristics was also described as shown in table 3.1.5 below. Uptake of cervical cancer amongst women aged 30 years and above was significantly related to the women's socio – demographic characteristics. The results further show that higher proportion of rural residents did not go for cervical cancer screening in 2006 whereas more than a quarter of metropolitan residents went for screening. Most of the elderly women aged 55 – 65 years indicated that they never had Pap smear in 2006 whereas almost 31% of the women aged 35 - 44 years indicated otherwise. The average age of participants who had gone for cervical cancer screening was around 42 years with the standard deviation of 7.8 years. Furthermore, few women who had none/primary education went for cervical cancer screening whereas higher proportion of women who had tertiary education had Pap smear in 2006. Most of the Coloured and African women aged 30 years and above indicated that they did not go for cervical cancer screening in 2006 whereas majority of Whites went for screening.

Table 3.1.5: Association between Cervical Cancer screening in women aged 30 years and above and Socio – demographic characteristics of participants.

Socio – demographics	Cervical Cancer Screening in the last 12 months (aged >= 30 years)		Chi – squares and p– values	
	Yes (n, %)	No (n, %)	Chi - square	p - value
Type of residential area				
Rural	6 (5.9)	96 (**94.1**)		
Town	37 (19.6)	152 (80.4)	23.6	< 0.001
Metropolitan	87 (**28.4**)	219 (71.6)		
Age group				
30 – 34	26 (20.2)	91 (79.8)		
35 – 44	73 (**30.9)**	163 (69.1)	23.5	< 0.001
45 – 54	24 (17.4)	114 (82.6)		
55 – 65	10 (9.2)	99 (**90.8**)		
Age (mean, std)	**41.6 (7.8)**	**44.8 (10.2)**	t=3.25	0.0012
Education				
None/Primary	6 (3.9)	148 (**96.1**)		
Secondary	102 (25.8)	294 (74.2)	49.9	< 0.001
Tertiary	22 (**46.8**)	25 (53.2)		
Employment				
Student/scholar	0 (0.0)	2 (100)		
Unemployed	17 (13.7)	107 (86.3)	18.8	< 0.001
Pensioner/Housewife	28 (15.6)	152 (84.4)		
Employed	85 (**29.2**)	206 (70.8)		
Language				
English	21 (**34.4**)	40 (65.6)		
Afrikaans	50 (20.6)	193 (79.4)		
Zulu	23 (**25.3**)	68 (74.7)	12.0	0.035
Sotho/Tswana	18 (17.7)	84 (82.4)		
Xhosa	16 (23.2)	53 (76.8)		
Others	2 (6.5)	29 (93.6)		
Race				
African	58 (20.1)	231 (**79.9**)		
Coloured	47 (19.6)	193 (**80.4)**	10.7	0.014
Asian	12 (33.3)	24 (66.7)		
White	13 (**40.6**)	19 (59.4)		

3.1.6: General Access and Exposure to media.

General access and exposure to media was also investigated and table 3.1.6 below indicates that more than a quarter of women read newspapers/magazines or have them read to them every day. However, majority of the women indicated that they read newspapers/magazines once to four times in a week. Most of the participants revealed that their main forms of media were radio and television as higher proportion of them listened to the radio and watched television every day.

Table 3.1.6: General access and exposure to media

Variables	n	(%)
How often read newspapers/magazines?		
Every day	275	(**27.2**)
Once – 4 times a week	425	(**42.0**)
Once – 3 times a month	128	(12.6)
Never/Hardly ever	185	(18.2)
How often listen to the radio?		
Every day	645	(**63.7**)
Once – 4 times a week	256	(25.2)
Once – 3 times a month	28	(2.8)
Never/Hardly ever	84	(8.3)
How often watch television?		
Every day	868	(**85.6**)
Once – 4 times a week	97	(9.6)
Once – 3 times a month	10	(1.0)
Never /Hardly ever	38	(3.8)
Total	**1013 (100)**	

3.1.7: Exposure to Soul City Educational Programme on Cervical Cancer.

Exposure to Soul City educational programme through television, radio and reproductive health booklet was also assessed. Table 3.1.7 shows that more than half of women were highly exposed to Soul City educational programme through television. Less than 15% of women indicated that they watched Soul City programme on television in 2006 but watched less than 5 Soul City episodes hence had low exposure to Soul City educational programme through television. Few participants indicated that they did not watch Soul City educational programme in 2006. The results further indicate that about two-thirds of the women did not respond to the question about listening to Soul City programme on the radio. Almost 20% of women indicated that they listened to Soul City in 2006 and listened to five or more episodes. Low proportion of women listened to less than 5 episodes on the radio in 2006. Ten percent of women did not listen to Soul City educational programme through radio in 2006. The majority of the respondents indicated that they had never read the reproductive health booklet which had information about cervical cancer.

