

**Impact of a Family Centered Approach on Uptake
of HIV Testing and Antiretroviral Therapy for
Exposed and Infected Children in Solwezi,
Zambia**

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Abstract

Title: Impact of a Family Centered Approach on Uptake of HIV Testing and Antiretroviral Therapy for Exposed and Infected Children in Solwezi, Zambia

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In the last 28 years, HIV has become an increasingly large public health problem affecting all age groups. However, most national and international responses to the HIV pandemic have mainly focused on mitigating the impact of the disease on adults. One third of infected infants die by the time they reach their first birthday and half die before the age of two years. Since nearly all pediatric infections are transmitted during pregnancy or breastfeeding, prevention of mother to child transmission (PMTCT) programmes are key entry points for diagnosing and managing paediatric HIV infection. In Zambia, however, over 55% of women deliver at home and those accessing PMTCT often fail to receive the full course, so other strategies are also needed to increase children's access to HIV testing and care. Among the interventions that remain unexplored in Zambia is the family centered approach.

Aim: To establish whether a family centered approach to HIV care in which HIV positive adults are counseled on the importance of having their children

tested results in the adults bringing their children under the age of five years for testing and or accessing HIV care, and to explore challenges faced by caregivers in bringing children for testing and care.

Study design: Interventional cohort study.

Study population: HIV positive adults aged 18 years and older, with children aged 0-5 years, accessing HIV care at Solwezi Urban Clinic and Solwezi General Hospital between November and December 2009.

Data collection: A questionnaire was administered to participants both at the time of initial contact with the research team and approximately one month after having received a brief counseling intervention. The second interview determined whether the respondents had facilitated for their children to be tested and/or entered into HIV care after the counseling intervention, and explored factors associated with bringing or not bringing their children into care.

Analysis: The data was analyzed using SPSS version 14.0 statistical package; McNemar's Statistic, Odds ratio and Pearson Correlation were used to detect association between the provision of the intervention and the adults' response to facilitate their children's uptake of testing and/or entry into HIV care.

Results: 18.9% of the cohort of 254 adults had already had their children tested or enrolled into care at the start of the study; this proportion increased to 59.4% after a single brief counseling intervention and one month of follow-up. Of the adults who had not yet had their children tested and who completed the follow

up interview 56.3% (n=103/182) brought their children for testing and/ or entry into HIV care. There was a marked gender difference: 63.1% of the women against 33.3% of the men brought their children after having received the intervention (OR 3.48, $p < 0.001$). Most respondents who did not bring their children indicated intentions to bring their children on their subsequent visits. Finding time while in formal employment or self-employment poses challenges to bringing children for care, especially for men. Transport costs and distance were also identified as barriers to access.

Conclusion: Providing adults accessing HIV care with a brief counseling intervention on the benefits of having their children tested or entered into care is a feasible and effective means of increasing the uptake of HIV testing and entry into care in young children. Women, the unemployed and those working in the public sector are more likely to respond positively to this brief intervention.

DECLARATION

I declare that *Impact of a Family Centered Approach on Uptake of HIV Testing and Antiretroviral Therapy for Exposed and Infected Children in Solwezi, Zambia* is my own work, that it has not been submitted for any degree or examination in any other university, and that all the sources I have used or quoted have been indicated and acknowledged by complete references.

Kalasa Mwanda



November, 2010

Signed:

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Chapter 1

1.0 Introduction

In the last 28 years, the Human Immunodeficiency Virus (HIV) has become an increasingly large public health problem affecting men, women and children alike. However, most national and international responses to the HIV pandemic have mainly focused on mitigating the impact of the disease on adults. As a result hundreds of thousands of children are left undiagnosed and untreated for HIV. Without treatment, approximately one third of infected infants die by the time they reach their first birthday and half die by their second birthday (WHO, undated cited in UNAIDS, UNICEF and WHO, 2008).

In 2007 alone about 2.1 million children younger than 15 years of age were living with HIV globally and of this figure 420 000 were new infections most of which were through mother-to-child transmission (WHO & UNICEF, 2008). In the same year nearly 1 800 new infections occurred every day in children under the age of 15 years and 1400 children died of AIDS-related illnesses daily the world over (UNAIDS, 2007). In the year 2007, 290 000 paediatric lives were claimed by HIV. Most of the victims neither received an HIV diagnosis nor were they entered into HIV care prior to their terminal illness (WHO& UNICEF, 2008). The majority (75%) of these deaths occurred in sub-Saharan Africa, a region to which Zambia belongs (UNAIDS, 2008).

In Zambia, 1.1 to 1.2 million people were estimated to be living with HIV/AIDS in 2007 out of a total population of about 11.8 million people (WHO, UNAIDS & UNICEF, 2008). The Ministry of Health (MOH) (2008) estimated that up to 130 000 children in the country were HIV positive and 40 000 were in immediate need of antiretroviral therapy (ART) (MOH, 2008). Of this figure, only about 11 602 (29%) were receiving ART by the end of 2007 (WHO/UNAIDS/UNICEF, 2008). Several strategies have been attempted by Zambia's Ministry of Health to increase children's access to HIV care including

testing every child in contact with any form of health care especially the children admitted to the in-patient wards and the ones attending under-five clinics (Mitti, 2008). However, other strategies remain unexplored and among these is the family centered approach.

A family centered approach in counseling and testing entails recommending HIV testing for an individual's immediate family members once he or she has been identified as being infected with the virus (WHO/UNICEF, 2008). This study explored the effectiveness of utilizing a family centered approach by counseling adults (who are parents of young children) accessing HIV care, and examined whether a brief intervention during an adult's routine clinic visit might increase children's uptake of HIV testing or care in Solwezi. The primary component of this study measured the impact that administration of a structured, brief counseling intervention had on children's uptake of HIV testing or care. The intervention included the following: basic information on HIV/AIDS; the limited access to HIV testing for children in Solwezi; the advantages of having children tested for HIV and the common obstacles encountered by parents in taking children for HIV testing. Being a counseling-oriented intervention, this

Counseling is described as a process by which one facilitates informed decision making: in HIV testing, counseling involves providing information on HIV including its transmission, progression and its treatment as a chronic manageable infection: it has two components, pre-test counseling (before the test) and post-test counseling (provided after the test results are ready) (Jackson, 2002). Mother-to-child transmission of HIV is the transmission of HIV from the infected mother to the child either during pregnancy, child birth or during breast feeding (Wilson, Naidoo, Bekker, Cotton, & Maartens, 2002).

study had other potential benefits including raising awareness amongst the study participants and the clinic staff/ research assistants on the importance of testing children for HIV. The study sites for this pilot of a potentially useful simple

intervention were Solwezi General Hospital and Solwezi Urban Clinic which are the busiest health facilities in Solwezi (SDHO, 2008).

In Zambia as elsewhere in sub-Saharan Africa, the HIV pandemic is largely driven by heterosexual transmission of the virus in the reproductive age group (15-49 years). In Zambia as elsewhere in the world, almost all paediatric HIV infections result from vertical transmission: the child is infected during pregnancy, during childbirth, or through breastfeeding. Prevention of Mother-To-Child Transmission (PMTCT) programs should in theory prevent over 95% of paediatric infections (Wilson, 2002). However, the majority (57%) of the mothers in Solwezi deliver from homes (Chonya and Chewe-Banda, 2009), thus out of reach of PMTCT interventions. Furthermore, up to 34% of women who access PMTCT programmes in North-Western Province do not complete prophylaxis to reduce risk of transmission of the virus to their unborn children (Zambia Prevention, Care and Treatment partnership (ZPCT), 2008).

Consequently, paediatric HIV infection is under-diagnosed and a much higher proportion of adults access ART as compared to children. In North-Western Province, ZPCT (2008) reported that of the people receiving ART, 92.5% were adults while 7.5% were children, while in Solwezi the number of children accessing ART was even lower. SGH had 3255 clients on antiretroviral therapy, of which 1836 (56.4%) were female, 1419 (43.6%) were male and 194 (6.0%) were children aged 0 to 14 years old. At SUC, of the registered 570 ART clients 376 (66.0%) were females, 194 (34.0%) were males and 28 (4.9%) were children aged 0 to 14 years old (ZPCT, 2009). Based on the fact that about 10% of the people infected with HIV are children, it is recommended that 10% of all people on ART should be children (UNICEF/UNAIDS, 2007). However, the proportion of children on ART in Solwezi was lower than the recommended international target.

1.1 Setting

1.1.1 Study Area

Solwezi Urban Clinic and Solwezi General Hospital are situated in Solwezi District of the North-Western Province of Zambia. Solwezi is the headquarters of the province and it shares borders with Kasempa District in the south, Chingola District in the east, Lufwanyama District on the south-eastern part, Mwinilunga District in the west and an international boundary with the Democratic Republic of Congo in the north (SDHMT, 2008).

Solwezi Urban Clinic and Solwezi General Hospital offer the following services: patient screening and treatment, maternal and child health, child delivery service, laboratory, pharmacy, prevention of mother-to-child transmission of HIV (PMTCT) and ART (SDHMT, 2008). The provincial health office has partnered with various non-governmental organizations (NGOs) in the provision of health care at both facilities and these include: Zambia Prevention Care and Treatment Partnership (ZPCT), United National Food Programme (UNFPA), Home Based Care (HBC) and the Health Communication Partnership (HCP) (SDHMT, 2008).

Solwezi has an area of 30 260 square kilometres and has a population density of seven (7) people per square kilometre (SDHMT, 2008). According to the Central Statistical Office (CSO) (2000), the district's 2008 projected population was estimated to be 258 510 (CSO 2000 as cited by SDHMT, 2008).

1.1.2 Socio- Economic Context

Solwezi is a multilingual area with three main tribes: the Kaonde, who dominate (contributing 30% to the district population) through out the district, the Lamba

in the eastern part of the district bordering with Chingola and the Lunda people in the west (SDHMT, 2008).

The main occupation in Solwezi is peasant farming with many people practicing shifting cultivation mostly growing Maize, Sorghum, Millet, Cassava, beans, vegetables and various fruits as well as Irish and Sweet Potatoes (SDHMT, 2008). The people in formal employment work for government departments, private institutions and the non-governmental organizations. Government departments include several ministries such as education, health, fisheries and works and supply while private institutions include the newly opened mines: Kansanshi Copper Mines and Lumwana Mine which entail an increased need to scale up HIV/AIDS/STI interventions (SDHMT, 2008).

North-Western province has an average HIV prevalence rate for all ages of 6.9% and this is the lowest provincial average in Zambia saves for Northern Province which has a prevalence rate of 6.8% (Zambia Demographic and Health Survey, 2007). However, data on the prevalence of HIV in children under the age of 15 years in the district, the province and the rest of the country is not established (MOH, 2008b).

1.2 Problem

Despite the fact that 95% of the children acquire the infection vertically from their mothers (Wilson et al, 2002), the option of engaging adults already accessing HIV care to enable their children to access HIV testing and care remains under-explored. Since the family centered approach is hypothetically a viable means of increasing children's uptake of HIV care, this study endeavoured to investigate the impact the FCA has on the uptake of HIV testing and care in children.

1.3 Purpose

To determine whether there is an association between providing a brief counseling session to HIV positive adults on the importance of having their children tested and the proportion of adults in HIV care who bring their children to be tested for HIV and/or entered into care. The study had a secondary purpose of exploring factors which may explain or predict the impact of the intervention. The results of this study can also be used as a basis for the further development and implementation of the family centered approach to enable more HIV infected children access care and treatment, should it prove to be effective.



Chapter 2 Literature Review

Although the family centered approach specifically examining whether an intervention in adults living with HIV is associated with an increase in the number of children accessing HIV testing is under documented in the literature, a family centered approach of attending to people living with HIV as families and not individuals is an evolving practice at Ndola Central Hospital, one of the major hospitals in Zambia (ZPCT, 2008). HIV clients known to have their spouses and or children receiving HIV care from this facility are deliberately given the same appointment dates with the intention of enhancing family unity and adherence to medication.

Another dimension of a family centered approach was explored in a study conducted by Sheehy, Scorgie, Mini, Tun and Kellerman (2008). These workers embarked on investigating whether a family centered approach increases HIV testing among family members (both adults and children) of persons in care for HIV. They used a referral card system which was passed on to the targeted family members. Ninety eight percent of the HIV-positive patients accepted the referral cards while 68% indicated that they would approach a family member about HIV testing and give them a referral card. In this study, all the participants (278 adult HIV positive patients, 76% females and 24% males) issued referral cards to their family members. The results showed that at least one extended family member was referred for every 14 HIV positive adults approached. All of the family members referred through the project tested positive for HIV. Among those who were referred and reported to the clinic 94% were female while 6% were male. The study's results were possibly an underestimation of its actual impact as some of the referred persons could have accessed the services from other facilities or after the study had come to an end. On the other hand, being HIV positive with likely knowledge of the basic signs and symptoms of advanced HIV infection could have enabled the participants to only refer HIV

positive family members, this perhaps contributed to the 100% positive rate among the referred persons. The researchers concluded that using HIV-positive persons in care as referral sources for HIV services was effective.

The approach of requesting a person accessing care to be a referral source is also well documented in partner notification for HIV in adults and contact tracing for other sexually transmitted infections such as gonorrhoea, syphilis and chlamydia. Mir et al (2001) conducted a retrospective population based evaluation of the processes and outcomes of partner notification in HIV-1 infection in Scotland. Of the 114 index patients, 47 indicated that partner notification was inappropriate because of varied reasons including their partners being only casual sexual contacts. From the remaining 55 index patients, 63 partners were listed and 51 of these were notified. Forty four were tested and 11 (25%) were newly diagnosed to be HIV positive (Mir et al, 2001).

A prospective survey to evaluate partner notification for HIV infection in genitourinary medicine clinics in England was undertaken by Fenton et al (1998). Of the 501 eligible HIV positive patients who were enrolled into the study, detailed information on outcomes was available for 70 patients who named 158 contacts. Seventy one contacts (44.9%) were notified, 27 of whom requested HIV counseling and testing; five (18.5%) were diagnosed positive (Fenton et al, 1998). The authors concluded that HIV notification in the study uncovered previously undiagnosed HIV infections.

Notification in HIV means passing on the name and contact details of someone with HIV or AIDS either to medical authorities (national notification) or to sexual partners (partner notification) (Jackson, 2002)

Efficacy of partner notification for HIV infection was also evaluated in Sweden by Giesecke, Ramstedt, Granath, Ripa, Rådö and Westrell (1991). Over an 18 month period in 1989-90, 365 HIV-seropositive index patients reported 564 sexual or needle-sharing contacts. Of the 390 contacts located and counseled, HIV test results came to be known for 350 contacts. Fifty three (15.14%) of the 350 cases were newly diagnosed to be HIV positive. The authors concluded that partner notification for HIV in a country where general HIV prevalence is low, is a cost effective strategy for location and counseling of unknowingly seropositive individuals.

The significance of partner notification in HIV was collectively highlighted by Hogben, McNally, McPheeters and Hutchinson (2007) who conducted a systematic review on the effectiveness of HIV partner counseling and referral services in increasing identification of HIV positive individuals. In the nine studies that qualified for the review, a range of 1 to 8 partners was identified per index case. A mean of 67% of identified partners were found and a mean of 63% of those notified were tested, of those tested, a mean of 20% were positive (Hogben et al, 2007).

Like partner notification, efficacy of education and counseling is well documented in various research studies among which is a study by Carey, Senn, Vanable, Cury-Doniger and Urban (2010). These authors conducted a randomized controlled trial in which they investigated the effectiveness of behavioral interventions to promote sexual risk reduction among STD clinic patients. They recruited 1483 patients with a mean age of 29.2 years. The patients completed a baseline assessment and were then randomized to six intervention arms. Each arm combined a brief intervention and an intensive intervention. Each intervention arm provided varying levels of information;

including motivational counseling and behavioral skills training. Follow-up assessments which included STD screening at 3, 6 and 12 months post intervention showed that infection rates declined from 18.1% at baseline to 4.5% at 12 months. At a 3-month follow-up patients reported fewer sexual partners, fewer episodes of unprotected sex and a strengthened sexual health knowledge. The authors concluded that implementing behavioral interventions in form of a combination of brief and intensive counseling in an STD clinic was associated with significant reduction of sexual risk behavior and risk antecedents.

Piwoz, Iliff, Tavengwa, Gavin, Marinda, Lunney, Zunguza, Nathoo and Humphrey (2005) assessed the impact an education and counseling program for preventing breast-feeding-associated HIV transmission had on maternal knowledge and behavior in Zimbabwe. Mothers enrolled into antenatal services after the program was fully implemented were 70% more likely to learn their HIV status earlier (less than 3 months) and 8.4 times more likely to exclusively breast feed than mothers who enrolled before the program began. Piwoz et al (2005) concluded that the intervention increased relevant knowledge and improved feeding practices among women.

