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Khoza, Samson S.. (2024). Factors Associated with Uptake of HIV Testing Services among Men in South Africa [Master`s dissertation, University of the Witwatersrand, Johannesburg]. WIReDSpace. https://hdl.handle.net/10539/46751

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FACTORS ASSOCIATED WITH UPTAKE OF HIV TESTING SERVICES AMONG MEN IN SOUTH AFRICA

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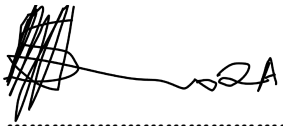
A research report submitted in partial fulfilment of the requirements for the degree of Master of Public Health (Rural Health) to the Faculty of Health Sciences, School of Public Health, University of the Witwatersrand, Johannesburg,2024

Declaration

I, Samson Solomon Khoza, declare that this research report is my own work. It is being submitted in partial fulfilment of the requirements for the degree of Master of Public Health, in the field of Rural Health at the University of the Witwatersrand, Johannesburg. It has not been submitted by anyone before for any degree or examination to this or any other university.



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ABSTRACT

Background: In 2016, the overall Human immunodeficiency virus (HIV) prevalence rate was estimated at 12,7% and the total number of people living with HIV was estimated at approximately 7,03 million in the South African population in 2016. The World Health Organization recommends that people know their HIV status by getting tested and those who are found to be HIV positive get initiated on treatment early. However, HIV testing rates are below the 90% target and reportedly lower among males in South Africa.

Aim: The study aimed to investigate factors associated with HIV Counselling and Testing (HCT) among men aged 18-34 years in South Africa.

Methods: The study is a cross-sectional study using secondary data from Testa Boy study conducted by the Centre for Communication Impact in collaboration with Genesis Analytics between April and May 2017. The primary study employed a three multistage sampling approach, where at the first, the country was stratified into nine provinces, with sample size proportional to the population size of each province. After that an initial sub-place (district) was selected randomly from each province. Households were then randomly selected from the enumeration area (EA) or Primary Sampling Unit (PSU) in each sub-place (township/village). Finally, following the household selection, one eligible respondent from each household was selected randomly to participate in the study using a KISH grid that was used to draw a sample of PSUs. Data was collected using a self-administered questionnaire. The primary study constituted of a total of 3,000 male and female participants across all provinces in South Africa. We restricted our study to 1, 388 male participants. The outcome variable of this study was "uptake of HIV Counselling and Testing in the past 12 months". The data was analysed using Stata SE version 14. Both univariable and multivariable analyses were employed.

Results: About 52% of total of 1,388 men had HCT uptake in the past 12 months. Rates of HCT uptake at the provincial level ranged from 41% and 60% with Western Cape recording the high levels and North-west recording the lowest levels. In the multivariable analyses, men residing in provinces outside of the Western Cape demonstrated significantly lower odds of HCT uptake. The odds of HCT uptake was significantly lower among men in the Eastern Cape (AOR0.33, 95%CI 0.33-0.94), Limpopo (AOR0.54, 95%CI 0.30-0.99) and North-west (AOR 0.43, 95%CI 0.22-0.83) compared to the men in Western Cape. Employed men were 1.34 times significantly more likely to receive HCT compared to unemployed men (AOR1.34, 95% CI 1.01-1.77, p=0.039). Middle income (AOR 1.51, 95% CI 1.01-2.27) and low-income men (OR 1.60, 95% CI 1.16-2.21) had significantly increased odds of HCT uptake than rich-income men. With regards to sexual history, men who did not report condom use at first (AOR 0.71, 95% CI 0.53-0.93) and at last sex (AOR 0.68, 95% CI 0.52-0.90) exhibited significantly reduced odds of HCT uptake compared to those who reported condom use. Knowing someone who is HIV positive (AOR 1.40, 95% CI 1.09-1.82) was significantly associated with increased HCT uptake among men.

Conclusion: The study provides important insights into the patterns and determinants of HCT uptake among men in South Africa. Geographic residence emerged as a key factor, with men from most provinces outside Western Cape exhibiting substantially lower odds of HCT uptake compared to those in Western Cape. Risky sexual behaviours such as not using condoms during sexual intercourse were correlated with low HCT uptake. Targeted interventions, such as expanding community-based HCT initiatives, strengthening health system infrastructure in underserved areas and tailor-made combinations of prevention interventions such as HCT and condom prevention strategies could contribute to increased HCT uptake and better control of the HIV epidemic in the country.

Acknowledgement

I am heartily thankful to my supervisors, Dr Zodwa Ndlovu, Prof Nicole & Ms Chenai for their encouragement, guidance and support from the initial stage to the final level and enabled me to develop an understanding of the study and ethical considerations.

I would like to show my deepest gratitude to my former employer Wits University (Agincourt Health and Population Unit) for the funding that made possible for me to enrol into the Master of Public Health program. Lastly, I offer my regards and blessings to all of those who supported me in any respect during the completion of the project.

Dedication

I dedicate this work, firstly to the Centre for Communication Impact for granting permission to use the research data and the overwhelming support from my statistician. I would like to further acknowledge the Faculty of Health Sciences and School of Public Health for the support and guidance. I also owe my deepest gratitude to my wife Evah, my children Lebo, Ripfumelo, Pheteni and Risima and the entire family for moral support offered in this journey.

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Abbreviations

AIDS	**Acquired Immune Deficiency Syndrome**
ART	**Antiretroviral Treatment**
ARV	**Antiretroviral drugs**
CCI	**Centre for Communication Impact**
NDoH	**National Department of Health**
EA	**Enumeration Area**
FSW	**Female Sex Workers**
HCT	**HIV Counselling and Testing**
HTS	**HIV Testing and Services**
HCW	**Health Care Workers**
HIV	**Human Immunodeficiency Virus**
HREC	**Human Research Ethics Committee**
FGI	**Freshly Ground Insights**
IDU	**Injection drug users**
MSM	**Men who have sex with Men**
PICT	**Provider Initiated Counselling & Testing**
PLHIV	**People Living with HIV**
PSU	**Primary Sampling Unit**
WHO	**World Health Organization**

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Chapter ONE

1.1 Introduction

HIV Counseling and Testing (HCT) is defined as a comprehensive service designed to help individuals make informed decisions about their HIV status and the potential consequences of those decisions (2). HCT offers direct benefits to the clients which includes affording clients the opportunity receive education on HIV and sexual risk behaviours, knowledge of HIV status, importance of early Antiretroviral treatment (ART) initiation and adherence (3). HCT is now widely accepted as the cornerstone of HIV prevention programmes in many countries including South Africa because of its multiple benefits. HCT assists in the epidemiological control of HIV by linking HIV positive people to early ART initiation which ensures viral suppression and prevents further transmission of HIV (3)(4). In addition, those who test negative for HIV can be initiated on PrEP which reduces the chances of HIV infection (4).

About 33 million people are living with HIV globally, of which one-fifth of this population is in South Africa (5). In 2016, the HIV prevalence in the general population in South Africa was approximately 12,7% and the total number of people living with HIV was estimated at 7,03 million. South Africa carries the highest burden of the number of people living with HIV as compared to the whole world hence more public health programs are channelled towards the prevention and control of HIV through various strategies including HCT and ART (4).

The World Health Organization (WHO) has come up with various strategies for controlling the HIV epidemic including the 90-90-90 strategy. The 90–90–90 strategy has set targets with the goals of ensuring that 90% of people living with HIV (PLHIV) know their HIV status, 90% of PLHIV be initiated on ART, and 90% of PLHIV on ART should be virally suppressed by

2020(4). The targets have been increased to 95-95-95 by 2025. Reports from the national HIV survey conducted in 2008 and 2017 show some improvements in the HIV testing rates. The surveys revealed that 75.2% of the population had been tested for HIV at least once in 2017 compared to 49.9% in 2008. However, it was noted that men (70.9%) had consistently lower HIV testing rates than women. In 2017, 70.9% of males tested for HIV in comparison to 79.3% of women (6). A similar pattern was observed in 2008, with only 43% of males and 56.7% of females testing for HIV (7).

Evidence from literature has shown that various factors including socio-demographic, behavioural, knowledge and community factors are associated with uptake of HCT. Low levels of education, unemployment, fear, perceived personal risk, long waiting times, negative staff attitudes, lack of privacy and confidentiality, social stigma and discrimination have been linked to low uptake of HCT (8). Although there is evidence of factors that influence uptake of HCT among men, these studies have been conducted in other settings, and there is paucity of evidence in the South African context. Therefore, this study aims to describe factors associated with the uptake of HCT among men to inform strategies and policies that will scale up the uptake of HCT among men in South Africa.