Table 3.1.7: Exposure to Soul City educational programme on Cervical Cancer through television, radio and reproductive Health booklet

Exposure to Soul City through	
Television	**n (%)**
High	556 (**54.9**)
Low	143 (14.1)
No	88 (8.7)
No response	226 (22.3)
Radio	
High	199 (19.6)
Low	48 (4.7)
No	101 (10.0)
No response	665 (65.7)
Reproductive health booklet	
Exposed	219 (22.5)
Unexposed	755 (**77.5**)
Can't remember	39 (3.9)
Total	**1013 (100)**

3.2: Logistic regression analysis

The associations between exposure to Soul City educational programme through television, radio and reproductive health booklet in 2006 and knowledge about cervical cancer, knowledge about Pap smear and practice towards Pap smear were investigated.

3.2.1: Association between Knowledge about Cervical Cancer and exposure to Soul City educational programme through Television

Table 3.2.1 indicates that knowledge about cervical cancer was significantly associated with high exposure to Soul City educational programme on cervical

cancer through television. Women who were highly exposed to Soul City educational programme on cervical cancer through television were 2 times more likely to have knowledge about cervical cancer than those who were not exposed to Soul City after adjusting for level of education, age and race. Knowledge about cervical cancer was not significantly associated with low exposure to Soul City educational programme through television.

Table 3.2.1: Association between Knowledge about Cervical Cancer and exposure to Soul City educational programme through television

Exposure to Soul City through	**Knowledge about Cancer of the Cervix**			
	Crude OR	**95% CI**	**Adjusted OR**	**95% CI**
Television				
No	1		1	
Low	1.35	0.76; 2.40	1.54	0.81; 2.92
High	1.18	0.72; 1.92	**1.97**	**1.12; 3.47**
Age group				
16 – 24			1	
25 – 34			2.85	1.82; 4.45
35 – 44			4.17	2.66; 6.56
45 – 54			3.62	2.08; 6.30
55 – 65			2.73	1.44; 5.16
Education				
None/Primary			1	
Secondary			1.96	1.21; 3.19
Tertiary			5.84	2.72; 12.5
Race				
African			1	
Coloured			2.65	1.78; 3.94
Asian			3.22	1.47; 7.07
White			7.86	2.40; 25.79

3.2.2: Association between Knowledge about Cervical Cancer and exposure to Soul City educational programme through radio

The findings in table 3.2.2 indicate that knowledge about cervical cancer was related to high exposure to Soul City educational programme through radio. Thus the odds of being knowledgeable about cervical cancer were higher among women who listened to five or more Soul City episodes in 2006 than those who did not listen to the programme in 2006 after controlling for level of education, age, and race. No association was observed between knowledge about cervical cancer and low exposure to Soul City programme on the radio.

Table 3.2.2: Association between Knowledge about Cervical Cancer and exposure to Soul City educational programme through Radio

Exposure to Soul City through	Knowledge about Cancer of the Cervix			
	Crude OR	95% CI	Adjusted OR	95% CI
Radio				
No	1		1	
Low	1.06	0.63; 1.79	1.72	0.91; 3.23
High	1.50	0.72; 3.15	**2.67**	**1.13; 6.30**
Age group				
16 – 24			1	
25 – 34			2.73	1.34; 5.58
35 – 44			4.09	2.03; 8.21
45 – 54			3.46	1.42; 8.40
55 – 65			3.35	1.22; 9.20
Education				
None/Primary			1	
Secondary			2.10	0.94; 4.67
Tertiary			5.93	1.73; 20.4
Race				
African			1	
Coloured			3.38	1.66; 6.89
Asian			10.93	2.44; 49.04
White			10.96	1.98; 60.58

3.2.3: Association between Knowledge about Cervical Cancer and exposure to Soul City educational programme through reproductive health booklet

The relationship between knowledge about cervical cancer and exposure to Soul City reproductive health booklet was also investigated. Table 3.2.3 below indicates that knowledge about cervical cancer was not significantly associated

with exposure to Soul City reproductive health booklet after controlling for level of education, age and race.

Table 3.2.3: Association between Knowledge about Cervical Cancer and exposure to Soul City educational programme through reproductive health booklet

Exposure to Soul City through	Knowledge about Cancer of the Cervix			
	Crude OR	95% CI	Adjusted OR	95% CI
Reproductive Health booklet				
Unexposed	1		1	
Exposed	1.19	0.87; 1.63	1.09	0.74; 1.61
Age group				
16 – 24			1	
25 – 34			3.29	2.18; 4.99
35 – 44			5.16	3.39; 7.87
45 – 54			4.04	2.46; 6.63
55 – 65			3.11	1.78; 5.44
Education				
None/Primary			1	
Secondary			1.93	1.28; 2.91
Tertiary			6.59	3.26; 13.33
Race				
African			1	
Coloured			1.99	1.44; 2.75
Asian			2.86	1.49; 5.47
White			5.93	2.70; 13.03

3.2.4: Association between Knowledge about Pap smear and exposure to Soul City educational programme through television

The relationship between knowledge about Pap smear and exposure to Soul City through media was assessed. Table 3.2.4 indicates that knowledge about Pap smear was associated with exposure to Soul City educational programme through television. That is, women who watched Soul City educational programme on television in 2006 irrespective of the number of episodes watched were more likely to have knowledge about Pap smear than those who did not watch the programme after adjusting for type of residential area, age, and level of education.