The evidence of the benefits of brief educational interventions had not only been demonstrated by client centered interventions but also by clinician centered ones. A randomized controlled trial of a clinician-delivered HIV risk reduction intervention for HIV-positive people was conducted by Rose et al, (2010). The study enrolled 386 patients. Its purpose was to integrate risk reduction counseling in routine medical care. The study developed and tested a medical provider HIV-prevention training intervention in 4 northern California HIV care clinics. The clinicians in the intervention arm received a four hour training on assessing sexual risk behavior in HIV-positive patients and delivering risk-

reduction-oriented prevention messages to patients who reported risk behaviors with HIV-uninfected or unknown status partners. Over six months of follow-up, patients whose providers were assigned the intervention reported a relative increase in provider initiated discussions of safer sex, assessment of sexual activity and a significant decrease in the number of sexual partners (OR= 0.49; 95% CI= 0.26 to 0.92). The authors concluded that a brief intervention to train providers to identify risk and provide a prevention message results in increased prevention conversations and significantly reduced the mean number of sexual partners reported by HIV positive patients.

Complementing the above mentioned quantitative studies is a qualitative study by Yeap et al, (2010). This research study investigated the factors influencing uptake of HIV care and treatment among children in South Africa. The study was motivated by the fact that fewer children than expected were accessing HIV care in South Africa. The objective was to describe the barriers and facilitators of uptake of HIV care among children. In-depth interviews were conducted with 21 caregivers of HIV infected children attending clinic at the study sites, 21 clinic staff members and three lead members of staff from affiliated care centers. The results showed that many children were only tested after being recurrently unwell and both facility and caregiver related factors were reported. Among the facility related factors were long queues, negative staff attitudes, missed testing opportunities at health care facilities as well as providers' difficulties with paediatric counseling and venesection. On the other hand, caregiver related factors included lack of transport money, lack of food and treatments for opportunistic infections, poor access to welfare grants and lack of coordination amongst multiple caregivers. Misperceptions about HIV, maternal guilt and fear of negative repercussions from disclosure were also common. The participants in this study generally felt that better public knowledge about HIV would facilitate uptake and the investigators added that health care providers should actively promote HIV testing and care seeking for children (Yeap et al, 2010).

These research studies all indicate that interventions similar to partner notification and brief educational interventions may help to address Zambia's challenge of improving access to HIV testing and care for children, 95% of whom acquire the infection through MTCT (Wilson et al, 2002). No literature was found to address the central question of this study: can a family centered approach where seropositive adults are counseled on the benefits of having their children tested and entered into HIV care have an impact on the number of children enabled to have an HIV test and access HIV care? If even a brief, simple intervention can be shown to make a difference, then it might be possible to begin offering it in the near future in some settings while continuing research to understand how to improve both the content of the intervention, and how it is delivered and followed up.

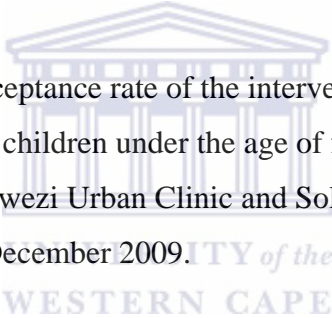


Chapter 3 – Aims and Objectives

3.1 Aim

To establish whether a family centered approach to HIV care in which HIV positive adults are counseled on the importance of having their children tested results in an increase in the number of children under the age of five years undergoing testing and accessing HIV care.

3.2 Specific objectives

- 
- a) To determine the acceptance rate of the intervention (counseling on the benefits of HIV testing in children under the age of five years) among adults accessing HIV care at Solwezi Urban Clinic and Solwezi General Hospital between November and December 2009.
 - b) To investigate the proportion of the adults who will bring their children for testing and or entry into care after having been provided with the brief counseling session on the benefits of having their children tested and or access care.
 - c) To investigate the common challenges adults accessing HIV care encounter in taking their children for HIV testing and or entry into HIV care.

d) To share the findings of this study with the facility staff, facility management, the Ministry of Health (MOH) as well as its collaborating partners particularly the Zambia Prevention Care Treatment partnership (ZPCT) which provides most of the financial, material and technical support to the two study facilities.



Chapter 4 - Methodology

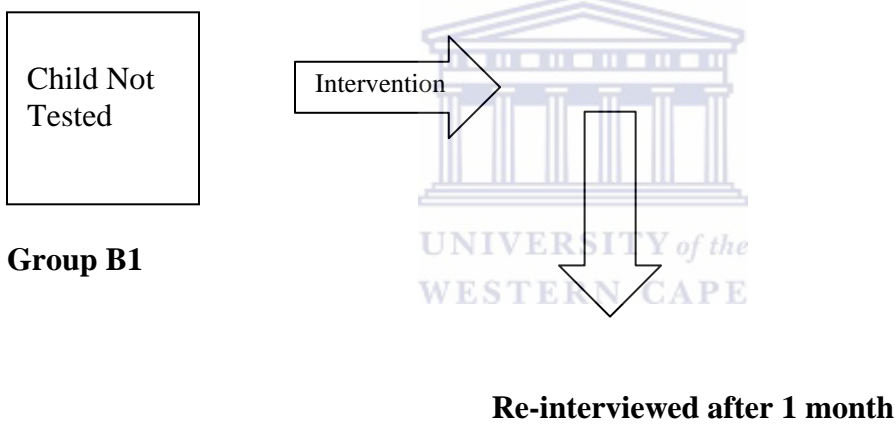
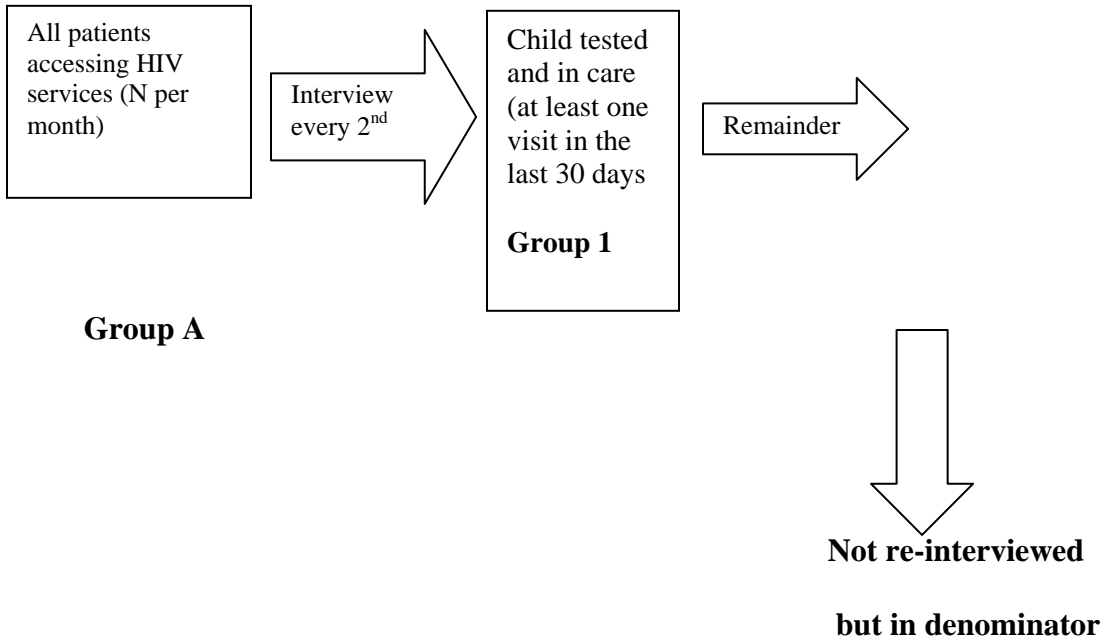
4.1 Study design: An interventional cohort study

4.2 Sampling

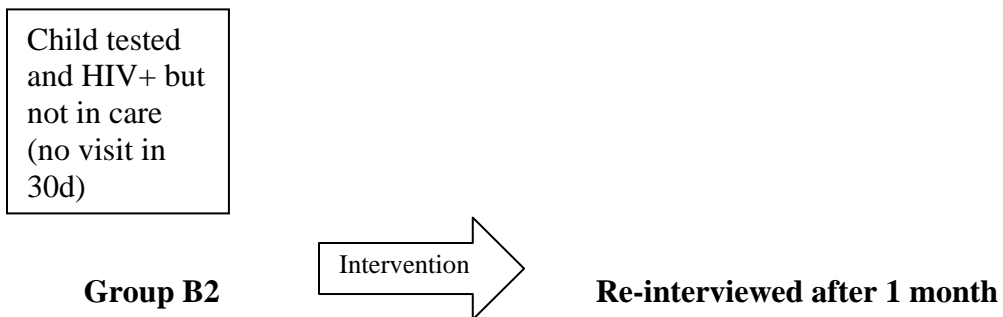
4.2.1 Study Population: HIV positive adults aged 18 years and older, with children aged 0-5 years, accessing any form of HIV care at Solwezi Urban Clinic and Solwezi General Hospital between November and December 2009.

4.2.2 Sampling Strategy: Systematic sampling was applied to enroll the study participants by scrutinizing for eligibility every second client attending the antiretroviral clinic at SUC and SGH in the months of November to December, 2009. The eligibility criterion was having a child who was under the age of five years old.

4.2.3 Sample Size and Sample Size Calculation: Epi-Info was used to explore sample size. It was assumed that about 25% of adults would have at least one child 0-5 years old and that the clinics would between them see 800 different patients in 2 months (recruitment period). These patients do not need to be people on ARVs, but people accessing some kind of HIV or ARV care, i.e. HIV positive and in care. Every second patient was interviewed to arrive at a minimal sample size of 200. For purposes of sample size calculation, a 50% “exposure” (child tested and in care) required the biggest sample to estimate the exposure with precision. In order to detect a 50% exposure plus or minus 7%, 200 subjects were needed. For the more realistic “exposure” where only 25% of the children of the respondents had been tested and were in care, 200 subjects implied a precision of 6% (i.e. a true prevalence of 19% to 31%). Therefore recruiting 200 people into the study provided an adequate sample for the first objective of determining proportions that have been tested and were in care. However, due to the good response to the intervention by the clinic attendees and in order to cater for the eventuality of losing some of the registered participants to follow up, the study enrolled 254 participants.



OR



Final sample: Group 1 = 48 patients, Group B1 + Group B2 = 206 patients

The brief counseling intervention was offered to all the 254 participants. Those whose children were already tested and in care (a proportion of Group A) benefited from a review and reminder, but they were not re-interviewed after a month because the added value of another reminder would have been outweighed by the cost and inconvenience (to them) of another interview. Although group A remained in the total sample and denominator against which the impact of the intervention was assessed, the real interest was in Group B, “adults who themselves were in HIV care but had neither had their children tested nor enrolled them in care”. The useable definition of “in care” was “any visit to HIV-related services within previous 30 days”. This included post-test or other counseling, pre-ART readiness courses, ART, clinical and laboratory monitoring or follow up of opportunistic infection treatment. This group would, in the “worst case” (for sample size requirements) have about 100 members, split between B1 and B2. This sample size (total of 254, and at least 100 in the originally unexposed arm) gave 80% power to detect a 20% change in outcome (i.e. tested OR brought into care) with 95% confidence, out of the total sample of 254.



4.3 Data Collection: An interviewer administered questionnaire was used to collect information from the participants. The post-intervention assessment (part B of questionnaire) was conducted as the respondents came for their return visit approximately one month after having received the intervention. Appointments were not made specifically for completing the post intervention component of the questionnaire but the research study took advantage of the respondents’ regular visit schedule especially the collection of drugs which is usually done on a monthly basis. The interviewers at no account directly obtained any form of information from the children as a consequence of their parents receiving the intervention. However, accuracy of the respondents’ reports of having facilitated for their children to be tested or entered into HIV care was confirmed by checking the child’s details in the facility records on counseling and testing in

the general counseling register as well as entry into HIV care from the Pre-Antiretroviral Therapy Register.

Qualitative data were also recorded from the research assistants especially during the weekly update/ feedback meetings. Some of the data were the views or perceptions of the research assistants emanating from their experiences during the study while others were the comments they took note of from the study participants.

Finally, the last objective of the study was not a research objective but a dissemination objective. The method was to hold a dissemination seminar where the key stakeholders were invited including a representative from the provincial and the district medical offices, the administrators of the two health facilities (SUC and SGH) as well as the research assistants. At this seminar, the key components of the study were shared including the primary purpose of the study, the methods and processes applied to achieve the objectives. The achievements, challenges and the recommendations were also presented.

4.4 Data Analysis

To assess the overall impact of the intervention in increasing the proportion of adults bringing their children for testing or care, the full sample of 254 respondents was analysed. The proportion of respondents who had brought their children under the age of five years for testing and or entry into care after the intervention was compared with the proportion of those who did not bring their children for testing and or entry into care after the intervention. McNemar Statistical Test (a paired t-test for categorical data) (McNemar, 1947) and Chi square test were used to test significance of the difference between the two figures. However, as the underlying interest of the study was to assess impact on

adults who had not yet brought their children for testing or care, further analysis was done on the sample of 206 respondents who had not yet brought their children. Demographic factors of adults who did not complete the study because they had not yet returned for their own care during the study period were compared with those who did complete the study, using analyses of central tendency. Finally, the exploration of factors facilitating or impeding a positive response to the intervention was limited to the respondents who completed both interviews. The correlation of the response to the counseling intervention with possible determinants such as sex, proximity to the health facility, level of education and type of occupation were explored with the Pearson Correlation Coefficient and the p-value. A statistical package (SPSS- version 14.0) was used to analyze the data.

The qualitative data were only descriptively presented.

4.5 Rigour

4.5.1 Validity

In this study internal and external validity was ensured. Confounding, as a significant threat to internal validity was reduced by restricting assessment of the impact of the intervention only to the adult HIV clients who were provided with counseling on the benefits of having their children tested and or entered into care. This was achieved by attaching a questionnaire to each respondent's file and the questionnaire was only removed once the respondent had either come for their earliest subsequent visit or at the end of the study. Furthermore, other confounding factors such as the "history effects", which are events during the life of a project that tend to either increase or decrease the expected outcomes (Fisher et al, 2002) were addressed. An example of history effects in this study include situations where the respondents after having received the intervention get hold of some other information or the child falls ill and this compels them to take their child for testing and or entry into care before the



scheduled return visit where the rest of the questionnaire was planned to be completed. This threat to internal validity was addressed in the questionnaire by enquiring on the possibility of other factors that could have prompted the parent to bring the child for testing other than the study-related-counseling session.

Differences in characteristics seen in the subjects belonging to the interventional group and the control group in experimental studies are a recognized threat to internal validity (Fisher et al, 2002). In this study, such a threat has been addressed by the study design: the same sample serves as both the cases and the controls with the intervention by way of a brief counseling session being the only distinguishing characteristic. Validity was further ensured by having the questionnaire translated into the local language (Kaonde) and was piloted before commencing data collection.

External validity is ensured by having an adequate sample size and by employing a sampling technique that ensures that the sample is representative of the study population (Golafshani, 2003). This exploratory study did not include preparation of a detailed formal sampling frame with true random or systematic sampling, but based on the assessment of clinic records over the prior 6 months and on the principal investigator's experience as well as the fact that antiretroviral therapy is lifelong treatment (most have patients have regular clinic visits), it was concluded that a very large variability over time periods was unlikely and that the sample was likely to be representative of the population of HIV positive adults whose children had not undergone HIV testing but who were themselves accessing care at SUC and SGH. This study enrolled a total of 254 participants i.e. 54 more than the minimum acceptable sample size in order to ensure a sufficient final sample size. The participants were selected by systematic sampling: every second client was scrutinized and offered to be part of the study if they met the eligibility criteria.

External validity beyond the study population of SUC and SGH patients cannot be assumed, as the research did not include an analysis and comparison between the sample, the clinic population, and the general population. However, this does not have a major effect at this point for two reasons. First, the study was an initial exploration within a specific clinic population, and results were intended to support good practice within this population. Secondly, nearly all adults on ART in Solwezi use this clinic. The study therefore should be generalizable to adults accessing ART, but it may not be generalizable to adults or families who do not yet have access to ART.

