Factors Associated with Late Presentation to HIV/AIDS Care in Harare City, 2015

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Declaration

I certify that this dissertation is my original work and submitted for the Masters in Public Health Programme. It has not been submitted in part or in full to any university and/or any publication.

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Signature______________________ Date________________________

I, having supervised and read this dissertation, I am satisfied that this is the original work of the author in whose name it is being presented. I confirm that the work has been completed satisfactorily for presentation in the examination.

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ABSTRACT

Title: Factors Associated with Late Presentation to HIV/AIDS Care in Harare City, 2015

Introduction: Despite widespread awareness and publicity concerning HIV care and advances in treatment, many patients still present late in their HIV disease. Preliminary review of the ART registers at Wilkins and Beatrice Road Hospitals indicated that 67% and 71% of patients enrolled into HIV/AIDS care presented late with baseline CD4 of <200 cells/uL and/or WHO stage 3 and 4 respectively. We therefore sought to explore factors associated with late presentation, with a view to encourage early health seeking behaviour

Methods: We conducted a 1:1 unmatched case control study in Harare City where a case was an HIV positive individual (>18 years) with a baseline CD4 of <200/uL or who had WHO clinical stage 3 or 4 at first presentation to OI/ART centres in 2014 and; a control was HIV positive individual (>18 years) who had a baseline CD4 of >200/uL or WHO clinical stage 1 or 2 at first presentation in 2014

Results: A total of 268 participants were recruited (134 cases and 134 controls). Independent risk factors for late presentation for HIV/AIDS care were illness being reason for test (AOR=7.68, 95% CI=4.08-14.75); Being male (AOR=2.84, 95% CI=1.50-5.40) and; experienced HIV stigma (AOR=2.99, 95% CI=1.54-5.79). Independent protective factors were receiving information on HIV (AOR=0.37, 95% CI=0.18-0.78) and earning more than US$250 per month (AOR=0.32, 95% CI=0.76-0.67). Median duration between first reported HIV positive test result and enrolment into pre-ART care was 2 days (Q1=1, Q3=30) among cases and 30 days (Q1=3, Q3=75) among controls.

Conclusion: Late presentation for HIV/AIDS care in Harare City was as a result of factors that relate to the patient’s sex, illness as a reason for getting a test, receiving HIV related information, experiencing stigma and monthly income($250). Based on this evidence, we recommended targeted interventions to optimize early access to testing and enrolment into care.

Key words: HIV, Pre-ART, Late Presenters, Harare City
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# TABLE OF CONTENTS

Declaration i

ABSTRACT II

ACKNOWLEDGEMENTS III

LIST OF TABLES VIII

TABLE OF FIGURES X

LIST OF APPENDICES XI

LIST OF ABBREVIATIONS XII

CHAPTER 1 1

1.0 INTRODUCTION 1

1.1 Global Epidemiology of Human Immunodeficiency Virus 1

1.1 Late Presentation to HIV/AIDS Care 1

1.1.1 Late Presentation to HIV/AIDS Care: The Implications 2

1.2 WHO Clinical Staging and CD4 Determination at Enrollment into Care 3

1.3 Study setting: Harare City 4

1.4 Problem Statement 5

1.5 Justification of the study 6

1.6 Research question 6

CHAPTER 2 7

2.0 LITERATURE REVIEW 7

2.1 Global epidemiology of late presentation to HIV/AIDS care 7

2.2 Regional Epidemiology of Late Presentation to HIV/AIDS care 9
### 3.11 Plan for data collection

22

### 3.12 Plan for data analysis

23

### 3.13 Project administration and utilization of results

23

### 3.14 Independent variables

24

### 3.15 Ethical considerations

25

---

**CHAPTER 4**

26

### 4.0 RESULTS

26

#### 4.1 Descriptive Epidemiology

26

- 4.1.1 Socio-demographic Characteristics of study participants
- 4.1.2 Point of entry for HIV/AIDS Care
- 4.1.3 WHO Clinical Staging of participants
- 4.1.4 Baseline CD4 cell count at first presentation
- 4.1.5 Duration between first positive test and enrollment into care

#### 4.2 Analytic Epidemiology

32

- 4.2.1 Socio-demographic factors Associated with Late presentation to HIV/AIDS Care
- 4.2.2 Socio-economic Factors Associated with Late Presentation to HIV/AIDS Care
- 4.2.3 Socio-cultural factors Associated with Late Presentation for HIV/AIDS care
- 4.2.4 Patient related factors associated with late presentation for HIV/AIDS Care
- 4.2.5 Health system related factors associated with late presentation to HIV/AIDS Care
- 4.2.6 Independent factors for Late Presentation for HIV/AIDS Care, Harare City, 2015

#### 4.3 Key Informants Results

38

- 4.3.1 Demographic characteristics of key informants
- 4.3.2 Key informant perceptions on Late Presentation

---

**CHAPTER 5**

40

### 5.0 DISCUSSION

40

---

**CHAPTER 6**

44

### 6.0 CONCLUSIONS AND RECOMMENDATIONS

44
LIST OF TABLES

Table 1 World Health Organisation HIV Clinical Staging for Adult and Adolescent Care ........ 3
Table 2 Independent Variables, definitions and scale of measurement ........................................ 24
Table 3 Socio-demographic characteristics of study participants, Harare City, 2015 ............ 27
Table 4 Socio-demographic Factors Associated with Late Presentation to HIV/AIDS Care, Harare City, 2015 ................................................................. 32
Table 5 Socio-economic Factors Associated with Late Presentation to HIV/AIDS Care, Harare City, 2015 .................................................................................. 33
Table 6 Socio-cultural Factors Associated with Late Presentation to HIV/AIDS Care, Harare City, 2015 .................................................................................. 34
Table 7 Patient related Factors Associated with Late Presentation to HIV/AIDS Care, Harare City, 2015 .................................................................................. 35
Table 8 Health System related Factors Associated with Late Presentation to HIV/AIDS Care, Harare City, 2015 .................................................................................. 36
Table 9 Independent Factors for Late Presentation to HIV/AIDS Care, Harare City, 2015 .... 37
Table 10 Demographic Characteristics of Key Informants, Harare City, 2015 ...................... 38
Table 11 Perceived Reasons of Key Informants about Late Presentation to HIV/AIDS Care in Harare City, 2015
# TABLE OF FIGURES

