

**HIV TESTING OF PREGNANT WOMEN IN THE FORT DAUPHIN  
REGION OF MADAGASCAR**

by

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## ABSTRACT

Madagascar is a country where HIV prevalence is low but changing conditions make it susceptible to a rapid increase in infections. Quantitative data from health care workers and pregnant women attending Basic Health Care Centres or Centres Santê de Bases (from here on referred to as CSBs) will shed light on factors that influence the women's uptake of HIV testing.

The researcher set out to determine the knowledge, attitudes and practices with respect to HIV/AIDS, of pregnant women attending four CSB sites in south east Madagascar. The Health care services at these same CSB sites were also evaluated.

Results showed that there were a number of factors that could be attributed to pregnant Malagasy women opting not to test for HIV. The reduced profile of the disease by the CSBs, inadequate knowledge of the disease, particularly among the rural women, lack of treatment for people living with HIV/AIDS (PLWHA) at the sites under study, and the perception that they are not at risk of HIV infection, were some of the factors identified.

Certain conditions need to be in place in order for voluntary testing of HIV to be accepted by pregnant women in Madagascar. It is an area of great sensitivity and the women in the study indicated that the welfare of their unborn baby was of paramount importance and the opinion of their families, partners and the community to their testing for HIV, was crucial in their decision.

## OPSOMMING

Madagaskar is 'n land met 'n laë MIV voorkoms, maar veranderende omstandighede maak dit vatbaar vir 'n eskalاسie in infeksies. Kwantitatiewe data van gesondheids werkers en swanger vroue wat die Basic Health Care Centres of Centre Santē de Bases (van hier af verwys na CSBs) besoek, sal lig werp op faktore wat die vrouens se begrip van MIV toetsing beïnvloed.

Die navorser het begin om die kennis, houding en praktyke van swanger vroue wat die vier CSB terreine in suidoos Madagaskar besoek het, met betrekking tot MIV/VIGS te bepaal. Die gesondheids sorg dienste by diselfde CSB is ook geevalueer.

Resultate toon aan dat 'n hele aantal faktore kan by dra tot Malagasiiese vroue se keuse om nie vir MIV getoets te word nie. Die lae profile van die siekte by die CBS, onvoldoende kennis van die siekte, veral onder die plattelandse vroue, afwesigheid van behandeling vir persone wat met MIV/VIGS lewe by the terreine wat bestudeer is, en die persepsie dat hulle nie vatbaar is vir MIV infeksie nie, was van die faktore wat geïdentifiseer is.

Om vrywillige MIV toetsing aanvaarbaar vir swanger vroue in Madagaskar te maak, moet sekere kondisies na gekom word. Dit is 'n baie sensitiewe area en die vrouens wat deel vorm van die studie het aangedui dat die welstand van hul ongebore baba van uiters belang is en die opinie van families, lewensmaats en die gemeenskap ten opsigte van MIV toetsing van kardinale belang is in hierdie besluit.

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## CHAPTER ONE

### INTRODUCTION

#### 1.1 INTRODUCTION

Prevalence of HIV in Madagascar is estimated to be low in relation to other countries in Africa. The country's physical separation from the rest of the African continent could account for this. Sero-surveys in the country reveal high prevalence of syphilis and other curable sexually transmitted infections. These trends are cause for concern in relation to the spread of HIV in the country and prevalence increased from 0.15% to 0.95% between 2000 and 2003 (Executive Secretariat/National AIDS Control Committee, 2006). A generalised epidemic is when prevalence of the disease sits below 1%; estimates are now at 1.7%. Epidemiological surveillance is limited to the antenatal setting in Madagascar where only 20% of pregnant women are being tested for HIV and with a prevalence of 1.1% being documented in this group (UNAIDS, 2010). If more of the pregnant women attending clinics were to test for HIV, a more representative sentinel surveillance group would appear, and with this a more realistic estimate of HIV prevalence within the Malagasy population could be obtained. An essential tool in an intervention mechanism is testing. Routine (opt-out) diagnostic HIV testing in the public health sector would be useful in this regard. A further challenge to the health ministry in Madagascar is that at least one third of the population does not have ready access to primary health care due to insufficient infrastructure.

Madagascar is a resource limited setting where poverty is severe (<2USD/person/day) education is minimal (29.9% of women had completed formal schooling in 1997) and health resources are strapped (Gwatkin, 2007). These types of statistics can only impact negatively on the spread of HIV in the country and specifically in the rural setting. Conflicting estimates on HIV in the country have unfortunately generated a response to the disease placing it as not high priority. In 2003, the then director of the Madagascar Ministry of Health, Family planning and social Protection said, "The government is aiming for a 100% success rate in preventing and treating malaria, while AIDS is not a major health problem because HIV is relatively low compared with the rest of sub-Saharan Africa" (Razafison, 2008 p421).

Why are only one fifth of pregnant women testing for HIV in the antenatal setting? Is it refusal, or are they not given an offer to be tested? What reasons are behind this lack of testing? Only just over 30% of Malagasy women deliver their babies at a public health care facility and infant mortality in the country is 99 in 1000 live births (UNAIDS, 2010). Intervention in this area is needed. If mothers are aware of their HIV status they would then be able to prevent mother to child HIV transmission (referred to as MTCT from this point forward). Close scrutiny of voluntary counseling and testing (VCT) programs in the public health facilities would enable systems to be optimized in the future.

## **1.2 RESEARCH PROBLEM**

Antenatal clinics have historically been the point at which countries can provide estimates of HIV prevalence within a country. Reasons for this choice are logical and twofold, namely the women has had unprotected sex and exposure to infection could have occurred. The second important reason would be that the clinic environment where follow-up is relatively frequent.

In the mid-1990's public health in Madagascar was decentralised. The result is that public health facilities are unevenly distributed between the rural and urban areas of the country. This disparity is evident in the uptake of formal health consultations and prenatal care (Glick, 2002). Basic infrastructure of health care facilities is lacking with only 22% of services in the rural setting having electricity, 43% having refrigeration and 25% having running water (Glick, 2000). There is a shortage of medical supplies including pharmaceuticals (medicines). Health Care facilities only met a quarter of patient drug requirements by 1995 (Kowalewski, 2001) with the World Bank reporting problems in the quality and availability of drugs in 2001. Facilities are understaffed and the health personnel indicator (HPI) demonstrates this with a doctor to Malagasy population ratio of 1:12000 and a nurse to population ration of 1:4000 (Ramalanjaona, 1998). All these factors contribute to what can be labeled, a 'health crises' in Madagascar. It seems evident that in the year 2012, Madagascar's health system would be poorly equipped to provide extensive prevention programs to the Malagasy people. It would be difficult to extend its diagnostic testing, and antiretroviral treatment will remain limited.

As a result of the coup d'etat in 2009 the present government in Madagascar is not recognized by the United Nations and the South African Development Community (SADC) has removed the

country from its list of members. The World Bank has withdrawn funding in all areas and many non-governmental organisations (NGO's) are functioning on shoestring budgets. Vaccination programs in the country were driven by NGOs and the cut in donations has impacted on these drives (Glick, 2000). The country is in a state of limbo and this has had an impact on the quality and availability of health offered to the Malagasy population. Health policies are in place but the level of implementation of this need to be assessed. Conditions that generate vulnerability to disease infection include poverty, inequality and migration (Piot, 2001) and all three of these conditions are evident in Madagascar. The unstable political and economic situation in Madagascar increases the Malagasy people's vulnerability to HIV and AIDS and it does little to curb the spread of the disease in the country.

### **1.3 SIGNIFICANCE OF THE RESEARCH**

The proposed research would identify voluntary counseling and testing procedures in a section of Madagascar's public health system. The empirical data received will illuminate factors that influence pregnant women in their decision to test for HIV. Responses given from participating groups, namely health care workers employed at, and pregnant women attending, four antenatal clinics in Fort Dauphin, Madagascar, will enable conclusions to be drawn on the level of services offered and on individual attitudes and knowledge of the disease. Findings from this study could be utilized to encourage Malagasy women attending antenatal clinics to be routinely tested for HIV (opt-out option). An HIV positive mother could take the necessary preventative measures to reduce the chances of infecting her unborn child. Optimising the uptake of prevention of mother to child transmission (PMTCT) could perhaps address aspects of the high infant mortality in Madagascar.

### **1.4 RESEARCH QUESTION**

The purpose of the study is: Which factors influence pregnant women, attending four basic health centres or *Centres Santè de Bases* (CSBs) in the Fort Dauphin region of southern Madagascar, in testing for HIV?

### **1.5 OBJECTIVES OF THE RESEARCH**

- To determine the level of participation in voluntary HIV screening amongst pregnant women at the four chosen CSB sites in the Fort Dauphin district.

- To analyse the VCT procedures (both pre and post testing) used in the same CSBs.
- To analyse the factors, both favourable and unfavourable, influencing the motivation of pregnant women accepting or rejecting the HIV test.
- To analyse health care workers (HCWs) knowledge of, and attitudes towards, HIV
- To offer suggestions and recommendations to increase motivation of pregnant women to undergo HIV counselling and testing.

It is hypothesised that a broad number of factors contribute to pregnant Malagasy women voluntarily testing for HIV.

## **1.6 OPERATIONAL DEFINITIONS**

Operational definitions “establish the rules and procedures an investigator plans to use to measure and give meaning to variables and terms” (Fisher, 2002). In this research study HCWs and pregnant women were asked a series of questions which were aimed at leading the researcher to understand why levels of HIV testing among pregnant women are low in Madagascar. One of the many measurable variables chosen for both sets of participants was HIV knowledge. Answers to questions that were testing this variable were given scores or ratings. Ultimately levels of HIV knowledge were measurable and conclusions could be drawn from these results. A number of different variables were used in the questionnaires and were assessed similarly.

## **1.7 DEMARCATION/LIMITATIONS OF THE STUDY**

The study was two tiered, namely there were the pregnant women between the ages of 18 and 49 years of age, who were on at least their second visit to one of the four CSB sites located in the Fort Dauphin district which falls in the Anosy region of Madagascar. Bazaribe and SALFA Annexe sites are regarded as being semi-urban CSB’s, while Ranopiso and Ankaramena as very rural CSB’s. The closed ended questionnaires covered, demographics, use of the CSB facilities, personal health behaviour, knowledge of HIV/AIDS and services offered at the frequented CSB.

The second groups targeted in the study were health care workers who had serviced the CSB for at least a period of 6months. Once again closed ended questionnaires covered demographics,

knowledge of HIV/AIDS, attitudes and behavior towards people living with HIV/AIDS (PLWHA), services and staff training offered at their respective CSB.

## **1.8 OUTLINE OF CHAPTERS**

Chapter 2 embraces literature on HIV/AIDS which is contextually relevant to the topic under study. An extensive range of topics were researched to link to the situation in Madagascar.

Chapter 3 outlines the methodology of the research and covers target populations, data collection and analysis, and the steps taken to ensure ethical compliancy

Chapter 4 will represent and analyse the three sets of data obtained during the research. Statistical evaluation is tabled, or represented by a number of different figures, which simplify the results making them comprehensible. The results will also be discussed and concluded in this chapter.

Chapter 5 presents an overall conclusion to the research and will offer recommendations based on the previous chapter. It will also cover problems the researcher faced when embarking on the study.

## **CHAPTER 2**

### **HIV/AIDS IN CONTEXT**

#### **2.1 INTRODUCTION**

The literature review will focus on HIV in the rural setting, estimation of HIV prevalence, HIV screening, HIV testing strategies, factors that influence the uptake of HIV counseling and testing, health behavior and education, and ultimately important for this study, HIV in Madagascar, in an attempt to meet the objectives of the research study.

#### **2.2 HIV IN THE RURAL SETTING**

The fight against HIV is a very complex one and combating the disease in a rural setting is even more complicated. The mere remoteness of certain locations would hamper the implementation of any VCT program.

In eastern and southern Africa, HIV appeared first in the urban regions but did spread to the rural areas. The rural areas are threatened by the spread of HIV due to the mobility of populations between the rural and urban setting (Lagarde, 2003). The authors of this particular study found that a key factor in the spread of HIV in the rural areas of West Africa was mobility. This was not only due to the obvious dissemination of the virus due to movement of populations but also due to the fact that these populations partake in more risky behavior when mobile. The omnipresence of mobility prevents researchers from determining why the spread would be higher in certain areas but it was however a significant risk factor when the HIV infection levels are high.

A study carried out in the rural areas of Limpopo province in South Africa found that there were high levels of unemployment, escalating labour migration and poverty was widespread. It was found that the least educated women in this rural setting were more susceptible to new infections due to the fact that they were less prone to using condoms and were more likely to have multiple partners (Hargreaves, 2007).

It would seem likely that by increasing the scale of VCT programs to rural communities you would increase the knowledge of HIV status within these previously neglected groups, and



according to Menzies et al, “HIV counseling and testing (HCT) is a key intervention for HIV/AIDS control in developing countries”(Menzies, 2009).

### **2.3 ESTIMATION OF HIV PREVALENCE**

In 2010, UNAIDS estimated that there were 34 million people worldwide living with HIV and 2.7 million new HIV infections within that year (UNAIDS, 2010). These estimates are based on data obtained from surveys done on pregnant women attending antenatal clinics, from home-based population surveys as well as from surveillance surveys carried out on those individuals regarded as high risk within the population. Population based surveys assist in improving on the estimates gained from the antenatal clinics. In countries where population surveys have not been done, an adjustment is done to the antenatal estimates based on data gathered from other countries that have used both the population survey and the antenatal clinic estimates. One concern is that surveillance systems in rural settings have limited geographical coverage. It would seem that antenatal clinic surveillance gives an elevated estimate of HIV statistics in countries and population surveys underestimate the HIV statistics. It indicates the importance of implementing a number of different surveys to have a more realistic picture of HIV statistics (Boerma, 2003).

Disease surveillance is a complicated issue and in the case of HIV even more so due to the sheer nature of the disease.

### **2.4 SCREENING OF THE EPIDEMIC**

It is vital in the public health system that potential epidemics are screened. The extent of the problem can be identified and action can be taken before a significant amount of damage is done. It can be determined if the country in question is experiencing an epidemic that is concentrated or generalised. In the case of HIV, a concentrated epidemic is where HIV prevalence is less than 1% in the general population but with at least one high-risk sub-population showing a prevalence of greater than 5%. In countries where the HIV prevalence is greater than 1% in the general population it would be regarded as being generalised (UNAIDS, 2010). Madagascar is a country that has provided estimates of low HIV prevalence. Literature varies and this lack of clarity could place the country in either one of the two categories mentioned. The uncertainty around estimates of HIV prevalence in this country could be as a result of a number of factors. In

generalised epidemics population surveys with HIV testing are or should be conducted. Most estimates have been below the 1% level and therefore the epidemic is regarded as concentrated in this country. The category in which the epidemic has been placed has determined to a certain extent the way in which the disease has been tackled. The political situation has had an impact on whatever systems had been in place and inconsistency is evident. The quality of the epidemiological surveillance as well as the geographical coverage of the surveillance contributes to the certainty (or lack) of HIV statistics (Executive Secretariat, 2006). There are two large gaps in the data for Madagascar in the 2010 UNAIDS report. There is no estimate for new infections (incidences) of HIV in the country or for the number of deaths due to HIV/AIDS. Both of these estimates are vital in determining the extent of the problem as well as the efficacy of existing VCT programs within the country.

Disease screening provides information that can assist in policy development, establishment of intervention programs as well as behavioural change campaigns. The data obtained can ultimately assist in the reduction of disease transmission. "From an individual perspective, those who screen and find they do not have a specific disease or condition benefit from knowing they are free from harm. Those who screen and find they do have 'it' a specific disease or condition, can garner the support necessary to reduce debilitating effects of the disease and maximise long-term benefits of subsequent care (Hall, p1, 2010).

On a global scale 2.6 million new HIV infections were estimated for 2009. The number of new infections in children under the age of 15 has shown an increase and is reason for concern. The estimate for new infections among children in 2008 was 430 000 worldwide. It is believed that most of the HIV transmission occurred between mother and child during pregnancy, delivery (birth) and during breastfeeding (UNAIDS, 2009). The country under discussion, Madagascar, has been placed in the SSA region due to its geographical location. The estimate of children infected with HIV on the island of Madagascar in 2009 was 1200 (UNAIDS, 2010). Statistics of new infections among children is not available, for reasons discussed earlier, but it is of paramount importance that an effective PMTCT program is in place in Madagascar. Efficacy hinges on VCT and more specifically a pregnant woman's willingness to be tested or screened for HIV.

## 2.5 TESTING STRATEGIES

Two main types of voluntary testing strategies exist; they target pregnant women who attend antenatal clinics. The opt-in approach to HIV testing in the ANC requires the health professional obtains informed consent, either verbal or written, from the pregnant woman herself. Voluntary counselling would precede the consent. The opt-out approach was used in a study on antenatal HIV testing in a teaching hospital in South Gujarat, India (Nandita, 2006). A specialist HIV counsellor was available to provide antenatal attendees with HIV information as well as counselling. The study carried out in 2003/2004 showed that a large number of participants accepted HIV testing in this type of approach (Nandita, 2006). Routine HIV testing or the opt-out approach has been utilised in many African countries. The HIV test is carried out together with screenings of other STI's, such as syphilis, Hepatitis B and gonorrhoea. In this approach the health practitioner would inform the patient that HIV testing is part of the facilities routine testing procedures. The patient does not need to give consent and has the option to opt-out of the test. This strategy of voluntary testing has been found to be useful in limited resource environments. Zimbabwe has one of the highest HIV prevalence rates in the world. In 2003 it was found that there was an HIV prevalence rate of 24.6% in the antenatal setting (Perez, 2006). A study carried out at hospitals in two districts of Zimbabwe, where the opt-out approach was used, found that only 55% of women (pre- and post-delivery) had accepted the HIV test. It was found that certain factors played a role in the decision to test or not. Women who had attended an ANC late in the gestational period and those who had visited the clinic less frequently were more inclined not to test. Declining a test was also attributed to the lack of information and pre-test counselling the woman had received. Uptake of testing occurred when PMTCT was provided at the health facility concerned (Perez, 2006).

It has been recorded the opt-in approach to voluntary HIV testing in higher income countries, like the US, Canada and the UK, had lower rates of testing than did the opt-out approach (Centre for Disease Control and Prevention, 2002).

HIV prevalence in pregnant women in Botswana was recorded to be very high in 2003. Uptake of HIV testing in the antenatal facilities was low up to then. At the end of that year the president of Botswana stated that health care facilities throughout the country would do routine, but not compulsory HIV testing from the following year. The country adopted the routine (opt-out)

approach in 2004 and this had positive outcomes. The number of women testing for HIV in clinics and hospitals increased markedly. PMTCT also increased substantially with the introduction of this type of voluntary testing (Creek, 2007). It has been difficult to determine which method of testing is more favourable in many of the low income countries. This could be attributed to a number of factors. An extensive and intensive approach to HIV testing needs to be adopted to allow prevention and treatment of the disease to expand and reach everyone.

The effectiveness of four HIV counseling and testing (HCT) projects in Uganda was evaluated. The one project took place in free standing centres and HIV testing and counseling was client initiated. Group counseling was provided and consent obtained from those individuals taking up the test. In the case of HIV-positive tests, the individual would then be referred to their nearest health centre for follow up. The second HCT project was a provider initiated strategy where hospital based HCT is offered. Patients were offered pretest counseling by HCT trained health care workers and if requested by patients, counselor assisted disclosure of results. In door to door HIV counseling and testing, mobile teams offer HCT to communities within their homes. This strategy provides group counseling and then both pre- and post test counseling to those clients who opt to test for HIV. The final project to be assessed was aimed at those families who have a member in the home living with HIV/AIDS who has consented to this intervention. Household member HIV counseling and testing is then offered to these individuals in the home base. The latter three projects, which are all provider initiated, have shown optimistic results, with a high percentage of individuals participating in the HCT programs offered (Menzi, 2009).

HIV testing in most of the African continent up to more recent years has been voluntary and this left a large portion of the population untested for HIV. This exclusion of HIV testing as normal medical practice meant that the population of Africa remained unaware of their status.

## **2.6 FACTORS INFLUENCING UPTAKE OF HIV COUNSELLING AND TESTING**

The factors that influence uptake of HIV testing by pregnant women are complex. The individual's attitudes, beliefs and knowledge of HIV will determine whether or not she would test. A woman might not test if she does not see herself as being at risk of being HIV positive. Other factors that have been mentioned are the fear of rejection by close friends and

family if diagnosed seropositive and in many cases the actual fear of hearing that one is infected with HIV (Nandita, 2006). Making the decision to test is difficult enough but receiving the result is perhaps the most frightening thought. Pregnant women who undergo HIV testing in the opt-out situation very often do not return to receive their results and one reason given is that they do not feel that they are psychologically prepared to face the outcome (Royce, 2001). In one particular study where routine HIV diagnostic testing was carried out, only 30% of the pregnant women who had tested returned for post-test counselling (Nandita, 2006). The follow-up to all routine testing, not HIV exclusively, is required in order to provide the patient with advice on treatment and care that is specific to the test results. The value of the opt-out approach is that statistics about HIV prevalence are obtained. The draw-back is that a seropositive pregnant woman might not get to know her status and ARV treatment and PMTCT will not occur.