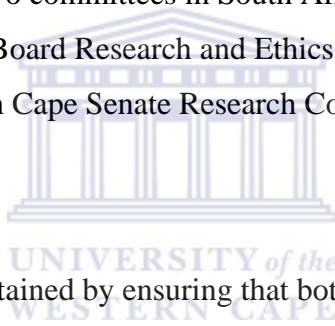
4.5.2 Reliability

Reliability, refers to “the extent to which results are consistent over time and are an accurate representation of the total population under study and whether the results of a study can be reproduced under a similar methodology” (Joppe as cited in Golafshani, 2003: 598). In this study reliability was ensured by educating all the research assistants (lay counselors, the nurse counselors and the clinical officers) on the rationale, process and purpose of the study. To ensure that both the mode of asking questions and the interpretation of the answers were uniform, the research assistants were also oriented in the administration of the questionnaire. To further ensure that all the measures to maintaining reliability were adhered to by the research assistants, the principal investigator provided close supervision at each site by working with them during both the clinic days (Tuesdays and Thursdays) at SUC and Mondays and Wednesdays at SGH where the clinic was conducted through out the week. The principle investigator also held update meetings with the two teams on a weekly basis; at SUC this was done on Friday morning, while at SGH, in order to avoid interfering with the regular clinic activities the meeting was held on Friday afternoons as by this time all the clients with appointments had been attended to and only on rare occasions was there need to see a walk-in client or two without an appointment. During the meetings, successes and challenges were discussed. The successes included the positive unexpected outcomes of the study (such as

the respondent bringing the child and the husband for counseling and testing after having received the study's intervention), while the challenges included the technical and administrative difficulties encountered on a day-to-day basis, such as the names of respondents the research assistants had forgotten to enter in the participant's register, how to ensure the consent forms are completed and all the forms are properly attached to the patient files.

4.6 Ethical Considerations

The research study's objectives and process adhered to research ethical guidelines stipulated by two institutions in Zambia namely, the Converge Ethics Review Board and the Directorate of Public Health and Research under the Ministry of Health and two committees in South Africa: University of the Western Cape's Faculty Board Research and Ethics Committees as well as the University of the Western Cape Senate Research Committee.



Confidentiality was maintained by ensuring that both the questionnaires and the consent forms were attached to the patient's folders throughout the course of the project. The filing system obtaining at the two facilities upheld confidentiality as it demanded that all patient folders were placed in lockable cabinets and were only accessed by authorized clinic staff and volunteers. At the end of the study, the study materials were shredded and burnt (consent forms and questionnaires) except for the study registers and the soft copy of the data base which were kept in a lockable cabinet and under password protection respectively by the principal investigator.

Although efforts were made to ensure that every ethical obligation was adhered to, in 9 instances the research assistants forgot to have the consent forms signed after having taken the participant through the whole process of obtaining

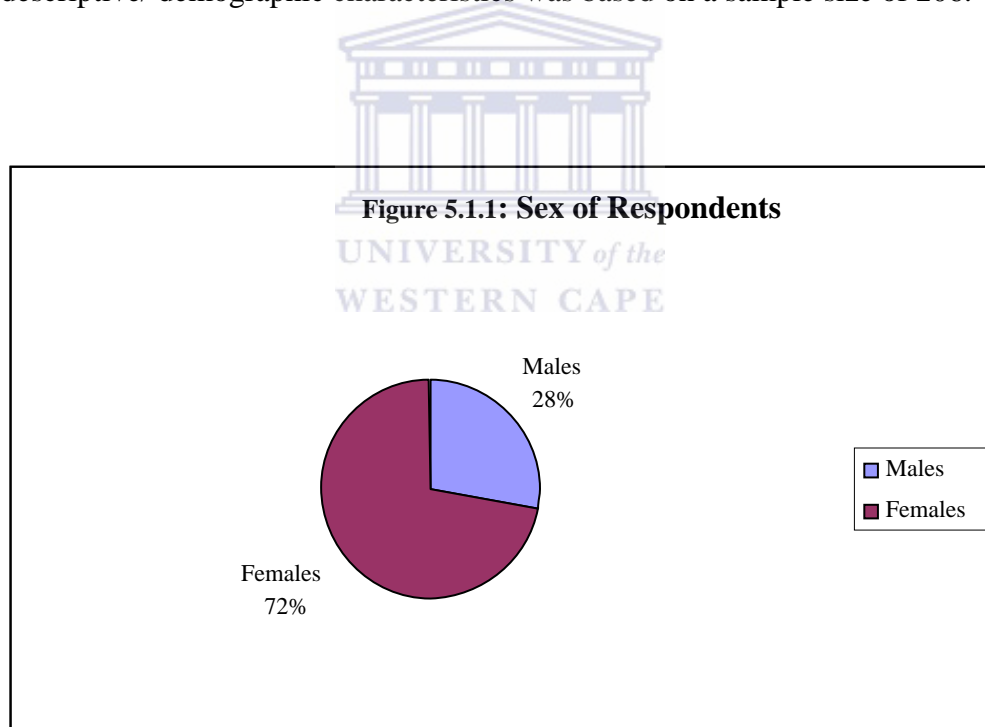
consent. These cases were addressed by ensuring that the participants signed the forms during their subsequent visit at the same time the second part of the questionnaire was being administered. No serious ethical issues arose during the study.



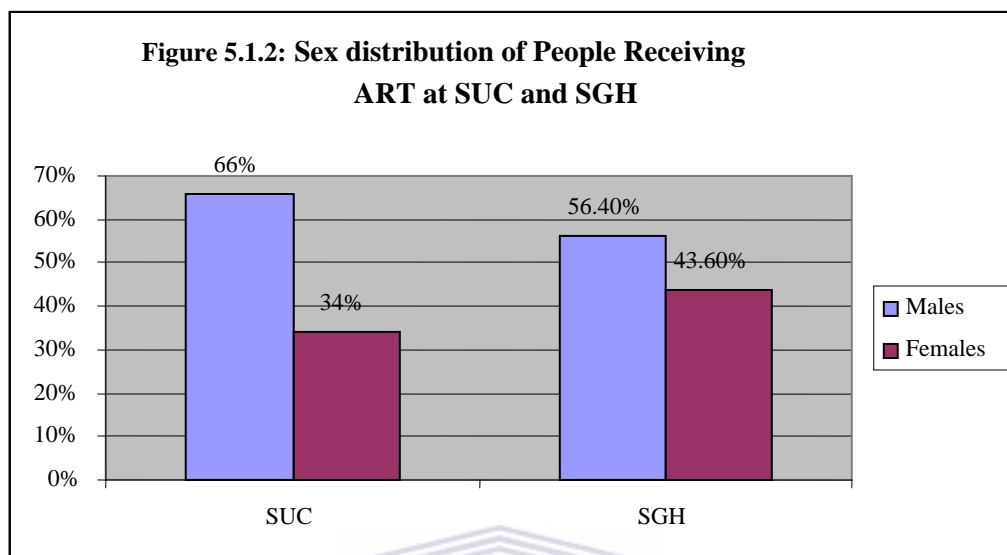
Chapter 5 - Results

5.1 Characteristics of Respondents

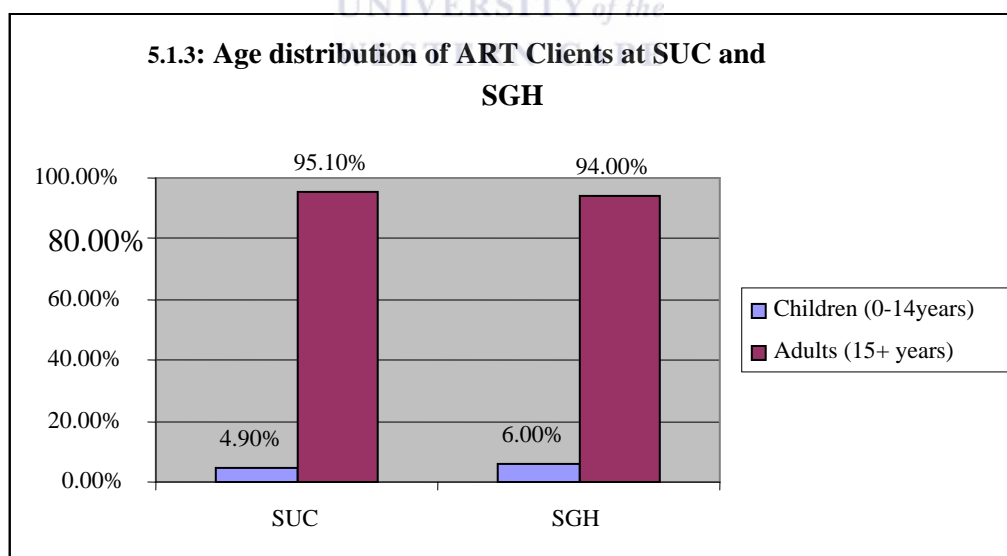
The sample population was analysed for their demographic characteristics including sex, age, educational and occupational status as well as the approximate distances between the participants' residential areas and the ART clinics. Of the 254 clients who had children under the age of five years, 206 participants (82.1%) had not yet brought their children for HIV testing or care. Of the 48 (18.9%) who had already had their children tested, 19 had their children already in care and the remaining 29 had their children already tested but pending commencement on antiretroviral treatment. Analysis of the descriptive/ demographic characteristics was based on a sample size of 206.



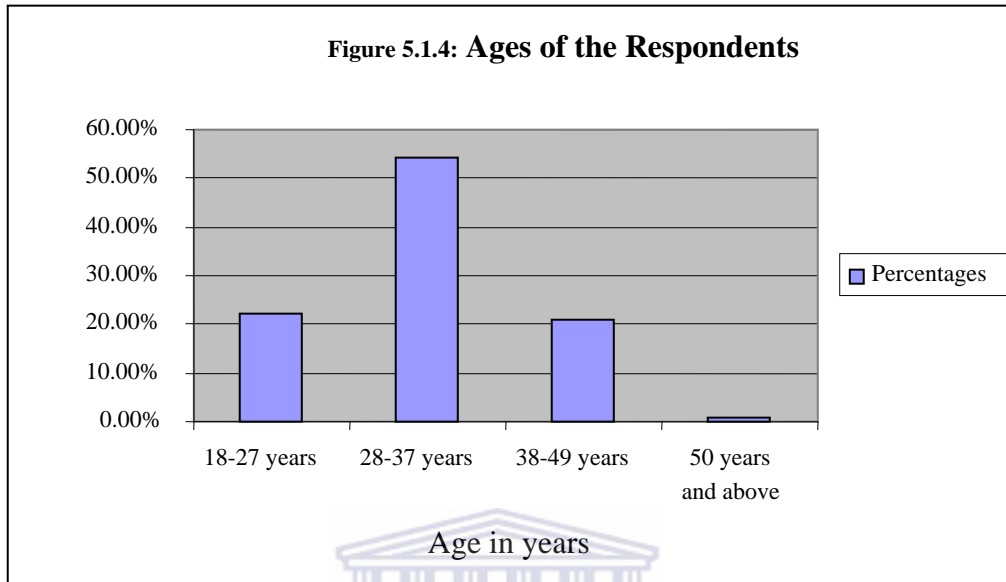
A higher number of females (72%) than males (28%) were entered into the study (n= 206). This was attributed to the fact that more women than men attend the two clinics as shown in figure 9.1.2. Additionally, though the study did not formally assess this, it was assumed that more women than men were likely to be caregivers of young children, thus further increasing the proportion of women entered into the study.



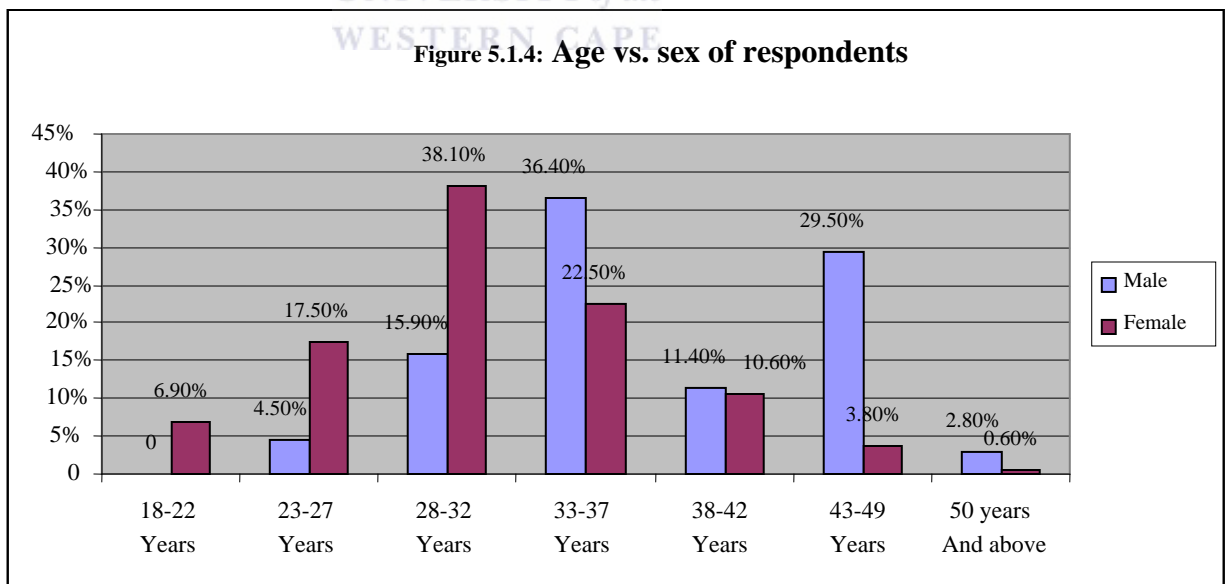
From a total of 570 clients accessing ART at SUC and 2880 at SGH, between May and October, 2009 most were female (ZPCT, 2009).



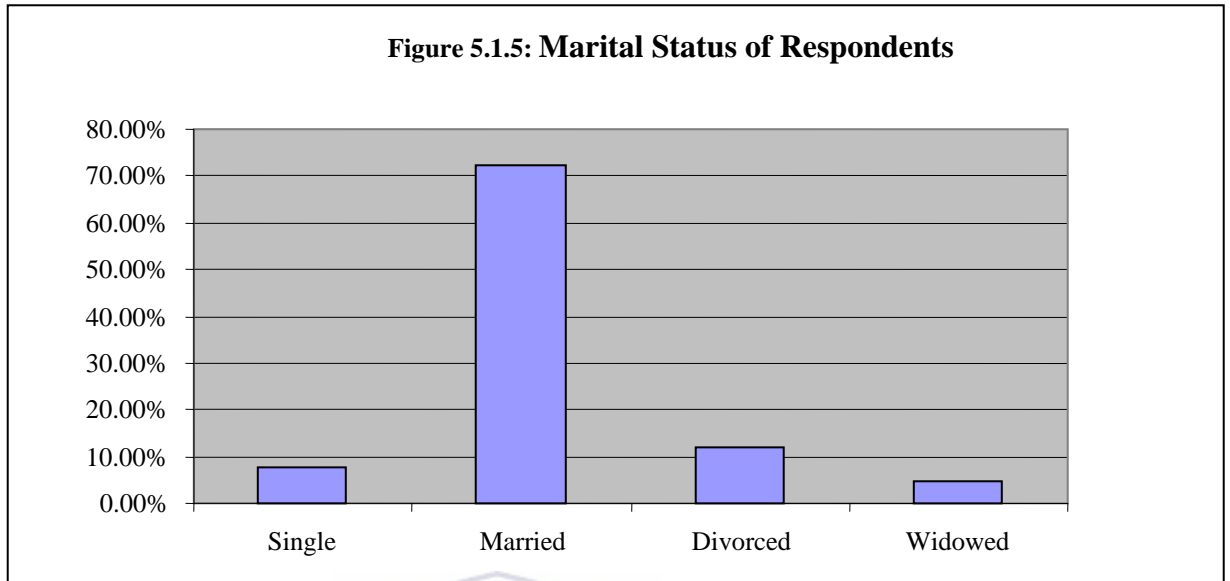
As at October, 2009, 4.9% (28) and 6.0% (194) of the clients accessing ART at SUC and SGH respectively were children aged 0- 14 years, while the rest were adults aged 15 years and older (ZPCT, 2009).