Figure 1 Map of Harare City (Source of map www.mapsofworld.com/zimbabwe/harare.html) ... 4

Figure 2 The Health Belief Model - Components and Linkages ........................................ 15

Figure 3 The Theoretical Framework for Late Presentation to HIV/AIDS Care in Harare City, 2015 .................................................................................................................. 16

Figure 4 Point of Entry for HIV/AIDS Care, Harare City, 2015 ........................................ 28

Figure 5 WHO Clinical staging among respondents presenting for HIV/AIDS Care in Harare City, 2015 .................................................................................................................. 29

Figure 6 Baseline CD4 Cell Count at first presentation for HIV/AIDS Care in Harare City, 2015 .................................................................................................................. 30

Figure 7 Duration between reported first HIV positive test and enrollment into care, Harare City, 2015 .................................................................................................................. 31
LIST OF APPENDICES

Appendix 1: Project Budget

Appendix 2A: Participant Informed Consent: English

Appendix 2B: Participant Informed Consent: Shona

Appendix 3: Key Informant Guide

Appendix 4A: Questionnaire for Respondents: English

Appendix 4B: Questionnaire for Respondents: Shona

Appendix 5: Permission Letter- Harare City Health Department

Appendix 6: Ethics Review Approval Letter

Appendix 7: Medical Research Council of Zimbabwe Approval
LIST OF ABBREVIATIONS

AIDS- Acquired Immune Deficiency Syndrome
ART- Antiretroviral Therapy
BRIDH- Beatrice Road Infectious Diseases Hospital
CD4- Cluster of Differentiation n (4)
HBM- Health Belief Model
HTC- HIV Testing and Counselling
OI- Opportunistic Infections
PMTCT- Prevention of Mother to Child Transmission
SIC- Sister in Charge
STI- Sexually Transmitted Infections
TB- Tuberculosis
VCT- Voluntary Counselling and Testing
WHO- World Health Organisation
CHAPTER 1

1.0 INTRODUCTION

1.1 Global Epidemiology of Human Immunodeficiency Virus

Human Immunodeficiency Virus (HIV) is the virus that causes acquired immunodeficiency syndrome, a condition in humans in which the immune system fails to contain life-threatening infection, which would otherwise be dealt with in non-infected individuals. Africa south of the Sahara remains the hardest hit region, with estimates ranging up to 22.5 million people living with the virus. Since 2004, there has been a rapid scale up in provision of antiretroviral therapy (ART) and close to 37% of those in need had access to it. Sub-Saharan Africa has been hard hit by the pandemic, with nearly 5 in every 100 adults living with HIV, and accounting for close to 71% of all global infections. Zimbabwe has experienced a decreasing trend in HIV prevalence from a peak of 26.7% in 2002 to 14.9% in 2014 according to latest data.

1.1 Late Presentation to HIV/AIDS Care

Despite significant investment in awareness and publicity concerning HIV care and advances in treatment, many patients still present late in their HIV disease with either an AIDS defining illness or a CD4 count of <200 cells/uL. Clients presenting late for care have been found to have less favorable outcomes than those who initiate early. HIV positive individuals with advanced HIV disease at the time of ART initiation are susceptible to treatment failure, pose a significant financial burden on the health system and have a higher likelihood of early mortality.
In addition, research suggests that a higher cumulative risk of HIV transmission to other individuals is posed by late presenters for treatment, considering that earlier presentation and initiation on ARVs might lead to viral load suppression thereby reducing risk of transmission.\(^7\)

**Working definition**

a) **Immunologically**, late presentation is enrollment into HIV/AIDS care with a CD4 count of <200 cells/\(\mu\)L. Enrollment into care is being entered into the Pre-ART register at a health facility and assigned an OI/ART number.

b) **Clinically**, late presentation is enrolment into care with an AIDS defining illness as prescribed by the World Health Organisation and is classified into stages from 1 to 4. Clinical staging is done by the observing clinician and recorded on the patient’s Opportunistic Infections Care Booklet at presentation to the facility.

**1.1.1 Late Presentation to HIV/AIDS Care: The Implications**

The importance of early diagnosis of HIV infection is highlighted by the profound reductions in morbidity and mortality with the receipt of HAART as well as the decreased opportunity for onward HIV transmission.\(^9\) However, antiretroviral therapy is likely to result in mortality within the first 12 months if initiation is done in the late stages of HIV disease, especially within the first few months.\(^10\) A cross sectional study conducted at a Ugandan rural clinic reported that approximately 40% of the ART patients presented with WHO stage 4 infections and male sex and poor education were significant risk factors for late presentation.\(^11\) This in all likelihood will result in a higher patient cost ratio and the probability of switching to second line therapy, which has its own economic and patient related implications.
1.2 WHO Clinical Staging and CD4 Determination at Enrollment into Care

Prior to starting ART, patients should be assessed for readiness to take the prescribed medication in the appropriate regimen. At enrollment into care, both medical and psychosocial issues need to be addressed\textsuperscript{12}. Early presentation and subsequently early initiation is associated with clinical and HIV improvement benefits, improving survival and reducing the incidence of HIV infection at the community level\textsuperscript{13}.