The manner in which health care facilities approach VCT will impact either negatively or positively on a pregnant woman's decision to test. In a study carried out in London, UK, it was evident that the uptake of testing in the three different types of facilities depended on the health care worker (midwife) who offered the test. This would indicate that the message being conveyed at these facilities was valuable and that specific HIV training of antenatal staff is vital (Duffy, 1998). The researchers in the same study found that the particular type of facility, be it a hospital clinic, community clinic or midwifery practice, impacted on uptake of HIV testing. In a low income environment, particularly Africa, public health systems are challenged. HIV testing might not be routinely offered and budgets might not allow for VCT programs. Logistically, VCT might be seen as impossible in the rural setting. The burden of counselling is problematic for untrained health care workers. Confidentiality and anonymity are often misunderstood and this can have serious implications. Cultural beliefs and practices inhibit health care workers and the topic of HIV might be handled reluctantly. All these factors contribute to a situation where silence and collusion around the disease occurs. This would not be conducive to increasing uptake of HIV testing in an antenatal setting as the stigma, discrimination and vulnerability are enhanced (De Kock, 2002). In one particular study, the recommendation by the health care provider to test for HIV influenced the patient remarkably. Twice as many women took up testing when it was recommended by the health care worker (Royce, 2001).

An important aspect of uptake of HIV testing is the availability of treatment in the public setting. In the antenatal situation, PMTCT service delivery is closely linked to the levels of VCT offered. The existence of PMTCT services in health facilities where antenatal care was taken up and where the delivery occurred, strongly influenced a woman's decision to test for HIV (Perez, 2006). It was also found in this study that a woman's basic knowledge on PMTCT also determined her decision to test for HIV. Women who had preconceived misconceptions about treatment were less likely to test (Perez, 2006). If a pregnant woman has the wrong information about ARV's and particularly PMTCT she is going to be skeptical about taking it up. She would then base her decision to test on this (Moore, 2005).

A study carried out in a rural part of Uganda found that individuals that are less likely to be infected with HIV seem to take up the services offered in the VCT program. The higher risk individuals were least likely to participate. The results revealed that VCT in this rural community did not seem to promote reduced risk reduction in the case of HIV (Matovu, 2004).

The main objective of a group of researchers was to determine what factors played a part in pregnant women in rural Burkina Faso, taking up HIV counseling and testing, as well as returning for results of these tests. Utilisation of the services offered to the pregnant women attending the rural hospital depended on operational aspects, partner participation in the process as well as on their social background. A large proportion of the participants indicated that they had not understood the process fully and this would impact on them taking up HIV testing and returning to receive their test results. This would indicate that the counseling process was inadequate. It was evident in this research that partner participation in the process, from counseling to uptake and to follow up on test results, was vital for a good response (Sarker, 2007).

VCT programs that have shown relative success rates are those where the services offered are free, the centres are conveniently placed and where HIV test results are issued on the same day of testing. These can be seen as structural factors that have been seen to act as barriers in taking up of VCT in any community. A study done in rural Thailand proved this point and the removal of any of these structural barriers resulted in a high percentage of the population testing for HIV (Kawichai, 2007). A large proportion of populations really want to know their HIV status and

this is a motivating factor. Individuals who have or are engaging in high risk behaviours also show interest in testing.

A fair number of studies have been carried out to determine the barriers to HIV testing in higher income countries but these shall be excluded from this document due to the location of the study in question, that is, rural Madagascar.

## **2.7 HEALTH BEHAVIOUR AND HEALTH EDUCATION**

The Health belief Model (HBM) was developed by three psychologists in 1952 in an attempt to explain and predict health behaviour. Who and what we are, determines the decisions we make with respect to our health. Health education would aim at bringing about positive changes to health behaviour. Socioeconomic factors have impacted on both the status of the health of people as well as on the behaviour of people towards their health status (Glanz, 2008). Poverty is synonymous with morbidity (ill health) and mortality (death). Socio-demographics which look at age, gender, race, employment, geographical location and marital status, influence the health status and health behaviour of individuals. It is well documented that women are more susceptible and vulnerable to being infected with HIV than men (Quinn, 2005). The rural setting isolates people from accessing health care facilities and this would impact on their health status and the action they take around their situation.

Well implemented, successful VCT programs have shown positive results with respect to health behavioural changes. Behaviour change is likely to occur if there is intent, if the individual has the ability to change, and if there are no outside factors blocking this change (Fishbein, 2000). Health belief models were found to be useful in understanding a pregnant woman's decision to test for HIV. Pregnant women in Tanzania showed willingness to participate in a VCT program if they were given free ARV treatment, if tested positive (de Paoli, 2004). A study carried out in Cape Town, South Africa, utilised the information-motivation-behavioural skills model to ascertain if knowledge and motivation were instrumental in influencing people to test for HIV. The researchers concluded that education alone was not effective in encouraging HIV testing. The social barriers that exist (stigma and discrimination) seem to be preventing individuals in this setting from taking up VCT. These barriers seem to outweigh the benefits of being tested (Kalichman, 2003).

The question in closing is on how Madagascar would fit into the above literature. Madagascar is categorised as being a least developed country. The human development index (HDI) places the country at 143 out of 177 countries. The HDI takes into consideration three aspects of human development: the length and quality of life, education and the standard of living. Disease impacts on health and two of the dreaded diseases that already present a problem in the country are TB and malaria. HIV is in the fringes and is emerging. Levels of education are low and this has a negative impact on health education and resultant health behaviour. Poverty is extreme with Madagascar being in the bottom countries in the world. Politically the country is unstable and public service delivery is stagnating and in most cases deteriorating (Waeber, 2008). All these factors have raised humanitarian concerns, globally. The long term outcome for HIV/AIDS interventions is bleak. Pregnant women in Madagascar are in a situation where governmental antenatal clinics are ill resourced with the result that VCT and PMTCT are limited.

## **2.8 HIV IN MADAGASCAR**

Of the 34 million people living with HIV/AIDS (referred to as PLWHA from this point on), almost 23 million are in sub Saharan Africa and 18 million of these found in only 10 African countries (USAID, 2012). Madagascar has been one of the lowest prevalence countries in East Africa, however, limited availability and conflicting HIV statistics make it difficult to characterise the disease in the country. It would be good practice to try and slow the epidemic down and avoid the disastrous impact seen in high prevalence countries. This having been said, prevalence rose by over 1% between 1995 and 2003. A number of factors can be attributed to a rapid rise in HIV prevalence, including poverty, low levels of education and literacy, access to health care, high numbers of multiple partners, low condom use and an increase in transient or mobile populations. All of these factors are present in Madagascar.

Most East African countries have strategic plans to fight HIV and between 2002 and 2009 the then president of Madagascar fully committed himself to this fight. Madagascar now faces challenges in this regard due to the political unrest in the country and the sustainability of its response is now hampered.



### **2.8.1 HIV KNOWLEDGE**

The population of Madagascar has been exposed to HIV and AIDS information mainly via radio stations. Only a small number of participants in a study which aimed to determine the basic HIV and AIDS knowledge, awareness and practices, indicated that they had received information from their health care provider. Although HIV/AIDS awareness seemed high amongst the participants, knowledge of mode of transmission seemed sketchy and the male participants showed a high incidence of multi-partnering and payment for sex. The low percentage of condom usage by these male participants suggests that the country is at risk to the epidemic (Lanouette, 2003).

A comprehensive questionnaire completed by students from the university in the capital of Madagascar, Antananarivo, gives an indication of HIV and AIDS related knowledge, awareness and the practices of the participants in the study (Rahamefy, 2008). There was a definite difference between the male and female students in relation to sexual behavior and condom use. A higher percentage of males had more than two sexual partners in the year before the study. No female students recorded having commercial sex whereas a number of the male students did report to having had commercial sex. Perceptions around condom use and actual use also revealed differences between the male and female students. Only half of the female students had used a condom while two thirds of the men had used a condom in the year prior to this study. At least 90% of the students reported to not having used a condom consistently. Three main reasons were given for this, firstly they had a steady partner and did not feel the need to use one, secondly they had had sex during non-ovulation periods and thirdly that the condom affected sexual pleasure. There definitely seems to be a distinct relationship between condom use and gender, with females being less inclined to use a condom.

### **2.8.2 SEXUALLY TRANSMITTED INFECTIONS**

The monitoring of STI's has been carried out largely in clinics in the urban areas in the country. HIV surveillance has been included in these efforts. With more than 70 % of the population residing outside these urban areas research began into the rural areas to get a better indication of the prevalence of STI's throughout the country. Accessibility to health facilities, education and any form of communication is limited in the rural areas of Madagascar. Herpes simplex virus

(HSV-2) infections in certain rural villages in north western Madagascar were found to be high (Leutscher, 2005). HSV-2 is more often than not a sexually transmitted infection and results in genital ulcers which make transmission of other STI's like HIV more possible and almost 1% of the participants in the study carried antibodies for HIV. A higher number of women than men carried antibodies for HSV-2 which would indicate that women are more susceptible to the virus than men are. The questionnaire revealed that condom use is low amongst the population under study. There were two main reasons given for this. Firstly, women want to have children and secondly, use of condoms is seen as affecting sexual pleasure. The term used by the Malagasy people is *tsy matsiro* \*.

\* *tsy matsiro*-a Malagasy term meaning devoid of pleasure

### **2.8.3 HIGH RISK GROUPS**

In 2003 a research team implemented the Madagascar Priorities for Local AIDS Control Efforts (PLACE) study at social meeting sites at seven urban areas within the country. The seven urban areas were identified as areas where there was high mobility of people. The specific social meeting sites were venues where sexual liaisons took place and were seen as being venues where STI and specifically HIV infections could be potentially high. The team hoped to determine the availability of condoms or the need for condom distribution at these venues. This type of approach could be seen as effective in a country like Madagascar where the incidences of HIV are still relatively low in relation to other African countries. Almost three quarters of the participants in the study had at least one new partner or had engaged in transactional sex in the month prior to the study. With this came the data indicating that only a small percentage of these individuals had used a condom in their last sexual interaction. This places the study participants in a high risk category. Most of the managers of the social venues in the study were happy enough to host different types of intervention programs at their venues and Population Services International have been instrumental in increasing condom access and condom use promotions at venues identified in the PLACE study (Kahn, 2008).

The relationships a sex worker has could be broadly categorized into two types. The relationship between the sex worker and his or her client could be regarded as the paying kind. This can be a clear cut situation where payment is made for services rendered. Further the sex

worker would not receive payment when having sexual intercourse with their full or long term partner. Female sex workers in Antananarivo use the Malagasy term *sipa*<sup>‡</sup> in the latter case. In a fairly recent study it became evident that a line between the client and the *sipa* is not extremely clear amongst these female sex workers (Stoebenau, 2009). What was of concern is the fluidity of condom use by these sex workers when the relationship parameters are vague. There appeared to be three forms of sex work in the capital city. Certain of the sex workers managed to maintain a ‘business’ type relationship with their clients and in this instance condoms were used. In the other two forms of sex work the sex workers seemed to be looking for a deeper relationship after the first encounter and the partner is shifted from the client to the *sipa*. It is these instances that condom use was irregular.

The term ‘transactional sex’ could be used to describe a relationship where sex is offered in exchange for gifts. Individuals involved in this type of practice would not regard themselves as sex workers but have been found to be particularly vulnerable and at high risk of being infected with HIV (Stoebenau, 2011). Why the link? Transactional sex seems to be synonymous to multiple concurrent partnerships. In the three countries where a study on transactional sex was carried out there was definite vocabulary used to distinguish between this type of practice as opposed to commercial sex work or prostitution. A relationship that is entered into only in order to obtain material goods seems to be frowned upon in Madagascar. Statistics seem to support this in that few women in Antananarivo engage in transactional sex and that having multiple sexual partners is also a rarity. Even with this said it seems as though the unstable economic and political environment has changed this somewhat. The lack of acceptability of this type of relationship does however render it prone to be shunned and therefore practiced underground and any attempts to have discussions around the practice and around condom use would be hampered.

<sup>‡</sup>*sipa* – Malagasy term for boyfriend or lover

## **2.9 CONCLUSION**

In the instance of condom promotional campaigns it seems as though messages need to specifically target gender (males or females) and couples. It must not just target the general population. The evidence where female students in Madagascar are less likely to use condoms

indicates the need for this. Individual focused strategies should be tailored to specific needs. This would be possible in the ideal world but a huge task from already stretched health care workers.

The high prevalence of STI's in both rural and urban Madagascar indicates the risk of the HIV infections rising amongst the Malagasy population. The scaling up of the management of STI's would assist in the country controlling the spread of HIV. The epidemiological link between other STI's and HIV are too close to be ignored. The reticence around using condoms within the population indicates the potential problem of HIV prevalence rapidly increasing.

In Madagascar, high risk individuals, specifically sex workers are particularly vulnerable to being infected with STI's due to the fact that there is a fluidity of condom use in the industry. Promotion of condom use amongst sex workers would do a lot to alleviate their vulnerability but due to the complex nature of sex work in Madagascar, this would be a difficult task. In a male condom promotion trial among sex workers in Antananarivo and Tamatave, it was found that there was increased reported condom usage by sex workers after repeated individual counseling of the women by health personnel at health care clinics (Feldblum, 2005).

Transactional sex practices need to be slightly distanced from formal sex work or prostitution but need to be seen as being as important in HIV transmission. Condom use is compromised in such relationships where the sexual encounter is not clearly 'paid' for and the individuals involved in transactional sex should be seen as being at high risk and therefore vulnerable to being infected with HIV.

Continued STI awareness campaigns and condom distribution at PLACE venues could play an important role in curbing the tide of STI's and HIV in Madagascar.

## CHAPTER 3

### RESEARCH DESIGN AND METHODOLOGY

#### 3.1 INTRODUCTION

The contrast between HIV and other STI prevalence statistics in Madagascar is what initiated this research.

The purpose of the study is: Which factors influence pregnant women, attending four basic health centres or *Centres Santè de Bases* (CSBs) in the Fort Dauphin region of southern Madagascar, in testing for HIV? The study focuses on the following objectives:

- To determine the level of participation in voluntary HIV screening amongst pregnant women at the four chosen CSB sites in the Fort Dauphin district.
- To analyse the VCT procedures (both pre and post testing) used in the same CSBs.
- To analyse the factors, both favourable and unfavourable, influencing the motivation of pregnant women accepting or rejecting the HIV test.
- To analyse health care workers knowledge of, and attitudes towards, HIV
- To offer suggestions and recommendations to increase motivation of pregnant women to undergo HIV counseling and testing.

Against the problem statement and the identified objectives the Anosy region is one of 22 regions in Madagascar and is situated on the south east tip of the country. Fort Dauphin, also known as Tolognaro, is the capital of the region, but due to its remote location and limited access by road, is still only semi-urban. Rio Tinto, a large international mining organization, built the Port d'Ehoala, as a means to export the mined product from the QMM heavy mineral mine at the Mandena site, approximately 12km from Fort Dauphin. The local airport is serviced by the national airline, Air Madagascar. Fort Dauphin was mainly a tourist destination but with the mine development and subsequent employment of many of the Malagasy people from the surrounding areas, it could be regarded as being a mining town. Although industry like this brings many advantages, it has resulted in an increase in the sex trade, which without intervention and monitoring, could result in an explosion of STIs.

The researcher, upon the advice of Dr Jean de Dieu, who is involved in public health in the region together with QMM, identified four of the seven government CSB sites that would give a reflective sample of those women attending a more urban site and also of those attending a rural site. Ethical approval from the University of Stellenbosch Ethics committee was granted and the Regional Director of Health, for the Anosy region, on behalf of the Health Ministry of Madagascar, based in Antananarivo, authorized permission for the research to continue.

This chapter will be describing the methodology used during the research and it will elaborate on aspects such as the type of research chosen, the population targeted, the construction of and implementation of the questionnaires, the data analysis as well as the crucial ethical considerations applied in this sensitive type of study.

### **3.2 RESEARCH DESIGN**

The design of a research study defines the strategy used to investigate a research problem by specifying procedures that would be used to answer the research question. Research approaches can be dichotomized into either quantitative or qualitative approaches. The separation of these two approaches is based on the type of data collected. Qualitative research is an interpretive approach relying on subjective data which is non-numerical. The data in this type of research is normally collected during interviews or observations. Quantitative research involves the collection of numerical data which when statistically evaluated, answers the research question.

The researcher decided on the non-experimental quantitative research design, which according to Christensen (2011:44) is a descriptive type of research in which the goal is to provide an accurate description or picture of a particular situation or phenomenon. This type of research design will enable the researcher to identify existing factors and the relationships among them.

### **3.3 TARGET POPULATION AND SAMPLING**

The quantitative survey targeted two groups at four CSB sites in the district of Fort Dauphin of the Anosy region in Madagascar. The researcher was given statistics by the manager of each of the CSB sites which included the number of pregnant women attending the site on monthly basis as well as the number of women who tested for HIV in that month. A six month history was given. The first group comprised of health care workers servicing each of the four CSB sites.

The requirement for their participation was that they had been employed at the site for at least a year prior to the study. The second group targeted was pregnant women at any stage (trimester) of pregnancy, frequenting the CSB site for at least a second time, and who were over the age of 18 years of age.

The Ministry of Health in Madagascar has 7 CSB sites in the Fort Dauphin district that cater for pregnant women. Both the Bazaribe site and the SALFA site are situated in the centre of Fort Dauphin and service mainly town residents. The Ankaramena and Ranopiso sites serve rural Malagasy people and are situated well out of the town of Fort Dauphin with the researcher requiring a 4x4 vehicle to access both sites with travel time sitting at 75minutes and 150minutes respectively.

Upon instruction from Dr Toussaint, the Regional Minister of Health, the researcher, together with Dr Jean de Dieu and the English/Malagasy/French translator went to each of the four CSB sites as an introduction to the manager of each site to explain the purpose of the research. The managers each wrote letters authorising continuation of research at their sites and also stipulating the day that the research could be carried out, based on group attendance by pregnant women. The health care workers (HCW) familiarized themselves with and gave feedback on the questionnaires which were in Malagasy and French. The Bazaribe and SALFA HCW indicated that the researcher would need both French and Malagasy questionnaires for the pregnant women attending their sites while Ankaramena and Ranopiso indicated that only Malagasy questionnaires would be needed for the women attending their clinics.

### **3.4 DATA COLLECTION AND INSTRUMENTS**

The necessary survey data was collected using self-administered questionnaires that were given to both the HCW at each site and to each of the pregnant women attending each of these sites. Christensen (2011: 337) defines a questionnaire as being a self-report data survey instrument that is filled out by research participants. Each of the questions in this type of survey instrument is posed to the entire sample population. The questionnaires were designed by the researcher with the assistance of Dr Jean de Dieu. Professional translation of these questionnaires was done and a pilot run done to make any adjustments that were needed. The pilot run was necessary for the questionnaires aimed at the pregnant women due to dialect differences among the Malagasy

population. Certain questions in the questionnaires for both the HCW and the pregnant women followed a similar trend in order to link and compare results. An effort was made to ensure validity and reliability of data by using the following guidelines:

- Questions were closed-ended
- Questions were constructed using clear and simple language
- By clearly explaining the questionnaire to both the HCW and the pregnant women by use of a translator
- By involving both a medical professional, some Malagasy women and the HCW in the questionnaire construction

The questionnaires for the HCW employed at Bazaribe, SALFA, Ankaramena and Ranopiso CSBs covered five areas:

- Personal information such as age and level of education
- Employment information covering areas such as length of employment and duties at the CSB
- Knowledge of HIV/AIDS which covered knowledge of transmission, treatment of the disease and known risks
- Attitudes of the HCW to PLWHA and knowledge of palliative care for PLWHA
- Services offered by the CSB and level and frequency of training offered to HCW

The questionnaires for the pregnant women attending the same CSB sites looked in depth at four areas of interest to the researcher

- Extensive demographics
- Level of healthcare provision and services offered at the CSB
- Personal health behavior including previous use of barrier contraceptive methods
- Knowledge of HIV/AIDS

Likert-type scaling was used for some of the questions in both the HCW questionnaires and the questionnaire targeting pregnant women. Here a multi-item summated scale is used to measure a single construct. Questionnaire rating scales can be either unipolar or bipolar. The unipolar scale prompts the participant to think of the presence or absence of an attribute. Those used in the two



sets of questionnaires for this study were: no risk to high risk and extremely low importance to extremely high importance. The bipolar scale prompts the participant to balance two opposite attributes and the type of bipolar scale used in the HCW questionnaire ranged from strongly disagree to strongly agree. The unipolar scale was favoured by the researcher due to the fact that this type of scaling is less taxing on the participants. It does however have its limitations which will be discussed later.