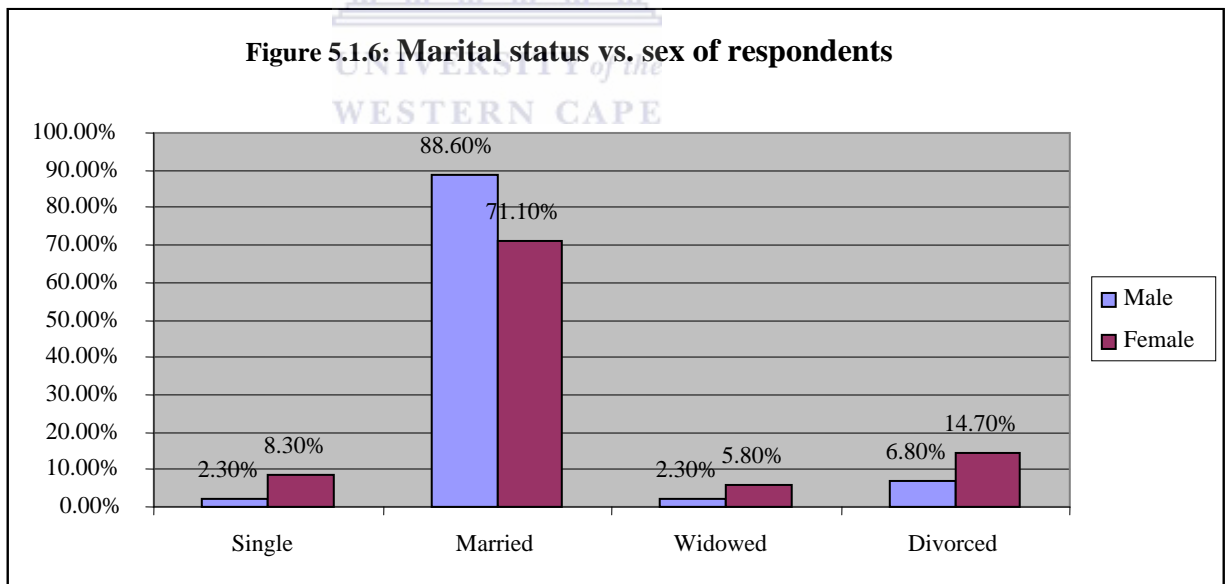
Most of the respondents were in the 28-37 years age group (54.3%), (n= 206).



The modal age group for the male respondents was 33 to 37 years (36.40%), while for the females it was 28 to 32 years old (38.10%) (n= 206).

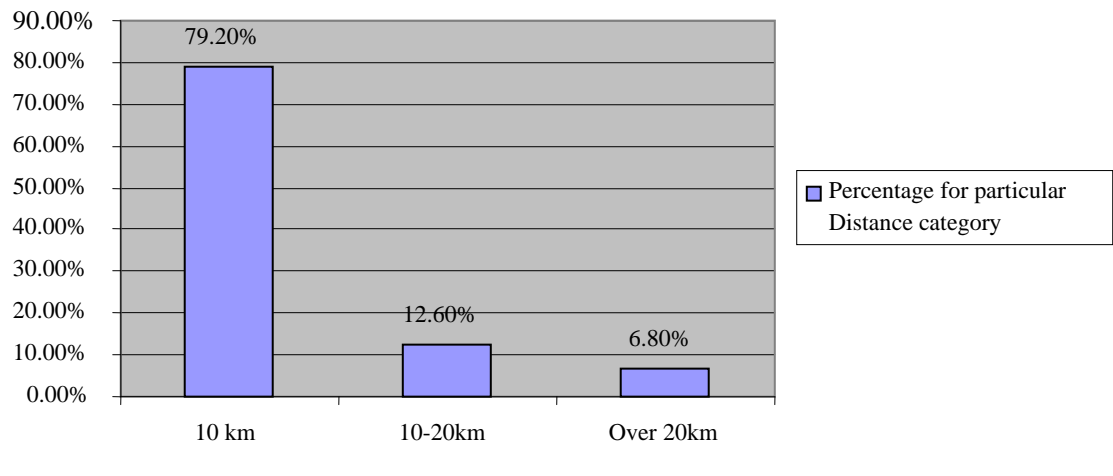


Most of the respondents were married while the widowed constituted the lowest proportion of respondents (n= 206).



The largest proportion of the male and the female respondents were married; A higher proportion of females were divorced as compared to the male respondents (n= 206).

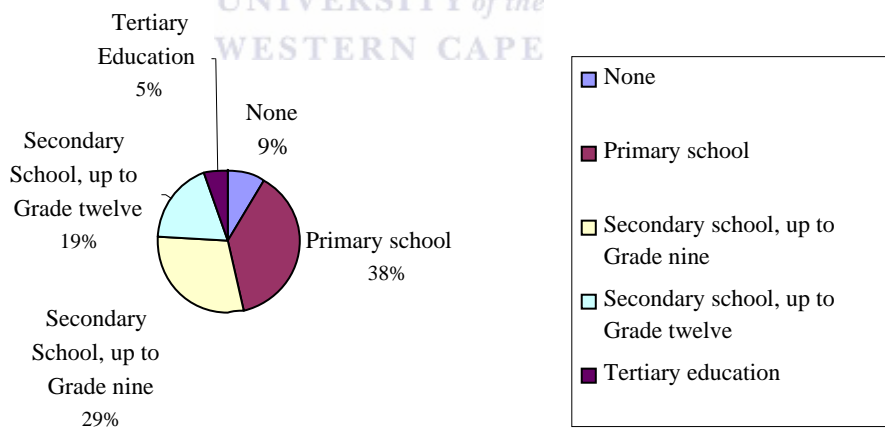
Figure 5.1.7: Respondents' distance from the health facilities



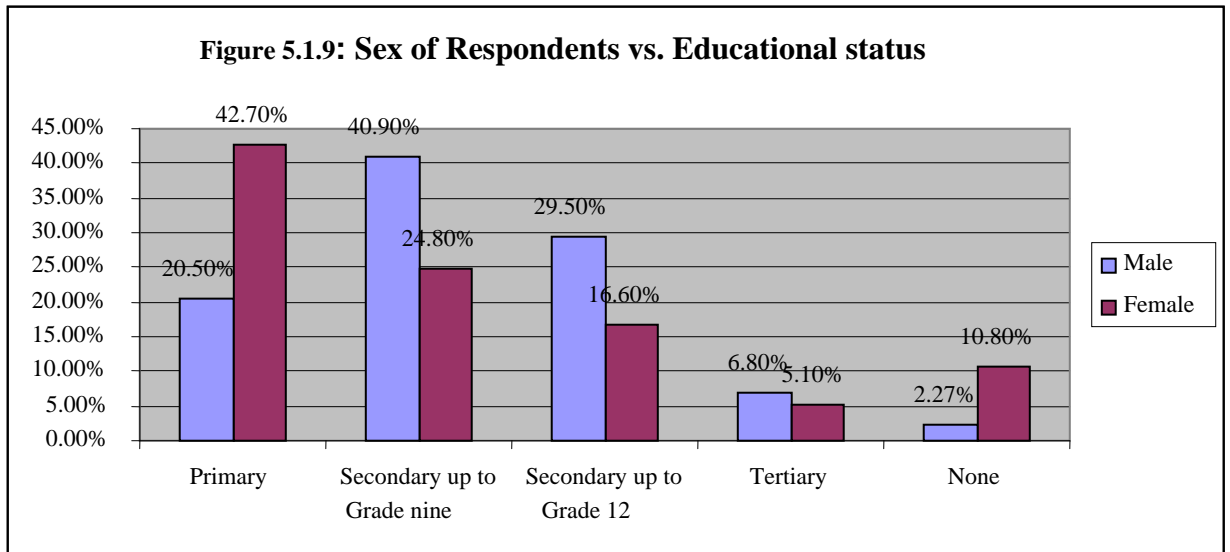
The largest number of respondents was in the distance category of within 10 kilometers (n= 206).



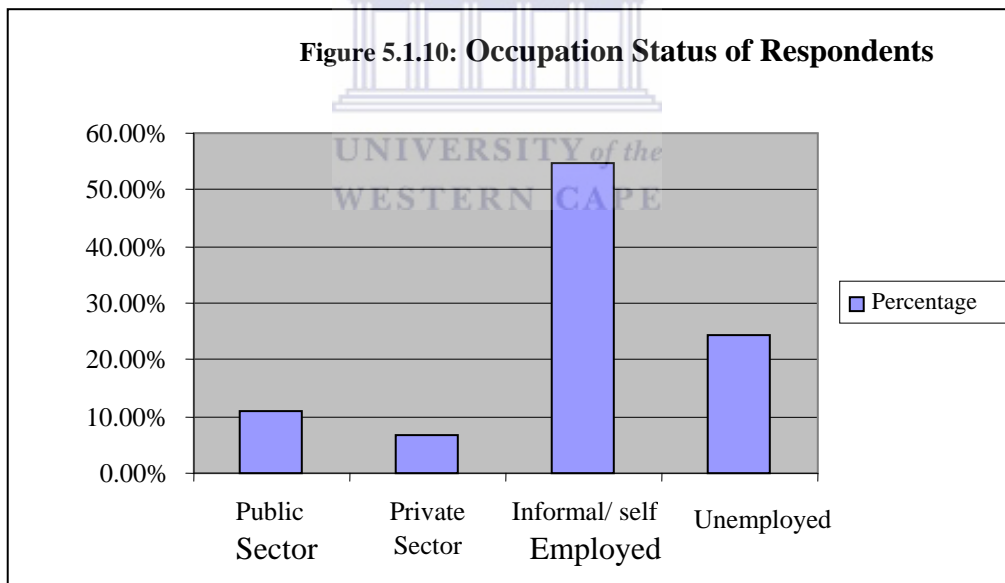
Figure 5.1.8: Level of Education attained



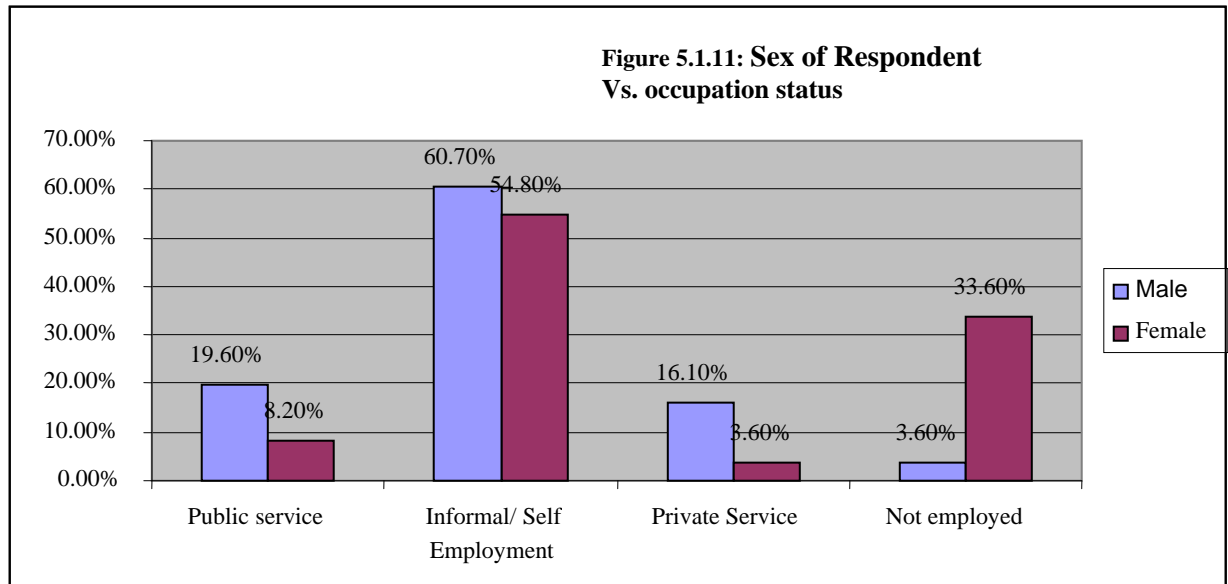
The highest proportion of respondents reached up to primary school while the lowest attained tertiary education (n= 206).



The highest proportion of the male respondents reached up to secondary school (grade nine) while the highest proportion of female respondents reached up to primary school.(n= 206).



The highest proportion of the respondents was from the informal or self employed sector (54.8%), the lowest was from the private sector (6.7%) (n= 206).



A higher proportion of the female than male respondents were unemployed. The highest proportion of respondents in both sexes was in the informal or self employed sector (n= 206).

5.2. Acceptance rate of the brief counseling session as an intervention to increase uptake of HIV testing in children under the age of five years old

Of the 206 participants offered the brief counseling on the importance of having their children tested, 205 accepted the intervention while 1 declined; hence acceptance rate of the intervention in this study was 99.5%.

5.3 Principal outcome and factors associated with the impact of the brief intervention

This section presents the key results and further analysis of the sample of 183 (88.8%) respondents who had returned for the subsequent clinic visit during the study period. During the subsequent visit, the final part of the questionnaire was completed. For the 10.7% (22) respondents who did not return, analysis and comparison to the rest of the sample was done as shown in section 7.6. In summary, the key findings are:

- A significant increase in the proportion of adults attending SUC and SGH who had brought their children for HIV testing or care by the end of the study period: 18.9% of the cohort of 254 adults had already had their children tested or enrolled into care at the start of the study; this proportion increased to 59.4% after a single brief counseling intervention and one month of follow-up (Chi square $p < 0.001$).
- The majority of the respondents [103, (56.3%)] who had come for a subsequent visit by the end of the study period had brought their children for HIV testing and or entry into care (n= 183) while 43.2% (79) had not brought their children despite coming back to the clinic for their own HIV related care.
- Women were 3.5 times as likely to bring their children for testing as men (OR=3.48, $p = 0.001$).
- Most factors explored as possible challenges or determinants of a positive response to the intervention differed between men and women.

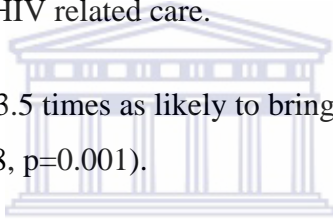
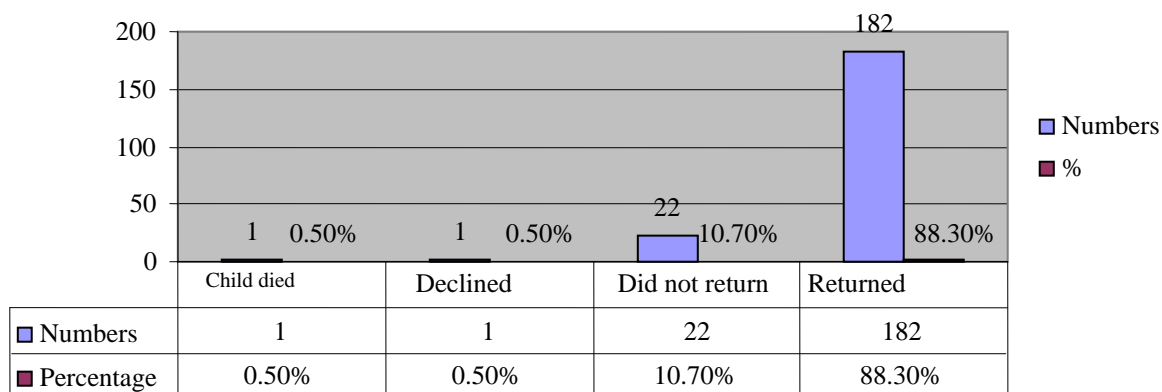
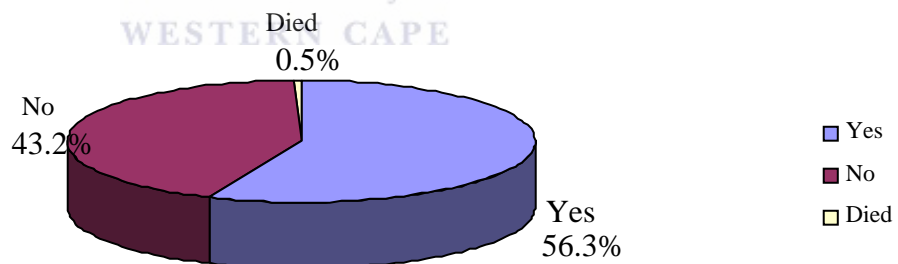


Figure 5.3.1: Respondents who returned after counseling



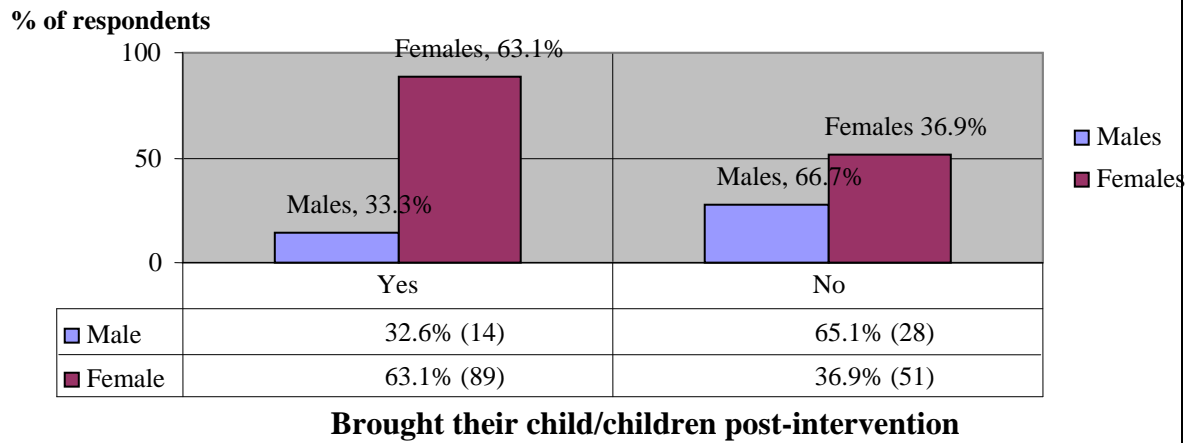
The majority of the respondents, returned for their subsequent visit within the study duration, one respondent returned despite the child dying (n= 206).