Adult HIV progression is classified according to the WHO clinical staging explained in table 1\textsuperscript{14}.

| Table 1 World Health Organisation HIV Clinical Staging for Adult and Adolescent Care |
|-----------------------------------------------|-----------------|------------------|------------------|
| Stage 1                                      | Stage 2         | Stage 3          | Stage 4          |
| Asymptomatic                                 | Moderate        | Unexplained      | HIV wasting syndrome |
| Persistent generalized lymphadenopathy       | unexplained     | severe weight    | Pneumocystis     |
|                                               | weight loss (<10% of | loss            | pneumonia       |
|                                               | presumed or measured| Unexplained     | Recurrent severe |
|                                               | body weight.     | chronic diarrhea | bacterial pneumonia. |
|                                               | Recurrent upper | Persistent fever | Chronic herpes simplex |
|                                               | respiratory tract infections (sinusitis, bronchitis, otitis media, pharyngitis) | Persistent oral candidiasis | infection |
|                                               | Angular Zoster   | Oral hairy       | Oesophageal candidiasis. |
|                                               | Angular cheilitis| leukoplakia      | EPTB             |
|                                               | Recurrent oral ulcerations | Pulmonary TB | Kaposi Sarcoma |
|                                               | Papular pruritic eruptions | Severe presumed bacterial infections | HIV encephalopathy |
|                                               | Seborrheic dermatitis | Acute necrotizing stomatitis, gingivitis or periodontitis | Central nervous system toxoplasmosis |
|                                               | Fungal nail infections | Unexplained anemia (< 8 g/dl) and or neutropenia | Chronic cryptosporidiosis |
|                                               |                   |                   | Chronic isosporiasis |
|                                               |                   |                   | Invasive cervical carcinoma |

According to National HIV treatment and Care Guidelines for Zimbabwe (2013), ART should be started to all eligible people with confirmed HIV diagnosis and with a CD4 of $\leq 500$ cells/mm$^3$ of blood\textsuperscript{12}. CD4 determination has proven to be an essential monitoring tool for treatment
eligibility and immune response to ART. A Mozambican study reported that the use of CD4 cell count to determine treatment eligibility was effective in identifying late presenters to HIV/ADIS care, with a median CD4 cell count of 192 cells/μL\(^{15}\). The review of eligibility criteria from the previous ≤350 cells/μL to the present ≤500 cells/μL has brought about an anticipated increase in the patient base, hence more investment in CD4 count machine at ART initiation sites.

1.2 Study setting: Harare City

Harare City is the capital of the Republic of Zimbabwe and is the largest city in the country. The city is situated to the north east of Zimbabwe in Harare Metropolitan Province and has an estimated population of 1 860 219 residing in six divisional districts\(^{16}\). The Figure 1 shows the map of Harare City.

Figure 1 Map of Harare City (Source of map www.mapsofworld.com/zimbabwe/harare.html)
The city has 12 polyclinics, seven primary care clinics, 15 satellite clinics, 6 family health service clinics, 4 dental clinics and 2 infectious disease hospitals, namely Beatrice Road Hospital and Wilkins Hospital. The City also has a specialized Genito-Urinary Centre for treatment of STIs located at Wilkins Hospital. Facilities in the city offer a wide range of programmes including TB/HIV Care, PMTCT, Reproductive Health and STI Prevention and Treatment. Programme data indicates that the leading cause of death in the city in 2014 were HIV-related illnesses (39%)\(^\text{17}\). Comprehensive OI/ART services have been decentralized to 90% of the clinics from the two infectious disease hospitals and the city recorded an increase to 86% of all HIV positive women accessing care (Option B+) at the end of 2014\(^\text{17}\).

### 1.3 Problem Statement

Late presentation to HIV/AIDS care is of importance from both a clinical and public health point of view in Harare City. In 2014, a total of a total of 797 and 1098 new adult in initiations were done at Wilkins and Beatrice Road Hospitals respectively. Preliminary review of the ART registers at both institutions indicated that 67% and 71% of patients presented late with baseline CD4 of <200 cells/microliter and/or WHO stage 3 and 4. This is despite adoption of guidelines recommending initiation at CD4 500 cells/uL. Both facilities offer comprehensive HIV/AIDS care

HIV positive individuals diagnosed with late stage AIDS disease may become a burden to already constrained health systems and meager resources\(^{37}\). The reasons for late presentation to HIV/AIDS care in Harare City have not been documented and analysed in scientific research. We therefore sought to explore these reasons with a view to improve service delivery and encourage health seeking behaviour. This is particularly important as Zimbabwe seeks to
implement the “90, 90, 90” strategy where 90% of clients know their status, 90% of HIV positive clients are put on treatment and 90% achieve viral suppression by 2020\textsuperscript{23}.

1.5 Justification of the study

There is little evidence to suggest that studies on factors associated with late presentation have been done in metropolitan areas such as Harare City. Jakopo Z and Chirundu D in Kadoma City in 2014 conducted a study on late presentation to ART services but focused on paediatric patients aged <14 and considered clinical staging only in their definition of late presentation for ART services\textsuperscript{24}. The study reported having an unemployed caregiver, being a maternal orphan and living more than 5km away from the health facility as being risk factors for presenting late for paediatric ART services. Conducting a study on late presentation among adults may generate evidence based interventions aligned to packaging HIV testing and counselling messages and behavior change communication, particularly in a metropolitan area such as Harare, which has a diverse socio-cultural landscape.

1.6 Research question

What are the factors associated with late presentation to adult HIV/AIDS care in Harare City?
CHAPTER 2

2.0 Literature review

Literature considered looked at global, regional and national epidemiology of late presentation for HIV/AIDS care and factors associated with late presentation on the same.

2.1 Global epidemiology of late presentation for HIV/AIDS care

The prevalence of late presentation is not generic and mostly differs according to countries and geographical regions. It has also been reported that late presentation is a phenomena which affects both industrialized and developing nations, and depending with the country’s definition of late presentation, can be as high as 43% or as low as 15%\(^\text{19}\). A study in the United Kingdom reported that of 977 new HIV positive clients in 2003, 33% presented with a CD4 count of <200 cells/uL\(^20\). However, this was a national survey and did not seek to explain any causal relationships associated with late presentation.

Similarly in Italy, among 968 patients enrolled in the multicenter Italian Cohort Naïve from Antiretrovirals (ICoNA) study between 1997 and 2000, 20% presented with an AIDS defining illness and CD4 <200 cells/uL. Unlike the UK study, the researchers in this study reported injection drug use [OR=5.05] and older age as being positively associated with late presentation\(^21\). This study however did not seek to establish a causal relationship between late presentation and perceived risk of infection, which has been reported to be of significance in some studies\(^22\).