Table 3.2.4: Association between Knowledge about Pap smear and exposure to Soul City through television

Exposure to Soul City through	Knowledge about Pap Smear			
	Crude OR	95% CI	Adjusted OR	95% CI
Television				
No	1		1	
Low	1.94	1.10; 3.44	**1.98**	**1.10; 3.59**
High	1.80	1.10; 2.94	**2.08**	**1.24; 3.47**
Type of residential area				
Rural			1	
Town			1.78	1.12; 2.82
Metropolitan			1.82	1.20; 2.75
Age group				
16 – 24			1	
25 – 34			2.55	1.67; 3.89
35 – 44			3.58	2.33; 5.50
45 – 54			3.07	1.82; 5.17
55 – 65			3.17	1.73; 5.78
Education				
None/Primary				
Secondary			1	
Tertiary			2.19	1.35; 3.56
			2.13	1.07; 4.24

3.2.5: Association between Knowledge about Pap smear and exposure to Soul City educational programme through radio

Knowledge about Pap smear in relation to exposure to Soul City programme through radio was determined. It was observed that knowledge about Pap smear was not significantly associated with exposure to Soul City educational

programme through radio after controlling for type of residential area and employment status as shown in table 3.2.5 below.

Table 3.2.5: Association between Knowledge about Pap smear and exposure to Soul City through radio

Exposure to Soul City through	Knowledge about Pap Smear			
	Crude OR	95% CI	Adjusted OR	95% CI
Radio				
No	1		1	
Low	1.93	0.93; 4.01	1.35	0.58; 3.12
High	1.05	0.64; 1.74	0.99	0.55; 1.81
Type of residential area				
Rural			1	
Town			4.63	2.09; 10.27
Metropolitan			5.02	2.55; 9.86
Employment				
Student/scholar			1	
Unemployed			3.65	1.73; 7.71
Pensioner/Housewife			4.61	1.90; 11.20
Employed			4.33	2.21; 8.45

3.2.6: Association between Knowledge about Pap smear and exposure to Soul City educational programme through Television, Radio Reproductive Health booklet

The results in table 3.2.6 indicate that knowledge about Pap smear was associated with exposure to Soul City reproductive health booklet. Thus, women who read the reproductive health booklet were 1.5 times more likely to have

knowledge about Pap smear than those who never read the booklet after adjusting for age, level of education, race and employment status.

Table 3.2.6: Association between Knowledge about Pap smear and exposure to Soul City through reproductive Health booklet

Exposure to Soul City through	Knowledge about Pap Smear			
	Crude OR	**95% CI**	**Adjusted OR**	**95% CI**
Reproductive Health booklet				
Unexposed	1			
Exposed	**1.44**	**1.05; 1.99**	**1.54**	**1.08; 2.19**
Age group				
16 – 24			1	
25 – 34			1.53	0.93; 2.50
35 – 44			2.19	1.31; 3.65
45 – 54			2.25	1.24; 4.08
55 – 65			2.13	1.08; 4.20
Education				
None/Primary			1	
Secondary			2.46	1.62; 3.72
Tertiary			2.36	1.23; 4.56
Employment				
Student/scholar			1	
Unemployed			2.10	1.21; 3.63
Pensioner/Housewife			2.08	1.04; 4.17
Employed			2.60	1.47; 4.60
Race				
African			1	
Coloured			2.20	1.57; 3.09
Asian			1.96	1.05; 3.64
White			2.97	1.44; 6.11

3.2.7: The relationship between Practice towards Pap smear and exposure to Soul City through television.

The relationship between practice towards Pap smear and exposure to Soul City educational programme through television was also determined. The findings indicate that there was no evidence to suggest that participation in cervical cancer screening of women aged 30 years and above in 2006 was associated with exposure to Soul City educational programme through television after adjusting for type of residential area and level of education.

Table 3.2.7: The relationship between Practice towards Pap smear and exposure to Soul City through television.

Exposure to Soul City through	Cervical Cancer Screening (aged >=30 years and had Pap smear in the last 12 months)			
	Crude OR	95% CI	Adjusted OR	95% CI
Television				
No	1		1	
Low	2.47	0.94; 6.50	2.36	0.86; 6.48
High	2.33	0.95; 5.69	2.25	0.89; 5.67
Type of residential area				
Rural			1	
Town			3.73	1.35; 10.31
Metropolitan			5.02	1.91; 13.21
Education				
None/Primary			1	
Secondary			6.31	2.21; 17.96
Tertiary			13.72	4.12; 45.74

3.2.8: The relationship between Practice towards Pap smear and exposure to Soul City through radio and reproductive Health booklet.