### **3.5 DATA ANALYSIS**

The researcher ultimately wanted to determine what variables would impact on a pregnant woman making a decision to test for HIV. The data that was generated from the questionnaires came from both quantitative (e.g. offering of an HIV test) and categorical variables (e.g. age, gender). Numbers were assigned to the different scale items in order to calculate means of data.

Items on the unipolar scales were assigned the following numbers:

- 0 - no risk/extremely low importance
- 1 - little risk/low importance
- 2 - medium risk/important
- 3 - high risk/extremely high importance

Items on the bipolar scales were assigned the following numbers (no 0 value is given ensuring that participants either agree or disagree):

- 2 - strongly disagree
- 1 - disagree
- 1 - agree
- 2 - strongly agree

The data obtained from both sets of questionnaires was analysed using descriptive statistics and focused on summarisation of the data. The SPSS statistical program was used to assist in calculating frequencies and means of data.

### **3.6 ETHICAL CONSIDERATIONS**

The health care worker in charge at each of the four CSB sites, explained to the pregnant women, in a group setting, what the purpose of the research study was. They were informed that their participation was completely voluntary and that they were under no obligation to participate. The women were also assured that, if they decided at any stage to withdraw from the study, there would be no consequences to their decision. This procedure was repeated a second time by the translator who was assisting the researcher. Verbal informed consent was obtained from each of the women participating in the study. Each and every questionnaire had a covering letter which re-iterated all of this information and was also read out to the women by the translator, prior to them starting the questionnaire. The self-administered questionnaire did not require any name or address from the participant. Confidentiality and anonymity were assured and maintained at all times.

The researcher is the only person who has had access to the data received from the CSB archives and from the two sample groups. All of this data has been written up in an anonymous way so that none of the individual participants from the two sample groups can be identified. The data has been in the hard copy (clinic records and questionnaires) and electronic format. All hard copy data has been stored in a safe place and will be kept in this safe place until the researcher destroys it after a period of six months. All electronic data has been securely filed and stored on password-protected computers and will also be deleted after the same period.

This study has been one of high sensitivity. It was ensured that at all times none of the participants were harmed in any way (physically or psychologically) and their dignity was regarded as being of utmost importance.

### **3.7 CONCLUSION**

With the study purpose always in mind the research tools were designed in such a way that the objectives could be met. Ethical issues were first on the agenda due to the fact that the subject matter was sensitive and that the main target group, pregnant women, are a vulnerable group. In one of the first meetings with Dr Toussaint, the Regional Minister of Health, it was communicated to the researcher that all research in this particular field had been restricted by the Department of Health due to a publication which had shed the government in a negative light

with respect to their action in the fight against HIV/AIDS in the country. He did indicate however, that it is felt that a study like this would provide them with valuable insight into the situation at these CSBs, and that observed issues could be addressed in the broader perspective.

The central research tool, the questionnaires, was designed in order to answer the research question. Although they were evaluated and professionally translated, it was evident to the researcher that they did not satisfy all criteria. The researcher did feel however that this would never be an easy task, particularly when drawing responses from women with very low literacy levels. A well structured, target appropriate questionnaire generates data that with solid statistical evaluation, is scientifically reliable. With this valid, repeatable conclusions can be drawn. It was felt that overall, the tools did serve the purpose.

## CHAPTER 4

### DISCUSSION OF RESULTS

#### 4.1 INTRODUCTION

The aim of this chapter will be to analyse and understand the research data obtained through the empirical study. Three sets of data were gathered in an attempt to understand the reasons why such a low percentage of pregnant women in the Fort Dauphin region of Madagascar choose to test for HIV in the clinic setting. Four CSB sites, Bazaribe, SALFA, Ranopiso and Ankaramena were where the following were obtained:

- Clinic records
- Questionnaires targeting HCW
- Questionnaires targeting pregnant Malagasy women attending the clinics

The introduction of 22 regions in Madagascar was an attempt by the government to improve the public health service delivery system. The system involves the alignment of the central, regional and district levels. The Malagasy population has the option to attend public health centres, private health clinics or traditional healers. Their choice would be based on the cost of the services rendered, proximity of the provider to their home, quality of service by the provider and accessibility to treatment from the provider.

Bazaribe and SALFA would be categorized as CSBII sites as they have a doctor and other medical staff on the premises. Ranopiso and Ankaramena are CSBI sites as they only have nursing staff in attendance. Bazaribe, Ranopiso and Ankaramena are public health CSBs while SALFA is a private health CSB with funding coming from the Lutheran Church. All four of these CSBs would be district health centres and would fall into the Anosy Region. All health policies and strategic decisions are filtered down from the Central health Ministry via the regional health authorities to these CSBs.

## 4.2 ANALYSIS OF CSB RECORDS

It was felt that clinic records of numbers of women attending the respective CSBs, as well as the number that tested for HIV over the 6 month period prior to the study would be of value to the research. These records spanned from June 2011 to December 2011. Figure 4.1 shows the numbers of women attending the four CSBs for a six month period.

**Figure 4.1**

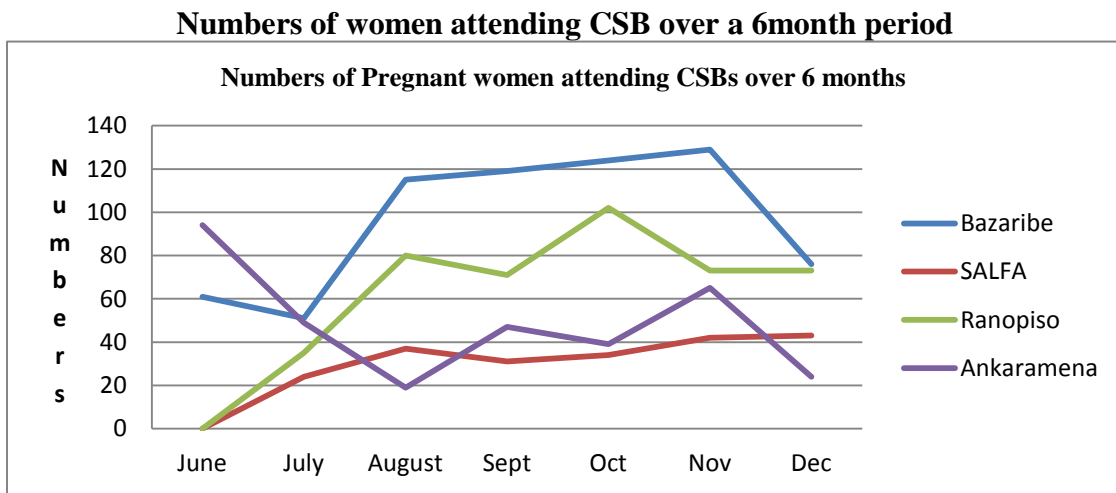
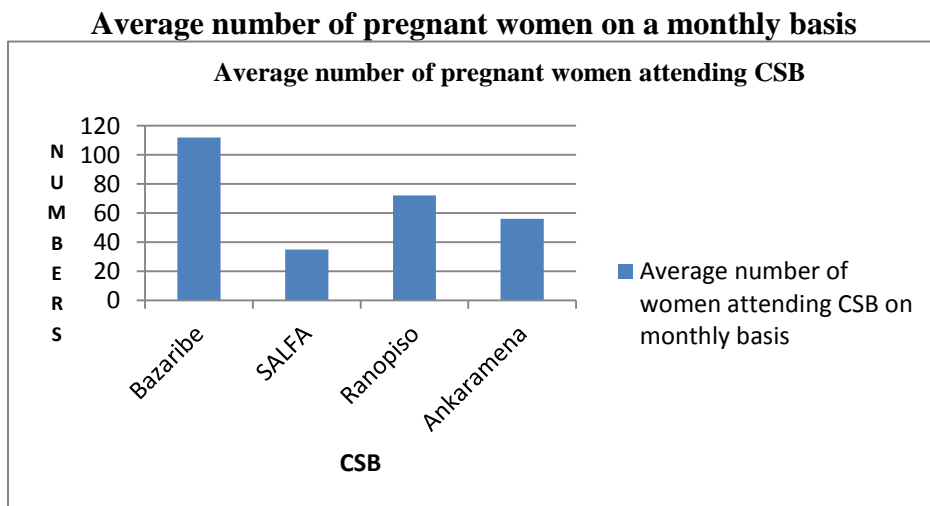


Figure 4.2 shows the average number of pregnant women attending each of the CSBs on a monthly basis.

**Figure 4.2**



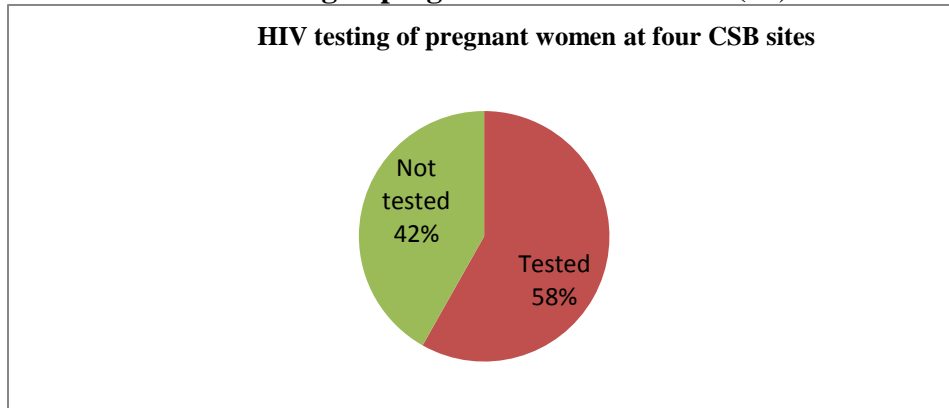
Bazaribe and SALFA CSBs are situated in close proximity of each other and are based in the town of Fort Dauphin. Bazaribe had the most number of pregnant women (one hundred and twelve), on average attending the clinic on a monthly basis and SALFA had the least number at an average of thirty five per month.

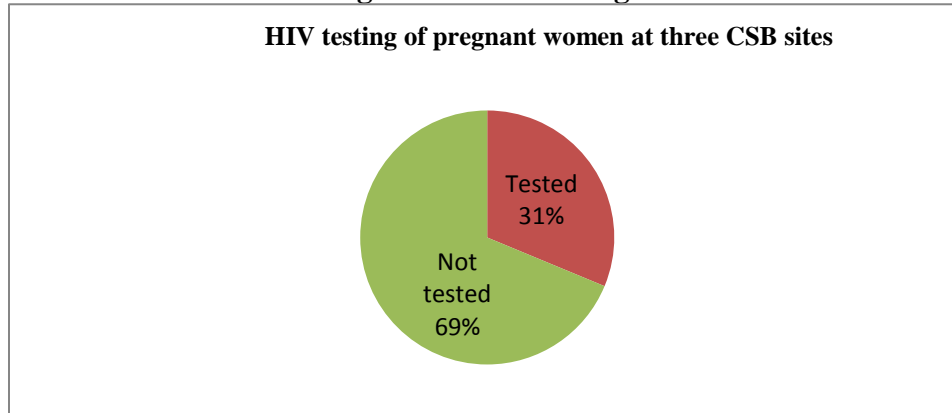
Ranopiso and Ankaramena are both rurally situated and had a monthly average of seventy two and fifty six pregnant women attending the clinics, respectively. Access to these two clinics by road is difficult by vehicle and this becomes even more difficult when the rainy season sets in.

Figure 4.3 and 4.4 show the overall percentages of the pregnant women who either tested or didn't test for HIV in this same period. The researcher felt that the results shown in the second figure were important to include as the HCW in attendance at Bazaribe had indicated that the pregnant women had been promised the gift of a mosquito net upon testing for HIV. There is a feeling this might have steered the women into testing. Malaria is a very real problem in the region and nets are good practical prophylactics for the disease. Eliminating Bazaribe from the picture makes quite a difference to the statistical outcome.

**Figure 4.3**

**HIV testing of pregnant women at CSBs (%)**



**Figure 4.4****HIV testing at CSBs excluding Bazaribe****4.3 ANALYSIS OF HCW QUESTIONNAIRES**

Literature has indicated there is a critical shortage of HCWs in Madagascar and also a major imbalance of these workers between the rural and urban areas. The ratio of medical (doctors, nurses and midwives) staff to the population is low at 2.3:1000 (Sharp, 2011). Twenty eight percent of these workers serve seventy five percent of the total population which is rurally situated. This means that seventy two percent of the workforce in this sector serves the urban community which amounts to twenty five percent of the total population of Madagascar. It is this factor that resulted in a low number of HCW participating in the study. Minimal health care staff was found at the four CSBs. Bazaribe and SALFA did have other personnel at their sites but these were not involved with the pregnant women attending the CSB.

**4.3.1 BIOGRAPHICAL INFORMATION OF HCWs**

There was one female doctor of the HCW participants at the SALFA CSB; balance of the participants was nurses. The HCW at the Ranopiso and Ankaramena sites were managing the CSB as well as attending to the patients.

The majority of the sample was female (80%) which follows the trends of the nursing industry. All of the HCW that participated were paid monthly which would indicate that they were permanently employed at their CSBs. However, only 40% of the employees had been at their CSB for over 2 years and this leads to the observation by researchers that in rural areas the HCWs tend to move to more lucrative positions in the urban areas when the opportunity arises

(Sharp, 2011). Tertiary qualifications had been obtained by the majority of the sample group with only one fifth having a high school leaving certificate. SALFA was the only CSB where staff was paid privately.

**Table 4.1**  
**Biographical statistics of HCWs at four CSB sites**

	N	Frequency	Percent	Mean	Standard deviation
<b>Gender:</b> Male	5	1	20	1.8	.447
Female		4	80		
<b>Age:</b> 26-32y	5	2	40	3.6	1.817
33-39y		1	20		
47-53y		1	20		
>54y		1	20		
<b>Level of education:</b> High School	5	1	20	2.6	.894
University degree		4	80		
<b>Employment type:</b> Medical	5	4	80	1.4	.894
Laboratory		1	20		
<b>Length of employ:</b> 1-2y	5	3	60	2.4	.548
>2y		2	40		
<b>Salary payment:</b> Monthly	5	5	100	4	0
<b>Employer type:</b> Government	5	4	80	1.2	.447
Private		1	20		

#### 4.3.2 KNOWLEDGE OF HIV/AIDS

The questionnaire targeting HCWs covered topics that would enable the researcher to evaluate the overall knowledge of HIV/AIDS. Three main questions were posed:

- Transmission of HIV
- Presence of the HI virus in different body fluids
- High risk groups
- Assimilation of HIV knowledge

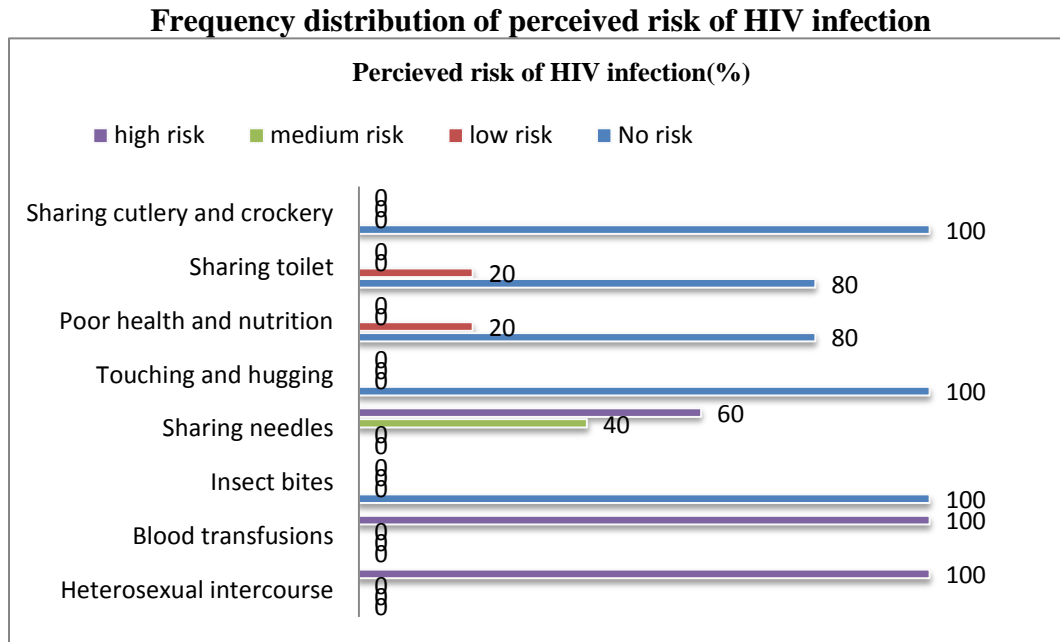
Additionally the HCWs were asked if they knew if there was a cure for HIV, if they had tested for HIV and where they had obtained their knowledge on HIV/AIDS.



### 4.3.2.1 HIV TRANSMISSION

Each of the participating HCWs was asked eight questions relating to transmission of HIV. In each case they had to rate the degree of risk (no, low, medium or high) for the HI virus being transmitted. Figure 4.5 reveals the outcome of this question.

**Figure 4.5**



All of the HCWs believed that transmission via insect bites, touching and hugging and sharing of cutlery and crockery had no risk. This response sits well in the fact that these HCWs would be delivering the correct message in relation to myths around the disease. Sharing of needles was seen as having a medium (40%) to high risk (60%). This response is of concern as this risk is extremely high. Twenty percent of the HCWs felt that poor health and nutrition as well as the sharing of ablution facilities result in a low risk for HIV transmission with the balance (80%) seeing this as holding no risk. All HCWs correctly indicated that heterosexual intercourse and blood transfusions hold a high risk for HIV transmission.

#### 4.3.2.2 PRESENCE OF HIV IN BODY FLUIDS

It was seen as valuable to determine how many of the HCWs correctly indicate in which of the body fluids the HI virus is found. Data in Table 4.2 summarises the responses related to the knowledge of HIV and body fluids.

Although 100% of the respondents correctly identified blood as being a vehicle for HIV transmission, only 80% correctly identified vaginal secretions and semen as being fluids that can transmit the virus. 20% of the HCW incorrectly identified saliva, tears and sweat as vehicles for transmission. Only 60% of the participants identified breast milk as being a body fluid that contains the HI virus. The CSBs advocate breastfeeding so it would be important that the correct message is conveyed to prospective mothers in relation to HIV and the risks associated with this type of feeding. Results do show that the HCWs have an overall average to good knowledge (80%) of body fluids that transmit HIV.

**Table 4.2**

<b>Knowledge of HIV and body fluids</b>		
<b>Statement relating to body fluids and HIV</b>	<b>Correct</b>	<b>Incorrect</b>
Blood	5 100%	0 0%
Vaginal Secretions	4 80%	1 20%
Semen	4 80%	1 20%
Saliva	4 80%	1 20%
Tears	4 80%	1 20%
Sweat	4 80%	1 20%
Breast milk	3 60%	2 40%
<b>Average</b>	<b>28</b> <b>80%</b>	<b>7</b> <b>20%</b>

#### 4.3.2.3 CURE FOR HIV

The HCWs were asked if they knew if there is a cure for HIV. The sample size is too small to clearly evaluate the outcome of the question (Table 4.3).