Figure 5.3.2: Respondents who brought their children after the intervention



The majority of the respondents brought their children for testing after having received the counseling. A child to one of the respondents died between the time the respondent received counseling and the subsequent clinic visit (n= 183). Over all, before the intervention 48/254 i.e. 18.9% had had their children tested while after the intervention a total of 151/254 i.e. 59.4% had their children tested (Chi square; P< 0.001).

Figure 5.3.3: Sex vs. number of respondents who brought their children



Women were 3.5 more likely to bring their children for testing compared to men (n= 183; OR 3.49; CI= 1.69 to 7.23, P= 0.001).

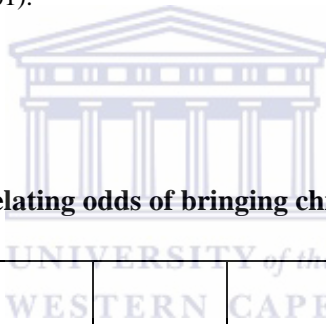
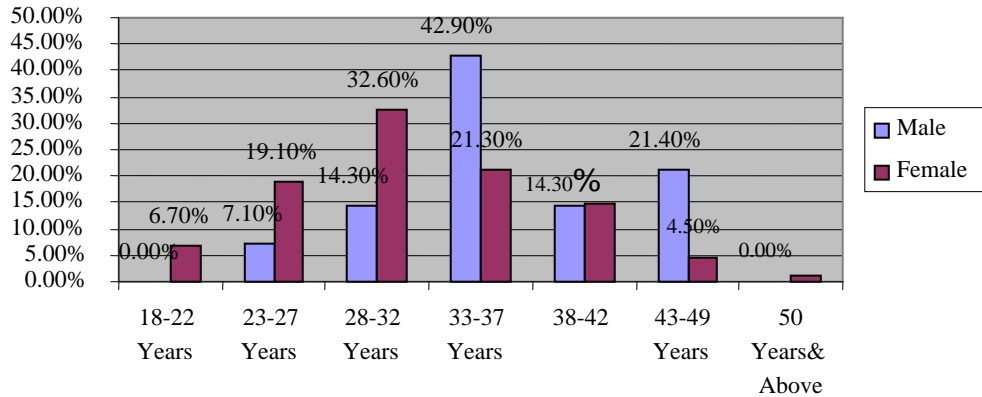


Table 5.3.3: Effect relating odds of bringing child to gender

Predictor	Category	B	S.E. (B)	95% C.I. for EXP(B)		Exp(B)	p-value
Gender	Female	Reference	-	-	-		
	Male	1.25	0.37	1.69	7.23	3.49	0.001

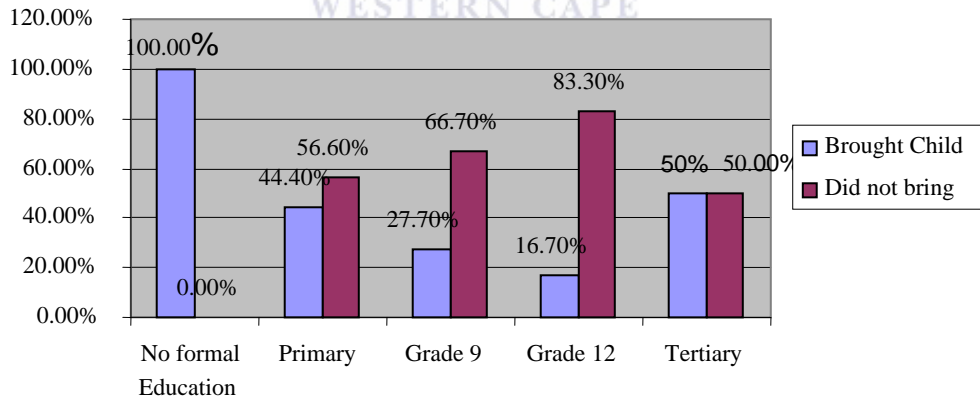
The odds ratio of women to bring their children as compared to men was 3.49 i.e. women were 3.49 times more likely to bring children than men (n=183; CI 1.69 to 7.23).

Figure 5.3.4: Sex vs. age vs. number that brought their children for Testing or care



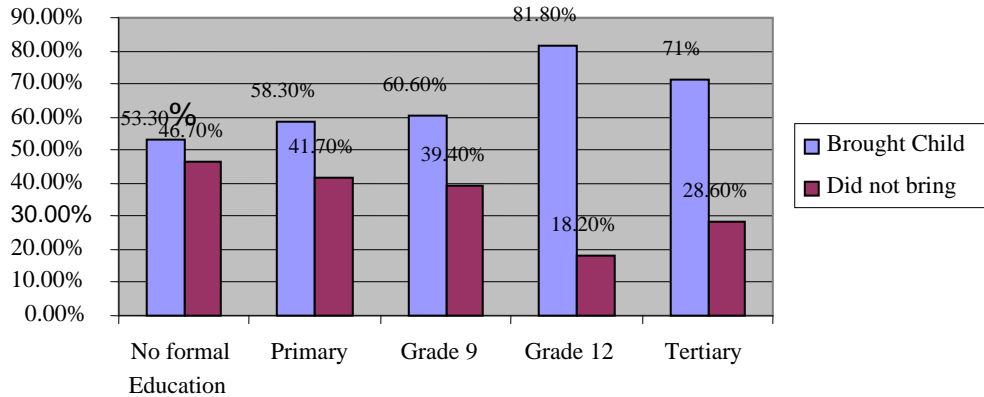
The highest proportion of male respondents that brought the children after counseling were aged 33-37 years old while highest proportion of female respondents who brought their children were aged 28-32 years (n= 183).

Figure 5.3.5: Male respondents vs. brought their children after Counseling vs. education



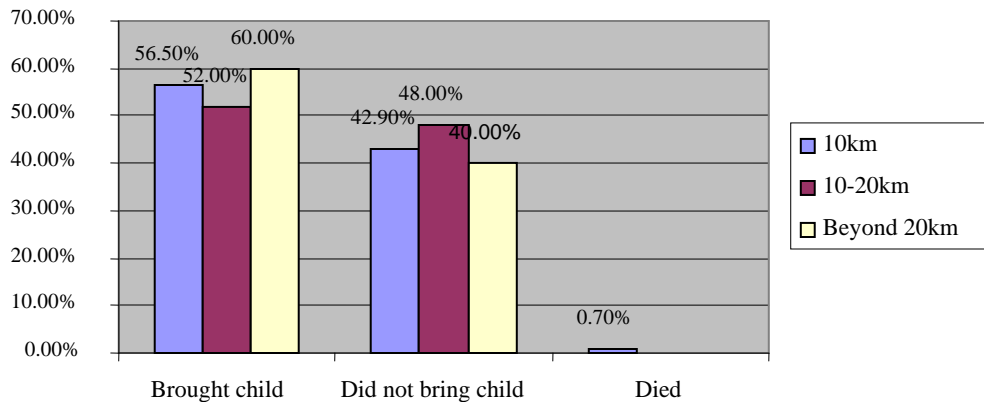
The proportion of male respondents who brought their children was lower than those who did not for all the educational categories except for the tertiary education and the “no formal-education” category (n= 42).

**Figure 5.3.6: Female respondents vs. brought their children
After counseling vs. education**



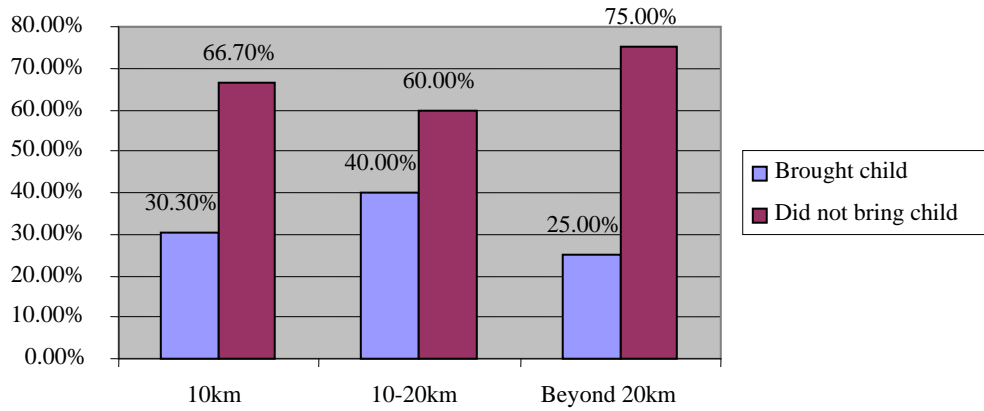
Among the female respondents, a higher proportion brought their children as compared to those who did not in all educational categories. The highest proportion of female respondents who brought their children had attained up to grade 12 education while the lowest had no formal education (n= 140).

Figure 5.3.7: Distance to facility vs. number that brought children



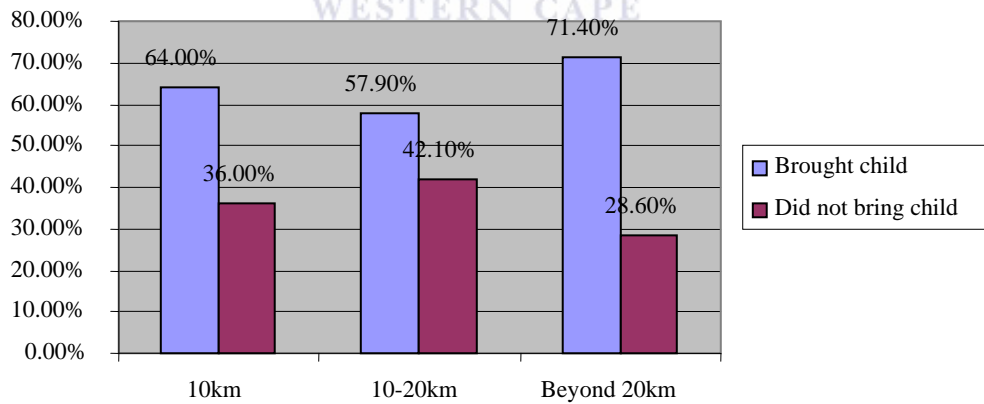
The highest proportion of the combined male and female respondents who brought their children lived beyond 20km from the facilities. However, the category beyond 20 km was too small to ascertain whether longer distance was a predictor for bringing children for testing (n= 183).

Figure 5.3.8: Male respondents vs. distance from Facility vs. numbers that brought children



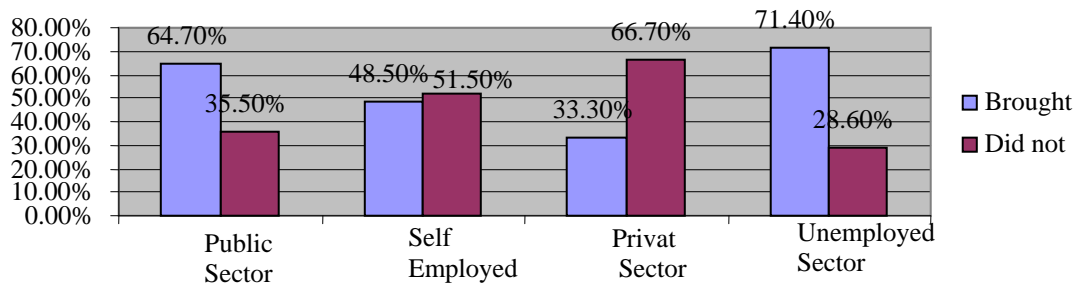
The highest proportion of male respondents who brought their children lived between 10 and 20km from the facilities, while the lowest proportion that brought their children for testing lived beyond 20km from the facilities (n= 42).

Figure 5.3.9: Female respondents vs. distance to facility vs. Number that brought children



Within the three distance categories, the highest proportion of female respondents who brought their children lived beyond 20km from the facilities, while the lowest proportion lived between 10 and 20km from the facilities (n= 140).

Figure 5.3.10: Occupational Status vs. Bringing the Children



The highest proportion of respondents who brought their children was unemployed. The public sector also had a relatively higher proportion of respondent who had brought their children compared to the self employed and the private sectors (n= 183).

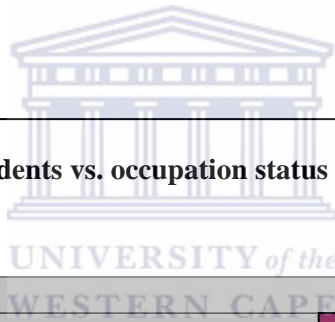
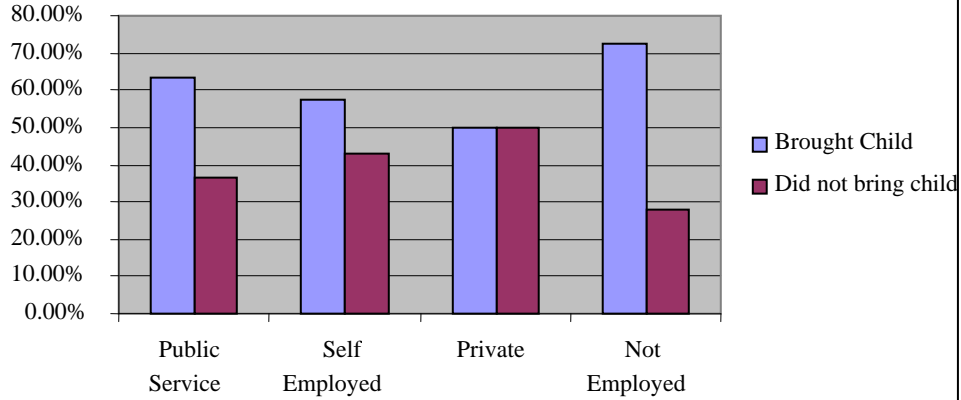


Figure 5.3.11: Male respondents vs. occupation status vs. number that brought the children for testing.



For the male respondents, only the public sector recorded a higher proportion of respondents to have brought their children after the counseling intervention (n= 42).

Figure 5.3.12: Female Respondents vs. occupation status vs. number that brought children after counseling

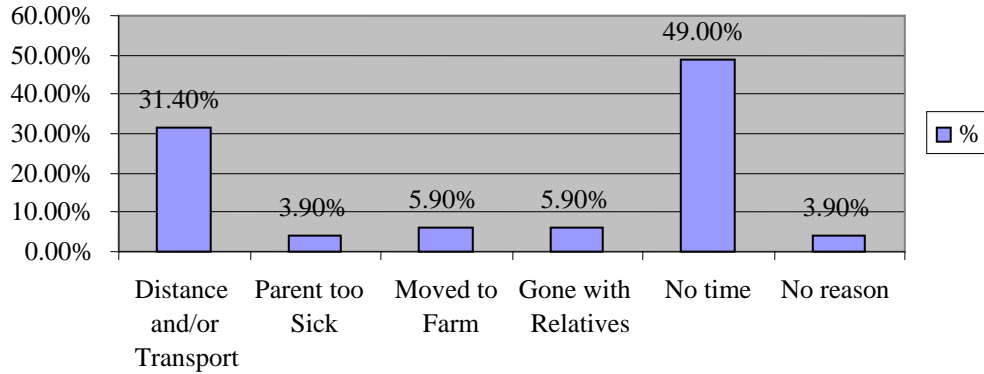


The “not employed” group had the highest proportion (73.3%) of female respondents who brought their children for testing. Of the four occupation categories, the “not employed” or “informal employment” category also had the largest difference between the number of respondents who brought their children and those who did not (n= 140).