1.2 Problem statement

The HIV epidemic is of health concern in South Africa. According to the Statistics South Africa report in 2016, the estimated overall adult HIV prevalence rate was approximately 12,7% of the total South African population and the total number of PLWH was estimated at approximately 7, 03 million in 2016 (4). HCT is an important component in the control of the HIV epidemic. According to the WHO, it is very important for HIV positive people get tested for HIV so that they are initiated on treatment early (9). People who are initiated early on

treatment are more likely to be virally suppressed persons and have lower chances of infecting other people. However, there are low testing rates among men particularly in South Africa. However, HIV testing remains lower among men than women. Reports from the national HIV survey in 2017, showed that HIV testing was lower among men (70.9%) than women (79.3%) (6).

1.4 Justification

HCT is one the main strategies in the prevention and control of HIV because it facilitates an early diagnosis and early ART initiation for HIV positive persons which improves their quality of life and reduces the risk of further transmission of HIV (10). For instance, according to a previous HIV study conducted in South Africa in 2016, almost 90% of women living with HIV had been tested and knew their status and 65% of women living with HIV were accessing ART. However, South African men have consistently been found to test for HIV at lower rates than women. The study showed that 82% of men had been had been tested and knew their status, and 54% of the men were receiving ART (11). There is paucity of empirical evidence of factors that influence uptake of HCT among men in South Africa. A comprehensive investigation is needed to have a more nuanced understanding of the factors associated with the HCT uptake among men at a large scale to inform strategies and policies that will scale up HCT uptake among men in South Africa, and ultimately, prevent further HIV infections and promote linkage to HIV care.

1.5 Research question

Question: What are the factors associated with HCT uptake among men aged 18-34 years in South Africa?

1.6 Aim and objectives of the study

Aim

To investigate factors associated with HCT uptake among men aged 18-34 years in South Africa

Objectives

1. To describe the uptake of HCT among men aged 18-34 years in South Africa in 2017.
2. To describe the socio-demographic, sexual behaviours, knowledge of HIV and community characteristics of men aged 18-34 years who volunteered to take HCT in South Africa in 2017.
3. To determine the socio-demographic, sexual behaviours, knowledge of HIV and community factors associated with HCT among men aged 18-34 years in South Africa in 2017.

CHAPTER TWO

2.0 LITERATURE REVIEW

This chapter provides an overview of HCT and on the literature of factors associated with HCT among men in South Africa and other settings.

2.1 HIV Counselling and Testing

HCT is regarded as a key priority area in strategies to prevent the spread of HIV and to provide care, support and treatment to PLWH (5). South Africa has a Provider Initiated Counselling & Testing (PICT) policy which promotes the routine availability of free HIV testing across all healthcare facilities since 2010 (2). An analysis of four national surveys conducted among South African households over 12-years suggests HIV testing has increased by 45%. The results show the proportion of people in South Africa reporting ever taking an HIV test rose from 50% in 2008 and 75% in 2017 (13). However, there remains a noticeable gender gap as far as the rates of HIV testing uptake in sub-Saharan African countries including South Africa are concerned, with men remaining difficult to reach for HIV testing compared to their female counterparts (14).

Expanding the coverage of HCT services to populations with low testing rates may accelerate efforts towards the control and elimination of the HIV epidemic. WHO recommends annual retesting to individuals from key populations and HIV-negative people in serodiscordant couples. Frequent voluntary retesting should also be made available based on client risk behaviours (15).

2.2 HIV Counselling and Testing uptake among men

Studies have shown that men are considered a key population disproportionately affected by HIV and most men who are HIV positive have not been initiated on treatment. According to

previous reports in South Africa in 2016, almost 90% of women living with HIV had been tested and knew their status, compared to only 82% of men, while 65% of women living with HIV were accessing antiretroviral therapy, compared to only 54% of men (11). Most men are not initiated because they do not know their HIV status and this results in them presenting late when the disease has advanced (17). The National Department of Health (NdoH) in South Africa also supported reported that more women reported testing for HIV than their male counterparts (9). Additionally, women frequent facility based health service centres more than men and this includes community-based services such as home-based and mobile HCT services (18). Furthermore, most women get tested for HIV when pregnant (18).

2.3 Factors associated with HCT uptake among men

A scoping review of studies done in sub-Saharan Africa showed that several factors are barriers to the uptake of HCT among men (13). These include knowledge of HIV, sociodemographic factors such as culture, marital status, education, societal stigma to those who are found to be HIV-positive, the individual fear of being HIV positive, clinic setting, masculinity confidentiality and risky sexual behaviours (13).

2.3.1 Socio-demographic factors and HCT uptake

Higher educational levels have been associated with increased uptake of HCT among men (19). This could be that more educated men might have higher levels of exposure to HIV/AIDS–related information and knowledge which enables them to make better choices of deciding to go for HIV testing than less educated men (20). Thus, highlighting the importance of providing health education to men with lower level of education (21). Although high levels of education have proven to be a major facilitator of high HCT uptake, other researchers have not found conclusive evidence (21) . Evidence from literature has also documented positive association

between uptake of HCT and older age, better HIV knowledge, higher income and being married (22).

2.3.2 HIV knowledge and perception among men and HCT uptake

Awareness and willingness to attend HCT is an indicator of the individual being able to make an informed decision with regards to the importance of being aware of their HIV status. Knowledge and fear have shown to be the most common barriers to health seeking behaviour to males in South Africa and other African countries (17). According to the research done by Brummer on Labour migration and HIV/AIDS in Southern Africa, lack of information or insufficient knowledge drives people's fear to get tested for HIV, stigma and/or misconception on how HIV is transmitted from one person to another (17).

2.3.3 Societal stigma and HCT uptake

Previous research has reported stigma associated with HIV testing among men in the families and communities (23). If men tested HIV seropositive, their families and communities would easily tell that they were HIV positive, which would unintentionally expose them to rejection (24). Evidence also suggests that men do not trust that their HIV positive status results will be kept confidential at health facilities (25). Other studies indicate that men expectations of professionalism was often undermined by negative attitudes of health care providers, poor quality of care and breaches of trust where health care providers gossip in the community (24). It was also shown that men also felt uncomfortable with female health care providers who are in the majority, and the largely high presence of female patients, and unsuitable inconvenient operating hours of health facilities during working hours (27). Men also refrained from HIV testing in local clinics citing concerns that counselling was done by counsellors in the local communities (26). Previous studies also show that men generally felt that a public clinic settings made them feel uncomfortable to test for HIV especially where there are local people known to them (24)(27).

2.3.4 Community perception and HCT uptake

There is existing evidence from sub-Saharan Africa that suggests that norms of masculinity are a barrier to men's HIV testing (28). A study of HIV testing in Lesotho showed that being tested for HIV was perceived to conflict with men's masculine self-presentation because it was perceived as feminised. Cross-cultural evidence suggests that, in many societies, masculinity is associated with a sense of invulnerability, and with men being socialized to be self-reliant, not to show their emotions, and not to seek assistance in times of need (29). This could possibly influence men's low uptake of HIV testing. The research also suggested that the delay in seeking help or the use health care facilities may be associated with beliefs about male masculinity (18). For instance in some settings in Kwa-Zulu Natal, men are not perceived to be man enough when they are seen to be visiting health facilities (31). This could be a potential major barrier in their uptake of HIV testing.

2.3.5 HCT uptake and sexual behaviour

Risky sexual behaviour appears to be on the increase in South Africa with nation-wide surveys showing high levels of inconsistent condom use and evidence of multiple and concurrent partners. Risky behaviors have been found to be associated with low uptake of HCT (26). Poor knowledge on HIV transmission is one of the driving factors of risky sexual behaviors such as multiple partners and inconsistent use (26). A study in Capetown found that men who tested negative for HIV had more knowledge of HIV and less sexual partners (31). On the other hand, men who were acutely aware of how their sexual behaviour may contribute to their HIV risk feared that they were already infected, and consequently avoid getting tested for HIV (32).

CHAPTER THREE

3.0 RESEARCH METHODOLOGY

This chapter will describe the study design, setting, data collection and management, and statistical analysis.

3.0 Primary study

The overall aim of the primary study was to evaluate the impact of the national Testa Boy campaign among men and women aged 18-34 in South Africa. The primary study was a nationally representative survey conducted in all nine provinces of South Africa, with fieldwork carried out by Freshly Ground Insights (FGI). FGI, a media and advertising healthcare organization, conducted fieldwork for the primary study across all nine provinces between April and May 2017. The organization is based in Hurlingham in Sandton.

3.1 Study Design

The study is a cross--sectional study using secondary data from the Testa boy study conducted by the Centre for Communication Impact (CCI) in collaboration with Genesis Analytics. The study is cross-sectional because the data was collected at single point in time between April and May 2017.