**Table 4.3**  
**Cure for HIV**

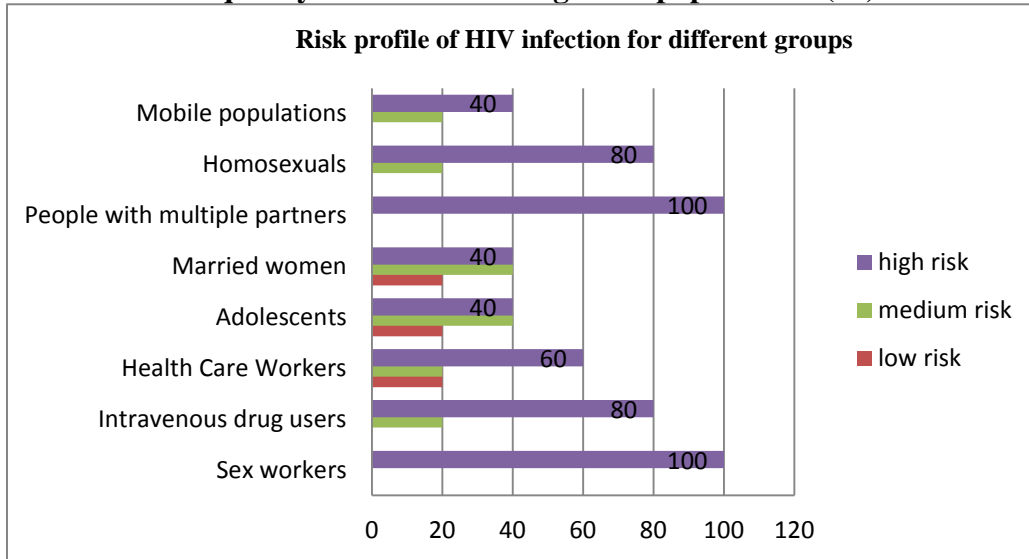
		<b>Frequency</b>	<b>Percent</b>
Valid	No	3	60
	Yes	1	20
	Total	4	80
Missing	No response	1	20
Total		5	100

#### **4.3.2.4 HIGH RISK GROUPS**

There were varied responses to the group of questions surrounding those people who are at high risk of contracting HIV. Sex workers and people with multiple sex partners were identified by all the participants as being high risk individuals for contracting the disease. Intravenous drug users as well as homosexuals were seen by 80% of the participants as being high risk candidates for contracting HIV. Homosexuality is not culturally accepted in Madagascar and this could be why this group was seen as being high risk and could be related to discriminatory beliefs about these individuals. Only 40% of the HCWs saw adolescents being at high risk. This could be attributed to the fact that on average, adolescents in Madagascar seem to have their sexual debut later, relative to other African countries (Rahamefy, 2008). Health Care workers see themselves as relatively high risk candidates (60%) for contracting HIV. This could lead the HCW into being reticent to treat a person infected with HIV for fear of being exposed to the virus. Married women are seen as being at medium (40%) to high risk (40%) for contracting HIV which could be attributed to perceptions of fidelity levels in marriages in Madagascar. The participants seem to feel that transient individuals are not at extremely high risk (40%) of contracting HIV. This would seem to reveal that the tendency of mobile populations to generally practice high risk behavior is not known or recognized (Figure 4.6)

**Figure 4.6**

**Frequency distribution of high risk populations (%)**

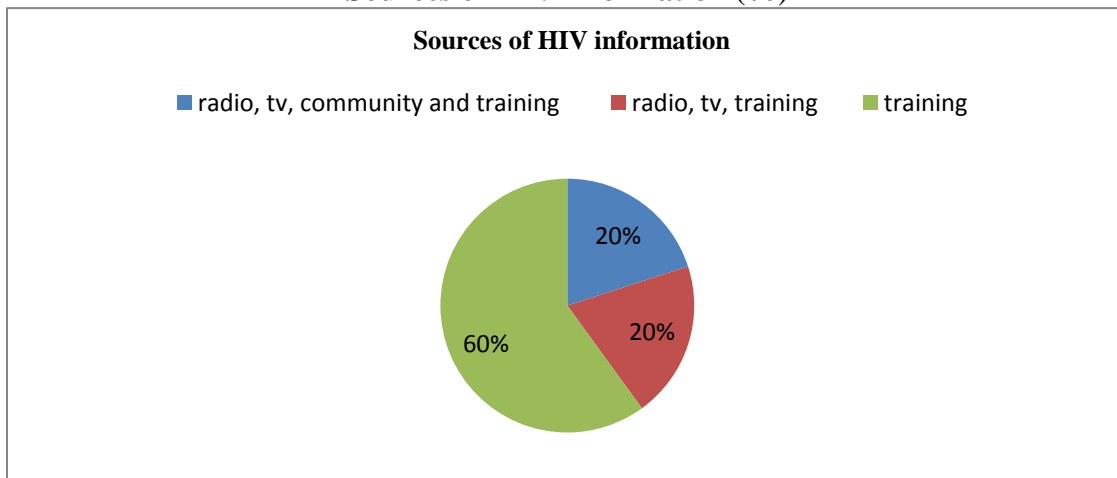


**4.3.2.5 ASSIMILATION OF HIV KNOWLEDGE**

HCWs have obtained their knowledge of HIV from a variety of sources ( Figure 4.7). Training programs (60%) seem to be a common source of HIV information amongst all participants.

**Figure 4.7**

**Sources of HIV information (%)**



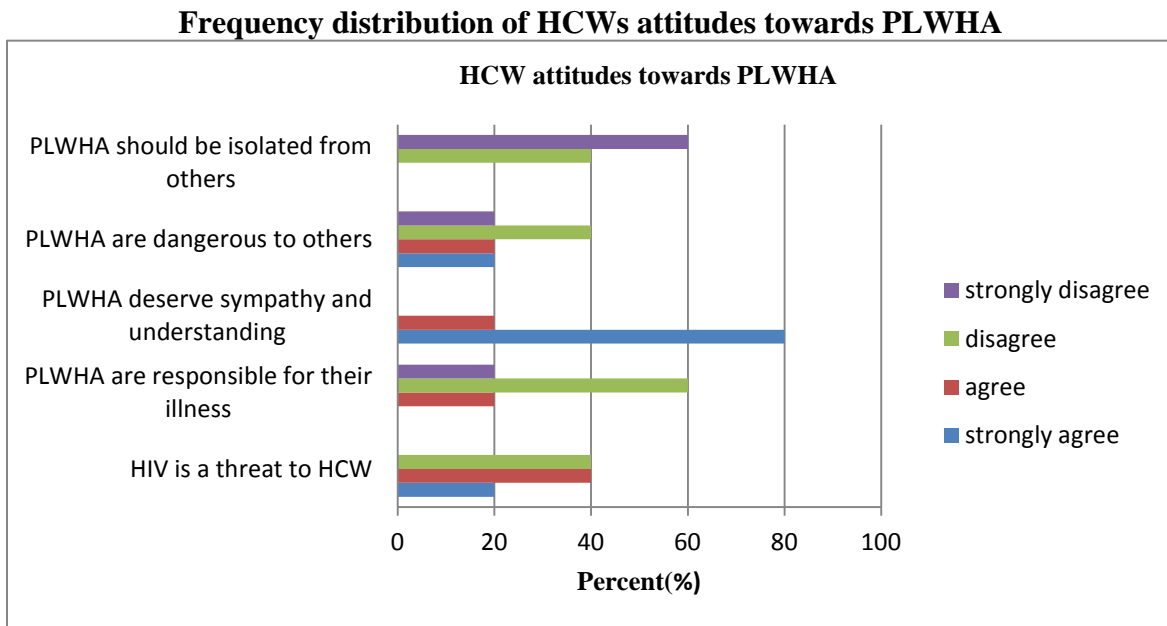
### 4.3.3 HCWs and PLWHA

These results reveal the attitudes of HCWs towards PLWHA and the level of care that they feel is expected of them with PLWHA.

#### 4.3.3.1 ATTITUDES OF HCWS TOWARDS PLWHA

Sixty percent (cumulative of those that agree and those that strongly agree) of the HCWs do see HIV as being a threat to them. The concern with this type of response is that these individuals might elicit prejudice towards HIV infected people. Negative attitudes result in poor patient management and if pregnant women were to detect this type of attitude they would be hesitant to test or reveal their status. A cumulative 40% of the HCWs feel PLWHA are dangerous to others with 20% indicating they feel that PLWHA are responsible for their disease. All of the participants felt PLWHA deserve to receive empathy to some degree and they also feel that PLWHA should not be isolated from others. The results from this series of questions were slightly conflicting but there does seem to be a feeling that they are at risk and this would determine the quality of care PLWHA would receive (Figure 4.8).

**Figure 4.8**



#### 4.3.3.2 CARE OF PLWHA

Table 4.4 reveals that the HCWs as professionals understand they are expected to treat all patients whatever the condition. A very positive outcome of this question was all felt HIV screening should be encouraged by them to patients attending the CSB. A large percentage felt that they should visit and treat PLWHA at their homes if the patients were too ill to attend the CSB. This would be an almost impossible task for those HCWs at the Ranopiso and Ankaramena CSBs due to lack of access roads to many of the rural population. This could explain the balance of 20% indicating they would not attend patients in the home setting.

**Table 4.4**

#### Care of PLWHA

	Frequency	Percent	Mean	Std deviation
<b>HCWs are duty bound to treat PLWHA</b> - yes	5	100		
No	0	0	1.00	.000
<b>HCWs should advocate HIV screening</b> - yes	5	100		
No	0	0	1.00	.000
<b>Would you be prepared to visit PLWHA at home?</b>				
Yes	4	80		
No	1	20	.80	.447

#### 4.3.4 SERVICES OFFERED AT CSBs

Some clear-cut outcomes were arrived at in relation to the four CSBs offering VCT promotions at their sites, the clinics being equipped to test for HIV, and treatment availability. All participants indicated that their CSB had presented a VCT campaign within the 6 months prior to this study. Although all indicated that HIV testing equipment was available, the researcher did find from the clinic records that two of the CSBs had run out of testing kits in this same time period. None of the CSB sites offered treatment for PLWHA. This fact could be a key determinant in why women do not test for HIV.

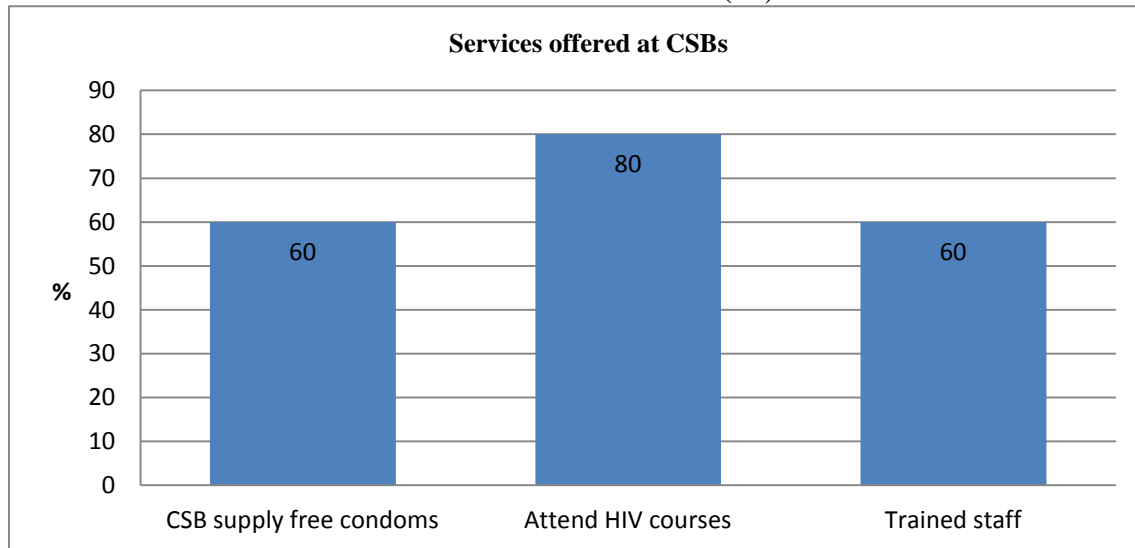
**Figure 4.9****Services offered at CSBs (%)**

Figure 4.9 shows free condoms were not made available at all of the CSB sites. The majority of the HCW (80%) would like to attend HIV courses if they were on offer and 60% know of staff that have had specialised training in HIV/AIDS.

#### **4.3.5 UPTAKE OF HIV TEST BY HCWS**

All the participants in this group had an HIV test. This allows to make the reasonable assumption they would be good advocates for HIV testing among the pregnant women attending their respective CSBs.

### **4.4 ANALYSIS OF QUESTIONNAIRES OF PREGNANT WOMEN**

The aim of the study was to determine the status of HIV/AIDS in the country.

#### **4.4.1 INTRODUCTION**

There was a high level of participation by pregnant women at most of the sites in the study. The enthusiasm shown by the women and a larger sample could have been obtained but it would have meant the normal functioning of the CSBs would have been interrupted. A total sample size of fifty (50) pregnant women was obtained from the four CSB study sites. Bazaribe, SALFA and Ranopiso gave samples of twelve (12), eighteen (18) and seventeen (17) respectively.

Ankaramena, servicing mainly illiterate Malagasy people had a small sample size of three (3). This section will cover the following areas:

- Personal information of participants
- Use of, and services offered by the CSB facility
- Personal health behavior
- Knowledge of HIV/AIDS
- Influencing factors for testing for HIV

#### **4.4.2 BIOGRAPHICAL INFORMATION**

In this section of the questionnaire, participants were asked questions around age, religion education levels and their marital status. The distance from and the mode of transport to the CSB was ascertained. The final leg of this section centered on their pregnancy; gestation period was determined, number of previous pregnancies was recorded and the type of delivery/ies she had experienced.

##### **4.4.2.1 AGE OF PARTICIPANTS**

The majority (88%) of the pregnant women participating in this research was between the ages of 18 and 32 years of age. It is important to note there were a number of pregnant women under the age of 18 attending the CSBs but they were not included in the study because consent from parents/guardians would have been required. Figure 4.10 shows the spread of ages of the women who participated.

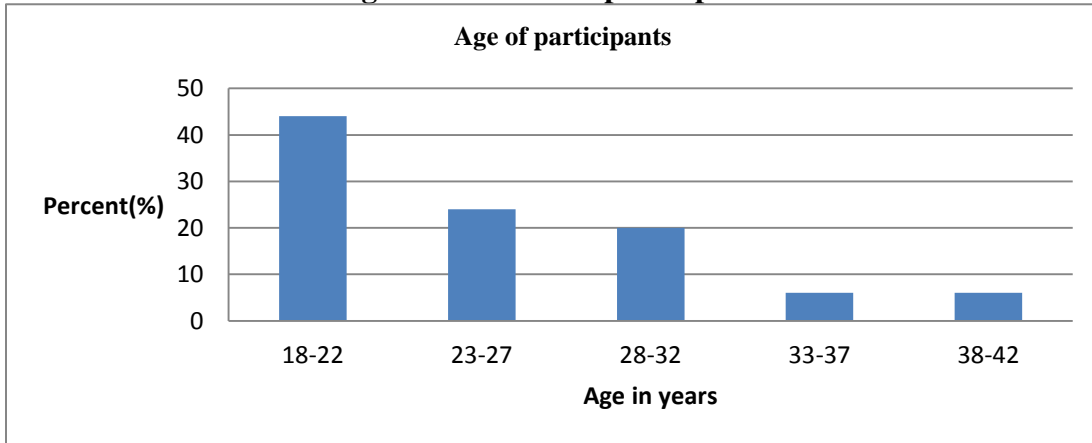
##### **4.4.2.2 EDUCATION LEVELS**

A definite trend was observed around education levels at the four different CSBs. Women with higher levels of education (high school and tertiary) attended Bazaribe and SALFA while the two rural sites had the least educated women. This did impact on the quality of questionnaire that was submitted. Certain questions were incomplete when literacy levels were low. Figure 4.11 shows the numbers of women with different levels of education while Figure 4.12 shows a cumulative figure of the lower levels of education in the total sample.



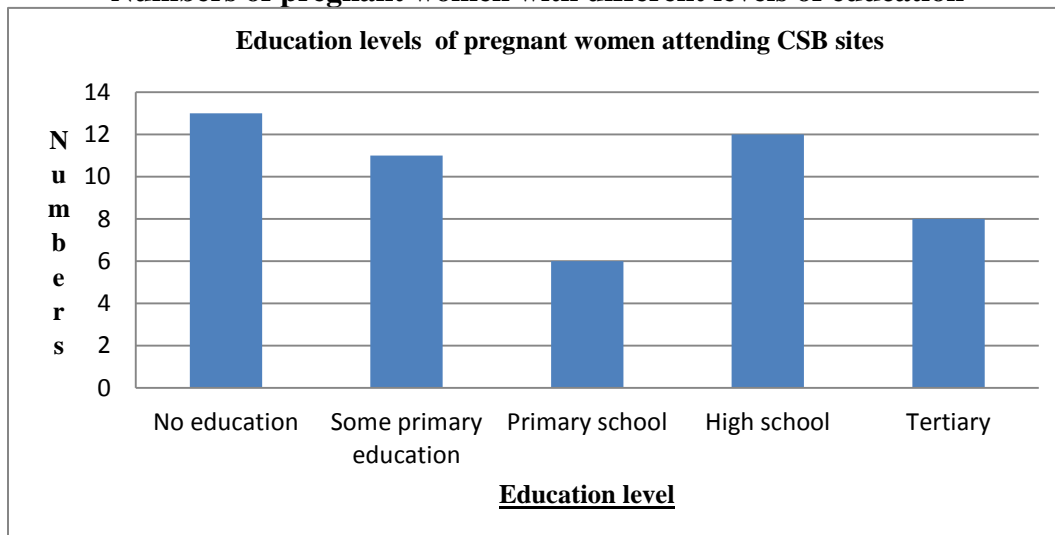
**Figure 4.10**

**Age distribution of participants**



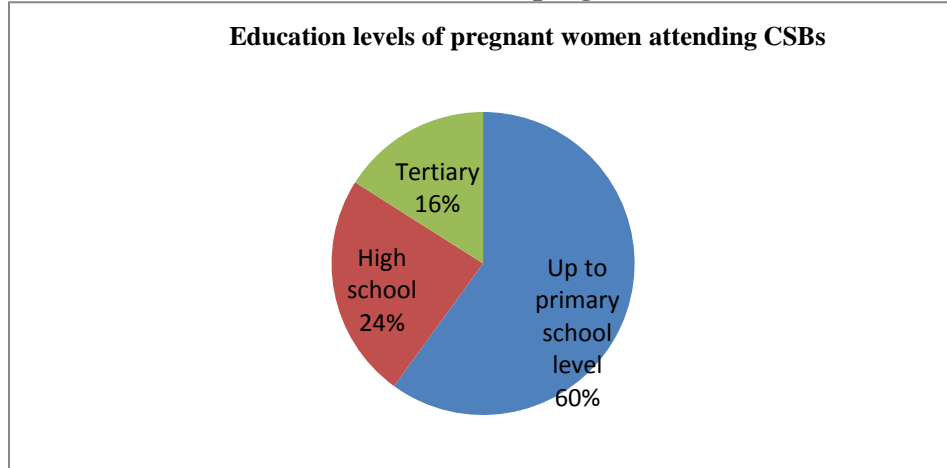
**Figure 4.11**

**Numbers of pregnant women with different levels of education**



**Figure 12**

**Different education levels of pregnant women (%)**

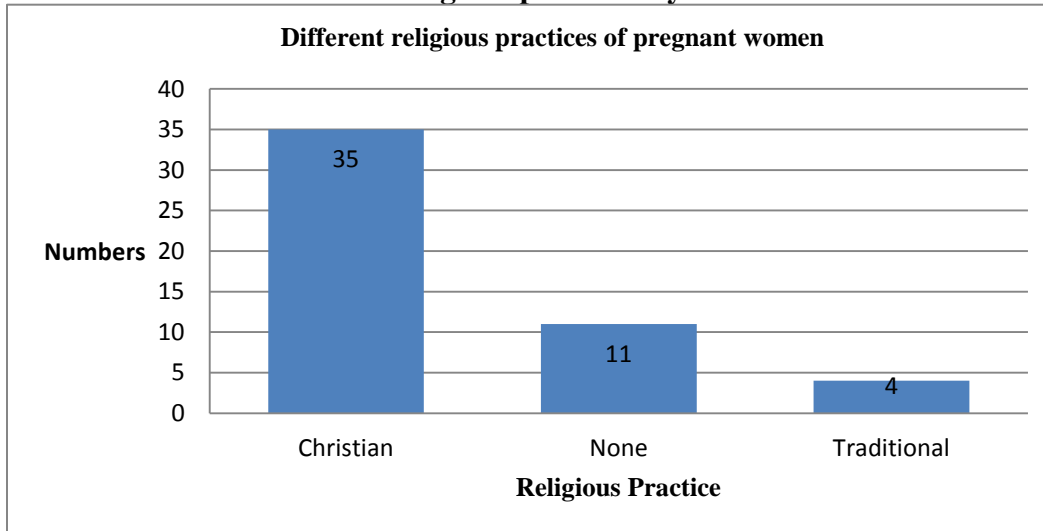


**4.4.2.3 RELIGION, MARITAL STATUS, DOMICILE AND TRANSPORT TO CSB**

A distinct trend was observed with respect to religion and CSB location. The urban sites had a greater number of women who were Christian while the rural sites revealed that many of the women were not attached to any form of religion or they practiced traditional practices. The main Christian churches in the town of Fort Dauphin are Roman Catholic and Lutheran (Figure 4.13).