The findings in table 3.2.8 indicate that exposure to Soul City educational programme through radio was not significantly related to cervical cancer screening after adjusting for level of education. Furthermore, there was no relationship observed between cervical cancer screening in 2006 and exposure to Soul City educational programme through reproductive health booklet after adjusting for type of residential area and level of education.

Table 3.2.8: The relationship between Practice towards Pap smear and exposure to Soul City through radio and reproductive Health booklet.

Exposure to Soul City through	Cervical Cancer Screening (aged >=30 years and had Pap smear in the last 12 months)			
	Crude OR	95% CI	Adjusted OR	95% CI
Radio				
No	1		1	
Low	0.45	0.11; 1.79	0.34	0.08; 1.41
High	1.27	0.59; 2.77	1.09	0.48; 2.49
Education				
None/Primary			1	
Secondary			17.65	2.32; 134.04
Tertiary			20.56	1.78; 237.26
Reproductive Health booklet				
Unexposed	1		1	
Exposed	1.47	0.93; 2.31	1.09	0.67; 1.75
Type of residential area				
Rural			1	
Town			3.45	1.38; 8.67
Metropolitan			4.75	1.97; 11.48
Education				
None/Primary			1	
Secondary			7.32	3.10; 17.25
Tertiary			16.67	6.03; 46.05

Chapter four: Discussion

The main aim of this study was to investigate if there is an association between exposure to Soul City educational programme on cervical cancer and knowledge and practices of South African women in relation to cervical cancer. Overall knowledge about cervical cancer and Pap smear were associated to exposure to Soul City educational programme on cervical cancer through different media more especially television. Participation of women aged 30 years and above in cervical cancer screening in 2006 was not associated with exposure to Soul City educational programme on cervical cancer through media. However, the observed results cannot be used to draw generalisations because women are supposed to only have one Pap smear in 10 years according to the national policy so the sample size of this study was not large enough to pick up a change in Pap smear behaviour.

4.1: The relationship between Socio – demographic characteristics and knowledge about cervical cancer and Pap smear.

This analytical cross sectional study has demonstrated adequate knowledge about cervical cancer and Pap smear among South African women aged 16 – 65 years. In contrast, some studies in developing countries have shown that women's knowledge about cervical cancer and screening is inadequate (6, 7). Adequate knowledge about cervical cancer Pap smear observed in this study

may be attributed to several factors. Access to information about cervical cancer and screening through Cancer Association of South African could have influenced the observed results since this was not measured in the primary survey. Exposure to Soul City educational programme through media more especially television could have also played a significant role in influencing women's knowledge about cervical cancer and Pap smear. Unfortunately exposure to Soul City educational programme through media cannot be solely attributed to the observed adequate knowledge about cervical cancer and Pap smear because the study designs employed for both primary survey and this study could not allow for the assessment of the impact of Soul City educational programme on the knowledge about cervical cancer and Pap smear. Temporal and causal relationships could not be assessed hence it was difficult to determine whether women had knowledge about cervical cancer and Pap smear before or after the Soul City educational programme.

Furthermore, knowledge about cervical cancer and Pap smear were found to be significantly related to socio – demographic characteristics of the participants. Inadequate knowledge about cervical cancer and Pap smear was observed among students, illiterate, African women and those who resided in rural areas. Lack of knowledge about cervical cancer and Pap smears observed in this study among these women more especially those residing in rural areas could be attributed to several factors illustrated in other studies (7, 14, 27). These factors include but not limited to poor dissemination of information on cervical cancer

and prevention strategies and unavailability of effective health education programmes.

4.2: Association between cervical cancer screening and socio – demographic characteristics of participants.

Generally participation in cervical cancer screening amongst women aged 16 -65 years was low. This finding may be brought about by the inclusion of women aged 16 – 29 years who were not eligible for cervical cancer screening since the national policy on cervical cancer screening in South Africa recommends screening at age not earlier than 30 years. Some studies in South Africa indicated that participation in cervical cancer screening programmes was low among women at high risk even though the services are provided free of charge in local clinics and hospitals (4, 7–9). In contrast to these previous study findings, this study has demonstrated higher participation in cervical cancer screening among women aged 30 years and above in the past but low uptake of pap smear in 2006. These finding should be interpreted with caution because factors which influenced participation in cervical cancer screening were not investigated.