3.2 Study Site

The study was conducted in all nine provinces in South Africa including Mpumalanga, Limpopo, Gauteng, North-West, Western Cape, Eastern Cape, Kwa-Zulu Natal, Free State and Northern Cape.

3.3 Study Population

The study population included males aged 18-34 years from the Testa Boy study conducted in South Africa in 2017 (33).

3.3.1 Inclusion and exclusion criteria

The primary study included individuals across all provinces and language groups who were household members i.e. they had to have spent four or more nights a week at the household for at least 12 months before the survey. The secondary data analysis included males aged 18-34 years and excluded males who never had a sexual relationship.

3.4 Sampling

The primary study applied a multistage cluster sampling approach that was used to draw a sample of primary sampling units (PSUs) using three sampling stages. At the first stage, the country was stratified into nine provinces, with sample size proportional to the population size of each province. An initial sub-place (district) was selected randomly from each province, where after additional sub-places (townships/villages) were selected from each province by systematically skipping through a list of sub-places according to a sample interval to reach the desired sample size for each province (33). Secondly, households were drawn from a randomly selected EA in each sub-place (township/village), where an initial household was drawn randomly from the EA and thereafter the remaining households were drawn systematically into the sample through a fixed skip interval so that all households had an equal probability of being selected (33). Thirdly, following the household selection, one eligible respondent from each household was selected randomly to be interviewed using a KISH grid (33). A KISH grid is a way of randomly choosing household survey respondents. This study is a secondary data analysis, and all eligible participants were included. The final sample size of the study was 1, 388 male participants.

3.5 Data Collection

In the primary study, Genesis Analytics, in collaboration with CCI, developed a structured questionnaire to collect data, attached in the appendix (33). The questions in the tool were largely adapted from the National HIV Communication Surveys (2006, 2009, and 2012), all of which were approved by the University of the Witwatersrand's Human Research Ethics Committee. FGI undertook the fieldwork for all nine provinces between April and May 2017. FGI together with Genesis Analytics, trained the fieldworkers before fieldwork started (33). Training involved exposure to Testa Boy campaign material, sensitisation exercises, lectures regarding procedures, quality control and ethical professionalism, a series of tests and role play exercises, and review of the questionnaire on the tablet. Data were collected by FGI through questionnaires administered using personal digital assistants (PDAs). The collected data were sent to FGI's head office via GPRS/ 3G for validation daily. Data quality specialists ensured that all data were valid and quality assured. A total of 299 interview records were inconsistent or invalid and were discarded from the sample.

3.6 Data Management

Quantitative data was received in an MS Excel format and imported to Stata version 14 using StatTransfer. All data management was done in STATA version 14. All relevant variables were extracted from the finalised database provided by the primary study gatekeeper. The research objectives have been used to guide the data cleaning process. Only variables relevant to the research objectives have been used to analyse the data.

3.7 Measurement of Variables

The outcome variable of this study was "HCT uptake in the past 12 months" which was coded as "1" if the participant responded that they ever tested for HIV and "0" for no if otherwise).

The socio-demographics independent variables were age (18-22; 23-27 & 28-34), race (black, white, colored and Indians), education (some primary, some high school and tertiary), marital status (married, staying with a partner and single), knowing someone who is HIV positive (no, yes) and employment status (unemployed and employed, exposure to media and socio-economic status. To obtain the socio-economic status we generated the asset index into propensity scores using multiple household assets and housing characteristics including ownership of a kitchen, radio, television, computer, flash toilet, microwave, water supply and having a domestic helper. The asset index scores were then categorized into tertiles of asset wealth ("poor, middle, rich"). The sexual behavior independent variables were; ever had sex in the past 12 months (no, yes) and condom use at first sex (no, yes) and condom use at last sex (no, yes). The Knowledge of HIV variable included the question on whether HIV is treatable (no, yes).

There were also social discrimination questions regarding the social barriers related to HIV testing among men. The questions were phrased as "Men in my community who test HIV positive feel free to tell their friends and family that they have HIV" ; "Men in my community are scared to test for HIV because they think that if they test HIV positive, they can never have a relationship again" and "Men in my community are scared to test for HIV because if they test positive their family and friends will reject them".

There were also questions of community perception on HIV testing. The questions were phrased as; "Men in my community do not test for HIV because they are scared it would change their lifestyle (i.e. use condoms, reduce number of partners, stop drinking alcohol and smoking)"; "Men in my community do not test for HIV because they are scared that they are already HIV positive" and "Men in my community who test for HIV are regarded as strong

and responsible men". The responses of questions on social discrimination and community HIV testing were given 4-point Likert scale; "Strongly disagree" "Somewhat disagree" "Somewhat agree" and "Strongly agree". We recorded the responses to the questions in binary form. The responses "Strongly disagree" and "Somewhat disagree" were recorded as "disagree" and responses "Strongly agree" and "Somewhat agree" were recorded "Agree".

3.8 Statistical Analysis

The data was analysed using Stata version 14. The analysis was conducted per objective. On the first objective, we used bar graphs to describe the uptake of HCT among men aged 18-34 years in the whole of South Africa and by province.

In the second objective, we used the chi square to describe the sociodemographic, knowledge of HIV and sexual risk behaviours characteristics of men aged 18-34 years who volunteered to take HCT in South Africa. In the third objective, we used a multivariate logistic regression to assess factors associated with HCT among men 18-34 in South Africa. The research outcome of interest is ever tested for HIV in the past 12 months. Both univariate and multivariable analysis were employed. Multivariable analysis was used to analyse the predictors of uptake HCT in the adjusted model.

3.9 Ethical Considerations

3.9.1 Primary Study

The primary study was approved by the University of the Witwatersrand's Human Research Committee (non-medical) (Protocol number: H17/03/05). A structured questionnaire was developed and used to collected by CCI and FGI. Field workers were trained on ethics and informed consent procedures, confidentiality, risks and benefits to participating of respondents

in the study. This was to ensure that respondents were not coerced but voluntary informed consent were obtained from all respondents. Each individual was given an information sheet and informed consent form to keep. The information included on the information sheet were contact details of Genesis Analytics and CCI personnel and a 24-hour telephone number of the AIDS Helpline to report any discomfort which could be experienced during the study.

Interviews were held in a private space where confidentiality was secured. In addition, the names of respondents were not recorded on questionnaires or selection forms and the database contains no identifiers. There were no direct benefits associated with this study or participation but indirect benefits which includes improvements in health messaging campaigns available across South Africa because of the responses from participants. Potential discomfort may have been experienced by participants because of the sensitive nature of the subject matter. However, fieldworkers sought to minimise discomfort by adhering to the ethical terms of the research and respecting respondents.

3.9.2 Secondary study

Permission to use the data was sought from the gate keeper, see attached letter in the Appendix. Ethic clearance was also granted by the Wits Human Research Committee (No: M230661 MED23-06-147). The secondary data analysis did not involve any additional data collection from participants beyond the primary study. Access to the data is restricted and only accessible to the researcher and the study supervisors.

CHAPTER FOUR

4.0 Results

A total of 1,388 men took part in the study across all provinces of South Africa, with 721 confirmed to have received HCT in the past twelve months.

4.1 Sociodemographic Characteristics of the participants

A total of 1388 males participated in this study with the majority of the age group between 18-22 years (36.52%) and the age group between 23-27 had the least proportion of the total participants (28.67%) (Figure 1).

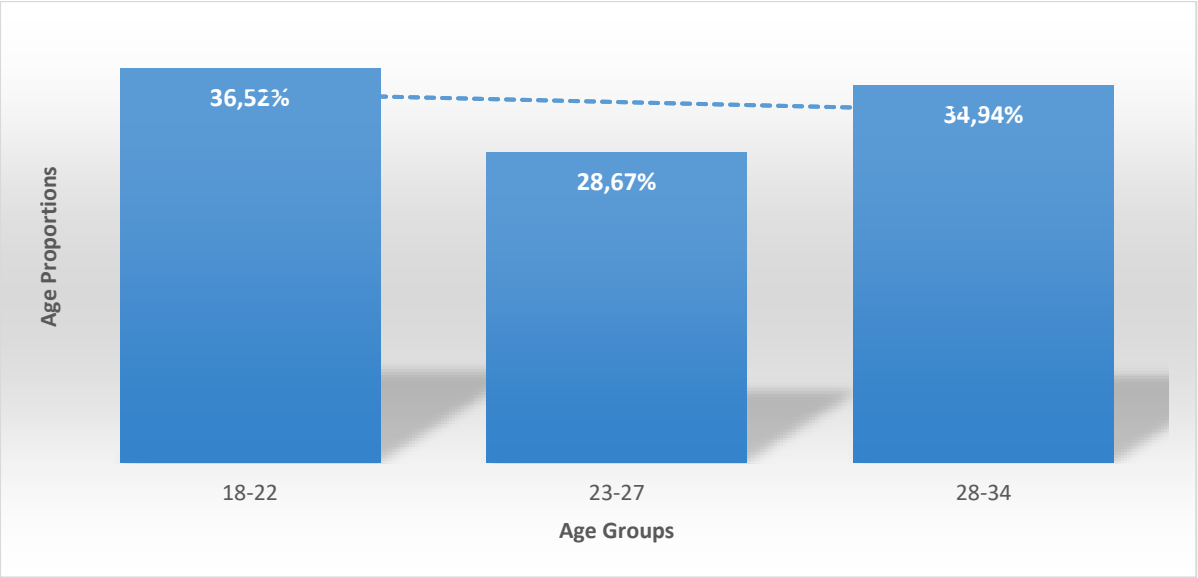

Figure 1: Age distribution of the participants

Just over three-quarters (77.44%) (n=1075) of the participants were Black and the Indians/Asians had the least representation in the study (3.38%) (n=47) (Figure 2).