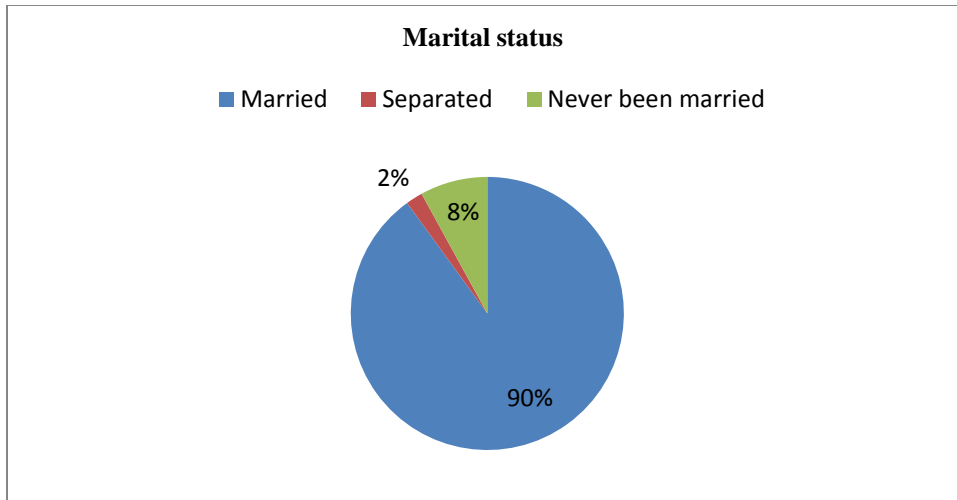
**Figure 4.13**

**Different religious practices by number**



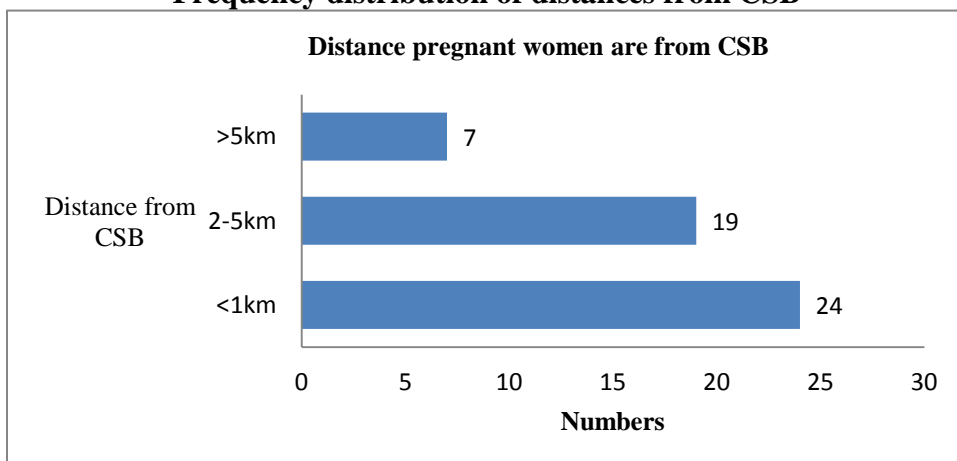
Most of the women (90%) attending these CSBs were married with the balance either having not being married or separated from their partners (Figure 4.14).

**Figure 4.14**  
**Marital status (%)**



More than half (52%) of the pregnant women live over 2km from their CSB; 90% of the women walk to these sites. The balance of women has to make use of a bus or taxi. These distances by foot in the tropical heat are burdensome for a woman in late stages of pregnancy (Figure 4.15).

**Figure 4.15**  
**Frequency distribution of distances from CSB**

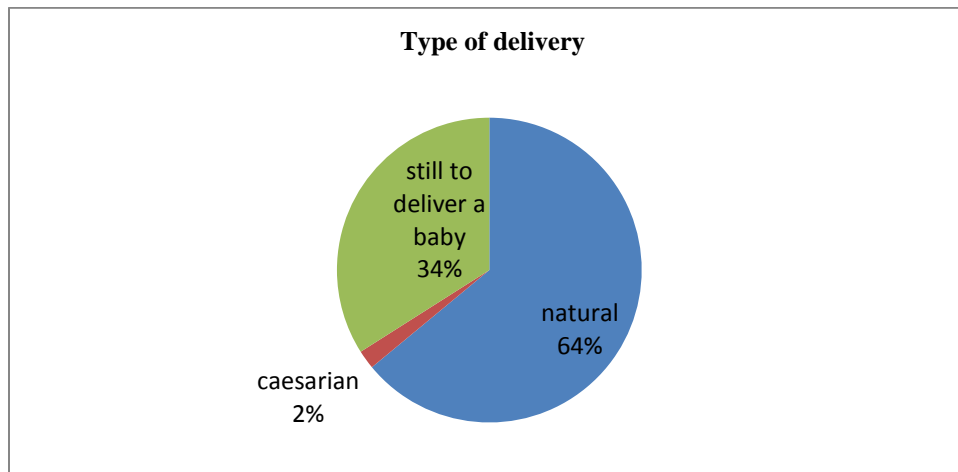


#### 4.4.2.4 OBSTETRICS OF WOMEN ATTENDING CSBs

Just under two thirds of the participants were in the third trimester of their pregnancy. One third was in their second and a small number (2%) in their first trimester. Those who were having their first child were 34% of the total with 26% on their second pregnancy and 10% expecting a third child. Thirty percent of the women had experienced four or more pregnancies. Figure 4.16 shows the type of deliveries the women had experienced; indicates 34% who had not delivered a child as yet. Caesarian sections are rare in the rural areas of Madagascar due to limited access to facilities that can cater for this type of delivery.

**Figure 4.16**

**Type of delivery (%)**



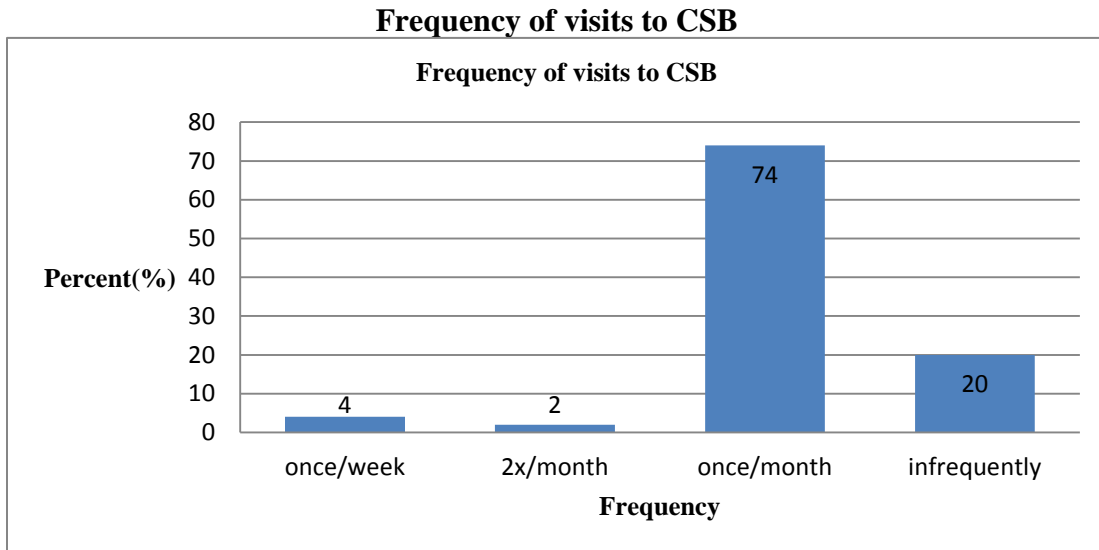
#### 4.4.3 SERVICES AT CSBs

The questions in this section were aimed at determining what is on offer at the respective CSBs. Aspects that were covered were attendance to the CSB, HCW management of the patients, availability of counseling and testing services and patient overall satisfaction.

One of the requirements for participation in this study was that pregnant women were on at least their second visit to the CSB. This was important in order to get a true reflection of perceptions of the facility. The more frequent the attendance the clearer the understanding of services offered. Just under a quarter of the women had visited the CSB at least twice with 46% having

attended between three and five times. A fair number of women (30%) at attended the facility at least six times. It would have been of value to have determined how many times the women had attended the CSB, pre- pregnancy, to get more clarity on broader aspects of services offered. Figure 4.17 shows the frequency of visits by the pregnant women. It is evident the women do not attend the CSB on a frequent basis with the majority visiting only once a month.

**Figure 4.17**



HCWs are in attendance at most times (96%) and ninety four percent of the pregnant women were satisfied with the treatment they received from these HCWs. A relatively large number of participants indicated that payment of services at the CSBs was required. SALFA is regarded as being a semi-private CSB and payment was expected. The questionnaire did not establish if payment was of an informal kind. The translator did indicate some women had stated payment was often on delivery of the baby. If this is the case it would lead to some women opting for a home delivery.

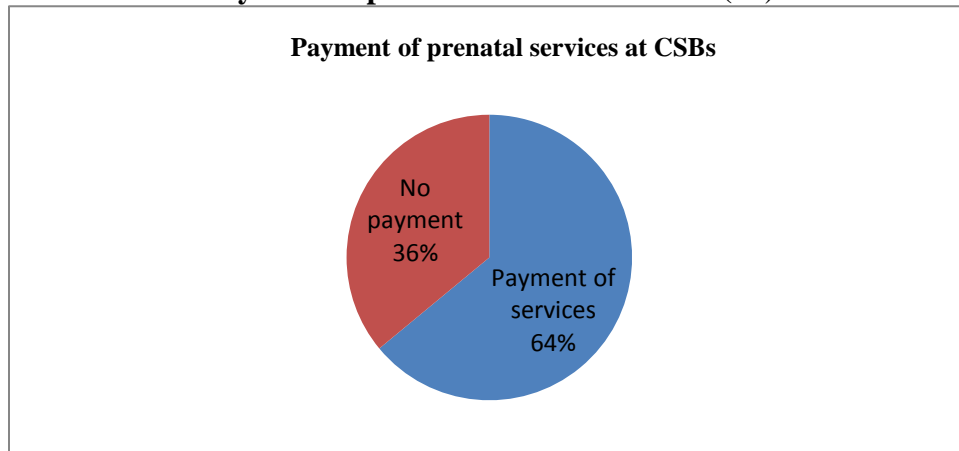
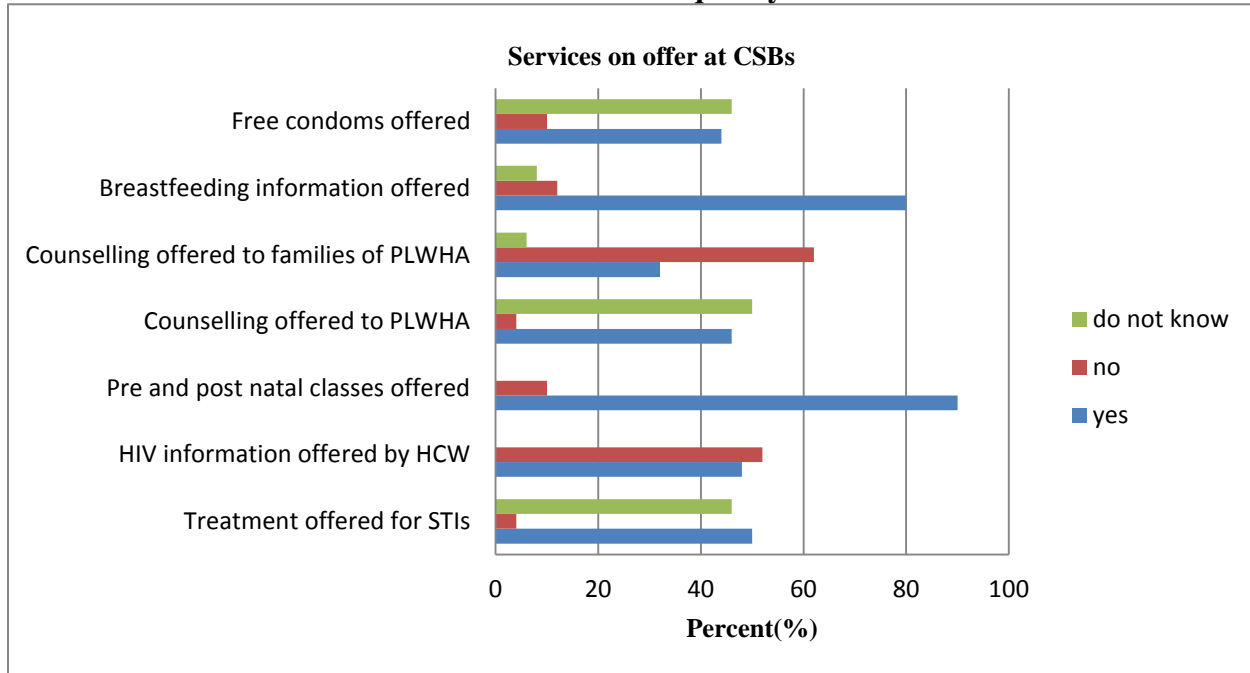
**Figure 4.18****Payment of prenatal services at CSBs (%)**

Figure 4.18 shows the level of payment at the CSBs. It became clear payment seems to be a definite that could deter women from seeking out services and into limiting the frequency of visits.

What did come out strongly is the fact that pre and postnatal services, including information on breastfeeding, are well covered by the CSBs (Figure 4.19). A relatively high percentage of participants (46%) were not sure of the CSB supplying free condoms to patients. It can be seen in Figure 4.9 that 60% HCWs indicated the CSBs do distribute free condoms. This compares to the 44% of the pregnant women. Less than a half of the participants (48%) had been given information on HIV by the HCW. Knowledge about availability of treatment for STIs was inconclusive with exactly half saying there was treatment available but the balance not knowing or saying it was not available. Counselling services do not seem to be a strong point at the CSBs with participants being unsure of these services being offered or clearly indicating they were not available to PLWHA and their families.

**Figure 4.19****Services offered at CSBs-frequency distribution**

Two key questions in relation to this study were: “If a free HIV test was offered to you, would you accept it?” and “If you tested positive for HIV would you accept treatment for yourself and your unborn child. The answer to both of these questions was a resounding YES (98%). The important concepts here are the words *free* and *treatment*. Figure 4.19 eliminates the word *free* and as was revealed in 4.3.4 none of the CSBs offer treatment for PLWHA. This results in a catch-22 situation with women indicating that they do want to test and do want treatment but the CSB cannot satisfy the latter part. It would be difficult to encourage a woman to test for HIV knowing that the prognosis of the disease is poor and not be able to offer them some form of treatment.

#### 4.4.4 PERSONAL HEALTH BEHAVIOUR

Five questions were asked of the participants in order to determine the degree to which they put themselves at risk for contracting HIV. Three of the questions asked about condom use directly.

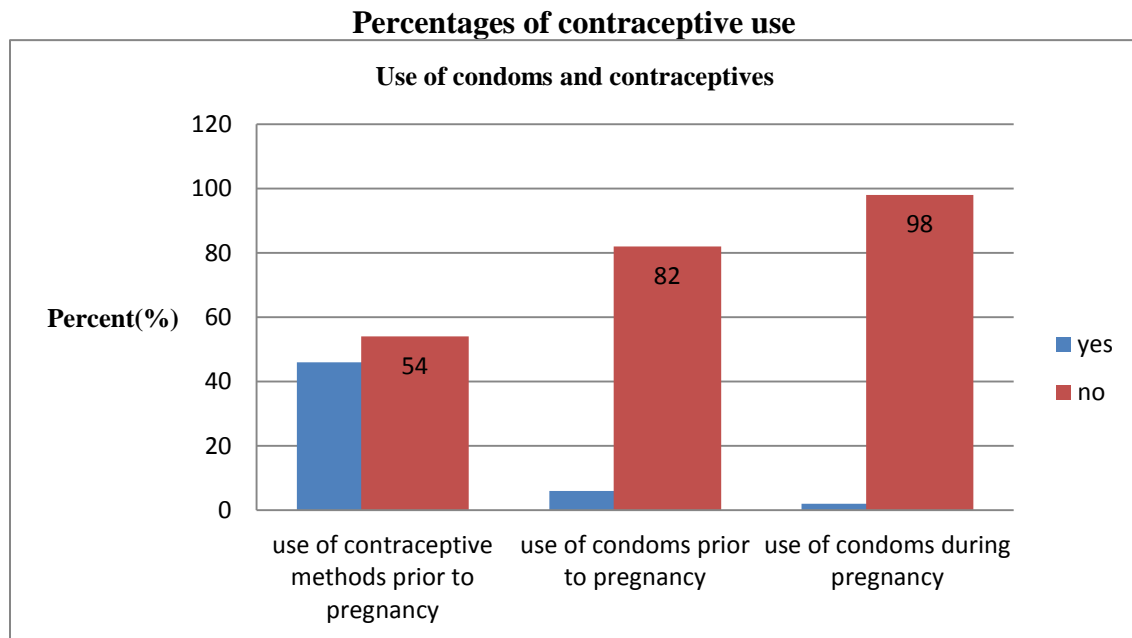
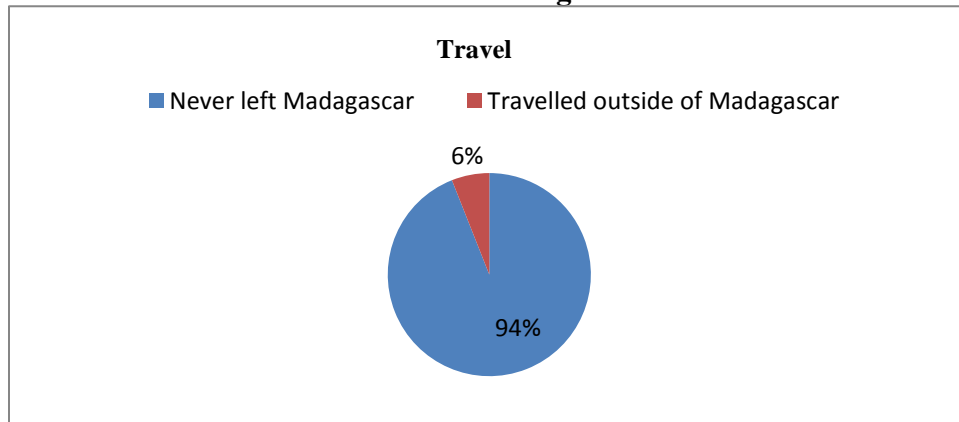
**Figure 4.20**

Figure 4.20 confirms the literature indicating that condom use among the Malagasy women is low. Only 46% of the participants had used any form of contraceptives prior to their pregnancy. A number of different types of contraceptive methods could have been used such as the contraceptive pill, injection and barrier methods. A large number of women (82%) had not ever used a condom in their sexual interactions prior to the pregnancy. Only one participant had used a condom during her pregnancy. These statistics are quite alarming and reveal the risk these women are to STI and HIV exposure.

The same percentage of women (6%) had received blood via a transfusion as those who have travelled outside of Madagascar. This factor puts them at lower risk of exposure to HIV (Figure 4.21).



**Figure 4.21****Travel in and out of Madagascar's borders****4.4.5 HIV KNOWLEDGE**

It was at this stage of the questionnaire awareness was created of the complexities of retrieving information from the rural people of this region. Literacy levels are low and the questionnaires did not cater for these levels. None of the women from the Ankaramena CSB and very few of those from Ranopiso CSB, answered the questions in this section. This means the outcome of this section would primarily depict the knowledge of semi-urban women from the Bazaribe and SALFA CSBs.

The participants were asked where they had obtained most of their knowledge on HIV/AIDS. The sources of information came from radio, television, newspapers and magazines, their community, family and school lessons. Table 4.5 shows the frequency of sourced information. Radio, newspapers and school lessons seem to be where the predominant amount of women has gained their knowledge on HIV/AIDS. Community, family and television do not seem to have contributed much to their knowledge. Knowing where most people gain their knowledge on any topic enables campaigns to be effective in their outcomes. Reaching the rural communities still has its hurdles to overcome (Table 4.5).

**Table 4.5**  
**Source of HIV/AIDS knowledge**

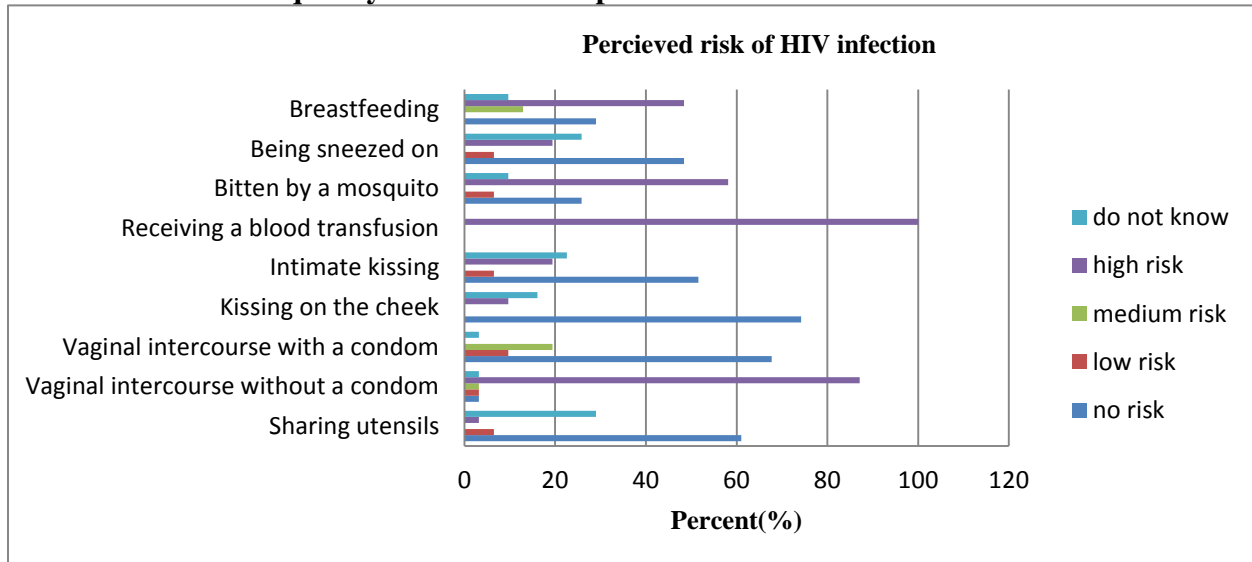
Type of source	Frequency	Percent
Community	1	2
Community and school lessons	1	2
Family	1	2
Newspapers	3	6
Newspapers and school lessons	2	4
Radio	7	14
Radio and community	1	2
Radio and television	1	2
Radio, television and newspapers	2	4
Radio, television, newspapers and school lessons	3	6
Radio, television and school lessons	3	6
School lessons	5	10
Television	2	4
Television and newspapers	1	2
Television and school lessons	2	4
<b>Total</b>	<b>35</b>	<b>70</b>
<b>No response</b>	<b>15</b>	<b>30</b>
<b>Total</b>	<b>50</b>	<b>100</b>

**4.4.5.1 HIV TRANSMISSION**

Figure 4.22 shows the perceived level of risk of nine different scenarios.