It was also evident that participation in cervical cancer screening in 2006 among women aged 30 years and above was associated with women's socio – demographic characteristics. Low uptake of Pap smear in 2006 was observed amongst rural residents, older women, illiterate, Coloured and Black South

African women. Although this study did not investigate factors affecting participation in cervical screening among these group of women, lack of services in the rural areas, lack of knowledge about cervical cancer and screening services due to poor dissemination of information on cervical cancer and prevention strategies, inadequate health education programmes, beliefs and attitudes towards screening and the intimate nature of the test could be the barriers to screening (7, 14, 27). Evidence exists that women tend to seek medical health care only when they are sick or when home – based traditional interventions fail (27). There are also beliefs among women that cervical screening is associated with sexually transmitted infections. Women in South Africa have been found to associate positive cervical screening tests with HIV/AIDS (27). These beliefs and attitudes may play a role in women's decision making towards screening.

4.3: Exposure to Soul City educational programme in relation to cervical cancer screening and knowledge about cervical cancer and Pap smear

Evidence exist that knowledge about cervical cancer and Pap smear were associated with exposure to Soul City media more especially television. These significant relationships indicate that exposure to Soul City media more especially through television could have played an important role in sensitising women about cervical and the screening services. However, the impact of Soul

City educational programme through media on the knowledge about cervical cancer and Pap smear could not be assessed due to the methodological aspects of this study. It was impossible to investigate the temporal and causal relationships between knowledge about cervical cancer and Pap smear and exposure to Soul City educational programme. The observed association between knowledge about cervical cancer and Pap smear and exposure to Soul City educational programme through television could be due to the fact that television is the most common form of media accessible to majority of South African women. Therefore women who watched television more often were more likely to watch Soul City educational drama hence more likely to have knowledge about cervical cancer and prevention strategies.

The associations between knowledge about cervical cancer and Pap smear and exposure to Soul City educational programme through radio and reproductive health booklet were inconsistent. Knowledge about cervical cancer was associated with exposure to Soul City through radio but not through reproductive health booklet. Furthermore, there was no evidence that exposure to Soul City through radio significantly influenced knowledge about Pap smear, but reading reproductive health booklet was associated with knowledge about Pap smear. Preference of television over other media, different broadcasting times of Soul City educational drama on different radio stations, language barriers, ignorance and distribution of the reproductive health booklet may have contributed to the observed results.

The study findings also revealed no association between cervical cancer screening among women aged 30 years and above and exposure to Soul City educational programme through media. Thus Soul City educational programme through media did not significantly influence participation in cervical cancer screening among women at high risk. Barriers to participation in cervical cancer screening outlined in other studies (7, 14, 27) may have played a significant role in this relationship, but as mentioned above the infrequency of the Pap testing may also have prevented the association being picked up as the sample size was too small.

For comparisons, some studies conducted in some countries have shown that educational programme through media has great potential to improve knowledge about cervical cancer and uptake of screening services (10, 11,). In Honduras radio broadcast on the importance of cervical cancer screening and the risk factors increased the proportion of women who were familiar with the term cervical cancer, who could identify means of preventing cervical cancer and who understood the purpose of Pap smear. Older and unscreened women were successfully recruited for screening via radio. The proportion of women aged 30 and above who attended the organised screening activities increased (10). Another study in North Carolina found that women who received the education program designed to increase screening for cervical cancer exhibited a greater knowledge about cervical cancer prevention and were more likely to have

reported having had a Pap smear within the past year than women who did not receive the program (11). The effectiveness of Soul City educational programme through media on cervical cancer screening among women aged 30 years could not be assessed in this study due to the sampling strategies employed in the primary survey as well as this study. An interventional study design could have helped to assess the impact of Soul City educational programme through media on knowledge about cervical cancer and prevention strategies.

4.4: Limitations of the study.

In considerations of these study findings it is important to consider the limitations of this study. Even though the study findings indicate that exposure to Soul City educational programme on cervical cancer was associated with knowledge and practise about cervical cancer and Pap smear, the temporal and causal relationships between exposures and outcomes could not be assessed. This brings about failure to know which came first between exposure to Soul City educational programme and knowledge and practise about cervical cancer and Pap smear.

Knowledge and practise about cervical cancer and Pap smear could have also been influenced by access to information on cervical cancer through Cancer Association of South Africa or other sources since these were not measured in the primary survey.

The relationship between knowledge about risk factors associated with cervical cancer and exposure to Soul City educational programme was not assessed since there were no data regarding this in the primary data even though this could have helped in investigating the impact of Soul City educational programme. Although age is the most important predictor of cervical cancer and knowledge and practice is associated with older women it would have been useful to assess other predictors of cervical cancer in relation to knowledge and practise.

Information bias might have occurred and influenced some observed results since some of the participants in this study were interviewed in the previous surveys (2004 and 2005) therefore might have given false information due to their awareness of what is needed on this study.