In view of the ambitions of most countries to scale up ART, late presentation to care is of paramount importance if this is going to be realized. The “90, 90, 90” concept advocates that
90% of the population should know their status, 90% should have access to treatment and 90% to have viral suppression\textsuperscript{23}. Late presentation therefore becomes a key issue in attempting to achieve these targets in that the majority of people might not have access to treatment, chiefly because they are unaware of their status and by the time they access, they would have developed late stage HIV disease\textsuperscript{24}. The second “90%” target in particular, becomes important as individuals know their status, whether in late or early stages of disease progression. Knowledge of status will then link the individual to care and treatment, with the ultimate goal being ART initiation to improve quality of life\textsuperscript{25}.

Several studies in the United States have been done to amplify the problem of late presentation for HIV care among patients attending opportunistic infections clinics. Among 1209 patients who presented for HIV care for the first time at an infectious disease facility, 41\% had already progressed to AIDS\textsuperscript{26}. Similarly in another US state, 50\% had a CD4 count <200 cells/uL at first presentation for HIV care; and in Maryland, the CD4 count at first presentation for HIV care declined from 371 to 276 cells/mm\textsuperscript{3} from 1990 to 2000\textsuperscript{27,28}.

A delay in presentation for care not only increases the chance of clinical disease progression for that patient, but also increases the risk for onward transmission to an uninfected individual.

Late presentation with a critically low baseline CD4 cell count and presence of AIDS is a strong indication for early mortality in both developed and developing nations. Generally, late testing among specific population may be as a result of one falling ill or having symptoms suggestive of HIV infection, while early testing, may be due to perceived risk by the individual\textsuperscript{29}. An alarmingly high proportion of HIV infected individuals are reported to present late for care in developing countries due to limited health care access and health literacy\textsuperscript{30,31}.
2.2 Regional Epidemiology of Late Presentation to HIV/AIDS care

Although governments in Sub Saharan Africa have made significant strides in provision of ART, more still needs to be done to effect positive behavior change\textsuperscript{32}. More so, despite revisions to guidelines for ART eligibility, which advocate initiation at ≤500 cells/uL, most patients in Sub Saharan Africa are initiated at low CD4 counts\textsuperscript{33, 34}.

Linkage to care after testing positive is of paramount importance, if HIV positive individuals are to be retained in care, and subsequently reduce late initiation\textsuperscript{35}. In Uganda, a study of newly diagnosed HIV positive adults enrolled in HIV care, 40% had an AIDS defining illness (WHO stage 3 or 4), another indication of the prevalence of late presentation in the African region\textsuperscript{36}.

In a case control study conducted in Ethiopia, Abaynew, et al, observed that late presentation to HIV/AIDS care was associated with several factors, which were identified from time of testing up until initiation of ART\textsuperscript{37}.

2.3 Late presentation to HIV/AIDS care in Zimbabwe

Preliminary findings from the Documentation of Implementation of WHO 2013 ART guidelines showed that the proportion of patients who had a CD4 count of <200 cells/uL at initiation decreased from 49% to 37% (of the total initiations with CD4 count determined)\textsuperscript{38}. A study on ART outcomes reported that 65% of males attending Opportunity Infections clinics had a median CD4 of 212 cells/uL\textsuperscript{39}. The AIDS and TB programme is concerned with the lack of documented factors on late presentation for HIV/AIDS care among patients attending OI clinics. Jakopo, et al, in Kadoma City reported that Eighty percent (n=88) of children were initiated on paediatric ART whilst in WHO clinical stage 2 of HIV/AIDS. Seventy percent (n=77) were initiated whilst
in WHO clinical stage 3 and 30% (n=33) in stage 4. This study however focused on infants and young children <14 years of age and was largely limited to two urban facilities.

2.4 Factors Associated with Late Presentation to HIV/AIDS Care

Late presentation to HIV/AIDS care has been found to be a predictor in the morbidity and mortality of people living with HIV, particularly in developing countries. In Ethiopia, Abaynew et al found out that people living with HIV and AIDS (PLWHA) who live in a rented house with their families [OR=2.52, 95% CI: 1.09-5.79] and those who were frequent alcohol users [OR 3.55, 95% CI: 1.63-7.71] were significantly associated with late presentation to HIV/AIDS care. In Italy, Camoni et al also found out that age older than 50 years [OR=4.6, 95% CI: 3.8-5.6] was significantly associated with being a late presenter.

Elderly persons presenting with HIV associated diseases are often misdiagnosed by general practitioners who may not consider the possibility of HIV infection in these patients. In the Ethiopian study, those who lived with their families were 3.29 times more likely to present late for HIV/AIDS care than those who did not live with their families. This might be related to issues to do with non-disclosure due to fear of losing one’s family or exposing them to stigma by the community. In Venezuela, Bonjour et al found out that there was an increased trend to present late the longer the person had a steady partner. However this was a case-case comparison which was largely limited to descriptive statistics and does not show causal inference by using a control group.

Late HIV diagnosis and the consequent late linkage to care is a worrying scenario. Apart from demographic factors associated with late presentation, patient level factors have been studied in order to quantify the problem. In Cameroon, Ndawitz et al reported that being a male younger
than 45 years was significantly associated with late presentation and there was an interaction between age and gender\( (p=0.043) \). Pre-existing characteristics of individuals such as mental disorders and substance abuse might also affect the timing of each milestone along the path to HIV/AIDS care. Two studies conducted in South Africa and Cameroon reported that on average, women present earlier for HIV/AIDS care than men\(^{43,44} \). The reasons likely include that women have more regular contact with the health care system and associated opportunities for HIV testing, especially via antenatal care, or holding different health related beliefs.

Individual socioeconomic status may also be associated with late presentation to HIV/AIDS care. Socioeconomic status may predispose patients to delay seeking care or to eventually default from care, probably from competing needs and opportunity cost of care. In Uganda, Braitstein et al. found out that financial constraints were significantly associated with delay in presentation to care\(^{45} \). Competing work or home-life commitments might also be associated to individuals presenting late for care and only doing so when they are in late stages of disease progression. However this study did not analyze the median period between an individual testing and enrolled into care and the relationship with health service providers.