Section 5.4 Reasons given by the respondents for not bringing their children for testing

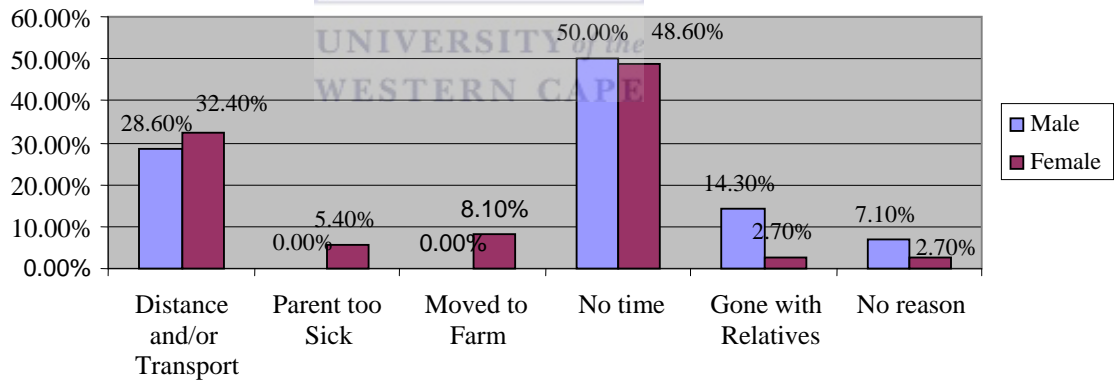
The different reasons given by the respondents were analysed against the various demographic characteristics including sex, occupational status and distance from health facility. In all of these categories, the most common reason cited for not bringing the children for testing after having received the intervention was lack of time, followed by the combination of long distance to the health facility and lack of transport money to board a taxi. From a total of 79 participants who had not facilitated for their children to be tested during the study duration, reasons for not doing so were recorded from 53 respondents; hence 53 was taken as sample size for the analysis of the reasons cited.

Figure 5.4.1: Reasons for not Bringing Child After Receiving Intervention



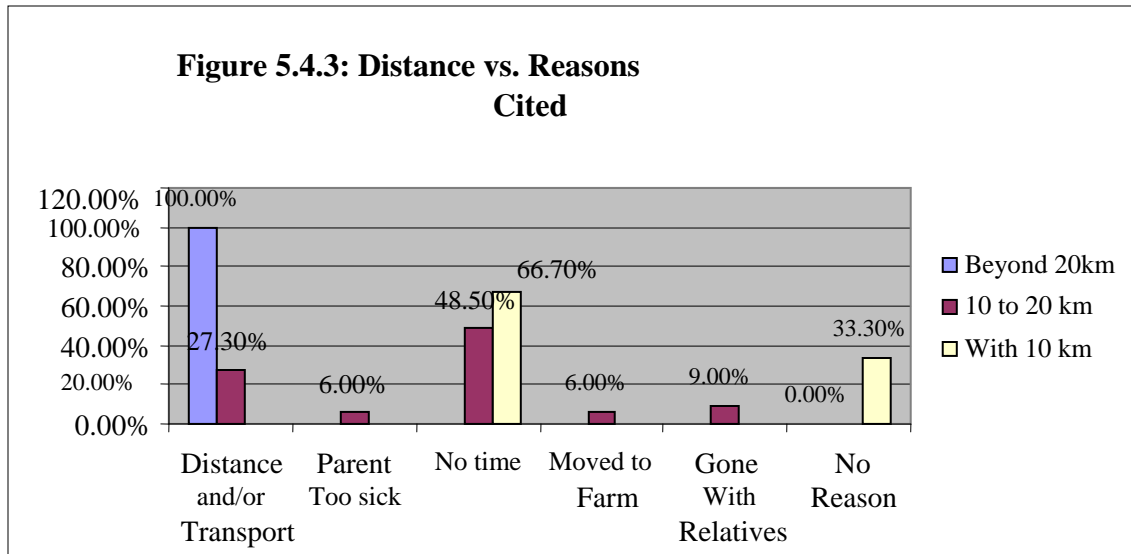
The commonest reason cited by the respondents for not bringing their children after the intervention was lack of time. This was followed by long distance and/ or lack of transport money (n= 53).

Figure 5.4.2: Sex vs. Reasons Cited by the Respondents



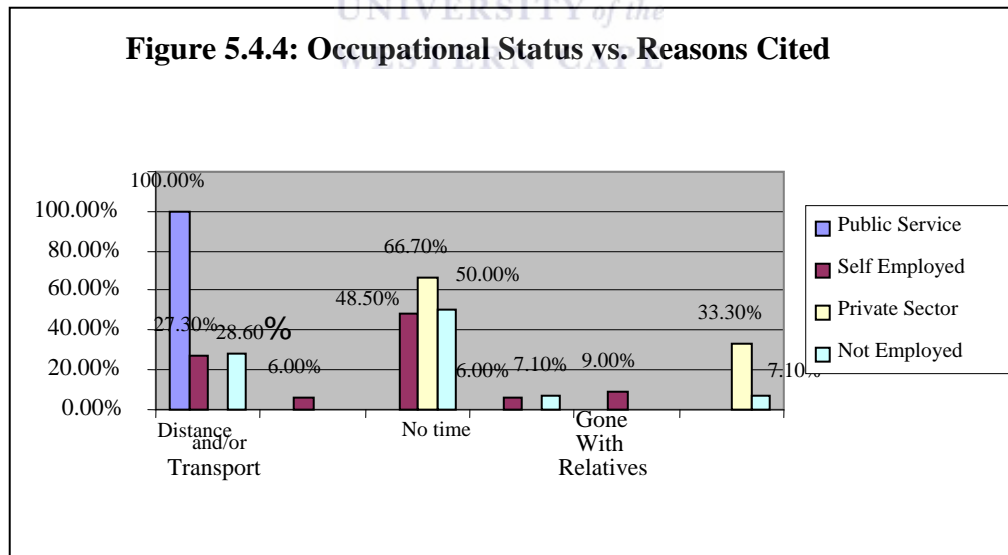
The highest proportion of male (48.6%) and the female (50.0%) respondents who did not bring their children indicated that they had no time to do so. This was followed by a significant others who cited distance and/ or lack of transport money for a taxi (n= 53).

Figure 5.4.3: Distance vs. Reasons Cited



All of respondents living beyond 20km cited long distance and/or lack of money for transport to the ART clinic as the inhibiting factor to bringing their children for testing on their return visit. A higher proportion of those living between 10 and 20km than those living within 10km also gave this reason for not bringing their children. The highest proportion of those living within 10km cited “no time” (n=53).

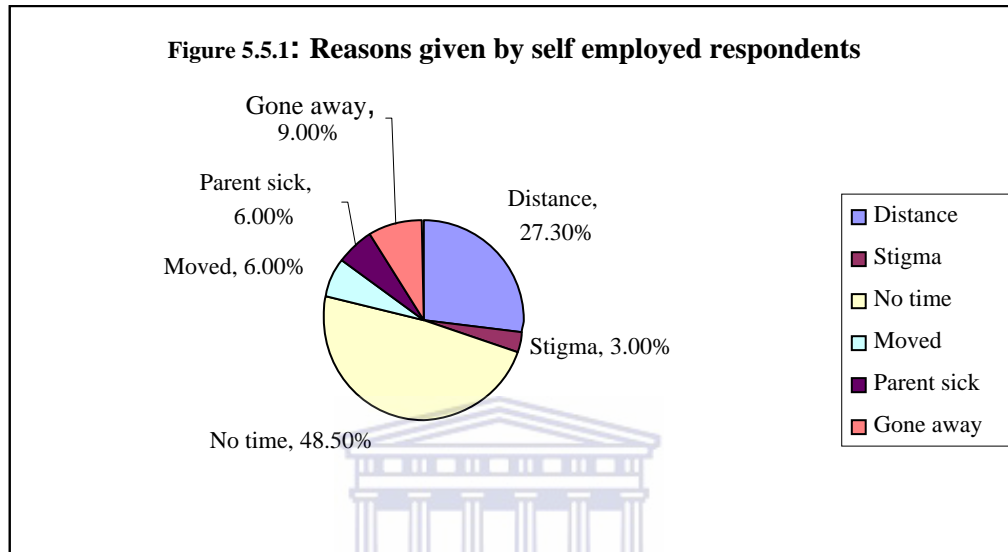
Figure 5.4.4: Occupational Status vs. Reasons Cited



The most common reason cited by the respondents from the different occupational categories was “no time”. However, for the respondents in the public sector, lack of money for transport or long distance to the clinic was the inhibiting factor (n=53).

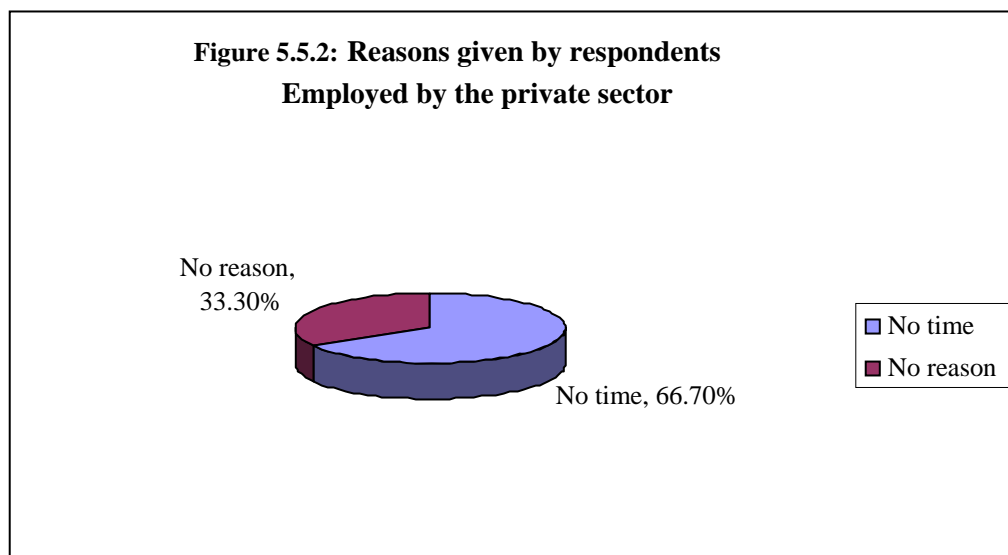
Section 5.5: Reasons given by the different occupational categories

The different reasons given by the self employed, the private sector and the “not- employed” were analysed as shown in the figures below.



The majority of the self-employed respondents indicated lack of time as the reason for not bringing their children for testing after having received the intervention. This was followed by those who cited long distance to the ART clinic (n= 33),

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The majority of the respondents (66.7%) in the private sector category indicated lack of time as the reason for not bringing their children while 33.3% said they had no significant reason for not bringing their children for testing (n= 3).

Figure 5.5.3: Reasons by the not-employed group



The majority of the respondents (50.0%) in “the not-employed” category indicated lack of time as the reason for not bringing their children for testing. This was followed by those who indicated that the long distance to the health facilities was the inhibiting factor (n= 14).

Section 5.8 Analysis of the Respondents Lost to Follow Up

For the respondents who had been lost to follow up (n= 22), a brief analysis was done. This was especially done to compare the demographic characteristics of the respondents who returned for the subsequent visit to those who did not.

Table 5.8.1A: Demographic characteristics: Respondents who had returned vs. those who did not

	Sex		Address		
	M	F	Within 10 km	10 to 20 km	Over 20 km
Returned	42 23.5%	140 76.5%	146 80.7%	24 13.3%	11 6.0%
Did not return	5 41.7%	17 58.3%	17 77.3%	2 9.0%	3 13.7%
Difference in %	18.2%	18.2%	3.4%	4.3%	7.7%

Table 5.8.1A: Demographic characteristics: Respondents who had returned vs. those who did not

	Educational Status				Facility	
	Primary	Grade 9	Grade 12	Tertiary	SUC	SGH
Returned	68 42.0%	52 32.1%	33 20.4%	9 5.6%	84 46.0%	99 54.0%
Did not return	8 40.0%	4 20.0%	6 30.0%	2 10.0%	7 31.8%	15 68.2%
Difference in %	2.0%	12.1%	9.6%	4.4%	14.2%	14.2%

Disaggregation of the sample of respondents who were lost to follow up revealed that there were some differences in the proportions in this group compared to those who returned during the study duration. The mean difference in the proportions for the different demographic characteristics between the two groups was 9.84; median 9.6; range of 2 to 18.2. With a mean difference of less than 10%, it was assumed that the sample that came for the subsequent visit was not different from the ones who did not come back.

5.9 Qualitative Results

From the principal researcher’s update meetings with the research assistants, it was also evident that most of the respondents who had not brought their children for testing indicated that they would bring the children on their subsequent visit to the clinic. The statement ... “I did not manage to bring my child today, but I will do so on my next visit” was not uncommon. From such meetings, the research assistants also reported that at least three women after having received the intervention went on to bring their spouses as well in addition to their children. “I was amazed to see the woman come with her husband and child for testing... it was so nice” one of the research assistants had said. It was also learnt that some of the respondents brought their children the same day they had received the counseling.

A dissemination workshop was held at the end of the data collection and analysis period. The workshop was attended by representatives from the North-

Western Province Medical Office; Solwezi District Medical Office, clinicians and administrative officers from Solwezi Urban Clinic and Solwezi General Hospital as well as the research assistants. During the workshop, the study findings were discussed by the principal investigator while one research assistant shared their experiences during the study from each of the study sites. The attendees of the workshop were thrilled at the results of the study and the provincial medical officer's representative expressed willingness to adopt the family centered approach at a larger scale in the province especially that it had proven to increase children's uptake for HIV services.



Chapter 6 - Discussion

The study enrolled almost three times as many female (72.0%) as male respondents (28.0%). This was largely due to the fact that female patients constitute a larger proportion of clients at the antiretroviral clinics at the two facilities. At SUC as many as 66% of the clients are female aged 15 years and over, while 26.0% are male clients aged 15 years and above and 4.9.0% are children aged 0-14 years (ZPCT, 2009). Differences in proportions of male and female respondents are not unexpected partly because health seeking behavior in men is generally different to that in women; according to some research workers men are less likely to seek health care in good time when afflicted by various health related conditions (Courtenay, 2000 as cited in Smith, Braunack-Mayer and Wittert, 2006; Mansfield and Mahalik, 2003 as cited in Smith, Braunack-Mayer and Wittert, 2006). In addition, women may be more likely than men to be caregivers of young children. The other possible contributory factor is the higher level of unemployment in women as compared to men in Solwezi, just like in the rest of Zambia (Zambia Demographic and health Survey, 2007). This study also found that about one third of the female respondents were unemployed as compared to 3.6% of the male respondents as shown in figure 9.1.10 . Since unemployment was observed to be higher in women than in men, there is a possibility that the high unemployment levels made it easier for the women to seek medical attention at the two ART clinics and also to be entered into this study. However, this study did not endeavour to investigate the relationship beyond the findings that more males failed to bring their children in all employment categories except in the public and the unemployed sectors.

With 99.5% of the respondents accepting to be counseled on the benefits of having their children tested, the intervention had a high acceptance rate. The only respondent who had declined to be counseled indicated that she was not ready to be enrolled on the study or to discuss the topic (importance of testing

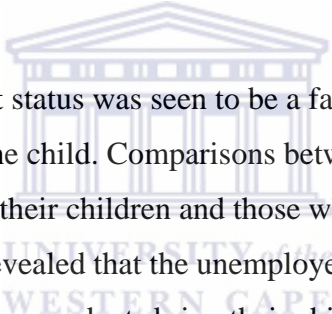
children for HIV) and was hence referred to the mainstream counseling services as a way of providing further psychosocial assistance. Although the study did not elucidate the reasons for such a high acceptance rate, it is assumed that since the clients at the ART clinic underwent counseling and testing at the time they were diagnosed to be HIV positive, undertaking counseling on an issue related to HIV was not seen as a problem, hence their willingness to take part in the study. The positive attitude towards the study was further evidenced by the fact that at the end of the study, the majority of the respondents [103, (56.3%)] who had come for a subsequent visit had brought their children for HIV testing and or entry into care (56.3%, $p=0.000$) while 43.2% had not brought their children despite coming back to the clinic for their own HIV related care. Results obtained in this study show similarities with those seen in partner notification for HIV and other sexually transmitted diseases as well as the positive response seen in the brief counseling interventions in reducing sexual risk behavior and improving infant feeding practices: most (56.3%) of the respondents who came for a subsequent visit during the study period brought their children for testing just as most of the respondents in partner notification brought or referred their partners for testing.

The child of one of the male respondents who had returned during the study period died between the time the respondent had received the counseling and the time he came back to the clinic for his subsequent visit. The child had fallen ill and was later admitted to hospital where he had died. The other pitfall in the study was that, 22 (10.7%) of the respondents had not come back to the clinic for their scheduled visits at the two health facilities during the study period. It is not uncommon for the patients accessing different forms of HIV related services to miss an appointment by a few days or weeks. Nevertheless, this may not imply that they have completely run out of their drug supplies. They are only declared “lost to follow-up” if a period of 30 days elapses after their missed clinic appointment; it is at this point when measures are instituted to make

physical follow-ups on the patients through a group of volunteers called adherence support workers (ZPCT, 2009). This short exploratory study did not last long enough to capture and analyse whether the patients who failed to return within a month were truly “lost to follow up” or whether they were simply late.