Chapter five: Conclusions and Recommendations

5.1: Conclusions

The goal of this study was to investigate the relationship between exposure to Soul City educational programme on cervical cancer through media and knowledge and practices of South African women in relation to cervical cancer. Evidence from this study indicated significant association between knowledge about cervical cancer and Pap smear and exposure to Soul City educational programme through media. There was no relationship between cervical cancer screening and exposure to Soul City educational programme through media. Based on these results and taking into considerations the limitations of this study, it is concluded that Soul City educational programme through media can help improve knowledge about cervical cancer and Pap smear. Although knowledge about cervical cancer and Pap smear was high amongst these South African women, Soul City educational programme through media could not influence uptake of cervical cancer screening. This indicates that knowledge about cervical cancer and Pap smear does not automatically translate to participation in cervical cancer screening. Therefore more efforts should be devoted to educational interventions targeting factors hindering participation in cervical cancer screening.

5.2: Recommendations

The study has demonstrated that Soul City educational programme through media was associated with knowledge about cervical cancer and Pap smear hence an indication that knowledge about cervical cancer and Pap smear can be improved by educational programmes. It is therefore recommended that these educational programmes be continued.

No evidence existed that Soul City educational programme through media influenced uptake of cervical cancer screening among women aged 30 years and above and barriers to utilisation of cervical cancer prevention services were not investigated. It is therefore recommended that barriers to cervical screening be thoroughly investigated. Educational programmes targeting these barriers should also be developed and implemented.

The study has also shown that people in rural areas lacked knowledge about cervical cancer and pap smear and majority had not gone for cervical cancer screening hence it is recommended that the mechanisms should be put in place to ensure that Soul City educational programme on cervical cancer targeting rural areas of South Africa is disseminated to these people in a proper and efficient way. Outreach and awareness campaigns in which information on cervical cancer and screening will be disseminated to people in rural areas can be organised. The campaign can be set in places were many people are found like shopping malls, clinics, schools, bus/taxi ranks etc. Information can be

disseminated to these people in the form of drama performances and/or distribution of leaflets or pamphlets. Televisions broadcasting information about cervical cancer could be displayed in those areas and afterwards people could then be asked to voluntarily test for cervical cancer. This can only be feasible if all stakeholders are involved and financial resources are availed for this initiative.

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7. Appendices

7.1 **Cervical Cancer Questionnaire**

Demographics

1. Type of area/ Tipe area

Metropolitan formal/Metropolitaans formeel	1
Metropolitan informal/Metropolitaans informeel	2
Town/Dorp*	3
Rural village/Plattelandse nedersetting	4
Rural on farm/Plattelands op plaas	5
Rural scattered/Plattelands verspreid	6

2a. Sex of respondent/ Geslag van respondent

Male/Manlik	1
Female/Vroulik	2

2b. What is your age in completed years? /Hoe oud is jy, in voltooide jare?

……..YEARS | | |

3. What is your current employment status (which of the following best describes your present work situation)? / Wat is jou huidige werkstatus (watter van die volgende beskryf jou huidige werksituasie die beste)?

Student/scholar / Student/skolier	01
Unemployed, not looking for work / Werkloos, soek nie werk nie	02
Unemployed, looking for work / Werkloos, soek werk	03
Work in informal sector, not looking for permanent work / Werk in die informele sector, soek nie permanente werk nie	04
Work in informal sector, looking for permanent work / Werk in die informele sector, soek permanente werk	05
Pensioner (sick/disabled, etc.) / Pensionaris (siek, gestremd, ens.)	06
Housewife, not working at all, not looking for work / Huisvrou, werk glad nie, soek nie werk nie	07
Housewife, looking for work / Huisvrou, soek werk	08

Self-employed - full time / In eie diens - voltyds	09
Self-employed - part time / In eie diens - deeltyds	10
Employed part time (if none of the above) / In deeltydse diens (indien geen van bogemelde)	11
Employed full time / In voltydse diens	12
Other (specify) / Ander (spesifiseer) ……	13

4. What is your highest educational qualification? / Wat is jou hoogste opvoedkundige kwalifikasie?

NONE/Geen	01
SOME PRIMARY/Bietjie primêre opleiding	02
PRIMARY COMPLETED/Primêre opleiding voltooi	03
SOME SECONDARY/Bietjie sekondêre opleiding	04
SECONDARY COMPLETED/Sekondêre opleiding voltooi	05
TERTIARY/Tersiêre opleiding	06
OTHER (SPECIFY)/Ander (Spesifiseer) ……	07

5. What language do you speak at home most of the time? / Watter taal praat jy die meeste van die tyd tuis?

English/Engels	1	
Afrikaans	2	
Zulu/Zoeloe	3	
South Sotho/Suid Sotho	4	
Setswana	5	
Xhosa	6	
Pedi / North Sotho/Noord Sotho	7	
Venda	8	
Tsonga	9	
Seswati	10	
Ndebele	11	
Other/Ander: …… ……		

6. RACE **(*Interviewer do not ask*)** /RAS **(Onderhoudvoerder moet nie vra nie)**

African/Swart	1
Coloured/Kleurling	2
Asian/Indiër	3
White/Blanke	4

General media access and exposure/Algemene media toegang en blootstelling

7. How often do you read newspapers or magazines, or have them read to you? / Hoe dikwels lees jy koerante of tydskrifte, of word dit aan jou voorgelees?