The health care worker shortage in the Sub Saharan Africa region is well documented\(^ {46,47} \) and concerns about meeting the demands of scale up have been raised. The capacity of the health delivery system to address the needs of HIV positive patients may have an effect on the timing at which they seek care. A study in 8 sub Saharan African countries reported that patient provider ratio was associated with a lower median CD4 count among patients initiating ART\(^{48} \). However this study was focusing on late ART initiation in contrast to late presentation to HIV/AIDS care thus more emphasis is on health service related factors rather than patient related factors.
It has been shown that those receiving ART in clinics providing it for free have significantly lower mortality than patients from clinics where a fee is charged\textsuperscript{49}, although vulnerable populations may still not benefit from free care. The effect of clinical policies, such as the number of days a particular facility offers HIV counselling and testing, and consultation hours, have not clearly been studied in much detail; however it is plausible that limited clinic days and hours may prohibit patients form presenting early for treatment as they will only go when opportunistic infection start to manifest thus hindering early enrollment\textsuperscript{50}.

In conclusion, late presentation for care, with this literature review, may be attributed to socio-cultural, client related and behavioral factors. These are going to be analysed in this study to ascertain if they are pointers to late presentation phenomena in the Zimbabwean context in general and Harare City in particular. The factors can be summarized as follows

**Client related factors**

- Being of older age
- Perceived HIV stigma before presentation
- Non-disclosure of status to significant others
- Low household income
- Symptoms of HIV-related disease at time of diagnosis
- Entry point to care was outpatients at enrollment
- Perceived ART side effects prior to enrolment

**2.5 Definition of terms**
Late presentation

Late presentation to HIV/AIDS care is when CD4 lymphocyte cell count is <200 cells/uL at first presentation to the Opportunistic Infections clinic or presenting with an AIDS defining illness (WHO clinical stage 3 or 4)\(^{37}\).

Enrollment into care

Enrollment into care in Zimbabwe is being registered for Pre-ART services after a positive test result. Pre-ART services include 3 counselling sessions for psycho-social support before being eventually registered into the ART records (to starting taking ART) at a health facility.

First Line Regimen

In Zimbabwe, first line regimens include Tenofovir, Lamivudine and Efavirenz (Tenolam E) and Zidovudine/Lamivudine/Nevirapine\(^{14}\).

2.6 Theories of the Health Belief Model

According to the HBM that was developed in the 1950’s to explain widespread failure of people to be screened for TB, and later extended to explain why an individual adopts or fails to adopt health preventive behaviour for improving the quality of life (ill-health condition)\(^{51}\). HBM states that behaviour changes when people think:

- they are at risk for contracting a disease
- disease is severe
- Proposed remedies are cost–beneficial.
The following are constructs of the Health Belief Model:

**Perceived Susceptibility**

This refers the subjective assessment of risk of developing a health problem. The HBM predicts that individuals who perceive that they are at susceptible to a particular health problem are more likely to engage in preventive behaviors. Those who believe that are at low risk of developing an illness are more likely to engage in unhealthy or risky behaviors.

**Perceived Benefits**

An individual’s assessment of the value or efficacy of engaging in a health promoting behavior to decrease risk of disease. Individuals who believe that a particular action reduces the risk of a health problem or reduce its seriousness are likely to engage in that behavior.

**Perceived Severity**

Individuals who perceive a health problem as serious are more likely to engage in behaviors to prevent the problem from occurring. Perceived seriousness can be explained as the problem being life threatening or causing disability.

**Perceived Barriers**

Refer to individual’s assessment of the obstacles to behavior change. Barriers may prevent engagement in the health promoting behavior.

**Cues to Action**
According to the HBM, cues to action or triggers are necessary for prompting engagement in health promoting behaviors. Cues to action can be internal or external. Examples include reminders. The intensity of cues needed to prompt action depends on perceived susceptibility, seriousness, benefits and barriers. Figure 1 depicts the HBM framework.

**Figure 1 Health Belief Model - Components and Linkages**

The conceptual framework in Figure 3 was based on the above HBM.
2.7 The Conceptual Framework

Based on the literature search and the constructs of the health belief model, the following theoretical framework was developed and was applied in this study:

**Figure 3 The Theoretical Framework for Late Presentation to HIV/AIDS Care in Harare City, 2015**
2.8 Objectives of the study

2.8.1 Broad Objective

To determine the factors associated with late presentation to HIV/AIDS care in Harare City

2.8.2 Specific Objectives

• To determine the socio-demographic factors associated with late presentation to HIV/AIDS care in Harare City, 2015

• To analyze the socio-cultural factors associated with late presentation to HIV/AIDS care in Harare City, 2015

• To establish the patient related factors associated with late presentation to HIV/AIDS care in Harare City, 2105

• To evaluate the health service related factors associated with late presentation to HIV/AIDS care in Harare City, 2015

2.9 Hypotheses

Null Hypothesis-(H₀): There is no association between experiencing HIV related stigma and late presentation to HIV/AIDS care.

Alternative Hypothesis (H₁): There is an association between experiencing HIV related stigma and late presentation to HIV/AIDS care.
CHAPTER 3

3.0 Methods and Materials

This chapter looked at materials and methods for conducting the study. These included study type, sample size determination and plan for data collection and analysis.

3.1 Study Design

A 1:1 unmatched case control study was conducted.

Case: is an HIV positive individual (≥18 years) with a baseline CD4 count of <200/uL or who had WHO clinical stage 3 or 4 at the time of first presentation to Wilkins and Beatrice Road Opportunistic Infections clinics between January and December 2014.

Control- is HIV positive individual (≥18 years) who had a baseline CD4 count of >200/uL or WHO clinical stage 1 or 2 at the time of first presentation to Wilkins and Beatrice Road Opportunistic Infections clinics between January and December 2014.