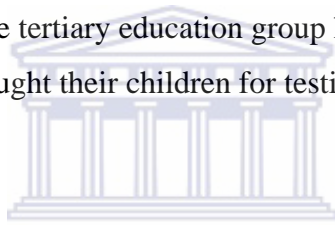
Despite the overall results showing that most of the study participants returned with their children after the intervention, a significant difference was observed between the two sexes: of the 56.3% respondents who brought their children 86.4% were women, while 13.6% were men. The female respondents were 3.5 times more likely to bring their children for testing than the males (OR= 3.49). Further analysis within the sex groups revealed that among the female respondents who had returned during the study period, a higher proportion (63.1%) brought their children compared to 33.3% of men. Exploring the determinants for this marked difference between the two sexes was not within the scope of the study; however the possibility is that this may be explained (as stated above) by the difference in health seeking behaviors seen in men and women. Several studies have linked men to a less proactive help and health seeking behaviors than women (Courtenay, 2000 as cited in Smith, Braunack-Mayer and Wittert, 2006; Mansfield and Mahalik, 2003 as cited in Smith, Braunack-Mayer and Wittert, 2006). Hence there is a possibility that men may attach less importance (as compared to women) to the need to bring their children for counseling and testing if they do not see the urgency in seeking attention for their own health. The other reason could be that men are generally the bread winners in most households in Solwezi while the women remain to take care of the children at home; this may be supported by the higher unemployment levels amongst women than men. This study, as stated above found that unemployment levels amongst the female respondents were much higher (33.6%) as compared to the male respondents (3.6%) (figure 5.1.11). Further to the perceived difference in gender roles between men and women, is the possibility that it is more socially acceptable for the females to request

permission or find time to bring their child to the clinic than their male counterparts. This might also explain why in the private and the self employed sector, a high proportion of male respondents (75.0%) as opposed to a lower proportion of female respondents (43.0%) were unable to bring/ facilitate for their children to be tested. The scenario that most men were sending their spouses or other relatives to bring their children after having received the counseling, although not completely eliminated was highly unlikely. Evidence from the study showed that the respondents who may have opted to send their children with another person could have mentioned doing so during their subsequent visit because the second part of the questionnaire specifically probed for possible reasons for them not to have brought the child for testing.



Furthermore, employment status was seen to be a factor in whether or not the respondent would bring the child. Comparisons between the numbers of respondents who brought their children and those who did not in the different occupational categories revealed that the unemployed or (informal sector) had the highest proportion of respondents bring their children after counseling [35 (71.4%)]. This was followed by those working in the public sector [11 (64.7%)]. A lower proportion of those in the self employed [50 (48.5%)] and the private sector [3 (33.3%)] had brought their children for testing after the counseling session. Even amongst the female respondents, the highest proportion who brought their children was observed in the “not employed” category [34 (71.4%)]. This association between unemployment and the likelihood of bringing the children for testing, although not fully explored in the study, could be explained by the possibility that the unemployed female respondents more easily found time to bring their children for testing as compared to those who were in employment.

Another difference observed between the two sexes was in the association of educational status to bringing the children for testing. While no correlation was observed with the male respondents, analysis of the education levels of the female respondents with regard to bringing their children revealed a characteristic pattern: women who had attained a higher level of education were more likely to bring their children for testing as compared to the less educated ones. The up-to-grade twelve category which had the lowest number in the male respondents to bring their children constituted the highest proportion among the female respondents [18 (81.8%)] to bring their children after counseling. The lowest proportion of respondents to bring their children was observed in the no-formal-education category [8 (53.3%)] followed by the primary [35 (58.3%)] and the up-to-grade nine [20 (60.6%)] categories consecutively. Like the up-to-grade twelve category, the tertiary education group had a significantly high number of those who brought their children for testing i.e. 5 (71.4%) ($p=0.000$).



Disaggregation of the participants into the three distance categories showed that the majority 164 (79.2%) of the respondents entered into the study lived within 10 km of the facilities followed by those who lived between 10 and 20 kilometres 26(12.6%), while the least 14 (6.8%) lived beyond 20 kilometers. The respondents who lived within 10kilometres also contributed the highest number of the respondents who brought their children for testing 83 (81.4%). However, comparisons within the distance categories between those who brought their children and those who did not in relation to sex revealed that the number of male study participants who brought their children was generally lower than those who did not in all the distance categories. The 10-20 kilometre category had the largest proportion 2 (40%) of male respondents who brought their children as compared to those who did not 3(60.0%). This category was followed by the with-in 10 kilometres 10 (30.3%) and lastly the over 20 kilometres category 1 (25.0%). In the within 10 kilometre category, the child to

one of the respondents (3.0%) died between the time the respondent had received the intervention and the subsequent clinic visit.

Unlike the male respondents, the proportions of the female respondents in all the distance categories who brought their children for testing were generally higher than the ones who did not. The highest proportion was in the over 20 kilometres category where five (71.4%) of the respondents had brought their children. The lowest proportion was observed in the 10-20 kilometres category in which 11 (57.9%) brought their children for testing while the within 10 kilometres category had 73 (64.0%) of the respondents bring their children for testing. Overall (male and female respondents combined), a higher proportion (56.5%, 52.0% and 60.0%) of respondents in all the three categories brought their children after receiving counseling. Among the three distance categories, the highest proportion of respondents who brought their children lived beyond 20km [6 (60.0%)], though the numbers in this category are small and hence make it difficult to deduce scientific significance; the beyond 20 kilometres category was followed by those who lived within 10 kilometers [83 (56.5%)]. The category 10 - 20km had the lowest proportion of respondents who brought their children [13 (52.0%)]. Therefore, despite the obvious association of a shorter distance to a greater number of clients attending the ART clinic or respondents enrolled into the study, there was no correlation between distance and the likelihood of bringing the children for counseling and testing (n= 182; Pearson Correlation 0.005; P= 0.945). However, the trend of having the highest number of respondents from within 10 kilometres and the lowest number from beyond 20 kilometres possibly denotes an underlying problem with accessing ART and ART related services for the study participants and possibly the general population, especially that apart from the two health facilities where the study was conducted, no other facility offers such services in a radius of 80 kilometres.

Respondents who did not bring their children for testing gave various reasons for not doing so. Lack of time to bring the child for testing was the most common reason cited by both the male and the female respondents i.e. 7 (46.7%) and 19 (48.7%) respectively. The study did not fully explore factors that led to respondents finding time to collect their medication but fail to find time to bring their children for testing. However, there is a possibility that for those respondents who were in some form of employment, it was difficult for them to leave their employment or their business premises, go back home to pick the child and in turn go with him or her to the clinic. Most respondents who did not bring their children, nevertheless, promised to do so at the subsequent visit to the ART clinic. The other reasons given included long distance to the ART clinic and/ or lack of money for transport to board a taxi to the ART clinic [16 (29.6%)]. Unlike the lack of time as reason for not bringing the children, long distance and lack of transport logistics were not unexpected constraints in accessing ART care in all age groups especially that, as mentioned above, the two study sites were the only health facilities providing ART services in a radius of 80 kilometres in Solwezi District (ZPCT, 2009). This is further evidenced by the fact that the respondents living beyond 20km who failed to bring the children on subsequent visits during the study all cited distance to the ART clinic as the constraining factor. Furthermore, even from the literature, the issue of lack of transport money was cited as a constraining factor in having the children tested as seen in the qualitative study conducted by Yeap et al, (2010).

Generally, the reasons given by the respondents formed a characteristic pattern; with the ones living beyond the 20 km radius citing long distance [100% (2)]; while the respondents living within 10-20km mainly cited long distance and or lack of money for transport [4, (50.0%)] with 25.0% (2) citing lack of time; for the within-10 kilometres category, more than half of the respondents [24, (54.4%)] indicated that they could not bring their children for testing due to lack of time and this was followed by those who cited lack of transport money and or

long distance to the ART clinic [10, (22.6%)]. Hence, the respondents living further away from the ART facilities were more likely to cite long distance as the inhibiting factor to bringing their children for testing, while those nearer the clinics were more likely to cite lack of time. The possibility is that the communities living nearer the facilities may be involved in rigorous economic activities which inhibit them from reserving enough time for their children's health care needs while those living beyond 20 km are more likely to be peasant farmers or generally engaged in less profitable economic activities hence rendering them incapable of generating adequate finances to afford the taxi fare with their child to the clinic. However, both these views are speculative as verifying or further exploring the reasons given by the respondents was beyond the scope of this study.



6.1 Limitations

Limitations to this study like other cohort studies include the possibility of participants being lost to follow up: some participants did not come back within the one to two months study period while others may not have come back at all probably as a result of defaulting treatment, illness, death or shifting to another town. If a significant proportion of the participants did not report back, this would have had a negative impact on the study's rigor.

The duration of the study was also a limiting factor as a longer follow up period up to three to four months will have allowed for more people to be re-interviewed on the third or fourth visit.

The other limitation this study had was that it was not able to reach out to the HIV exposed/ infected children living in Solwezi but whose parents were not accessing HIV care. This largely includes children living with non-HIV positive guardians including their grand parents, aunties and uncles and in some cases

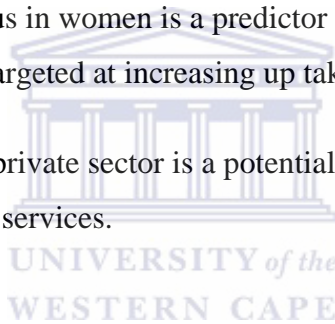
their non positive biological parents where the child may have contracted the infection by other means other than from the infected mother.



Chapter 7 – Conclusions and recommendations

7.1 Conclusions

- The family centered approach where adults accessing care are counseled on the benefits of having their children tested is a simple and effective strategy for increasing the uptake of HIV testing in children. This approach is, however, more effective in female than male adults.
- Distance and transportation to the ART clinics are significant barriers to accessing HIV related services; very few respondents living beyond 20km were enrolled into the study.
- Higher educational status in women is a predictor of a positive response to the counseling intervention targeted at increasing up take of HIV testing in children.
- Being employed in the private sector is a potential barrier to facilitating for children's uptake of HIV services.



7.2 Actions/ Recommendations

- To conduct a more representative similar research study on the impact of the family centered approach on the uptake of HIV related services for children. This should be done on a larger scale, over a longer period of follow-up and not only in the predominantly rural districts like Solwezi but also in the more urbanized districts where the HIV prevalence rates are even higher. It should also explore the gender, occupational, distance, cost and time constraints in more detail.
- To the administration at Solwezi Urban Clinic, Solwezi General Hospital and the cooperating partners in the two facilities: to consider piloting the family

centered approach at Solwezi Urban Clinic and Solwezi General Hospital especially for a duration longer than 6 to 12 months.

- During the extended pilot, to document and analyze the quality, impact, and costs (in staff and client time) of the intervention in order to tailor it to specific populations and especially to men
- To the Ministry of Health of Zambia through the North-Western Provincial Medical Office and the Solwezi District Health Office: to consider establishing more antiretroviral therapy clinics to enable greater accessibility even for people living in the peripheral areas of Solwezi.
- To the government of the republic of Zambia through the ministry of health and the ministry of justice: to formulate policy which will make it obligatory for private companies to include the aspect of HIV in the family in their HIV workplace policies.
- To the civic and the traditional leaders to spearhead community sensitization on the benefits of having children tested for HIV especially that the provision of information as was done seen in this study ended up with more people bringing their children for testing.
- The results of this study were shared with the key stakeholders including the North-Western Provincial Medical Office, Solwezi District Medical Office, administration at the two facilities as well as the study's research assistants. This was done at a dissemination workshop.

Appendices

16.1 The Intervention

The intervention is adopted from the client centered counseling provided to adults during voluntary counseling and testing in accordance with the Zambia National guidelines for HIV counseling and testing (National AIDS Council, 2006) . Upon providing assurance of confidentiality and that the session is meant to benefit the children to the clients: counseling will be provided with a focus on the following:

1) Basic information on the transmission of HIV and AIDS from the mother to the child:

- HIV is transmitted from the HIV infected mothers to their children during pregnancy, during birth and during breast feeding.
- However, not every child born of an HIV positive mother will contract HIV; as a matter of fact, even without any medication, more children (6 out of 10) born from HIV positive mothers are HIV negative.
- Nevertheless, provision of ARV drugs to expectant mothers significantly increases the likelihood of preventing HIV transmission to their unborn child.

2) Prevailing situation in Solwezi that has necessitated the study:

- It has been recorded that most mothers in Solwezi, do not have access to health facility based deliveries.
- This means that they do not have an opportunity to benefit from the ARV drugs given to help reduce the risk of transmitting HIV to their unborn children.

- Without such medications, most of the children born from HIV positive mothers are at increased risk of getting infected with HIV.
- Most of these children do not have a chance to undergo an HIV test.
- The children, who mostly get diagnosed with the virus, are those who are admitted to the in-patient wards and those whose mothers have access to antenatal care.
- In some cases, by the time HIV is diagnosed the infection has advanced significantly and it is too late for successful treatment.

3) **Advantages of having children tested for HIV**

- Like in adults, HIV testing is the entry point to antiretroviral therapy in children
- It promotes early management of HIV related conditions and hence reduces the risk of dying from such illnesses.
- It opens access to support services including nutritional and social support provided by people living with HIV and AIDS (PLWHA) support groups.
- With the knowledge of the child's status even treatment of various infections commonly afflicting PLWHA can be promptly treated.

4) **Disadvantages of not having the children tested**

- Without the knowledge of the child's status, such a child will have no access to HIV treatment and support.
- The child may not access appropriate treatment for infections associated with HIV.

- With out access to appropriate treatment for HIV and HIV related infections, the likelihood for death is high.
- Without treatment as many as one third of the HIV infected children die before their first birthday and half die before reaching the age of two years.

5) The process of testing

- Like in adults, it is difficult to tell the child's status without performing the recommended HIV tests.
- In children over the age of one and a half years, a rapid test will be conducted and the test results will be ready the same day.
- For children under the age of 18 months, dried blood spots will be taken for specialized tests that particularly look for the HIV and the results take up to one month to be ready. This is because children at this age still have antibodies (chemicals) passed on from their mothers and it is these antibodies that the rapid tests look for. Hence, the rapid tests can give false positive results in children under the age of 18 months.
- For children who are still breast feeding, HIV testing will be done like in the non-breast feeding children but the test will need to be repeated after two to three months after the child has stopped breast feeding; this is because breast feeding not only poses a risk for infection.

6) Common obstacles to having children tested for HIV

- The clients will be asked to discuss with the interviewer on what they feel are the major obstacles to bringing children for testing.
- The interviewer will facilitate the clients process of coming up with a list of possible ways to overcome these obstacles and how such solutions can be implemented.

7) Concluding remarks during the counseling session

- HIV testing in children is dependant on the will and effort of the parents.
- HIV testing is a critical step in ensuring that children access HIV care and increase the chance of living longer.



16.2 Tables used in analysis of study results

Table 16.2.1; Age of respondents vs. number who brought their children

Did you bring your child after counseling	Age of respondent									
	Sex of respondent		18-22 years	23-27 years	28-32 years	33-37 years	38-42 years	43-49 years	50 years and above	Total
Yes	Male		0 (0.0%)	1 (7.1%)	2 (14.3%)	6 (42.9%)	2 (14.3%)	3 (21.4%)	0 (0.0%)	14 (100.0%)
	Female		6 (6.7%)	17 (19.1%)	29 (32.6%)	19 (21.3%)	13 (14.6%)	4 (4.5%)	1 (1.1%)	89 (100.0%)
	Total		6	18	31	25	15	7	1	103
No	Male		0 (0.0%)	1 (3.7%)	5 (18.5%)	8 (29.6%)	3 (11.1%)	9 (33.3%)	1 (3.7%)	27 (100.0%)
	Female		4 (7.8%)	10 (19.6%)	23 (45.1%)	11 (21.6%)	2 (3.9%)	1 (2.0%)	0 (0.0%)	51 (100.0%)
	Total		4	11	28	19	5	10	1	78
Died	Male					1 (6.7%)				1
	Total					1				1

Highest proportion of respondents belonged to the age group 28 to 37 years old.

Table 16.2.2: Distance vs. outcome of counseling intervention

		Distance to ART centre	Stigma	Child looked healthy	no time	moved to the farm	parent too sick	child has gone with relatives	No reason	Total
Address of respondent	Within 10 km	10	0	1	24	3	2	2	2	44
		22.6%	0.0%	2.3%	54.4%	6.8%	4.5%	4.5%	4.5%	
	Within 10-20 km	4	1	0	2	0	0	1	0	8
		50.0%	12.5%	0.0%	25.0%	0.0%	0.0%	12.5%	0.0%	
Beyond 20 km		2	0	0	0	0	0	0	0	2
		100%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	
	Total	16	1	1	26	3	2	3	2	54
		29.6	1.8%	1.8%	48.1%	5.6%	3.7	5.6%	3.7%	

The highest proportion of combined male and female respondents for both sexes lived within 10 km of the facilities while the lowest proportion lived beyond 20 kilometers.