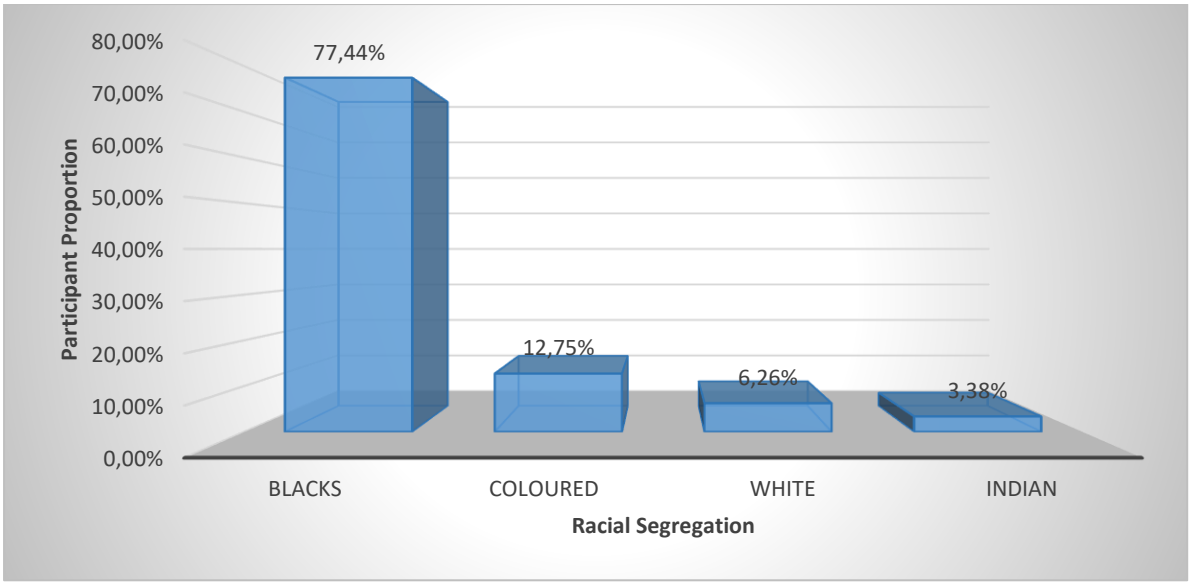

Figure 2: Racial segregation of the participants

A total of 1,366 participants responded to the marital status question and 84.77% were single followed and married participants had the lowest proportion of the participants (6.52%) (Figure 3).

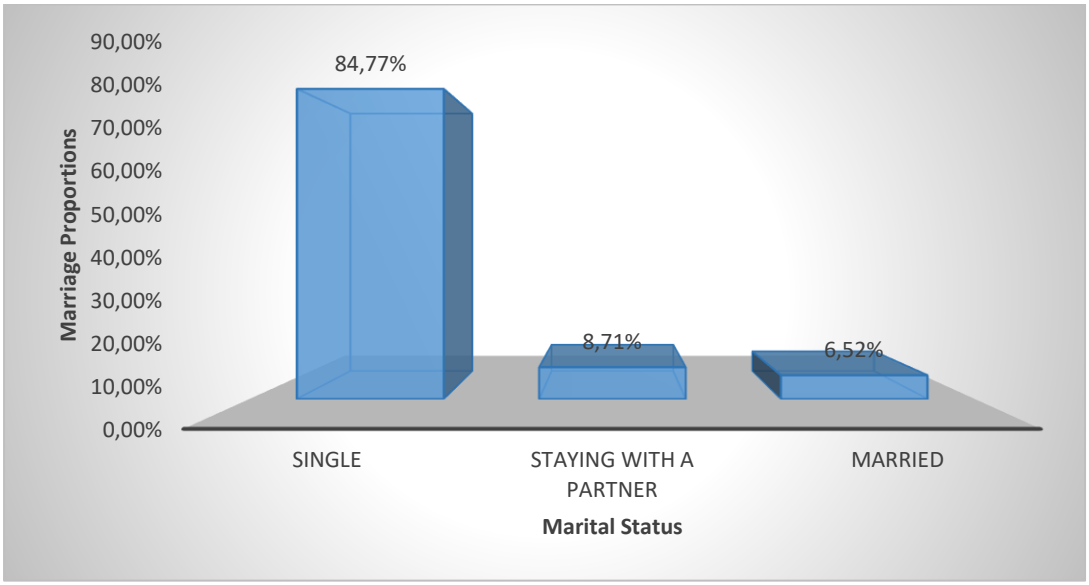

Figure 3: Marital status of the participants

Only 34% of the participants were employed and 66% of the participants were unemployed (Figure 4).

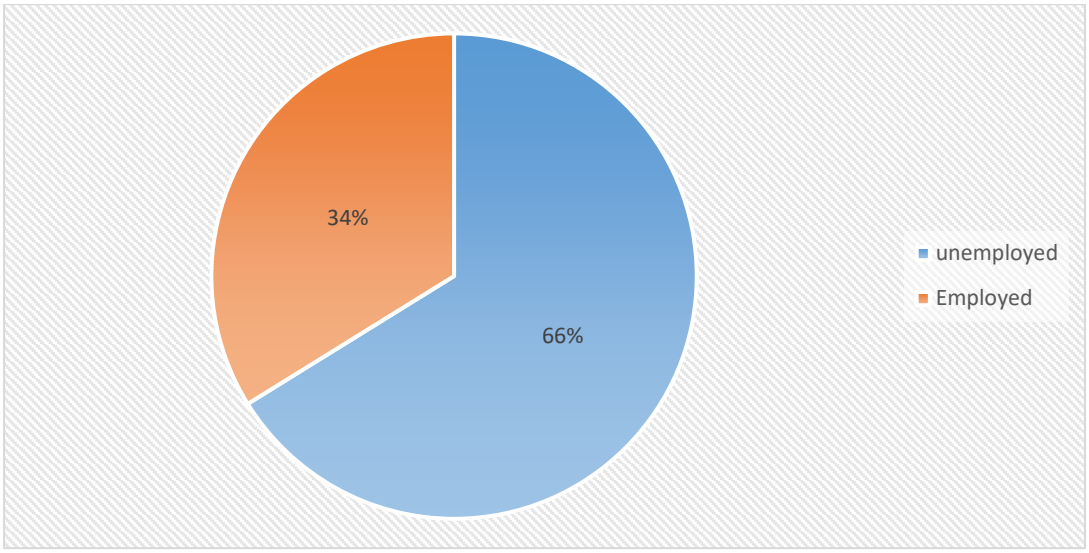

Fig 4: Employment status of the participants

The majority (77%) of the participants had some high school education, 11% had some primary education and only 1% tertiary education (Figure 5).

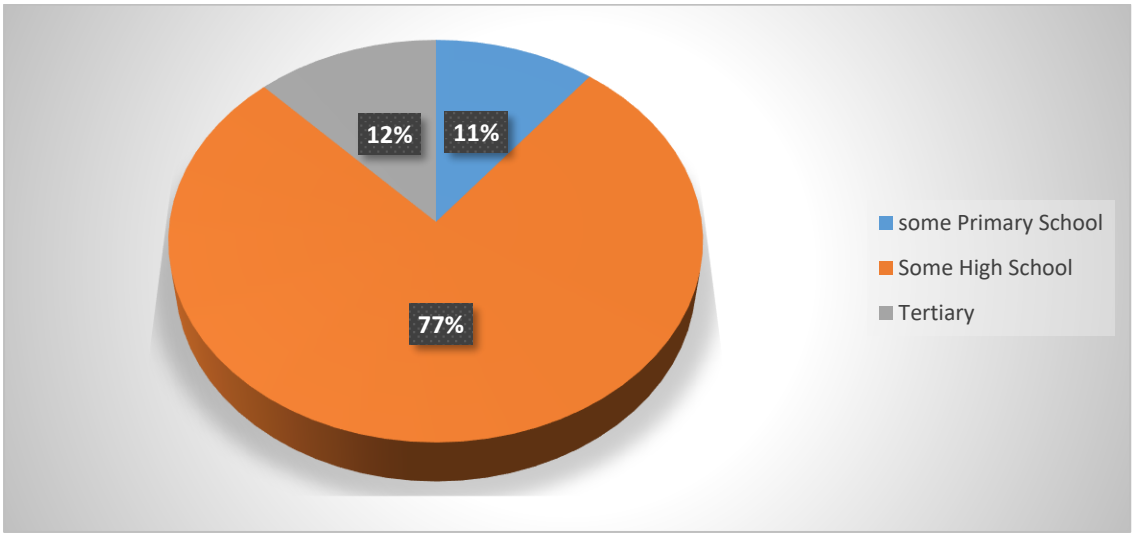

Figure 5: Educational level of the participants.