**Figure 4.22**

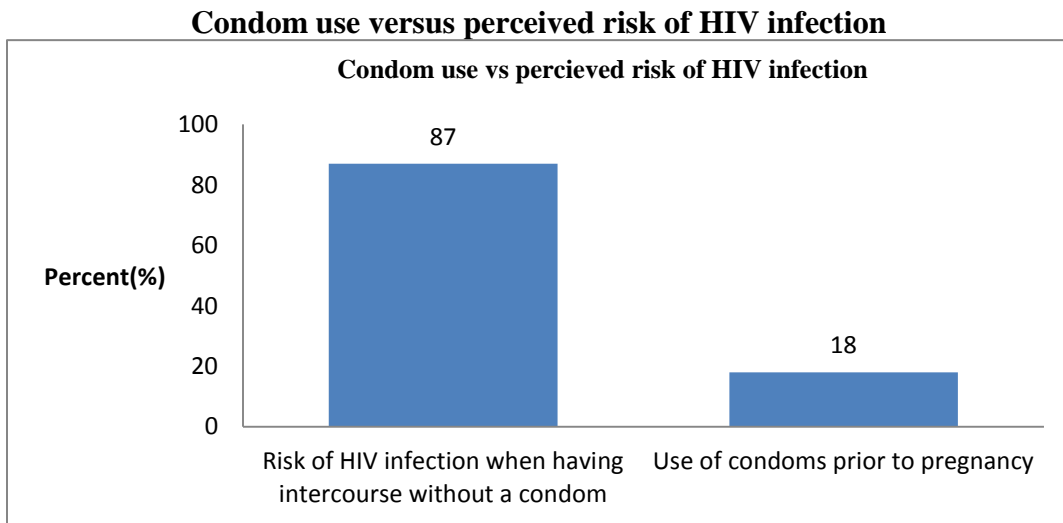
**Frequency distribution of perceived risk of HIV infection**



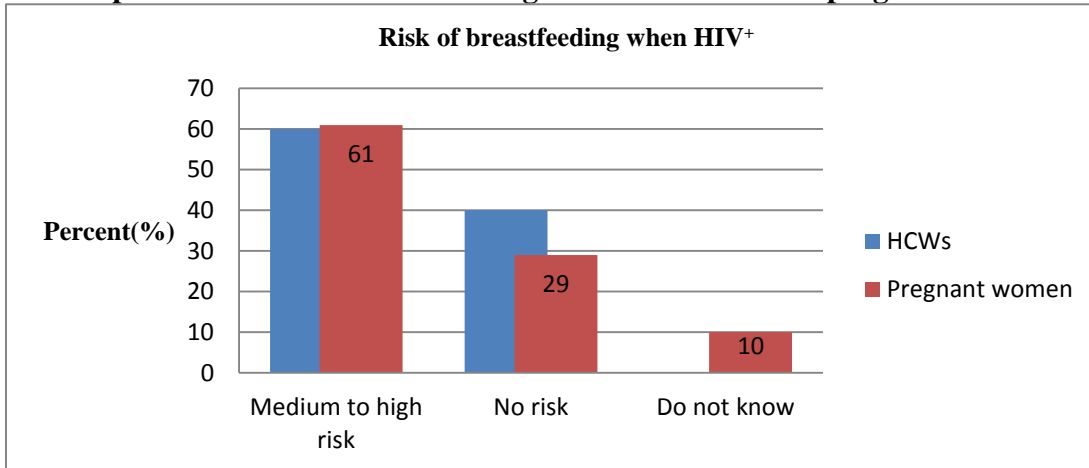
Thirty one women (N=31) answered questions relating to their perceived risk of contracting HIV.

All of these participants indicated that receiving a blood transfusion puts one at high risk of being infected with HIV. A high percentage (87%) of women correctly believed that vaginal intercourse without a condom puts them at high risk but that a condom reduces this risk with 67% of the participants seeing themselves as being at no risk in this situation. This response does not, however, correlate well to their response to condom use, with 82% never having used condoms (Figure 4.23).

**Figure 4.23**



Approximately two thirds of the participants see that a baby is at high risk of being infected with HIV if the mother is positive for HIV. Twenty nine percent incorrectly see the baby being at no risk of infection. Figure 4.24 compares this perception with that of the HCWs.

**Figure 4.24****Comparison of risk of breastfeeding between HCWs and pregnant women**

There does not seem to be many misconceptions around HIV transmission in relation to contact like kissing, sharing utensils and being in the area where somebody sneezed. A high percentage of participants (58%) did incorrectly say, however, they are at high risk of infection when bitten by a mosquito.

A number of participants indicated that they did not know the risk involved in eight of the proposed questions. This ranged from 3% in certain instances to as high as 29% in others. This would indicate that there are gaps in the participant's knowledge of HIV transmission.

#### **4.4.5.2 PRESENCE OF HIV IN BODY FLUIDS**

It seems from the results of this question the pregnant women are relatively well informed about where in the body HIV can be found. It must be re-iterated, however, the results for this section were not gathered from the two rural clinics due to the possible outcome that could have a negative impact on the project. A fair number of participants felt HIV could be present in saliva, tears and sweat and this could affect their interaction with an HIV<sup>+</sup> person. Only two of the 32 participants (6%) knew of anyone with HIV/AIDS. This does reveal the impact of the disease is still to be realised (Table 4.6).

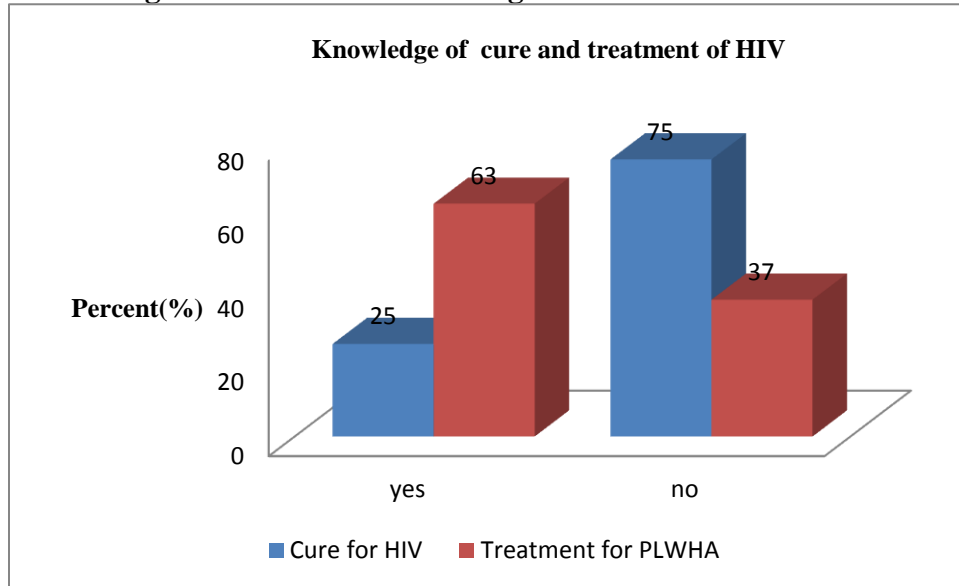
**Table 4.6**

<b>Knowledge of HIV in body fluids</b>		
<b>Statement relating to body fluids and HIV</b>	<b>Correct</b>	<b>Incorrect</b>
Blood	32 100%	0 0%
Vaginal Secretions	28 87.5%	4 12.5%
Semen	26 81.3%	6 18.8%
Saliva	22 68.8%	10 31.3%
Tears	25 78.1%	7 21.9%
Sweat	25 78.1%	7 21.9%
Breast milk	24 75%	8 25%
<b>Average</b>	<b>26</b> <b>81%</b>	<b>6</b> <b>19%</b>

N=32

#### **4.4.5.3 CURE AND TREATMENT FOR HIV**

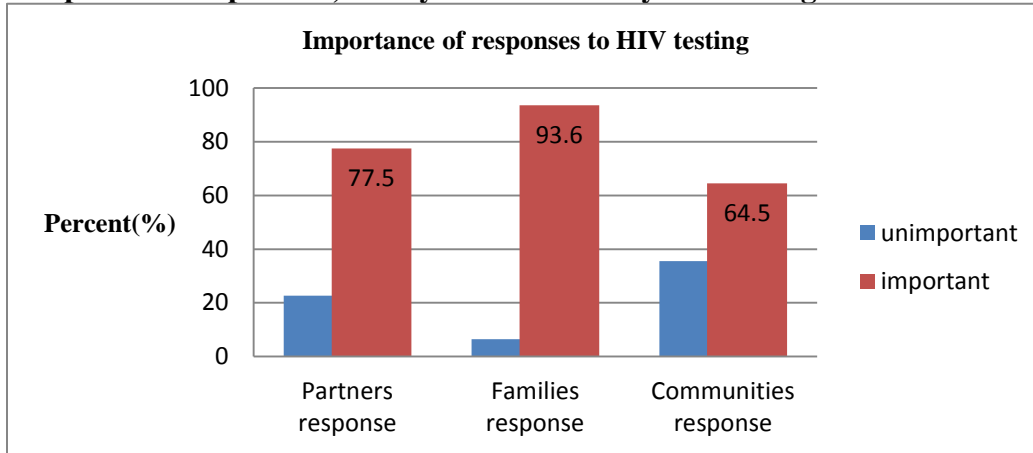
Eight of the participants (25%) believe there is a cure for HIV and twelve (37%) do not believe there is treatment for PLWHA. The sample size obtained for this question from HCWs was too small to be significant. This incorrect understanding amongst the pregnant women indicates that a lot still needs to be done to increase HIV awareness among the Malagasy people. A key determinant in people testing for HIV is they have the correct knowledge about treatment and the availability of this treatment (Figure 4.25).

**Figure 4.25****Percentage of women with knowledge on treatment and cure of HIV****4.4.6 INFLUENCING FACTORS IN DECIDING TO TEST FOR HIV**

The participants were asked to indicate how important their partners, families and communities response to them testing for HIV would be. They could indicate it as of extremely low importance, of low importance, important and of extremely high importance. This type of evaluation was relevant to the study topic and the importance of other people's response to an individual testing for HIV cannot be underestimated. Figure 4.26 reveals that family (93.6%) has the greatest influence on a women testing for HIV. The woman's partner's response (77.5%) is also important with community (64.5%) having the least influence on their decision. What is evident is the opinion of all three of these people or more of them would impact on their decision.

**Figure 4.26**

**Importance of partner, family and community in deciding to test for HIV**



The participants were also asked in the same way, to determine how important the welfare of their unborn child is on their decision to test for HIV. Furthermore they were asked to indicate how fear of the test result would dictate their decision to test. Finally the participants were to indicate how their belief of either being HIV positive or HIV negative would affect their decision to test.

**Figure 4.27**

**Factors influencing women into testing for HIV**

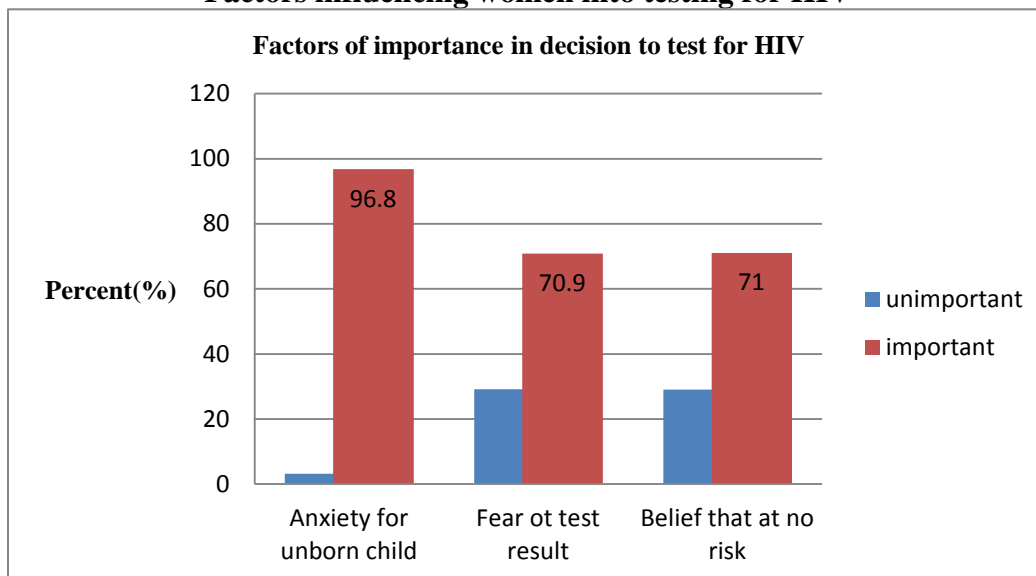


Figure 4.27 shows concern for the welfare of their unborn child would strongly lead to the woman testing for HIV (96.8%). It is important to state without available treatment the woman might alter her decision to test. The participants indicated if they saw themselves at being low risk for contracting HIV this would lead them away from screening for the disease. Fear of the unknown such as the result of an HIV test weighed quite strongly on their decision to test for HIV.

#### 4.5 DISCUSSION

Clinic records from Bazaribe, SALFA, Ranopiso and Ankaramena CSBs, questionnaires from HCWs (N=5) stationed at these CSBs, and questionnaires from pregnant women (N=50) attending the CSBs were the tools used to meet the main objectives of the study. The four selected CSBs were representative of both rural and semi-urban pregnant women in the South Eastern region of Madagascar. The different objectives are placed in context and discussed within the framework of the findings:

- **Level of participation of voluntary HIV screening:** To determine the level of participation in voluntary HIV screening amongst pregnant women at the four chosen CSB sites in the Fort Dauphin district.

The level of participation of voluntary HIV screening among the pregnant women at the study sites was determined. Literature revealed only one fifth of pregnant women were testing for HIV in Madagascar. Records from SALFA, Ranopiso and Ankaramena over a six month period put this figure at closer to a third. There was a willingness to take a free HIV test (98%) but this has not become a reality. The implementation of the opt-out approach at prenatal clinics in Botswana and Zimbabwe resulted in more women testing for HIV and this could hold true for the study setting in Madagascar.

- **VCT procedures:** To analyse the VCT procedures (both pre and post testing) used in the same CSBs.

Each of the CSBs had held a VCT program at some stage in the six months prior to the study. The pregnant women participating indicated that prenatal and postnatal services were offered at the CSBs. This ranged from classes to breastfeeding information. Services related to HIV and



AIDS did not seem to be clearly on offer, with only 48% of participants being offered information on HIV by the HCW, 46% saying that they knew of counselling being offered to PLWHA and 32% having knowledge that the families of PLWHA were offered counselling. HCWs stated categorically that none of the CSBs offered treatment for HIV/AIDS patients. This would mean the 50% of women who indicated the CSB provided treatment must have been speaking of treatment for STI's other than HIV. Another measure of the services offered at a clinic would be the supply of free condoms. A large number of the women did not know if these were available which would indicate lack of visibility and difficulty to access. It can be stated with conviction HIV/AIDS services at the four CSBs need to be drastically improved upon.

- **Factors influencing the motivation in accepting or rejecting an HIV test:** To analyse the factors, both favourable and unfavourable, influencing the motivation of pregnant women accepting or rejecting the HIV test.

Certain of these factors could generate a favourable response while others could result in a not so favourable outcome. The participants were satisfied with the treatment they had received from the HCWs (98%). This if channeled correctly could be instrumental in motivating women to test. The HCWs had received training at some stage on HIV/AIDS and this lends itself to knowledge being imparted from the service provider to the patient and this knowledge can lead to more informed decisions on health and well-being.

Numerous factors can be seen as leading a woman to reject taking an HIV test. Madagascar does have a distinct problem with the ratio of staff to patients in the health sector. Three of the CSBs had only one HCW attending pregnant women with the fourth having two HCWs in attendance. This situation determines how many women the HCW can see and the time spent with a woman in consultation will be short. It would be practically impossible for the HCW to educate the patient on HIV/AIDS in this scenario. Added to this the visits to the CSB are not frequent which reduces their exposure to any HIV/AIDS drives and the chance of returning for test results. Most of the women (74%) frequent the CSB once a month. A number of factors could contribute to fewer visits, namely two were evident from the results were firstly, distance from the CSB (>2km) and secondly that 64% of them had to pay for services.

The results graphically presented in Figures 4.26 and 4.27 are valuable in that they reveal direct factors influencing the pregnant woman's decision to test. Partner, family and community all have an impact. 93.6% of women indicated that their family would play an important role in their decision. Slightly less (77.5%) women said partners would influence their decision and community's response would affect 64.5% of the woman's decision. This outcome is significant enough for the realisation of how important partners, family and community are in the fight against the spread of HIV/AIDS in Madagascar.

Many participants indicated fear of an HIV test result (70.9%) as well as the perception of risk of HIV infection (71%) was important in their decision to test. Literature has shown availability of treatment for HIV/AIDS is an important determinant in an individual testing.

Knowledge empowers people to make unemotional and calculated decisions. A few misconceptions and discrepancies came to light when pregnant women were tested on their knowledge of HIV/AIDS. The two rural CSBs delivered questions that were left unanswered. This could indicate deficiencies in knowledge but this might be true, the questionnaires did not cater correctly for this target audience. One specific problem is in many instances the participants indicated they did not know the risks involved in certain situations (26% not sure of the risk of being infected from somebody sneezing in their vicinity and 29% not sure of the risk when sharing a drinking glass with an HIV<sup>+</sup> person). These gaps do make it difficult to determine complete knowledge of the participants. The relatively high numbers of the 32 women believed saliva (10), tears (7) and sweat (7) could carry the HI virus is of concern for the fact that this could lead to discrimination and stigma around PLWHA. Lack of knowledge would generate fear and impact on an individual testing.

- **HCWs knowledge and attitudes towards HIV/AIDS:** To analyse health care workers (HCWs) knowledge of, and attitudes towards, HIV

The sample size for the HCWs was felt to be small and with this certain results might not be reliable. These HCWs were well educated with 80% of them having tertiary qualifications. Participation of the HCWs was useful in the study and does shed light on the research question. The HCWs obtained most of their knowledge from HIV/AIDS training they had received. Knowledge on transmission of HIV was clear with few misconceptions. Areas left for

interpretation were in the sharing of needles which should have been seen as high risk but only 60% identified it as such. Sharing a toilet and having poor health and nutrition was seen by a single participant in each case of presenting a low risk of transmission.

Knowledge of HIV in body fluids gave a result of 80% overall. Emphasis should be placed that one incorrect answer is 20% of the total indicating the problem with small sample sizes in having reliable outcomes. As this research is obstetrics related with 40% of the HCWs not seeing breast milk as a carrier of HIV, further training on these aspects needs to be given to HCWs. Correct messages need to be conveyed to the pregnant women in HIV counselling sessions. It is a sensitive issue as breastfeeding is perhaps the only option in rural Madagascar. HCWs see themselves at high risk for HIV infection but all stated that they are duty bound to treat PLWHA. They also show empathy and understanding towards PLWHA. There does seem to be a hint of homophobia amongst the participants with 80% seeing homosexuals as being very high risk individuals for contracting HIV.

The last objective aims to offer recommendations to various role players in order to improve upon the number of women testing for HIV in the CSB setting. Two of the sites situated in the town of Fort Dauphin produced a sample size of 30. These sites are in close proximity to each other and access is relatively easy for the inhabitants of the area. The one CSB, SALFA was semi-private and had 211 women attending the clinic in a six month period which is one third of the number attending Bazaribe. This can be explained through the payment for services was expected at SALFA but not at Bazaribe. Women with limited financial resources would then choose to attend the latter. A doctor was in attendance at the SALFA site and this could also affect the choice by the women. Queues at Bazaribe were extremely long and the nurse in charge was very busy attending to all the pregnant women. The majority of the women (63%) at these two sites had an education of high school and above so literacy levels enabled them to manage and complete the questionnaires with minimal effort during this project.

The joint sample size of Ranopiso and Ankaramena was 20 respondents. Access to both sites was very difficult with 60% of the women living a distance of at least 2km from the CSB. Both sites had a fair number of women attending the CSB in the 6 months prior to the study relative to Bazaribe (Ranopiso-434 and Ankaramena-337). Literacy levels at these two rural sites were very low with 60% of the women having no formal education of any kind. This made the task of

answering questionnaires difficult and an arduous task for the women. Both these sites are governmentally run but 80% of the women indicated that payment of services was expected. It was clearly evident the rural women attending these two sites were very poor and resource strapped. It would seem attendants receive an informal payment from these women.