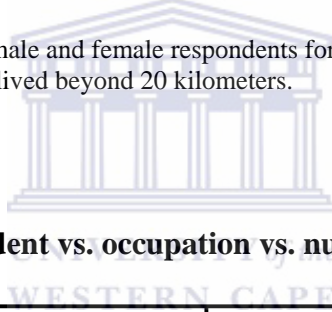


Table 16.2.3: Sex of respondent vs. occupation vs. number that brought children

Occupation status			Brought children after counseling			Total
			Yes	No	Died	
Public service	Sex of respondent	Male	4	2		6
		Female	7	4		11
	Total		11	6		17
Self employed	Sex of respondent	Male	7	21		28
		Female	43	32		75
	Total		50	53		103
Private Service	Sex of respondent	Male	1	4	1	6
		Female	2	2	0	4
	Total		3	6	1	10
Not employed	Sex of respondent	Male	1	1		2
		Female	34	13		47
	Total		35	14		49

Table 16.2.4: Occupation status vs. Reasons for not bringing the child for testing or care

		Reasons for not bringing the child for testing or entry into care								Total
		Distance to ART centre/Lack of transport	Stigma	Child looked healthy	No time	moved to the farm	parent too sick	child has gone with relatives	No reason	
Occupation Status	Public service	3	0	0	0	0	0	0	0	3
		100.0%								100.0%
	Self employed	9	1	0	16	2	2	3	0	33
		27.3%	3.0%	0.0%	48.5%	6.0%	6.0%	9.0%	0.0%	100.0%
	Private service	0	0	0	2	0	0	0	1	3
					66.7%				33.3%	100.0%
	Not employed	4	0	1	7	1	0	0	1	14
		28.6%	0.0%	7.1%	50.0%	7.1%	0.0%	0.0%	7.1%	100.0%
Total		16	1	1	25	3	2	3	2	53

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The most frequent reason given by respondents for not bringing their children was lack of time, as noted in 48.5% of the self employed, 66.7% of the respondents in the private sector and 50% of the respondents in the not-employed category (n=53).

Table 16.2.5: Odds ratio calculation

SPSS output-Distribution of respondents who returned by gender and returning with child

gender1 * bchild1 Cross tabulation

			bchild1		Total
			no	yes	
gender1	female	Count	51	89	140
		% within gender1	36.4%	63.6%	100.0%
	male	Count	28	14	42
		% within gender1	66.7%	33.3%	100.0%
Total		Count	79	103	182
		% within gender1	43.4%	56.6%	100.0%

The probability of a female parent bringing a child is 0.636 (63.6%) and so the **odds of a female parent to bring a child** is given by

$$O_{female} = \frac{\text{probability of female bringing child}}{\text{probability of female not bringing child}} = \frac{0.636}{1 - 0.636} = 1.74 .$$

Similarly, the probability of a **male parent bringing a child** is 0.333 (33.3%) and so the **odds of a male parent to bring a child** is given by

$$O_{male} = \frac{\text{probability of male bringing child}}{\text{probability of male not bringing child}} = \frac{0.33}{1 - 0.333} = 0.5 .$$

The odds of a female parent bring a child relative to the male parent is 3.48-**This is the odds ratio**. That is,

$$OR = \frac{O_f}{O_m} = \frac{1.74}{0.5} = 3.48$$

This indicates that female parents were 3.48 times more likely to bring the children at the next visit as the male parents.

16.3 Informed Consent form

RECORD OF INFORMED CONSENT TO CONDUCT AN INTERVIEW

Date:

Interviewer:

UWC student No.: 2822768

Mobile No.:+260976110095

E-mail: kalasamwanda@yahoo.com

Institution: Solwezi Urban Clinic

Interviewee's name:



Thank you for agreeing to allow me to interview you. Below, is an explanation of the purpose and the process of this interview.

1. Information about the interviewer

I am Kalasa Mwanda, a student at the SOPH, University of the Western Cape. As part of my Masters of Public Health, I am required to conduct research. The focus of my study is to investigate whether providing counseling on the benefits of testing children to adults accessing HIV care at the ART clinic can improve their children's uptake of HIV testing/ care. I am accountable to my supervisor, Professor Christina Zarowsky who is contactable at 021 959... or c/o SOPH Fax: 021 959 2872 or by e-mail: czarowsky@uwc.ac.za

Here is some information to explain the purpose and usage of my interview.

2. Purpose and contents of interview

To obtain information on whether or not the HIV positive clients accessing care at SUC who have children have taken their children for counseling and testing and or have had them entered into HIV care: for those who have not done so, a brief counseling session on the benefits of having children tested for HIV will be provided. A follow up interview will be conducted at the respondent's subsequent visit approximately one month after the initial visit to confirm whether or not the respondents facilitated for their children to be tested and or enrolled into HIV care.

3. The interview process

To the eligible HIV positive clients at SUC, the research assistants or the principle investigator will introduce themselves and provide information on the research study. This will be followed by asking the clients whether they be willing to be enrolled into the study or not. The interview will be conducted in two parts: the first will be before the counseling session while the second will be after the session. The potential benefit of the counseling session is the advantage of having your child or children tested and promptly access care if they are positive. However, there will be no financial gain by participating in the study. Additionally, the investigator can not entirely eliminate the potential risk of stigmatization that may accompany you bringing your child or children for testing and equally importantly, you have the right to withdraw from the study without any negative consequence.

4. Anonymity of contributors

At all times I will keep the source of the information confidential and the documents indicating interaction with you will be kept in a locked cabinet at all times and the questionnaires and all other study material will be destroyed after the data has been collected.

5. Things that may affect your willingness to participate

The interview may touch on issues which are personal and may be sensitive. If there is anything that you would prefer not to discuss, please feel free to say so. I will not be offended and there will be no negative consequences if you would prefer not to answer a question. I would appreciate your guidance should I ask anything you see as intrusive.

6. Agreement

6.1 Interviewees agreement

The respondent will be asked to give his/her consent on the form.

Signed:

Date:

Place:



6.2 Interviewer's agreement

I shall keep the contents of the above research interview confidential in the sense that the all the interview documents will be locked in a secured cabinet. The contents will be used for the purposes mentioned above, but may be used for published or unpublished research at a later stage without further consent. Any change from this agreement will be renegotiated with you.

Signed:

Date:

Place:

16.4.1 Questionnaire

INTRODUCTION

My name is Kalasa Mwanda; I am a student at the School of Public Health, University of the Western Cape. As part of my Masters in Public Health, I am required to conduct research. I will be focusing on the impact a family centered approach has on the number of children accessing HIV testing and care. The information from you is very important and will be treated with confidentiality and only for the purpose of this project. Can we go ahead with the interview?

Yes/No

Start time: _____

1.		
	Questionnaire number: _____	Date of interview: ___ ___ / ___ ___ / ___ ___ dd mm yy
General respondent overview		
2.	Address (Location):	Phone number:
3.	Age (in years):	Sex <input type="checkbox"/> M <input type="checkbox"/> F
4.	Marital Status	<ul style="list-style-type: none"> a. Single b. Married c. Widowed d. Divorced
5.	Highest educational attainment	<ul style="list-style-type: none"> a. None b. Primary c. Secondary d. Tertiary
6.	Occupational status	<ul style="list-style-type: none"> a. Public service b. Self employed c. Private service <p>Other (specify) _____</p>
Family Centered Approach Study Questions		
Question (Ask the respondent the questions below)		Response

7.	Do you have a child (children) aged 0-5 years old?	1. Yes 2. No	If answer is NO thank the respondent for their time and let them access the service they came for.
8.	How many children aged 0 - 5 years do you have? (circle the appropriate option)	a. one b. Two c. Three Other (specify): _____	
9.	How old are your children?	a. Child one: b. Child two: c. Child two: d. Other (specify):	
10.	What are the statuses of your children under the age of five years?	a. Child one: (1)+ve (2)-ve (9) I don't know b. Child two: (1)+ve (2)-ve (9) I don't know c. Child three: (1)+ve (2)-ve (9) I don't know	If the child or children are negative or the status is unknown, proceed to question number 12.
11.	If your child or children are positive , are they receiving HIV care?	1. Yes 2. No	
12.	Are you aware of the benefits of having children tested and access HIV care if found positive?	1. Yes 2. No	
13.	If the respondent does not know the status of child (children) and or the child (children) are positive but not accessing HIV care , offer counseling on the benefits of having children tested or access HIV care.	1. Counseling accepted 2. Counseling declined	If the counseling is accepted, provide a brief counseling session to the respondent and ask the respondent to

			come back after one month.
		PART B	
14.	Did you bring your child/children since you were counseled on the benefits of having children tested and or entered into HIV care?	1. Yes 2. No	If NO proceed to question number 19.
15.	What are the name(s), age(s) and address of the child (children) you brought for testing and or entry into care?	Name(s): Age(s) of child (children) (in years): Address:	Date when the child/children were brought for testing.....
16	Respondent's report of having brought the child (children) confirmed by checking the facility records?	1. Yes 2. No	
17.	Were they any other event between the time you received the brief counseling and today that could have prompted you to bring your child (children) for testing or entry into care?	1. Yes 2. No	
18.	If Yes, what was the other prompting event/factor?	1. Illness 2. Advice received at another forum 3. Other (specify):	
19.	Where they any obstacles that caused you not to bring your child (children) for testing and or entry into care?	1. Yes 2. No	If YES indicate in the space below.
20.	Briefly state the major obstacles that caused you not to bring your child for testing and or entry into care after having received the brief counseling session.	

General questionnaire template adopted from: MOH 2009.



16.4.2 Questionnaire in Kaonde (Bishika/ Bikebwa kuyuka pa muntu ubena kukumbula mepuzho)

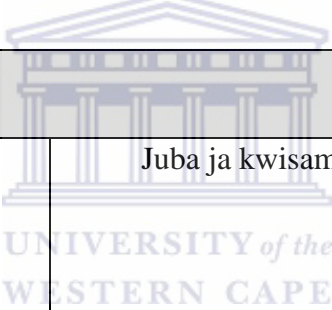
CHAKUTENDEKA

Jizhina jami ne _____. Pakino kimye nanchi jiko na mutachi wa bipuzho bya kuba mba ne mwipuzheko. Mino kyo mwafwainwa kuyuka kekyakuba mba byonse byo musakukumbulanga kebya bufyafya, mambo byaikala bya nema bingi. Kebena kulumbulula mba kafwako kubulako muntu ungi uji yense ine. Byambo bya musakumbula bya nema bingi mambo bibena kukebewa. .

Mwane, twajijile kwipuzha mutachi wa bipuzho byojinabyo nyi?

Ee/ine

Chime chakubala: _____

		
1	Nambala ya chipepala cha chamepuzho: _____	Juba ja kwisamba: ____ / ____ / ____ Juba mwenji mwaka
Bishika Bikebwa kuyuka pa muntu ubena kukumbula mepuzho		
	Komutainya:	Nambala ya lanya:
	Mwaka:	wamulume ____ wamukazhi _____
	Mwaila masongola	e.Muzhike (wamukazhi) f.Katanda (wamulume) g. Wasongolwa/ wasongola h. Kituzhi

		i. Kyupo kyapwa	
	Papelela kufunda ku sukula	e. Kupichilako mubukonde ya sukulu ine f. Kechi kukila mu grade 7 ine g. Kechi kukila mu grade 9 ine h. Ku masukulu a peulu kwakufunda kinto nobe ku college/ university	
	Kusebeza kinto	d. mukafulumende e. kwisebela amiwa mwine f. nkito yabula ya kafulumende Ikwabo (lumbululai)	
Mepuzho a kwa pa kisemi			
Mepuzho (ipuzha mepuzho aji munshi)		Mukumbu	
	Muji na mwana nangwa bana bafikizha myaka ya kusemwa kutapila pa 0- kufika ku mwaka	3. Ee	Inge ba kumbula mba INE? Basachilai na mambo a kimye kyabo kabiji balekai

	itanu (5) nyi?	4. Ine	ba tambule lukwasho lobakwishila.
	Muzhi na bana banga bafikizha myaka ya kusemwa kufuma pa 0 kufika ne ku mwaka itanu (5)? (Zhokoloshai mukumbu walinga)	a. Umo b. Babiji c. Basatu Ikwabo (lumbululai): _____	
	Bulananai mwaka wa mwana nangwa myaka ya bana?	d. Mwana mutashi: e. Mwana wabubiji: f. Mwana wabusatu: d. Kikwabo (lumbululai):	
	Bana benu bakyangye kufikizha myaka ya kusemwa itanu (5), mwayukapo kika kilingana na kalongolo (HIV) kaleta kikolo kya muzeze puya (AIDS) mumibiji yabo?	a. mwana mutashi: (1)uji nako (2) ufwako (9) Kechi nayuka ne b. mwana wabubiji: (1)uji nako (2) ufwako (9) Kechi nayuka ne c. Mwana wabusatu: (1)uji nako (2) ufwako (9) Kechi nayuka ne	
	Inge mwana wenu nangwa bana benu baji na kalongolo kaleta		

	kikola kya muzezepuya, bibena kutambulapo lukwasho na mambo akutainya na kalongolo ka muzezepuya?	1. Ee 2. Ine	
	Mwayukapo buwame buji mukupimisha mwana/bana kabiji ne bukwasho bujimo inge mwana nangwa bana batainya na kalongolo ka muzezepuya nyi?	1. Ee 2. Ine	
	Inge kyakuba mba bibena kukumbula ano mepuzho Kechi bayukapo biji mumibiji wa mwana/bana kutazha kukikola kya muzezepuya, nangwa mwana/bana baji na kalongolo ka muzezepuya pano mino Kechi bibena kutambula lukwasho lujilonse ine, isambai nabo kutazha kubuwame butainjamo inge bana bebapima nangwa ba tampa kutambula bukwasho?	1. Baitabizha misambo 2. Bakana kwisamba	Inge baitabila kwisamba, isambai na bibena kwimukumbula mukakimye kacheche. Kabiji mwibabule mba ba fwainwa kwiya (babena kwimukumbula) nakwimumona inge papita mwezhi umo.
	KIBESE KYABUBIJI	(PART B)	
	Kufuma po mwisambile pa buwame buji mukupisha bana kutazha kukalongolo kaleta kikola kya muzezepuya. Mwibaletele nangwa kwiba twala na	1. Ee 2. Ine	Inge bakumbula mba 'ine'. Yai kukipuzha kya Nambala 17.

	kupimisha nyi?		
	Mbulaiko myaka nangwa mwaka wa mwana/bana bo mwaletete kukupimisha nangwa babena kutaana lukwashi namambo akuba mba batainya na kalongolo kaleta kikola kya muzezepuya?	Jizhina/ mashina ya mwana/bana: Mwaka/myaka ya mwana/bana:	
	Respondent's report of having brought the child (children) confirmed by checking the facility records?	1. Ee 2. Ine	
	Kujiko bimo byanweka kufuma po mwisambile mwisambo wakupimisha mwana/bana kutazha kukalongolo kaleta kikola kya muzezepuya, kufika nelelo. Byalengela kuba mba muleta mwana /bana kukupimisha, nangwa kukeba mba atampe kutambula bukwabo?	1. Ee 2. Ine	
	Inge mukumbu uji mba 'Ee'. Kika kyalengele mba muleta mwana/bana bukiji bukiji?	1. kukolwa 2. Lutundaiko lonatambula ku bantu 3. Bikwabo (bilumbilulai/biton golai)	
	Kujiko bimo Byalengela mba mukakalwe kuleta mwana wenu nangwa bana benu kukupimisha	1. Ee 2. Ine	Inge mukumbu uji mba 'Ee', mulembe pe samba.

	kikola kya muzezepuya? Nangwa kuba mba atampe kutambula bukwasho nyi?		

General questionnaire template adopted from: MOH 2009.



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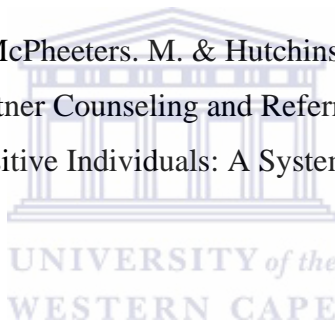
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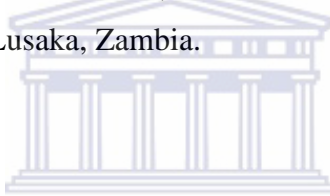
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