4.2 HCT uptake rates among men

A total of 1,388 men participated in the study across all provinces of South Africa. Fifty two percent of the total population of men participated in the study had HCT in the past twelve months.

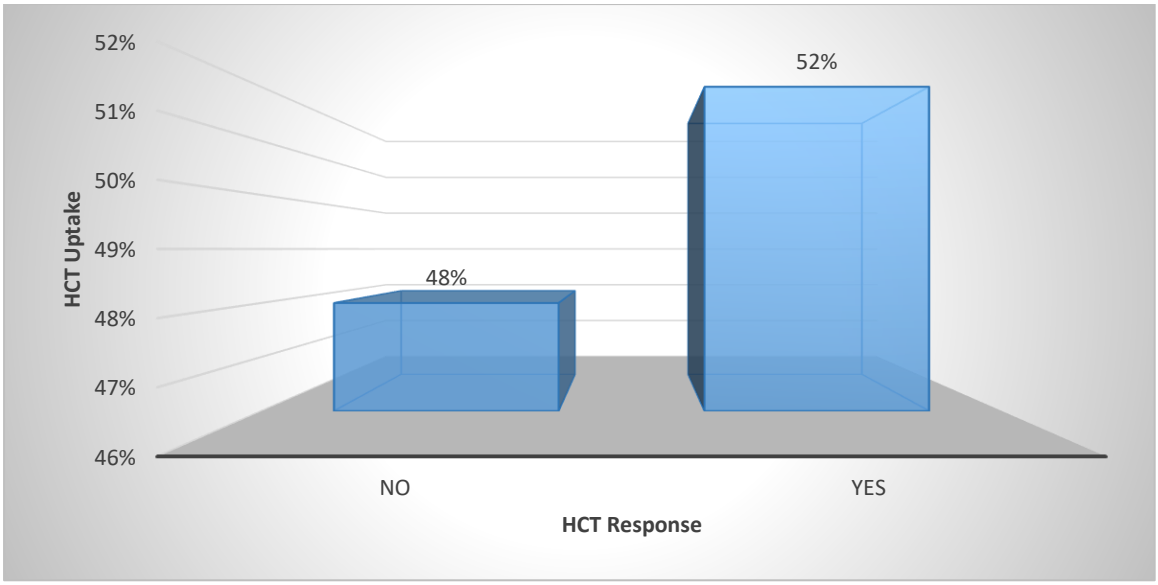

Figure 6: HCT uptake in the past 12 months for South African men in 2017

HCT uptake rate at the provincial level ranges between 41% and 60% with Western Cape being the highest and the Northwest performed the lowest (figure 7) with following participant composition; Mpumalanga (n=83); Gauteng (n=415); Western Cape (n=194); North West (n=77); Eastern Cape (n=190); Limpopo (n=112); Northern Cape (n=19); Free State (n=70); and KwaZulu-Natal (n=224).

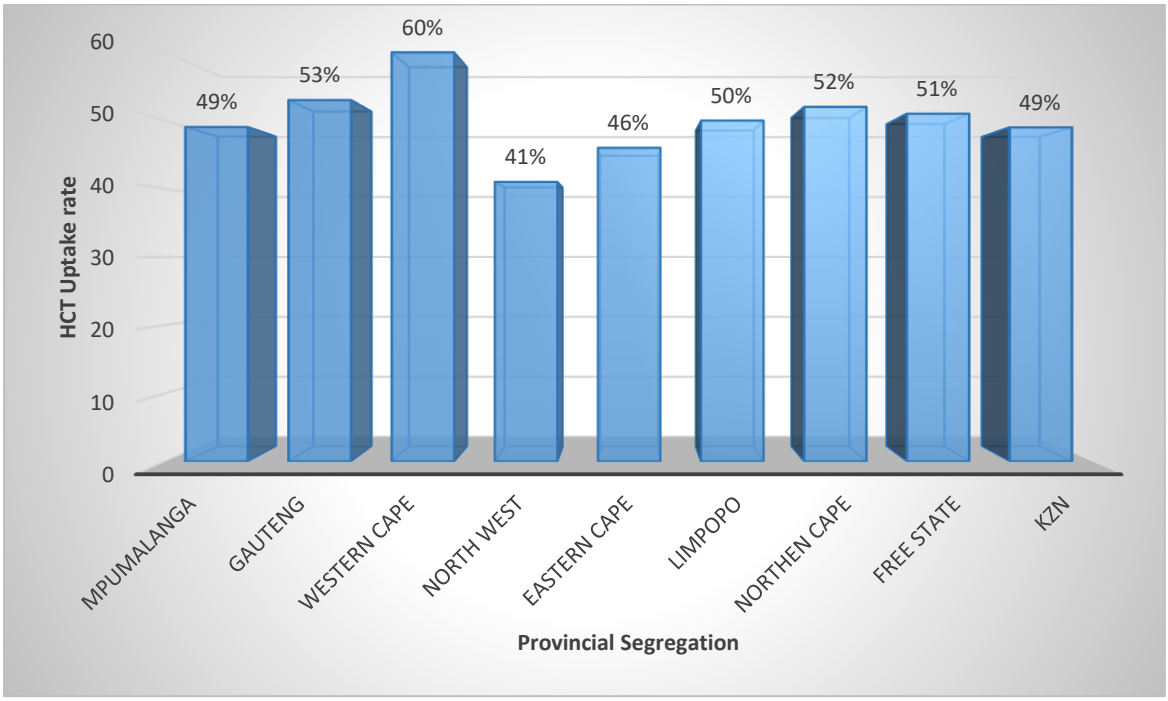

Figure 7: HCT uptake rate per province in the past 12 months for South African men in 2017

4.3 HCT uptake among men by Socio-demographic, HIV knowledge, Sexual behaviours and Community beliefs characteristics

Table 1 shows HCT uptake among men by socio-demographic, HIV knowledge, sexual risk behaviour and community beliefs characteristics. Significant differences were seen across socio-demographic, HIV knowledge, and sexual behaviours characteristics. HCT uptake was lower among younger men aged 18-22 years (45.96%) than those aged 23-27 years (56.31%) and 28-34 years (54.64%). Employed men (57.36%) had higher HCT uptake than unemployed men (49.00%). HCT uptake increased by higher levels of education. Men with tertiary education had higher HCT uptake (59.88%) than men with some high school (52.12%) or primary education (44.22%). HCT uptake was higher among men who had sex in the last 12 months (55.42%) than those who did not (45.21%). Men who knew someone with an HIV positive status had high HCT uptake (58.56%) than those who did not (47.10%). HCT uptake was higher among men who believed that HIV is treatable (53.47%) than those who did not (45.45%). Men who reported that they used condoms at first sex (58.44%) and at last sex in the past 12 months (59.79%) reported higher HCT uptake. There were no significant differences observed of HCT uptake among men by marital status, geographic location, race, exposure to media, and social discrimination factors.