Religion in Madagascar is in a milieu where orthodox practices in some of the churches would frown upon the use of contraceptives. This would impact on the use of condoms and as shown from this sample only 18% of women had used condoms at any stage of their lives. The participants did see that the risk of HIV infection is reduced with use of a condom (Figure 4.22) but only 2% have used them during their pregnancy. This could indicate they do not feel they are at risk of being infected. It would be useful in further research to ascertain if it is religious belief or other factors that determine use of condoms among the Malagasy women.

#### **4.6 LIMITATIONS OF THE STUDY**

Results of this study should be interpreted in the context of certain limitations. The focus of the study was on only four of almost 3200 CSB sites listed by the Health Ministry of Madagascar in 2007. Although the target sample came from semi-urban and rural Malagasy women it might not be representative of the whole population of pregnant women in Madagascar. It is important to consider when speaking of limitations a large part of the rural population does not attend any health care facility so representation is already hindered. The sample size of the HCWs was small and limits the reliability and validity of this section of the research. There was the intention to link HCWs responses to the pregnant women attending the clinics but due to understaffing, the sample size of HCWs would always be significantly lower than that of the pregnant women. Generalisations would be possible with more data from HCWs. Qualitative research, where HCWs are interviewed, might also provide more insight into the research. Many of the HCWs were conversant in English and did not require the translator in most instances during the study.

It was distinctly felt the questionnaire did not cater correctly for all of the participants. Those women with slightly higher levels of education interpreted questions well and were able to respond accordingly. The less educated participants battled with the questions as they progressed into the questionnaire. The layout of certain questions did create challenges for these

participants. Clarity of questions in both sets of questionnaires could have been improved upon to eliminate any discrepancies in answers.

Further research can be conducted in the areas highlighted as limitations to enlarge the field to contribute towards the body of knowledge.

## CHAPTER 5

### CONCLUSION AND RECOMMENDATIONS

#### 5.1 CONCLUSION

Various factors have been identified to support the concluding remarks.

##### Factor 1

The CSBs seemed well equipped for HIV testing of the attending pregnant women. A motivating tool (offer of free mosquito nets) at the one CSB did result in almost all of the women testing. There was no evidence to prove that the women returned to receive the results of their tests but none the less, the results would be valuable to add to statistics in Madagascar which seem to be lacking with respect to HIV prevalence. It was determined that 3 of the 4 CSBs were receiving payment for services rendered and it would be valuable in future studies to determine if they are also expected to pay for an HIV test. This was identified as the first factor that would influence pregnant Malagasy women in testing for HIV.

##### Factor 2

The limited awareness of services offered at the CSB with respect to HIV/AIDS is identified as the second factor influencing HIV testing. All four CSBs had presented a VCT campaign in the 6 months prior to the study but it seems as though information is not readily available on a daily basis for those women who are on average only attending the site once a month. When testing for a disease like HIV it would be essential that the individual knows that counseling for themselves and their family was available once the test result is available.

##### Factor 3

A third factor identified which impacts negatively on the uptake of HIV testing, is the lack of ARV treatment available at any one of the sites. There is awareness of two facilities in the town of Fort Dauphin that do have treatment for HIV/AIDS which could be accessed by the pregnant women. This is not the ideal scenario and there is an understanding that these facilities attach a fee for consultations. The women attending the two rural CSBs would not be able to access

treatment in the immediate vicinity and this would make the practical aspects of treatment regimes impossible.

#### Factor 4

Pregnant women being satisfied by the treatment provided by the HCWs leads us to the fourth factor of consideration for uptake of HIV testing. Prenatal and postnatal services offered by the HCW are more than satisfactory and if the profile of HIV/AIDS were to be heightened these HCWs could be instrumental in promoting testing. HIV/AIDS issues were not approached much by the HCWs when in consultation with the participants. This highlights that HIV is not seen as a priority in this setting; limited human resources could be a reason for this. The HCW has limited time with the patient due to staffing issues and attendance by the patient to the facility is not frequent.

#### Factor 5

Knowledge of the different aspects of HIV/AIDS is the fifth factor that the researcher feels could play a role in decisions to test for HIV. Gaps in information can lead to misconceptions about the disease and this increases levels of discrimination and stigma associated with the disease. There were deficiencies in knowledge among the women attending the semi-urban sites but what was of greater concern was the evidence of incomplete knowledge obtained from the women at the rural sites. The literacy levels of these particular participants prevented us from correctly evaluating the knowledge levels at the two sites. The fear of the possibility of rejection by partners, and the broader community, which could stem from misconceptions around the disease, could influence decisions around testing. Fear of the test result can also be factored in here with the pregnant women indicating that this plays an important role in their decision. The possibility of testing positive and then perhaps facing rejection would prevent them from testing. HIV/AIDS knowledge among the HCWs, which was obtained mainly from training sessions, did seem to be adequate but small sample size did raise questions about validity of these results. It is these individuals, however, who could be the key to imparting correct knowledge of HIV/AIDS, without misconceptions, to the broader communities, particularly in rural Madagascar.

#### Factor 6

The sixth important factor is the evidence that the pregnant women do not see themselves at high risk for HIV infection. There is limited condom use by the participants, even when recognition was given that HIV infection rates are reduced with their use. The women themselves indicated that their perceived level of risk is important in their decision to test. This false sense of security needs to be addressed in a country where other STIs are highly prevalent.

#### Factor 7

A vitally important seventh factor is the response of partners, family and the community to HIV testing. The sentiments of all three of these were important to the participant's ultimate decision to test. Gaining insight into the knowledge, attitudes and behavior of the broader community to the disease would assist in determining which way the women would lean with respect to testing.

On a positive note the CSB records showed that with the exclusion of Bazaribe, HIV testing of women in the remaining three CSBs was at 31% in the six months prior to the research. This figure is higher than the national average of approximately 20%.

## **5.2 RECOMMENDATIONS**

In order for this research to be brought to a logical conclusion certain recommendations will be made. Dr Toussaint, the Regional Health Minister, requested from the researcher that feedback and suggestions be given on completion of the study. These recommendations would hope to address the challenges identified in this research. The study aimed at identifying factors that influenced the uptake of HIV testing by pregnant women in the Fort Dauphin district of Madagascar. It is hoped, that with the involvement of various stakeholders, the factors deterring women from testing, will be focused on in order to increase uptake of HIV testing. Keeping the disease hidden leads to delayed response and late reaction.

The results have satisfied the purpose of the study which was to determine the factors which influence pregnant women, attending four CSBs in the Fort Dauphin region of southern Madagascar, in testing for HIV. The results obtained lead to these eight recommendations.



1. Elevate the profile of the disease nationally: The Health Ministry in Madagascar has to recognize the potential impact HIV and AIDS could have on the country. By taking an active, as opposed to reactive stance, Madagascar could be one of very few African countries able to curb the tide of the disease within its borders. HIV/AIDS requires ongoing VCT campaigns with recognisable deliverables. Specific task teams need to be assigned to achieving certain goals in fighting the disease. Historically, certain regions in Madagascar have been neglected in aspects of governance. This has often been factored down to distance from the country's capital and subsequent accessibility problems. The Malagasy population needs to be educated on all aspects of the disease. The role of the Health Ministry would be to ensure that task teams obtain current, up-to-date information on the disease and filter it down to the HCWs in facilities in the country. This is specifically pertinent to those CSBs in the rural areas where a large gap in knowledge was observed. Mobile clinics could be deployed on a frequent basis to difficult-to-access areas running VCT campaigns for extended periods in order to make contact with larger sections of the community. CSBs are known not to be frequented by a large portion of the population so this type of system would enable information to be spread beyond the walls of the clinics. This study did recognize the importance of the broader community in a pregnant woman's decision to test for HIV. This action would address the potential problem. It would additionally take the pressure off the CSBs which suffer with very obvious limited human resources.
2. Free condom distribution and promotion: Needs to be implemented at all government run CSBs.
3. Payment for consultations: Regional Health Ministers need to investigate this situation. If this policy is adopted, the clinics will not service the community correctly. Poverty levels are high and people cannot afford to pay for health care.
4. HIV/AIDS knowledge: Education needs to be made an integral part of each and every CSB's daily activity. It must be seen as the task of the manager of the CSB that patients make informed decisions about their health. Improved and extended training programmes offered by the Ministry of Health would aid in improving the HCWs' knowledge on all aspects of HIV/AIDS. The HCWs in the study obtained most of their information on the disease from this source. Transferred knowledge should include

modes of transmission of HIV, prevention methods and safe practices. It should ensure that myths and misconceptions are eliminated from the patient's knowledge base. This might take the fear out of testing and increase awareness of risks of unprotected sex. Pregnant women in particular are entitled to be properly educated on treatments available for them and their unborn child and should be counseled on breast-feeding practices that are deemed safest by the international medical fraternity.

5. **Protective clothing/gear:** HCWs at all CSB sites need to be provided protection when working with patients. This would help alleviate their fear of their perceived high risk of HIV infection by PLWHA and protect them against other blood borne diseases.
6. **Availability of ARV treatment:** Needs to be addressed by the Ministry of Health. Certain urban areas do have specific facilities that dispense ARVs and opportunistic infection medication for PLWHA. The rural communities catered for by the CSBs in this study have no access to ARVs and this is problematic when trying to advocate HIV testing. A pregnant woman would be hesitant to test for HIV with the knowledge that she would not be able to treat herself and protect her unborn baby from the deadly disease.
7. **Routine opt-out approach:** The Health Ministry should look at HIV testing in CSBs that offer prenatal services to the community. This has shown great success in many countries in Africa (Nandita, 2006).
8. **Extension of this research study:** With adaptations, into other CSBs in districts throughout Madagascar, would increase reliability of the results and give the Ministry of Health a strong data base on which to act.

## **REFERENCES**

Abraham, C and Sheeran, P. (2005). Predicting health behaviour: a social cognitive approach. Retrieved 28th March 2011.

<http://www.ihepsa.com/files/predicting%20Health%20beh%20avior.pdf#page=45>

Boerma, J, Ghys, P and Walker, N. (2003). Estimates of HIV-1 prevalence from national population-based surveys as a new gold standard. *Lancet* 362: 1929-1931.

Centres for disease control and Prevention. (2002). HIV testing among pregnant women: United States and Canada, 1998-2001. *MMWR Morbidity Weekly report*. 2002 51: 1013-1016

Christensen, L.B, Burke Johnson, R and Turner, L.A. (2011). *Research Methods, design and Analysis*. 11<sup>th</sup> Edition. Boston. Pearson Publishers

Creek, J, Ntuny, R, Seipone, K, Smith, M, Mogodi, M, Smit, M, Legwaila, K, Kolokwane, I, Tebele, G, Mazhoni, L, Shaffer, N, Kilmarx, P.H. (2007). Successful Introduction of routine opt-out testing in antenatal care in Botswana. *Journal of Acquired Immune Deficiency Syndrome* 45(1): 102-107.

De Kock, K.M, Mbori-Ngacha and Marum, E. (2002). Shadow on the continent: public health and HIV/AIDS in Africa in the 21<sup>st</sup> century. *The Lancet* 360: 67-72

De Paoli, M.M, Manongi, R and Klepp, K.L. (2004). Factors influencing acceptability of voluntary counselling and HIV-testing among pregnant women in Northern Tanzania. *AIDS CARE* 16(4): 411-425.

Duffy, T, Wolfe, C.D.A, Varden, C, Kennedy, J and Chrystie, I.L. (1998). Women's knowledge and attitudes, and the acceptability of voluntary antenatal HIV testing. *British Journal of Obstetrics and Gynaecology* 105: 849-854.

Executive Secretariat/National AIDS Control Committee, Madagascar. (2006). HIV/AIDS prevalence in Madagascar. Antananarivo, Madagascar. Retrieved on 3 April 2011.

[http://www.sanec.org/images/stories/Country/Madagascar\\_Review\\_2006.pdf](http://www.sanec.org/images/stories/Country/Madagascar_Review_2006.pdf)

Feldblum, P.J, Hatzell, T, van Damme, K, Nasution, M, Rasamindrakotroka, A and Grey, T.W. (2005). Results of a randomized trial of male condom promotion among Madagascar sex workers. *Sexually Transmitted Infections* 81: 166-172.

Fishbein, M. (2000). The role of theory in HIV prevention. *AIDS CARE* 12(3): 273-278. Fisher, A and Foreit, J. (2002). *Designing HIV/AIDS Intervention Studies: An Operations Research Handbook*. Chapter 6:40-44

Glanz, K, Rimer, B and Viswanath, K. (2008). *Health Behaviour and health education: theory, research and practice*. Chapters 1 and 3. Retrieved 3rd May 2011.  
<http://www.ihepsa.com/files/HB%20&%20HE-%20Glanz%20Book.pdf#page=83>

Glick, P, Razakamantsoa, M. (2002). *Distribution of Social Services in Madagascar: 1993-99*. Cornwell University and UNISTAT. p1-108.

Glick, P, Razafindravonona, J and Randretsa, I. (2000). *Education and Health Services in Madagascar: Utilisation patterns and demand determinants*. Cornwell University and UNISTAT. p1-99.

Gwatkin, D.K, Rutstein, S, Johnson, K, Suliman, E, Wagstaff, A and Amaouzou, A. (2007). *Country reports on HNP and Poverty. Socio-economic differences in health, nutrition and population within developing countries: an overview*. The World Bank.

Hall, G.J. 2010. *HIV Screening patterns in Sub-Saharan Africa: Evidence from the demographic and health survey data 2003-2007*. Unpublished. DPhil, University of Michigan.

Hargreaves, J.R, Bonell, C.P, Morison, L.A, Kim, J.C, Phetla, G, Porter, J, Watts, C and Pronyk, P.M. (2007). Explaining continued high HIV prevalence in South Africa: socioeconomic factors, HIV incidence and sexual behavior change among a rural cohort 2001-2004. *AIDS* 21: S39-S48. Retrieved on 3<sup>rd</sup> September 2012.

[http://journals.lww.com/aidsonline/Abstract/2007/11007/Explaining\\_continued\\_high\\_HIV\\_prevalence\\_in\\_South.5.aspx](http://journals.lww.com/aidsonline/Abstract/2007/11007/Explaining_continued_high_HIV_prevalence_in_South.5.aspx)

- Hochbaum, G and Kegels, S. 1952. The Health Belief Model. Retrieved 3rd May 2011.  
<http://www.infosihat.gov.my/media/BahanRujukan/bahan%20rujukan%20doc/HealthBeliefModel.pdf>
- Kahn, M.R, Rasolofomanana, J.R., McClamrock, K.J., Ralisimalala, A, Zafimanjaka, M.G., Behets, F and Weir, S.S. (2008). High risk sexual behavior at social venues in Madagascar. *Sexually transmitted diseases* 35(8): 738-745.
- Kalichman, S.C and Simbayi, L.C. (2003). HIV testing attitudes, AIDS stigma and voluntary HIV counselling and testing in a black township in Cape Town, South Africa. *Sexually transmitted infections* 79: 442-447.
- Kawichai, S, Celentano, D.D, Chariyalertsak, S, Visutaratna, S, Short, O, Ruangyuttikarn, C, Chariyalertask, C, Genberg, B and Beyrer, C. (2007). Community based voluntary counseling and testing services in Rural communities of Chiang Mai Province, Northern Thailand. *AIDS Behaviour*. Original Paper
- Kowalewski, M and Jahn, A. (2001). Health professionals for maternity services: Experiences on covering the population with quality maternity care. *Studies in HSO & P*, 17: 131-148.
- Lagarde, E, Schim van der Loeff, M, Enel, C, Holmgren, B, Dray-Spira, R, Pison, G, Plau, JP, Delaunay, V, M'Boup, S, Ndoeye, I, Coeuret-Pellicer, M, Whittle, H and Aaby, P. (2003). Mobility and the spread of human immunodeficiency virus into rural areas of West Africa. *International Journal of Epidemiology* 32: 744-752. Retrieved 5<sup>th</sup> September 2012  
<http://ije.oxfordjournals.org>
- Lanouette, N, Noelson, R, Ramamonjsoa, D, Jacobson, M and Jacobson, J. (2003). HIV- and AIDS-related knowledge, awareness and practices in Madagascar. *American Journal of Public Health* Vol. 93 (6): 917-919.
- Leutscher, P, Jensen, J.S, Hoffmann, S, Berthelsen, L, Ramarakoto, C, Ramaniraka, V, Randrianasolo, B, Raharisolo, C, Bottiger, B, Rousset, D, Grosjean, P, McGrath, M.M, Christensen, N and Migliani, R. Sexually transmitted infections in rural Madagascar at an early stage of the HIV epidemic. (2005). *Sexually transmitted diseases* 32(3): 150-155.

Matovu, J, Gray, R.H, Makumbi, F, Wawer, M.J, Serwadda, D, Kigozi, G, Sewankambo, N.K and Nalugoda, F. (2004). Voluntary HIV counseling and testing acceptance, sexual risk behavior and HIV incidence in Rakai, Uganda. *AIDS* 19: 503-511.

Menzies, N., Abang, B., Wanyenze, R., Nuwaha, F., Mugisha, B., Coutinho, A., Bunnell, R., Mermin, J and Blandford, J. (2009). The costs and effectiveness of four HIV counseling and testing strategies in Uganda. *AIDS* 23: 395-401.

Moore, M. 2005. Linking PMTCT to family based antiretroviral treatment and care: a behaviour change perspective. Retrieved 28th April 2011.  
<http://www.comunit.com/pdf/LinkingPMTCTtoFamily-BasedAntiretroviralTreatment.pdf>

Nandita, M, Kavishvar, A.B, Archana, D and Desai, V.A. (2006). Antenatal HIV testing. *The Journal of Obstetrics and Gynaecology of India* 56(1) 56-58.

Perez, F, Zvandaziva, C, Engelsmann, B and Dabis, F. (2006). Acceptability of routine HIV testing (“Opt-Out”) in antenatal services in Two Rural districts of Zimbabwe. *Journal of Acquired Immune Deficiency Syndrome* 41(4): 514-520.

Piot, P, Bartos, M, Ghys, P, Walker, N and Schwartlander, B. (2001). The global impact of HIV/AIDS. *Nature* 410: 968-973. UNAIDS. Macmillan

Quinn, T.C and Overbaugh, J. (2005). HIV/AIDS in women: An expanding epidemic. *Science* 308(5728): 1582-1583. Retrieved on 5th May 2011.  
<http://www.sciencemag.org/content/308/5728/1582.short>

Rahamefy, O.H, Rivard, M, Ravaoarino, M, Ranaivoharisoa, L, Rasamindrakotroka, A.J and Morisset, R. (2008). Sexual behaviour and condom use among university students in Madagascar. *Journal of Social aspects of HIV/AIDS* 5(1): 28-35.

Ramalanjaona, G. (1998). Emergency Medicine in Madagascar. *Annals of Emergency Medicine* 31(6): 766-768.

Razafison, R. (2008). Primary Health Care: back to basics in Madagascar. *Bulletin of the World Health Organisation* 86(6): 421-423

Royce, R.A, Walter, E.B, Fernandez, M.I, Wilson, T.E, Ichovics, J.R and Simonds, R.J. (2001). Barriers to Universal Prenatal HIV testing in 4 US Locations in 1997. *American Journal of Public Health* 91(5): 727-733.

Sarker, M, Sanou, A, Snow, R, Ganame, J and Gondos, A. (2007). Determinants of HIV counselling and testing participation in a prevention of mother-to-child transmission programme in rural Burkina Faso. *Tropical Medicine and International Health* 12(12): 1475-1483.

Sharp, M and Kruse, I. (2011). Health, Nutrition and Population in Madagascar, 2000-09. *World Bank Studies* 216:56-77.

Stoebenau, K, Hindin, M.J, Nathanson, C.A, Rakotoarison, P.G and Razafintsalama, V. (2009). "...But then he became my sipa": The implications of relationship fluidity for condom use among women sex workers in Antananarivo, Madagascar. *American Journal of public health* 99(5): 811-819.

Stoebenau, K, Nixon, S.A, Rubincam, C, Willan, S, Zembe, Y.Z, Tsikoane, T, Tanga, P.T, Bello, H.M, Caceres, C.F, Townsend, L, Rakotoarison, P.G and Razafintsalama, V. (2011). More than just talk: the framing of transactional sex and its implications for vulnerability to HIV in Lesotho, Madagascar and South Africa. *Globalization and Health* 7(34): 1-15.