3.2 Plan for reducing potential biases

Recall bias:

There was a possibility that cases (those who presented late for care) and controls (those who presented early for care) could have remembered or reported exposure information in different ways. This could have overestimated the strengths of associations as cases are more likely to remember exposure information than controls. To reduce this bias, ascertainment of exposure was done through checking medical records where possible.
3.3 Study setting

The study was conducted at Beatrice Road and Wilkins Infectious Diseases Hospitals in the capital city of Harare, Zimbabwe.

3.4 Study population

The study population was HIV positive patients who had been enrolled into care between January and December 2014.

3.5 Study Unit

The study unit was one HIV positive patient who had been enrolled into care between January and December 2014 at Wilkins and Beatrice Road Hospitals.

Key informants

These were HIV program managers and facility managers, and had specific knowledge about HIV program in Harare City. They included Beatrice and Wilkins Hospitals Medical Superintendents, Hospital Matrons of the two institutions, the Sisters in Charge of the Opportunistic Infections at both hospitals and a Primary Care Counsellor at each institution.

3.6 Patient Record Review

The patients OI/ART Care booklets (“the Green book”) for each participant i.e. both cases and controls were reviewed for the following

- To ascertain baseline CD4 count at first presentation to the facility after an HIV positive test.
To ascertain the WHO clinical staging at first presentation to OI/ART clinics.

3.7 Inclusion criteria and exclusion criteria

3.7.1 Inclusion criteria

- Patients on ART at Wilkins and Beatrice Road Hospitals who were available on the study days

3.7.2 Exclusion criteria

- Patients on ART at Wilkins and Beatrice Hospitals who were not available on the day of the interview.
- Patients at Wilkins and Beatrice hospitals who declined to participate in the study.
- Patients who were too ill to respond to questions

3.8 Sample size determination

3.8.1 Primary participants

Sample size was calculated using Fleiss formula in the StatCalc™ function of Epi Info® 7.

\[
P_1 = \frac{p_2 (OR)}{1 + [p_2 (OR - 1)]}
\]

Where:

- \(p_1\) = proportion of exposed with disease
- \(p_2\) = proportion of unexposed with disease
- \(OR\) = Calculated odds ratio form previous study

Calculation was based on a study by Abaynew et al\(^{37}\). Assumptions were that perceived HIV related stigma was a significant risk factor for late presentation for HIV/AIDS care with an Odds
Ratio of 2.80. The proportion of those having perceived HIV/AIDS related stigma among controls was 9.4%. A 1:1 unmatched case control study, with a 95% Confidence Interval and 80% power was conducted in Harare City. A minimum sample size of 122 cases and 122 controls was calculated. Assuming a 10% non-response rate, the minimum total sample size was 268. Therefore the minimum sample size calculated was 134 cases and 134 controls.

### 3.8.2 Sample size for records

A total of 268 records were reviewed i.e. every participant’s record.

### 3.8.3 Key informant sample size

A total of 8 key informants were purposively recruited into the study and these were the cadres listed in section 3.5.

### 3.9 Sampling

The OI/ART register which captures all patients enrolled into care and had been allocated an OI/ART number was used as the sampling frame. Proportional sampling was done in accordance with the enrolled patients at each facility.

**Cases**

Cases were randomly recruited from OI/ART register into the study using the lottery method. Names of participants were written on pieces of paper and blindly picked by the researcher until a sample size of 134 cases was reached.
Controls
Controls were randomly recruited from the OI/ART register after creating a separate list extracted from the same register.

Key informants
Key informants were purposively selected at the two institutions due to their knowledge on HIV/AIDS programming, management and performance monitoring and evaluation.

Reviewed records
A desk review for all the 268 records (134 cases and 134 controls) was done.

3.10 Pretesting data collection instruments

Interviewer administered semi structured questionnaire
The questionnaire was pretested at Parirenyatwa Central Hospital Opportunistic Infections clinic to check for appropriateness and structure of questions, and whether the intended data was being collected. The time taken to administer the questionnaire was also considered.

3.11 Plan for data collection

Primary participants
A pre-tested interviewer administered, semi-structured, questionnaire was used to collect data from cases and controls. Checklists were used to identify baseline CD4 count and baseline WHO clinical stage at first presentation.

Key informants
An interview guide for key informants was used to elicit information on the city’s HIV program; from inputs, processes, outputs and outcome.
3.12 Plan for data analysis

Questionnaires were checked for completeness and internal consistence before being created in Epi info version 7 for data analysis. The Epi Info software was used to analyse quantitative data. Means, frequencies, proportions, odds ratios (OR), and their 95% confidence intervals (CI), were generated. Odds ratio (OR) that did not include the value 1 in the 95% confidence interval were considered statistically significant. Forward stepwise logistic regression analysis was done to determine independent factors associated with late presentation. Qualitative data was sorted and analyzed thematically.

3.13 Project administration and utilization of results

In terms of results utilization, written reports were given to Beatrice and Wilkins Infectious Diseases Hospital Medical Superintendents, Director City Health Department, Director AIDS and TB Unit and Health Studies Office. Presentation of results was done to the Director of Health Service Harare City and hospital superintendents.
3.14 Independent variables

Table 2 summarizes the independent variables, definitions and scales of measurement that were used.