Table 1: HCT uptake among men by socio-demographic, HIV knowledge, sexual behaviour and community beliefs characteristics

	No HIV Testing and Counselling		Had HIV Testing and Counselling		p-value
Variable	**N**	**%**	**n**	**%**	
Age Group					
18 to 22	273	53.85	233	45.96	0.003
23 to 27	172	43.43	223	56.31	
28 to 34	218	44.95	265	54.64	
Racial segregation					
White	42	48.28	45	51.72	0.158
Black	503	46.79	568	52.84	
Coloured	86	48.59	91	51.41	
Indian/Asian	30	63.83	17	36.17	
Province					
Eastern Cape	101	53.16	89	46.84	0.075

Free State	34	48.57	36	51.43	
Gauteng	194	46.41	221	52.87	
Kwa-Zulu Natal	114	50.89	110	49.11	
Limpopo	56	50.00	56	50.00	
Mpumalanga	34	40.48	49	58.33	
North West	45	58.44	32	41.56	
Northern Cape	9	47.37	10	52.63	
Western Cape	76	39.18	118	60.82	
Marital status					
Single	557	48.10	597	51.55	0.200
Staying with a partner	61	51.26	119	48.74	
Married	35	39.33	89	60.67	
Employment status					
Employed	195	42.21	265	57.36	0.003
Unemployed	459	50.77	443	49.00	
Education Level					
Some Primary School	82	55.78	65	44.22	0.018
Some High School	506	47.60	554	52.12	
Tertiary	66	39.52	100	59.88	
Socio-economic status					
Poor	236	50.97	226	48.81	0.105
Middle	235	41.96	325	58.04	
Rich	191	52.47	170	46.70	
Listen to the radio					
Listened	556	47.32	616	52.43	0.416
Never	107	50.23	105	49.30	
Watch television					
Watch	610	47.10	681	52.59	0.416
Never	51	56.04	40	43.96	
Read a print magazine					
Never	315	50.16	311	49.52	0.097
Read	347	45.72	410	54.02	
Read print paper					
No	217	50.12	216	49.88	0.267
Yes	446	46.70	505	52.88	
Use the internet/search the internet for information					
Browse	383	46.37	439	53.15	0.251
Never	279	49.73	282	50.27	
Had sex in the past 12 months					
No	80	54.79	66	45.21	0.019
Yes	491	44.39	613	55.42	
Condom use at first sex					
No	241	52.74	215	47.05	<0.000

Yes	324	41.43	457	58.44	
Condom use at last sex					
No	224	51.38	212	48.62	<0.000
Yes	267	39.91	400	59.79	
Is HIV treatable					
No	90	54.55	75	45.45	0.049
Yes	553	46.28	639	53.47	
Know someone who is HIV positive					
No	420	52.90	374	47.10	<0.000
Yes	239	40.92	342	58.56	
Social discrimination					
Men in my community feel free to tell their friends and family that they have HIV					
Agree	307	45.82	362	54.03	0.166
Disagree	345	49.50	350	50.22	
Men in my community are scared to test for HIV because they think that if they test HIV positive, they can never have a relationship again.					
Agree	423	48.12	455	51.76	0.649
Disagree	226	46.60	256	52.78	
Men in my community are scared to test for HIV because if they test positive their family and friends will reject them					
Agree	389	48.99	402	50.63	0.257
Disagree	264	45.99	309	53.83	
Men in my community do not test for HIV because they are scared that they are already HIV positive, scared to test HIV positive					
Agree	406	46.08	473	53.69	0.127
Disagree	240	50.31	235	49.27	
Men in my community do not test for HIV because they are scared it would change their lifestyle					
Agree	479	47.85	518	51.75	0.756
Disagree	170	47.09	191	52.91	
Men in my community who test for HIV are regarded as strong and responsible men					
Agree	525	47.38	579	52.26	0.716
Disagree	124	48.82	130	51.18	

4.4 Factors associated with HCT uptake among men.

Table 2 presents results of the logistic regression analysis examining factors associated with HCT uptake among South African men. Several socio-demographic, sexual behaviour and

community factors were found to be associated with HCT uptake among men. After controlling for confounders, men residing in provinces outside of the Western Cape demonstrated significantly lower odds of HCT uptake. Men in the Eastern Cape had 65% reduced odds of HCT uptake compared to the Western Cape (AOR 0.33, 95% CI 0.33-0.94, p=0.028). Similarly, men from Limpopo (AOR 0.54, 95% CI 0.30-0.99, p=0.045) and Northwest (AOR 0.43, 95% CI 0.22-0.83, p=0.012) had significantly reduced odds of HCT uptake compared to the men in Western Cape.

Employed men were 1.34 times significantly more likely to undergo HCT compared to unemployed men (AOR 1.34, 95% CI 1.01-1.77, p=0.039). Middle income (AOR 1.51, 95% CI 1.01-2.27, p=0.048) and low-income men (OR 1.60, 95% CI 1.16-2.21, p=0.004) had significantly increased odds of HCT uptake than rich-income men. In terms of sexual history, men who did not report condom use at first (AOR 0.71, 95% CI 0.53--0.93, p=0.015) and at last sex (AOR 0.68, 95% CI 0.52-0.90, p=0.007) exhibited significantly lower odds of HCT uptake compared to those who reported condom use. Knowing someone who is HIV positive (AOR 1.40, 95% CI 1.09-1.82, p=0.010) was significantly associated with increased HCT uptake among men.

Table 2: Logistic regression of factors associated with HIV testing among South African men in 2017 (n= 1388)

Variable	N	N	%	Univariate		Multivariate	
				OR (95% CI)	P-Value	AOR (95% CI)	P-Value
Province							
Western Cape	118	194	60.82	ref	-		
Eastern Cape	89	190	46.84	0.57 (0.38 to 0.85)	0.006	0.56(0.33 to 0.94)	**0.028**
Free State	36	70	51.43	0.68 (0.39 to 1.18)	0.173	0.56(0.60 to 1.06)	0.077
Gauteng	221	418	52.87	0.73 (0.52 to 1.04)	0.08	0.74(0.49to 1.12)	0.148
Kwa Zulu Natal	110	224	49.11	0.62 (0.42 to 0.92)	0.017	0.83(0.50 to 1.36)	0.450
Limpopo	56	112	50.00	0.64 (0.4 to 1.03)	0.066	0.54(0.30 to 0.99)	**0.045**
Mpumalanga	49	84	58.33	0.93 (0.55 to 1.57)	0.78	0.98(0.52to 1.86)	0.594
Northwest	32	77	41.56	0.46 (0.27 to 0.78)	0.004	0.43(0.22 to 0.83)	**0.012**
Northern Cape	10	19	52.63	0.72 (0.28 to 1.84)	0.488	1.89(0.48to 7.47)	0.366
Employment status							
Unemployed	443	904	49	ref	-		
Employed	265	462	57.36	1.41 (1.12 to 1.77)	0.003	1.34(1.01 to 1.77)	**0.039**
Socio-Economic Status							
Rich	170	364	46.70	ref	-		
Middle	325	560	58.04	1.55 (1.19 to 2.03)	0.001	1.51(1.01 to 2.27)	**0.048**
Poor	226	463	48.81	1.08 (0.82 to 1.42)	0.603	1.60(1.16 to 2.21)	**0.004**
Watch television							
Never	40	91	43.96	Ref	-		
Watch	681	1 295	52.59	1.42 (0.93 to 2.18)	0.106	1.30(0.73 to 2.34)	0.374
Condom use first time you had sex							
Yes	457	782	58.44	Ref	-		
No	215	457	47.05	0.63 (0.5 to 0.8)		0.71(0.53 to 0.93)	**0.015**
Condom use last time you had sex							
Yes	400	669	59.79	Ref	-		
No	212	436	48.62	0.63 (0.5 to 0.81)	0.000	0.68(0.52 to 0.90)	**0.007**
Know someone who is HIV positive							
No	374	794	47.1				
Yes	342	584	58.6	1.61 (1.29 to 1.9)	0.000	1.40(1.09 to 1.82)	**0.010**
Social discrimination							
Men in my community do not test for HIV because they are scared that they are already HIV positive, scared to test HIV positive							
Disagree	235	477	49.27	Ref	-		
Agree	473	881	53.69	1.19 (0.95 to 1.49)	0.127	1.21(0.93 to 1.58)	0.165

Chapter 5: DISCUSSION

5.0 Introduction

In this chapter, a comprehensive analysis of the study findings on HCT uptake among men will be presented. It will cover various factors and associations related to HCT uptake among men, as well as a comparison of existing studies. The chapter will also conclude with an assessment of strengths, limitations and conclusions of the current study and recommendations for future research.

5.1 Interpretation of the findings

5.1.1 HCT uptake among men

The study found that only 52% of South African men had undergone HCT uptake in the previous 12 months. This rate is relatively lower compared to other sub-Saharan African countries in East Africa which men's uptake of HCT has been reported to be above 60% (36). The lower HCT rate among South African men is concerning given the high prevalence of HIV in the country and the importance of regular testing for early diagnosis and timely initiation of ART.

5.1.2 Factors associated with HCT uptake among men

The study uncovered significant disparities in HCT uptake across various sociodemographic and behavioural factors, mirroring findings from other studies in sub-Saharan Africa. It is evident that younger men aged 18-22 years had markedly lower HCT rates (45.96%) compared to older age groups (56.31%). This age disparity is consistent with previous research, which reported lower HIV testing rates among younger men (39)(40). Several factors contribute to this pattern, including lower risk perception, limited access to HCT services, and sociocultural barriers discouraging healthcare-seeking among younger age groups (37)(41). However, age

group was not a significant factor after adjusting for other factors in the multivariable analysis in our study.