Every day/ Elke dag	1
2-4 times per week/ 2-4 keer per week	2
Once a week/ Eenkeer 'n week	3
2-3 times a month/ 2-3 keer per maand	4
About once a month/ Omtrent een keer per maand	5
Hardly ever/ Feitlik nooit	6
Never/ Nooit	7

8. How often do you listen to the radio? / Hoe dikwels luister jy na die radio?

Every day/ Elke dag	1
2-4 times per week/ 2-4 keer per week	2
Once a week/ Eenkeer 'n week	3
2-3 times a month/ 2-3 keer per maand	4
About once a month/ Omtrent een keer per maand	5
Hardly ever/ Feitlik nooit	6
Never/ Nooit	7

9. Which radio station(s) have you listened to during the past 7 days? / Na watter radiostasie(s) het jy gedurende die afgelope 7 dae geluister?

……..			
……..			
……..			

10 How often do you watch television? / Hoe dikwels kyk jy televisie?

Every day/ Elke dag	1
2-4 times per week/ 2-4 keer per week	2
Once a week/ Eenkeer 'n week	3

2-3 times a month/ 2-3 keer per maand	4
About once a month/ Omtrent een keer per maand	5
Hardly ever/ Feitlik nooit	6
Never/ Nooit	7

11. Which TV station(s) have you watched during the past 7 days? / Na watter TV kanale het jy die afgelope 7 dae gekyk?

……..			
……..			
……..			

KNOWLEDGE AND AWARENESS/KENNIS EN BEWUSTHEID

12. Have you ever heard of a Pap smear/ Het jy al ooit gehoor van ‘n papsmeer?

Yes/ Ja	1
No/ Nee	2
Don’t know/Weet nie	*3*

If YES, go to Q13bi./Indien JA, gaan na Vraag 13bi.

13a. Do you know what a pap smear is? /Weet jy wat ‘n papsmeer is?

Yes/ Ja	1
No/ Nee	2
Don’t know/Weet nie	*3*

If YES, go to Q 13bi. / If NO, go to Q 14a

13bi. (If YES to q12) What is a pap smear? /(Indien JA op Vr12) Wat is ‘n papsmeer?

……..			
……..			
……..			

13bii Who should have a pap smear?/Wie behoort ‘n papsmeer te ondergaan?

……..			
……..			

…….

14a. Have you heard of cancer of the cervix?/Het jy gehoot van kanker van die serviks?

Yes/ Ja	1
No/ Nee	2
Don't know/Weet nie	*3*

If YES, go to Q14ci. If NO or DON'T KNOW go to Q14b:

14b. Do you know what cancer of the cervix is? /Weet jy wat kanker van die serviks is?

Yes/ Ja	1
No/ Nee	2
Don't know/Weet nie	*3*

If YES, go to Q 14ci./If NO or DON'T KNOW, go to Q 16.

14ci. (If YES on q14a) Who is at risk of getting cancer of the cervix?/(Indien JA op Vr14a) Wie loop die gevaar van kanker van die serviks?

……..			
……..			
……..			

PERCEPTION OF RISK/RISIKO PERSEPSIE

15a. Do you think you are at risk of getting cervical cancer?/Dink jy jy loop die risiko om servikale kanker te kry?

Yes/ Ja	1
No/ Nee	2
Uncertain/Don't Know/Onseker/Weet nie	*3*

15b. ***Ask only for females*** Have you ever had a pap smear/Het jy al ooit 'n papsmeer laat doen?

Yes / Ja	1
No/ Nee	2

Uncertain/Don't Know/Onseker/Weet nie	*3*

15c. ***Ask only for females*** Have you had a pap smear in the last 12 months/Het jy 'n papsmeer in die afgelope 12 maande laat doen? *(Do not ask males)*

Yes / Ja	1
No/ Nee	2
Uncertain/Don't Know/Onseker/Weet nie	*3*

16. Have you seen the following logos before? /Het jy al die volgende logo's gesien?

		Yes	No
B	Soul City	1	2
C	LoveLife	1	2
D	Soul Buddyz	1	2
E	Khomanani	1	2
F	National Association of School Governing Bodies (NASGB)/Nasionale Vereniging van Skoolbeheerrade (NVSB)	1	2
G	Buddyz on the Move	1	2
H	BP	1	2

17a. Have you heard of any of the following programmes…/Het jy van enige van die volgende programme gehoor…

17b. **(*If YES to 17a*)** Have you ever watched [….] on TV?/(*Indien JA op 17a)* Het jy ooit […] op TV gekyk?