### Table 2 Independent Variables, definitions and scale of measurement

<table>
<thead>
<tr>
<th>Conceptual Definition of Variable</th>
<th>Operational Definition or Indicator</th>
<th>Scale of Measurement</th>
</tr>
</thead>
<tbody>
<tr>
<td>Age of respondent</td>
<td>Number of completed years</td>
<td>Continuous in years</td>
</tr>
<tr>
<td>Sex of respondent</td>
<td>Being male or female</td>
<td>Nominal</td>
</tr>
<tr>
<td>Level of education</td>
<td>Highest level of education attained by the respondent</td>
<td>Ordinal</td>
</tr>
<tr>
<td>Employment Status</td>
<td>Whether the respondent is employed or not</td>
<td>Nominal</td>
</tr>
<tr>
<td>Marital Status</td>
<td>Whether the respondent is single, married, widowed or divorced</td>
<td>Nominal</td>
</tr>
<tr>
<td>Outcome</td>
<td>Whether the respondent presented early or not</td>
<td>Nominal</td>
</tr>
<tr>
<td>Received HIV related information</td>
<td>Whether the respondent received information on HIV from print or electronic media</td>
<td>Categorical</td>
</tr>
<tr>
<td>Experienced HIV related stigma</td>
<td>Whether the respondent ever experienced HIV related stigma prior to enrolling for care</td>
<td>Categorical</td>
</tr>
<tr>
<td>Monthly income</td>
<td>The estimated amount of money a respondent earned per month prior to enrolling for care</td>
<td>Continuous</td>
</tr>
<tr>
<td>HIV status</td>
<td>Whether the child is HIV positive or negative for those with known HIV status</td>
<td>Nominal</td>
</tr>
<tr>
<td>Duration between testing HIV positive and enrolling for care</td>
<td>The time taken between testing HIV positive and being enrolled into care (pre-ART and ART)</td>
<td>Continuous</td>
</tr>
<tr>
<td>Baseline CD4 cell count</td>
<td>Initial CD4 cell count result at presentation to an OI clinic</td>
<td>Continuous</td>
</tr>
<tr>
<td>Routine HIV testing and Counselling</td>
<td>Going for HIV testing and counselling more once a year prior to enrolling for care</td>
<td>Categorical</td>
</tr>
</tbody>
</table>
3.15 Ethical considerations

Ethical clearance was obtained from the Joint Research Ethics Committee for College of Health Sciences and Parirenyatwa Group of Hospitals (JREC 131/15). Permission to conduct the study was obtained from Harare City Council Health Department, Health Studies Office and the Medical Research Council of Zimbabwe (MRCZ B/875). Written informed consent was obtained from study participants. The completed questionnaires were secured in a locker. Study participants were treated with dignity, regardless of race, gender, political or religious affiliation. No names or addresses of participants were used in the study. Confidentiality was maintained throughout the study. Participation was voluntary and there were no financial gains for participating in the study.
CHAPTER 4

4.0 Results

This chapter presents the results of the study. The results are presented starting with descriptive statistics and then analytic statistics. In analytic statistics, bi-variate analysis will be presented followed by multivariate analysis.

4.1 Descriptive Epidemiology

4.1.1 Socio-demographic Characteristics of study participants

A total of 134 cases and 134 controls were recruited into the study. Table 3 illustrates socio-demographic characteristics of study participants.
<table>
<thead>
<tr>
<th>Variable</th>
<th>Category</th>
<th>Cases n=134(%)</th>
<th>Controls n=134(%)</th>
<th>p-value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sex</td>
<td>Male</td>
<td>77(57)</td>
<td>42(31)</td>
<td>&lt;0.01</td>
</tr>
<tr>
<td></td>
<td>Female</td>
<td>57(43)</td>
<td>92(69)</td>
<td></td>
</tr>
<tr>
<td>Age</td>
<td>&lt;20</td>
<td>2(1)</td>
<td>0(0)</td>
<td>0.42</td>
</tr>
<tr>
<td></td>
<td>20-29</td>
<td>31(23)</td>
<td>38(28)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>30-39</td>
<td>59(44)</td>
<td>60(45)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>40-49</td>
<td>30(22)</td>
<td>29(22)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>50+</td>
<td>12(9)</td>
<td>7(5)</td>
<td></td>
</tr>
<tr>
<td>Median age</td>
<td></td>
<td>35(Q1=30, Q3=40)</td>
<td>34(Q1=30, Q3=43)</td>
<td></td>
</tr>
<tr>
<td>Marital status</td>
<td>Single</td>
<td>24(18)</td>
<td>17(13)</td>
<td>0.32</td>
</tr>
<tr>
<td></td>
<td>Divorced</td>
<td>18(13)</td>
<td>18(13)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Married</td>
<td>70(52)</td>
<td>78(58)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Widowed</td>
<td>22(16)</td>
<td>21(16)</td>
<td></td>
</tr>
<tr>
<td>Place of residence</td>
<td>High density surbub</td>
<td>89(66)</td>
<td>89(66)</td>
<td>0.91</td>
</tr>
<tr>
<td></td>
<td>Medium density</td>
<td>30(22)</td>
<td>31(24)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Low density surbub</td>
<td>15(11)</td>
<td>14(10)</td>
<td></td>
</tr>
<tr>
<td>Highest level of education</td>
<td>None</td>
<td>3(2)</td>
<td>1(1)</td>
<td>0.08</td>
</tr>
<tr>
<td></td>
<td>Primary</td>
<td>27(20)</td>
<td>18(13)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Secondary</td>
<td>86(64)</td>
<td>99(74)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Tertiary</td>
<td>18(14)</td>
<td>16(12)</td>
<td></td>
</tr>
<tr>
<td>Living arrangements</td>
<td>Alone</td>
<td>17(13)</td>
<td>16(12)</td>
<td>0.85</td>
</tr>
<tr>
<td></td>
<td>Spouse</td>
<td>74(55)</td>
<td>82(61)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Relatives</td>
<td>42(31)</td>
<td>36(27)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Friends</td>
<td>1(1)</td>
<td>0(0)</td>
<td></td>
</tr>
<tr>
<td>Religion</td>
<td>Pentecostal</td>
<td>42(33)</td>
<td>54(40)</td>
<td>&lt;0.05</td>
</tr>
<tr>
<td></td>
<td>Apostolic</td>
<td>47(35)</td>
<td>27(21)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Orthodox</td>
<td>20(15)</td>
<td>16(12)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Traditional</td>
<td>7(8)</td>
<td>9(8)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Protestant</td>
<td>13(9)</td>
<td>25(19)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>None</td>
<td>5(3)</td>
<td>3(1)</td>
<td></td>
</tr>
<tr>
<td>Employment status</td>
<td>Formally employed</td>
<td>61(42)</td>
<td>55(41)</td>
<td>0.49</td>
</tr>
<tr>
<td></td>
<td>Self employed</td>
<td>41(33)</td>
<td>31(23)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Unemployed</td>
<td>32(25)</td>
<td>48(36)</td>
<td></td>
</tr>
</tbody>
</table>
Cases and controls were comparable in terms of socio-demographic characteristics except for sex and religion where cases were more likely to be male and subscribe to an apostolic sect.