Notably, substantial geographic disparities in HCT uptake were observed, with men in the Western Cape Province exhibiting higher HCT uptake (60.82%) compared to other provinces. After adjusting for other covariates, men residing in most provinces outside Western Cape exhibited significantly lower odds of HIV testing compared to those in Western Cape. The findings are similar to studies conducted by Zuma who found out HIV testing disparities across provinces (6). Hence, these finding underscores the need to address geographic disparities in access to HCT services, particularly in underserved and rural areas. Strategies such as mobile and community-based testing initiatives, as well as strengthening the health system infrastructure in these regions, could help improve HCT accessibility and uptake.

Employed men also demonstrated higher HCT rates (57.36%) than unemployed men (49%), in line with previous studies linking employment status with improved access to health services, including HIV testing (42). This could be that employed individuals exhibit better financial resources, access to workplace-based health programs, and higher health literacy, promoting HCT engagement. Furthermore, socioeconomic status emerged as a strong predictor of HCT engagement. Middle-income and low-income men had higher adjusted odds of HCT uptake compared to high-income men. The findings are consistent with a study conducted in Zimbabwe which showed that participants that reported to be poor and moderate in terms of wealth index had higher chances of going for HIV testing (40). This pattern may be attributed to the availability of free or subsidized HCT services targeting lower-income populations in South Africa. However, it is important to note that financial barriers and limited access to

healthcare services can still impede HCT uptake among low-income groups due to lack to finances to transport themselves to the point of service.

The study findings also showed that condom use during sexual encounters was independently associated with higher odds of HCT uptake. Previous studies in Uganda on condom use among sex workers and in Central Africa on risk factors of HIV infection among young adults has shown similar findings (42). This finding suggests that individuals with higher risk perception and health-seeking behaviours are more likely to undergo HIV testing (6). The study also found that knowing someone who is HIV positive increased the odds of HIV testing. This could possibly served as a cue to action for getting an HIV test. It is worth noting that some factors, such as educational attainment, and perceived community attitudes towards HIV testing, did not emerge as significant predictors in the multivariate analysis. This may warrant further studies in the future. It's important to note that the cross-sectional nature of the study limits establishing causality between these factors and HCT uptake.

5.2 Strengths and limitations

The study assessing HCT among South African men has several notable strengths. First, the large sample size inclusive of all provinces enhances the representativeness and generalizability of the findings to the broader male population in the country. Additionally, the comprehensive data collection approach, encompassing sociodemographic factors, sexual behaviours, HIV knowledge, and community beliefs, allows for an in-depth exploration of the various determinants of HCT uptake.

However, the study is not without limitations. The cross-sectional design is a major limitation, as it precludes the establishment of causal relationships between the examined factors and HCT

uptake. It is difficult to determine whether the identified factors preceded or followed HCT engagement. Furthermore, the reliance on self-reported data raises concerns about potential recall bias and social desirability bias, where participants may have provided inaccurate information or underreported certain behaviours due to stigma or other factors. Furthermore, the study may have failed to account for some potential confounding variables that could influence HCT uptake, such as access to healthcare services, distance to HIV testing facilities, or other cultural or behavioural factors. The researcher has no control over the data collection issues and any missing data from the primary study. The secondary study limits the researcher to only deal with the actual sample size from the primary study.

5.3 Conclusion

The study provides important insights into the patterns and determinants of HCT uptake among men in South Africa. The findings reveal that only 52% had received HCT in the past 12 months, highlighting the need for targeted efforts to increase HIV testing rates in this population. Significant disparities in HCT engagement were observed across various sociodemographic and behavioural factors. Younger age, unemployment, and residing in certain geographic regions, such as Northwest Province, were associated with lower HCT rates. Conversely, factors like employment, lower socioeconomic status, knowing someone who is HIV positive and condom use were linked to higher likelihood of HIV testing.

The multivariate analysis identified several independent predictors of HCT uptake. Geographic residence emerged as a key factor, with men from most provinces outside Western Cape exhibiting substantially lower odds of HIV testing. Employment increases the likelihood of HCT uptake among men. Socioeconomic status also played a crucial role, as middle-income

and low-income men had higher odds of HCT compared to high-income men. Additionally, condom use during sexual encounters was independently associated with higher odds of HCT uptake, suggesting a possible link between safer sexual practices and increased awareness of HIV risk and testing. Additionally, cues to action like knowing someone who is HIV positive motivated individuals to get tested for HIV. Overall, the study underscores the importance of addressing geographic disparities, socioeconomic barriers, and promoting safer sexual behaviours to improve HCT engagement among South African men. Targeted interventions, such as expanding community-based testing initiatives, strengthening health system infrastructure in underserved areas, and implementing comprehensive HIV prevention and education programs, could contribute to increased testing uptake and better control of the HIV epidemic in the country.

5.4 Recommendations

- The study revealed lower HCT rates among younger men aged 18-22 years. Interventions specifically tailored to address the unique barriers and misconceptions faced by this age group are crucial. These could include mobile youth-friendly services, peer-led outreach programs, and educational campaigns designed to increase risk perception and promote positive health-seeking behaviours among younger men pioneered and facilitated by men of their same age groups. Interventions such as mobile school-based HCT services and Youth Friendly Health Services could scale up uptake of HCT among younger men (47).

- Significant geographic disparities were observed, with men residing in provinces like Northwest, Eastern Cape, and KwaZulu-Natal having lower HCT rates compared to Western Cape. Strategies to improve access to testing services in these underserved

areas should be prioritized, such as mobile testing units, community-based testing initiatives, and strengthening the healthcare infrastructure in rural and remote regions. Efforts should be made to increase the demand for testing among men living in more rural areas.

- The study found that men with lower socioeconomic status had higher odds of HCT uptake, potentially due to the availability of free or subsidized services. However, financial constraints and limited access to healthcare can still impede testing engagement among disadvantaged groups. Efforts should be made to ensure equitable access to HCT services, regardless of socioeconomic status, through the expansion of affordable or no-cost testing options and improved healthcare coverage. "Research has demonstrated that offering mobile HIV testing services through a caravan, strategically stationed in convenient and accessible community areas, has led to a higher number of men getting tested for the first time compared to women". This insight can help guide efforts to make HIV testing more accessible and inclusive for everyone (47)(48).

- Consistent condom use was independently associated with higher odds of HCT, suggesting a potential link between safer sexual practices and increased awareness of HIV risk and testing. Comprehensive HIV prevention and education programs that emphasize condom use, safe sexual behaviours, and the importance of regular testing could be beneficial in increasing HCT uptake among men.

- While the study did not find a significant association between community attitudes and HCT engagement, addressing social discriminations and negative community perceptions surrounding HIV testing is crucial. Community-level interventions, such as engaging religious and traditional leaders, promoting inclusive messaging, and creating safe spaces for open discussions, could help reduce stigma and encourage more men to access HCT services.

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APPENDIX ONE

Plagiarism form



PLAGIARISM DECLARATION TO BE SIGNED BY ALL HIGHER DEGREE STUDENTS

SENATE PLAGIARISM POLICY: APPENDIX ONE

I Samson Solomon Khoza (Student number: _749572) am a student registered for the degree of Masters of public Health_____ in the academic year _2013

I hereby declare the following:

- I am aware that plagiarism (the use of someone else's work without their permission and/or without acknowledging the original source) is wrong.
- I confirm that the work submitted for assessment for the above degree is my own unaided work except where I have explicitly indicated otherwise.
- I have followed the required conventions in referencing the thoughts and ideas of others.
- I understand that the University of the Witwatersrand may take disciplinary action against me if there is a belief that this is not my own unaided work or that I have failed to acknowledge the source of the ideas or words in my writing.
- I have included as an appendix a report from "Turnitin" (or other approved plagiarism detection) software indicating the level of plagiarism in my research document.