UNAIDS. (2009). AIDS Epidemic update 2009. Joint United Nations Programme on HIV/AIDS (UNAIDS) and World Health Organization (WHO) 2009. Retrieved 12 February 2011. [http://data.unaids.org/pub/Report/2009/jc1700\\_epi\\_update\\_2009\\_en.pdf](http://data.unaids.org/pub/Report/2009/jc1700_epi_update_2009_en.pdf)

UNAIDS. (2010). Global Report: UNAIDS Report on the global AIDS epidemic. Retrieved 3 April 2011. [http://www.unaids.org/documents/20101123\\_GlobalReport\\_em.pdf](http://www.unaids.org/documents/20101123_GlobalReport_em.pdf)

USAID. (2012). HIV/AIDS Health Profile, Sub Saharan Africa. Retrieved on 7 November 2012. [http://www.usaid.gov/our\\_work/global\\_health/aids/Countries/africa/hiv\\_summary\\_africa.pdf](http://www.usaid.gov/our_work/global_health/aids/Countries/africa/hiv_summary_africa.pdf)

Waeber, P and Orengo, Y. (2008). Radio broadcasting for sustainable development in southern Madagascar. *Madagascar conservation and Development* 3(1): 64-72.

## APPENDICES

### APPENDIX A-Information sheet and consent form for HCWs

September 2011

To whom it may concern

I, Kathryn Lamarque, am a student studying my Masters in Philosophy through the Africa Centre for HIV/AIDS at the University of Stellenbosch, South Africa. The data obtained from my research will be valuable in the field of HIV/AIDS and will assist in satisfying the requirements for completion of my degree.

The title of my research study is "HIV testing of pregnant women in the Fort Dauphin region of Madagascar".

You, as a respondent, are kindly requested to complete the questionnaire provided to you. Your opinions and participation are valuable and your contributions are greatly appreciated.

My research will be passed by the Ethics committee at the University of Stellenbosch and by the necessary authorities here in Madagascar. These questionnaires remain anonymous and all responses will remain confidential. As the researcher, I will be the only individual accessing and analysing the data obtained. Results obtained will appear in my final research document which will be made available to my tutors at the Africa Centre.

You must not at any stage feel coerced into completing the questionnaire.

If you have any other questions please feel free to contact me at the following telephone number: 00261346504943 or 00261832731765.

Yours sincerely

Kathryn Lamarque



**STELLENBOSCH UNIVERSITY  
CONSENT TO PARTICIPATE IN RESEARCH**

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TITLE OF STUDY: HIV TESTING OF PREGNANT WOMEN IN THE FORT DAUPHIN REGION OF MADAGASCAR. POPULATION UNDER STUDY: HEALTH CARE WORKERS AT THREE ANTENATAL CLINICS IN THE FORT DAUPHIN REGION OF MADAGASCAR

You are asked to participate in a research study conducted by Kathryn Lamarque, a Masters in Philosophy student from the Africa Centre for HIV and AIDS of the Management Sciences Faculty at Stellenbosch University. The results of this study will anonymously be processed into the research paper, HIV testing of pregnant women in the Fort Dauphin region of Madagascar. You were selected as a possible participant in this study because you are a health care worker at one of the three antenatal clinics that are included in the study.

**1. PURPOSE OF THE STUDY**

The purpose of this study is to evaluate the extent to which HIV testing is being carried out in three antenatal clinics, namely Bazaribe, SALFA, Ranopiso and Ankaramena, in the Fort Dauphin region of Madagascar.

**2. PROCEDURES**

**Clinic records**

Existing clinic records will be used to determine, the number of pregnant women utilizing the clinic facilities, the number of women testing for sexually transmitted infections and the number of pregnant women who have tested for HIV. These records will be taken as far back as 6 months prior to the study.

If you volunteer to participate in this study, we would ask you to do the following:

**Questionnaire**

Complete a questionnaire about your experiences as a health care worker at the clinic you are employed at. You will also be asked questions about your understanding of HIV/AIDS. The questionnaire will take approximately 30 minutes and will be completed when convenient to you as a participant

**3. POTENTIAL RISKS AND DISCOMFORTS**

You as a participant might feel uncomfortable answering questions about existing procedures at your place of employ. All information is confidential and anonymous but if you as a participant feel uncomfortable with a question/questions please feel free to indicate so. You can at any stage decide not to continue with completing the questionnaire. There is a counselor that will be made available to you, upon request, in the event of you experiencing any strong reaction to questions posed in the questionnaire.

**4. POTENTIAL BENEFITS TO SUBJECTS AND/OR TO SOCIETY**

The results obtained from this study will shed light on HIV testing practices in the three antenatal clinics in Fort Dauphin, Madagascar. This will expand an information base for future studies in this field of study.

**5. PAYMENT FOR PARTICIPATION**

This is a voluntary exercise and there will be no payment for participation.

**6. CONFIDENTIALITY**

Any information that is obtained in connection with this study will remain confidential. There will be no threat to the participants at any time. All information drawn from the study will be kept in a safe location and will not be accessible to the public

The information will be inspected by the study leader and by the Ethics committee. The results obtained will be part of the research paper necessary for the completion of the MPhil degree.

**7. PARTICIPATION AND WITHDRAWAL**

You can choose whether to be in this study or not. If you volunteer to be in this study, you may withdraw at any time without consequences of any kind. You may also refuse to answer any questions you don't want to answer and still remain in the study. The investigator may withdraw you from this research if circumstances arise which warrant doing so.

**8. IDENTIFICATION OF INVESTIGATORS**

If you have any questions or concerns about the research, please feel free to contact Kathryn Lamarque at 0027-832731765 or email on [kathryn.lamarque@gmail.com](mailto:kathryn.lamarque@gmail.com) and Professor Elza Thomson(Study Supervisor)on email [elzathomson@gmail.com](mailto:elzathomson@gmail.com).

**9. RIGHTS OF RESEARCH SUBJECTS**

You may withdraw your consent at any time and discontinue participation without penalty. You are not waiving any legal claims, rights or remedies because of your participation in this research study. If you have questions regarding your rights as a research subject, contact Ms Maléne Fouché [[mfouche@sun.ac.za](mailto:mfouche@sun.ac.za); 021 808 4622] at the Division for Research Development.

**SIGNATURE OF RESEARCH SUBJECT OR LEGAL REPRESENTATIVE**

The information above was described to me.....by Kathryn Lamarque in English and was translated by .....(translator) in my language. The questionnaire was in my language (French/Malagasy)..... I asked for explanations, in my own language, of sections/questions that I could not understand and it was satisfactorily translated to me.

I.....was given the opportunity to ask questions and these questions were answered to my satisfaction. I am aware that the results of the study will anonymously be processed into a study report and that at any stage I can withdraw my consent and participation in the study.

\_\_\_\_\_

\_\_\_\_\_

**Name of Subject/Participant**

**Date**

**SIGNATURE OF INVESTIGATOR**

I declare that I explained the information given in this document to \_\_\_\_\_  
\_\_\_\_\_. He/she was encouraged and given ample time to ask me any questions. This  
conversation was conducted in (Malagasy/French) \_\_\_\_\_ and a translator was used in this  
conversation. The conversation was translated into (Malagasy/French) \_\_\_\_\_ by  
\_\_\_\_\_(translator).

\_\_\_\_\_  
**Signature of Investigator**

\_\_\_\_\_  
**Date**

## APPENDIX B-Consent form for Pregnant women

### STELLENBOSCH UNIVERSITY CONSENT TO PARTICIPATE IN RESEARCH

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TITLE OF STUDY: HIV TESTING OF PREGNANT WOMEN IN THE FORT DAUPHIN REGION OF MADAGASCAR. POPULATION UNDER STUDY: PREGANANT WOMEN ATTENDING THREE ANTENATAL CLINICS IN THE FORT DAUPHIN REGION OF MADAGASCAR

You are asked to participate in a research study conducted by Kathryn Lamarque, a Masters in Philosophy student from the Africa Centre for HIV and AIDS of the Management Sciences Faculty at Stellenbosch University. The results of this study will anonymously be processed into the research paper, HIV testing of pregnant women in the Fort Dauphin region of Madagascar. You were selected as a possible participant in this study because you are a pregnant woman attending one of the three antenatal clinics that are included in the study.

#### **1. PURPOSE OF THE STUDY**

The purpose of this study is to evaluate the extent to which HIV testing is being carried out in three antenatal clinics, Ranapiso, Bazaribe, SALFA and Ankaramena, in the Fort Dauphin region of Madagascar.

#### **2. PROCEDURES**

##### **Clinic Records**

Existing clinic records will be used to determine, the number of pregnant women utilizing the clinic facilities, the number of women testing for sexually transmitted infections and the number of pregnant women who have tested for HIV. These records will be taken as far back as 6 months prior to the study.

If you volunteer to participate in this study, we would ask you to do the following:

##### **Questionnaire**

Complete a questionnaire about your experiences at the clinic you are attending. You will also be asked questions about your understanding of HIV/AIDS. The questionnaire will take approximately 30 minutes and will be completed when convenient to you as a participant

#### **3. POTENTIAL RISKS AND DISCOMFORTS**

Questions around personal behaviour might make you uncomfortable. Certain questions are sensitive in nature and might cause you to be distressed. If you feel that you might need emotional or psychological support at any stage, please indicate this to the researcher, who will refer you to the counselor who is available to you at this clinic. All information is confidential and anonymous but if you as a participant feel uncomfortable with a question/questions please feel free to indicate so. You may withdraw from the study at any given time.

#### **4. POTENTIAL BENEFITS TO SUBJECTS AND/OR TO SOCIETY**

The results obtained from this study will shed light on HIV testing practices in the three antenatal clinics in Fort Dauphin, Madagascar. This will expand an information base for future studies in this field of study.

**5. PAYMENT FOR PARTICIPATION**

This is a voluntary exercise and there will be no payment for participation.

**6. CONFIDENTIALITY**

Any information that is obtained in connection with this study will remain confidential. There will be no threat to the participants at any time. All information drawn from the study will be kept in a safe location and will not be accessible to the public

The information will be inspected by the study leader and by the Ethics committee. The results obtained will be part of the research paper necessary for the completion of the MPhil degree.

**7. PARTICIPATION AND WITHDRAWAL**

You can choose whether to be in this study or not. If you volunteer to be in this study, you may withdraw at any time without consequences of any kind. You may also refuse to answer any questions you don't want to answer and still remain in the study. The investigator may withdraw you from this research if circumstances arise which warrant doing so.

**8. IDENTIFICATION OF INVESTIGATORS**

If you have any questions or concerns about the research, please feel free to contact Kathryn Lamarque at 0027-832731765 or email on [kathryn.lamarque@gmail.com](mailto:kathryn.lamarque@gmail.com) and Professor Elza Thomson(Study Supervisor)on email [elzathomson@gmail.com](mailto:elzathomson@gmail.com).

**9. RIGHTS OF RESEARCH SUBJECTS**

You may withdraw your consent at any time and discontinue participation without penalty. You are not waiving any legal claims, rights or remedies because of your participation in this research study. If you have questions regarding your rights as a research subject, contact Ms Maléne Fouché [[mfouche@sun.ac.za](mailto:mfouche@sun.ac.za); 021 808 4622] at the Division for Research Development.

**SIGNATURE OF RESEARCH SUBJECT OR LEGAL REPRESENTATIVE**

The information above was described to me.....by Kathryn Lamarque in English and was translated by .....(translator) in my language. The questionnaire was in my language (French/Malagasy)..... I asked for explanations, in my own language, of sections/questions that I could not understand and it was satisfactorily translated to me.

I.....was given the opportunity to ask questions and these questions were answered to my satisfaction. I am aware that the results of the study will anonymously be processed into a study report and that at any stage I can withdraw my consent and participation in the study.

I hereby consent voluntarily to participate in this study. I have been given a copy of this form.

\_\_\_\_\_  
**Name of Subject/Participant**

\_\_\_\_\_  
**Date**

**SIGNATURE OF INVESTIGATOR**

I declare that I explained the information given in this document to \_\_\_\_\_  
\_\_\_\_\_. She was encouraged and given ample time to ask me any questions. This  
conversation was conducted in (Malagasy/French) ..... and a translator was used in this  
conversation. The conversation was translated into (Malagasy/French) \_\_\_\_\_ by  
\_\_\_\_\_(translator).

\_\_\_\_\_  
**Signature of Investigator**

\_\_\_\_\_  
**Date**

**APPENDIX C-Questionnaire for HCWs**

***HIV/AIDS QUESTIONNAIRE FOR HEALTH CARE WORKERS***

Name of clinic: \_\_\_\_\_

1. Personal Information - please place a tick(✓) in the box you have selected

1.1 **Sex:**     male         female

1.2 **Age in years:**

18 - 25     26 - 32     33 - 39     40 - 46     47 - 53     older than 54

1.3 **Level of education**

high school         college diploma         university degree

2. Employment information - please place a tick(✓) in the box that you have selected

2.1 **Which category would best describe your type of employment at the clinic?**

medical         administrative         laboratory         other

2.2 **How long have you been employed at this health care facility?**

1 year         1-2 years         longer than 2 years

2.3 **If you do draw a salary, are you paid**

hourly         daily         weekly         monthly

2.4 **Is your salary funded by**

government         a private organisation

3. Knowledge of HIV and AIDS

3.1 **How do you believe HIV is transmitted?** - place a tick(✓) in the column that reflects your answer

	No risk	Low risk	Medium risk	High risk
heterosexual intercourse:				
blood transfusions:				
insect bites:				
sharing sharp instruments(needles)				
touching and hugging:				
poor health and nutrition				
sharing the same toilet:				
sharing crockery and cutlery:				

3.2 **Where can HIV be found in a person infected with the disease?**

- blood  yes  no
- vaginal secretions  yes  no
- semen  yes  no
- saliva  yes  no
- tears  yes  no
- sweat  yes  no

3.3 **Is there a cure for HIV?**  yes  no

3.4 **Which of the following groups of people carry a high risk of contracting HIV?**

	No risk	Little risk	Medium risk	High risk
Sex workers				
People who inject drugs				
Health care workers				
Adolescents				
Married women				
People with multiple sex partners				
Homosexuals				
People working away from home				



4. Attitudes towards and care of patients living with HIV and AIDS(PLWHA)

4.1 **Attitudes of health care workers towards PLWHA**

	Strongly agree	Agree	Disagree	Strongly disagree
HIV is a threat to health care workers				
PLWHA are responsible for their illness				
PLWHA deserve sympathy and understanding				
PLWHA are dangerous to others				
PLWHA should be isolated from others				

4.2 Care of patients that are infected with HIV or who have AIDS

4.2.1 **Health care workers are duty bound to treat all people irrespective of their HIV status.**

yes                       no

4.2.2 **Health care workers should advocate HIV screening of all pregnant women.**

yes                       no

4.2.3 **Would you as a health care worker be prepared to visit/attend to an HIV positive patient who is too sick to travel to the clinic?**

yes                       no

5. HIV services and staff training

5.1 **Does the clinic offer any HIV information(pamphlets, posters) to attending patients?**

yes                       no

5.2 **Does the clinic supply free condoms?**

yes                       no

**5.3 In the past 6 months, has the clinic promoted voluntary counselling and testing of HIV?**

yes                       no

**5.4 Have you had and HIV test?**    yes               no

**5.5 Is the clinic equipped to test patients for HIV?**    yes       no       do not know

**5.5 Where have you obtained most of your knowledge on HIV and AIDS?**

radio    Television    community    training programs

**5.6 If the clinic offered you the opportunity to attend courses on HIV/AIDS treatment and care, would you attend?**    yes                       no

**5.7 Is there treatment available at the clinic for PLWHA?**    yes               no

**5.8 Are you aware of any staff member who has been trained in the field of HIV/AIDS?**

yes               no               do not know

©THANK YOU FOR YOUR VALUABLE CONTRIBUTION!

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**APPENDIX D-Questionnaire for Pregnant women**

<p><b>HIV/AIDS QUESTIONNAIRE FOR PREGNANT WOMEN ATTENDING THE PRENATAL CLINIC</b></p>
---

Name of clinic: \_\_\_\_\_

1. PERSONAL DETAILS

1.1 Age in years:

18-22    23 - 27    28 - 32    33 - 37    38 - 42    43 - 45    older than 45

1.2 Level of education:

no formal education    primary school    high school    tertiary (diploma or degree)

1.3 Religion

Christian    Islam    No religion    traditional religion

1.4 Marital status

married    divorced    separated    widowed    never married

1.5 Domicile (place where you live) in relation to clinic

< 1km    2 - 5 km    > 5km

1.6 Is this your

first pregnancy    second pregnancy    third pregnancy    > 4 pregnancy

1.7 If not your first pregnancy, did you deliver

naturally, or    by caesarean section

1.7 Are you in your

first trimester    second trimester    third trimester

## 2. USE OF HEALTH CARE FACILITIES

2.1 On average, how often do you attend your local health care facility?

- once a week
- twice a month
- once a month
- infrequently

2.2 Do you have to pay for services rendered (consultations and treatment) at the facility?

- yes
- no

2.3 Has any health care worker encouraged you to test for HIV?

- yes
- no

2.4 If a free HIV test was offered to you, would you accept it?

- yes
- no
- not sure

2.5 Transportation method to get to the clinic. Do you

- walk
- cycle
- catch a taxi or bus

## 3. PERSONAL HEALTH BEHAVIOUR

3.1 Prior to falling pregnant did you use any form of contraception(oral birth control or barrier methods)?

- yes
- no

3.2 Prior to falling pregnant did you use condoms?

- yes
- no

3.3 Since falling pregnant, have you used condoms during sexual intercourse?

- yes                       no

3.4 Have you ever had a blood transfusion?

- yes                       no

3.5 Have you ever travelled:

- outside the Fort Dauphin region

- outside of Madagascar

- to the main continent of Africa

4. KNOWLEDGE OF HIV AND AIDS

4.1 What level of risk will a person who is not infected with HIV have when in contact with a person infected with HIV in the following cases? - please tick (✓) the column you choose.

	No risk	Low risk	Medium risk	High risk	Do not know
Sharing a drinking glass					
Having vaginal intercourse without a condom					
Having vaginal intercourse with a correctly used condom					
Kissing on the cheek					
Intimate kissing					
Receiving a blood transfusion					
Being bitten by a mosquito					
Being sneezed on					

4.2 Where can HIV be found in a person infected with the disease?

blood	<input type="checkbox"/> yes	<input type="checkbox"/> no
vaginal secretions	<input type="checkbox"/> yes	<input type="checkbox"/> no
semen	<input type="checkbox"/> yes	<input type="checkbox"/> no
saliva	<input type="checkbox"/> yes	<input type="checkbox"/> no
tears	<input type="checkbox"/> yes	<input type="checkbox"/> no
sweat	<input type="checkbox"/> yes	<input type="checkbox"/> no

4.3 Is there a cure for HIV?  yes  no

4.4 Is there treatment for HIV?  yes  no

4.5 Do you know of anyone who is infected with HIV?  yes  no

5. SERVICES OFFERED AT HEALTH CARE FACILITY

5.1 Are you satisfied with the treatment you receive from the health care workers at the clinic?

never  sometimes  most times  always

5.2 Does the clinic offer pre- and antenatal classes?

yes  no  do not know

5.3 The factors mentioned below could influence your decision to be tested for HIV. Indicate their level of importance they have in your decision. Please place a tick(✓) in the column you choose.

	Extremely low importance	Low importance	Important	Extremely high importance
your partners response				
your families response				
Communities response				
anxiety for your unborn child				
fear of the outcome of a test				
The fact that you believe you are at no risk of testing positive for HIV				

5.4 Have you been offered any information (pamphlets, posters or counselling), that is specifically about HIV and AIDS?

yes  no

5.5 Where have you obtained most of your knowledge on HIV and AIDS?

radio  television  community  newspapers and magazines

family  lessons when at school

5.6 Are condoms freely distributed from the clinic?

yes  no  do not know

5.7 If you were offered a test and tested positive for HIV, would you accept treatment for yourself and your unborn child?

yes  no  not sure

☺THANK YOU FOR YOUR VALUABLE CONTRIBUTION!

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## APPENDIX E-Letter of permission to conduct the study

33 Greenleaves Village

Fort Dauphin

Madagascar

21st October 2011

Monsieur Le Medecin Inspecteur

Chef de service de Sante de District

Fort Dauphin

Dear Sir

I, Kathryn Julia Lamarque, am a Masters in Philosophy student, at the University of Stellenbosch, South Africa. Dr Jean de Dieu, has kindly offered to act as my study leader here in Madagascar. Part of the requirements for the completion of my degree is a research component. I would like to look at the reasons why pregnant women, in the Fort Dauphin region of Madagascar, choose, or do not choose to test for HIV.

I hereby request that I be able to enter some of the CSB sites in the region. My research would be divided into three stages:

- I would need to draw statistics from each of the CSB health facilities to determine how many women have attended the facility in the past 6months, and how many of these women tested for sexually transmitted infections, including HIV. I will not be requiring the results of the outcome of these tests.
- The second stage of my research would be to request, with informed consent, that the health care workers at the CSB sites complete a questionnaire.
- The next stage would be to request, with informed consent, that the pregnant women attending the CSB facility complete another questionnaire.

All questionnaires will be anonymous and confidentiality will be upheld at all times. Statistics, and completed questionnaires, will be in my possession at all times and will be kept secure.

The results of my studies will appear in my final research document, which will be made available to my tutors at the University. I would also supply Dr de Dieu and yourself, with these results.

I appreciate your consideration of my request.

Yours sincerely,

---

Kathryn Lamarque