17c. **(*If YES to 17a*)** Have you ever listened to […..] on radio?/(*Indien JA op 17a)* Het jy ooit na […] op die radio geluister?

17d. **(*If YES to 17b or 17c*)** Are any of these your favourite programmes/ (*Indien Ja op 17b of 17c)* Is enige van die jou gunsteling programme? (*2 mentions, write 1 for first mention and 2 for second mention/twee antwoorde, skryf 1 vir eerste en 2 vir tweede antwoord*)

	17a		17b	17c	17d
	Yes / Ja	**No/ Nee**	**Watched on TV/Op TV gesien**	**Listened on radio/Op radio geluister**	Favourite - first and second mention **(*If YES to 17b or 17c*) Gunsteling – eerste en tweede atwoord** (*Indien Ja op 17b of 17c)*
Generations	1	2	1		
Soul City	1	2	1	2	
Isidingo	1	2	1		
Gazlam	1	2	1		
Soul Buddyz	1	2	1	2	
Cha Cha	1	2	1		
Backstage	1	2	1		

18. ***If 'watched Soul City' to 17b:*** Did you watch Soul City on television this year?/ *Indien 'Soul City gekyk' op 17b:* Het jy hierdie jaar na Soul City op televisie gekyk?

Yes/ Ja	1
No/ Nee	2
Can't remember/Kan nie onthou nie	*3*

19a. ***If "yes" to watching to Soul City on TV this year in 18.***

Thinking about Soul City on TV this year, approximately how many episodes did you watch? There were 13 episodes altogether. *(single mention)*Indien "ja" op die kyk na Soul City op TV hierdie jaar in 18.
Dink aan Soul City op TV hierdie jaar, omtrent hoeveel episodes het jy gekyk? Daar was in totaal 13 episodes (*een antwoord*)

Almost all (12-13 episodes)/Bykans almal (12-13	1
Most (9-11 episodes)/Meeste (9-11 episodes)	2
Some (5-8 episodes)/Party (5-8 episodes)	3
Only a few (3-4 episodes)/Net ‘n paar (3-4 episodes)	4
Just one or two episodes (1-2)Net een of twee episodes	5
Uncertain/Can’t remember /Onseker/Kan nie onthou nie	6

19bi. ***If ‘listened to Soul City on radio’ on 17c:*** Did you listen to Soul City on radio this year?/ *Indien ‘geluister na Soul City op op radio’op 17c:* Het jy hierdie jaar na Soul City op radio geluister?

Yes/ Ja	1
No/ Nee	2
Can't remember/Kan nie onthou nie	*3*

19bii. *If “yes” to listening to Soul City on radio this year in 19bi.* Thinking about Soul City on radio this year, how regularly did you listen to the programme? *(single mention)/Indien “JA” op geluister na Soul City op radio hierdie jaar op 19bi:* Dink aan Soul City op radio hierdie jaar, hoe gereeld het jy na die program geluister?

Almost always / every episode/Amper altyd/elke episode	1
Often / most days / most episodes/ Dikwels/meeste dae/meeste episodes	2
Sometimes / some episodes /Soms/ sommige episodes	3
Occasionally / only a few episodes /Per geleentheid/slegs ‘n paar	4
Almost never / just one or two episodes/Bykans nooit/net een of twee	5
Uncertain/Can’t remember /Onseker/Kan nie onthou nie	6

20 Have you ever <u>read</u> this particular booklet or parts thereof before? / Het jy ooit vantevore hierdie spesifieke boekie of dele daarvan <u>gelees</u>?

		Yes/ Ja	**No/ Nee**	***DK/can’t remember***
*C	HIV and AIDS and Treatment	1	2	*3*
*D	Prevention and treatment of HIV and AIDS (A5)	1	2	*3*
*G	ART for Life*	1	2	*3*

*H	Reproductive Health	1	2	*3*
*I	Soul Buddyz Parenting	1	2	*3*

21 How did you hear about Soul City on TV this year? / Waar het jy gehoor van Soul City op TV hierdie jaar?

Radio advertisement	1
Television advertisement	2
Friend	3
TV guide	4
Other (Specify)	5

Thank you for your assistance, patience and cooperation

7.2 Soul City Approval letter

9/4/2008

Dr Sue Goldstein
Soul City: Institute for Health and Development Communication
1st Floor
Dunkeld West Centre
281 Jan Smuts Ave Cnr Bompas
Dunkeld West
Tel: 0113410360
Fax: 0113410370

Dear Sir/ Madam

This letter is to grant permission to Mr. Lemphi Moremi to use the Soul City evaluation data base from 2006 to perform a secondary analysis in order to complete his Masters degree. Soul City will also supply any necessary funding needed to complete the work.

Yours Sincerely



Dr Sue Goldstein
Senior Executive South Africa Programmes
Soul City: Institute for Health and Development Communication