Signature: _____ Date: _____ 07 October 2024

APPENDIX TWO

Questionnaire

Section 1: Demographics			
1.1	**Sex of the respondent**	**1 = Male** **2 = Female**	
1.2	**Race of the respondent**	1 = Black 2 = Coloured 3 = White **4 = Indian or Asian** **55 = Other (specify):** **_____**	
1.3	**PRESENT age of the respondent today**	**Years: _____**	
1.4	**What is your marital status? (Marital status referring to legal, traditional or common-law)** **[ONE RESPONSE ONLY]**	**1 = Single** **2 = Not married or living together but in a steady sexual relationship lasting more than 3 months** **3 = Not married, but living with sexual partner/boyfriend/girlfriend** **4 = Married, living with husband/wife** **5 = Married, NOT living with husband/wife** **6 = Divorced/Widowed** **55 = Other (specify):** **_____**	
1.5	**What is your present employment status?** **[ONE RESPONSE ONLY]**	**1 = Unemployed, not looking for work** **2 = Unemployed, looking for work** 3 = Informal work (such as making things for sale, selling things or providing a service) 4 = Employed full-time [40 or more hours a week] 5 = Employed part-time [less than 40 hours a week] 6 = Full-time student / pupil / learner at SCHOOL **7 = Full-time student at COLLEGE / TECHNIKON / UNIVERSITY** **8 = Pensioner** **9 = Living on disability or other grant** **55 = Other (specify):** **_____**	
1.6	**What is the HIGHEST level of education you have completed?** **[ONE RESPONSE ONLY]**	**0 = No schooling** **1 = grade 1- 5** **2 = grade 6-9** **3 = grade 10-11** **4 = grade 12 (Matric)** **5 = Diploma or certificate after Matric** **6 = Bachelor's degree from a University** **7 = Post graduate degree (e.g. Honours, Masters)** **8 = Doctoral degree (PhD)** **55 = Other (specify):** **_____**	

1.7	**Please tell me which, if any, are presently in your household** **[TICK FOR YES]**	**1 = Built in kitchen sink** **2 = Vacuum cleaner/floor polisher** **3 = Microwave oven** **4 = Computer – Desktop/Laptop in home** **5 = Washing machine** **6 = Radio** **7 = Flush toilet in/outside house** **8 = Domestic workers or household helpers** **9 = TV set** **10 = Electric stove** **11 = Motor vehicle in household** **12 = DVD player/Blu Ray Player** **13 = Home security service** **14 = Dishwashing machine** **15 = Three or more cellphones in household** **16 = Pay TV (M-Net/DStv/StarSat) subscription** **17 = Deep freezer** **18 = Refrigerator or combined fridge/freezer** **19 = Tumble dryer** **20 = Hot running water from geyser** **21 = Tap water** **22 = Air conditioner** **23 = Home telephone** **24 = Swimming pool** **25 = Home theatre system** **26 = Hi-Fi/music centre**	

Section 2: Sexual behaviours and practices			
2.1 **→**	**Have you ever had sex?**	**1 = Yes** **2 = No**	
2.2	**Did you use a condom the first time you had sex?**	**1 = Yes** **2 = No**	
2.3 **→**	**Have you had sex in the past 12 months?**	**1 = Yes** **2 = No**	
2.4 **→**	**Did you use a condom the last time you had sex?**	**1 = Yes** **2 = No**	
2.5 **→**	**In the past 12 months, have you been tested for HIV?**	**1 = Yes** **2 = No**	
2.6	**About how many of your friends do you think have been tested for HIV?** **[SHOW BOTH HANDS TO REPRESENT 10 PEOPLE]**	**1 = 1 out of 10** **2 = 2 out of 10** **3 = 3 out 10** **4 = 4 out of 10** **5 = 5 out 10** **6 = 6 out of 10** **7 = 7 out 10** **8 = 8 out of 10** **9 = 9 out 10** **10 = 10 out of 10**	

Interviewer read out loud: How much do you agree with the following statements about HIV testing in your community? There are no right or wrong answers, only peoples opinions. We would like to know which opinions you agree or disagree with. [READ OUT ALL]			
2.7	**Men in my community who test HIV positive feel free to tell their friends and family that they have HIV [READ OUT]**	**1 = Strongly disagree 2 = Somewhat disagree 3 = Somewhat agree 4 = Strongly agree**	
2.8	**Men in my community do not test for HIV because they are scared it would change their lifestyle (i.e. use condoms, reduce number of partners, stop drinking alcohol and smoking) [READ OUT]**	**1 = Strongly disagree 2 = Somewhat disagree 3 = Somewhat agree 4 = Strongly agree**	
2.9	**Men in my community do not test for HIV because they are scared that they are already HIV positive [READ OUT]**	**1 = Strongly disagree 2 = Somewhat disagree 3 = Somewhat agree 4 = Strongly agree**	
2.10	**Men in my community are scared to test for HIV because they think that if they test HIV positive, they can never have a relationship again [READ OUT]**	**1 = Strongly disagree 2 = Somewhat disagree 3 = Somewhat agree 4 = Strongly agree**	
2.11	**Men in my community who test for HIV are regarded as strong and responsible men [READ OUT]**	**1 = Strongly disagree 2 = Somewhat disagree 3 = Somewhat agree 4 = Strongly agree**	
2.12	**Men in my community are scared to test for HIV because if they test positive their family and friends will reject them [READ OUT]**	**1 = Strongly disagree 2 = Somewhat disagree 3 = Somewhat agree 4 = Strongly agree**	

Section 3: HIV knowledge (treatment, CD4 count and viral load) I am now going to ask you some questions about your knowledge of HIV as well as your personal experiences on HIV, treatment and support.			
3.1	**Do you know someone who is HIV positive?**	**1 = Yes 2 =No**	
3.2 →	**Is there a treatment for HIV? NOTE: READ OUT DEFINITION [Treatment being something to keep people healthy for a long time & not a cure for the disease]**	**1 = Yes 2 =No**	

Section 4: Media, communication and norms
Interviewer to read out: I am now going to ask you a number of questions about different sources of information and what you think of them

	How often do you do the following?	Never	Once in a while/ rarely	Once a week	2-6 days a week	Every day of the week
4.1	**Listen to the radio**	1	2	3	4	5

4.2	**Watch television**	1	2	3	4	5
4.3	**Read a print magazine**	1	2	3	4	5
4.4	**Read a print newspaper**	1	2	3	4	5
4.5	**Use the Internet /search for information online**	1	2	3	4	5
4.6	**Use Facebook**	1	2	3	4	5
4.7	**Use Twitter**	1	2	3	4	5
4.8	**Go onto HIV or other health related websites**	1	2	3	4	5
4.9	**Use Instagram**	1	2	3	4	5
4.10	**Use WhatsApp**	1	2	3	4	5

APPENDIX THREE

Letter of Permission

CCI
CENTRE FOR COMMUNICATION IMPACT

Incorporated as NPC
Registration number: 2004/027886/08
Vat reg. no. 4890219837
Muckleneuk, Pretoria, 0181
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Brookfield
Office Block, 261
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15 March 2021

Dear Samson Khosa

Permission to use the CCISA dataset from the Testaboy evaluation for your MPH research report

CCI hereby grants permission for you to use the Testaboy evaluation dataset for your MPH research report. Please note that this permission is for your research report only and that you may not use the data for any other purposes.

We understand that your interest pertains to examining HIV knowledge and attitudes and associated factors. Should you have an interest in presenting the results from your MPH at a conference or writing up a paper for publication based on your research, CCI should be acknowledged. The drafts should be sent for approval prior to any presentation. Authorship for any publication needs to be discussed and agreed upon prior to drafting a manuscript.

Yours sincerely

Lusanda Mahlasela

Director: Research and M&E



APPENDIX FOUR

Clearance certificate

M230661 MED23-06-147

UNIVERSITY OF THE WITWATERSRAND, JOHANNESBURG

R14/49 Mr Samson Khoza and Dr Nicola Christofides

HUMAN RESEARCH ETHICS COMMITTEE (MEDICAL)

CLEARANCE CERTIFICATE NO. M230661 MED23-06-147

NAME: (Principal Investigator)	Mr Samson Khoza and Dr Nicola Christofides
DEPARTMENT:	School of Public Health
PROJECT TITLE:	Factors associated with uptake of Human Immune virus testing services among men in South Africa
DATE CONSIDERED:	30/06/2023
DECISION:	Approved unconditionally
CONDITIONS:	
SUPERVISOR:	Dr Zodwa Ndlovu
APPROVED BY:	Prof P Ruff, Chairperson, HREC (Medical)
DATE OF APPROVAL:	23/08/2023 **EXPIRY DATE:** 23/08/2028

This clearance certificate is valid for 5 years from date of approval. Extension may be applied for.

DECLARATION OF INVESTIGATORS

I/we fully understand the conditions under which I am/we are authorized to carry out the above-mentioned research and I/we undertake to ensure compliance with these conditions. Should any departure be contemplated, from the research protocol as approved, I/we undertake to resubmit the application to the Committee. **I agree to submit a yearly progress report** in January each year until study is closed. Failure to submit annual report will result in ethics clearance certificate suspension. The date for annual re-certification will be one year after the date of convened meeting where the study was initially reviewed. In this case, the study was initially reviewed in June and will therefore be due in the month of June each year. Unreported changes to the application may invalidate the clearance given by the HREC (Medical). Email signed copy of this ethics clearance certificate prior to commencing with the study hrec-medical.researchoffice@wits.ac.za

Principal Investigator Signature

Date

PLEASE QUOTE THE PROTOCOL NUMBER IN ALL ENQUIRIES