### 4.1.2 Point of entry for HIV/AIDS Care

The point of entry for HIV/AIDS care is illustrated in the graph below

**Figure 4 Point of Entry for HIV/AIDS Care, Harare City, 2015**

The majority of cases (66%) enrolled through the outpatient department and the least (2%) enrolled through the PMTCT programme. The majority of controls (53%) entered through voluntary counselling and testing (New Start Centre) offered at both institutions.
4.1.3 WHO Clinical staging of participants

The figure below illustrates the proportion of respondents clinically staged at presentation to the OI/ART clinic using WHO clinical (n=268)

**Figure 5 WHO Clinical staging among respondents presenting for HIV/AIDS Care in Harare City, 2015**

Majority of participants (31%) enrolled into care with clinical stage 3 whilst the least (19%) enrolled into care with clinical stage 4 disease.
4.1.4 Baseline CD4 cell count at first presentation

The box and whisker plot in Figure 6 illustrates the median CD4 cell count at first presentation to the OI clinic.

![Box and whisker plot showing CD4 cell count at first presentation](image)

**Figure 6 Baseline CD4 Cell Count at first presentation for HIV/AIDS Care in Harare City, 2015 (n=268)**

The median baseline CD4 count at first presentation to the OI/ART clinic among cases was 61 cells/uL (Q₁=34, Q₃=110), with the maximum CD4 count value being 612 cells/uL of blood and the minimum value being 3 cells/uL of blood. Among the controls, the median CD4 count was 367 cells/uL (Q₁=301, Q₃=505), the maximum value being 1200 cell/uL and the least value was 201 cells/uL.
4.1.5 Duration between first positive test and enrollment into care

The box and whisker plot in Figure 7 illustrates the duration in days between reported first HIV positive test and result and enrolling into pre-ART care.

Figure 7 Duration between reported first HIV positive test and enrollment into care, Harare City, 2015 (n=268)

The median duration between testing positive (reported) and enrolling into care among cases was 2 days (Q1=1, Q3=30) with a maximum delay of 180 days. The median duration from testing positive and enrolling into care among controls was 30 days (Q1=3, Q3=75) and the maximum duration was 320 days.
## 4.2 Analytic Epidemiology

### 4.2.1 Socio-demographic factors Associated with Late presentation to HIV/AIDS Care

Table 4 below presents socio-demographic factors associated with late presentation to care.

<table>
<thead>
<tr>
<th>Factor</th>
<th>Category</th>
<th>Cases n=134(%)</th>
<th>Controls n=134(%)</th>
<th>OR(95% CI)</th>
<th>p-value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sex</td>
<td>Female</td>
<td>57(43)</td>
<td>93(69)</td>
<td>0.33(0.19-0.54)</td>
<td>&lt;0.05</td>
</tr>
<tr>
<td></td>
<td>Male</td>
<td>77(67)</td>
<td>41(31)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Formally employed</td>
<td>Yes</td>
<td>61(46)</td>
<td>55(41)</td>
<td>1.18(0.73-1.92)</td>
<td>0.49</td>
</tr>
<tr>
<td></td>
<td>No</td>
<td>73(54)</td>
<td>78(59)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Married</td>
<td>Yes</td>
<td>70(52)</td>
<td>77(67)</td>
<td>0.79(0.49-1.28)</td>
<td>0.32</td>
</tr>
<tr>
<td></td>
<td>No</td>
<td>64(48)</td>
<td>57(43)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Lived in High density suburbs</td>
<td>Yes</td>
<td>89(66)</td>
<td>88(67)</td>
<td>1.01(0.60-1.68)</td>
<td>0.91</td>
</tr>
<tr>
<td></td>
<td>No</td>
<td>45(34)</td>
<td>46(34)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Highest level of education</td>
<td>Primary and below</td>
<td>30(22)</td>
<td>19(14)</td>
<td>1.73(0.91-3.06)</td>
<td>0.08</td>
</tr>
<tr>
<td></td>
<td>Secondary and above</td>
<td>104(78)</td>
<td>115(86)</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Females were 67% less likely to present late for HIV/AIDS care (CI=0.19-0.54). Those in formal employment were 1.18 times likely to present late for HIV/AIDS care (CI=0.73-1.92).
4.2.2 Socio-economic Factors Associated with Late Presentation to HIV/AIDS Care

Socio-economic factors associated with late presentation to care were analysed in Table 5:

<table>
<thead>
<tr>
<th>Factor</th>
<th>Cases: n=134(%)</th>
<th>Controls: n=134(%)</th>
<th>Odds Ratio (95% CI)</th>
<th>p-value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Earned less than $250 monthly</td>
<td>Yes 110(82)</td>
<td>No 24(18)</td>
<td>3.01 (1.76-5.41)</td>
<td>&lt;0.01</td>
</tr>
<tr>
<td>Rented accommodation</td>
<td>Yes 63(47)</td>
<td>No 71(53)</td>
<td>1.35 (0.84-2.20)</td>
<td>0.21</td>
</tr>
<tr>
<td>Spent more than $1 travelling to clinic</td>
<td>Yes 108(81)</td>
<td>No 26(19)</td>
<td>0.86 (0.46-1.61)</td>
<td>0.65</td>
</tr>
</tbody>
</table>

Those who earned less than $250 a month were 3.01 times likely to present late for HIV/AIDS care (95% CI= 1.76-5.41).
4.2.3 Socio-cultural factors Associated with Late Presentation for HIV/AIDS care

Socio-cultural factors associated with late presentation for HIV/AIDS care were analysed in Table 6 below.

**Table 6 Socio-cultural Factors Associated with Late Presentation for HIV/AIDS Care, Harare City, 2015**

<table>
<thead>
<tr>
<th>Factor</th>
<th>Cases n=134(%)</th>
<th>Controls n=134(%)</th>
<th>OR(95%CI)</th>
<th>p-value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Family aware of status</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Yes</td>
<td>127(95)</td>
<td>123(92)</td>
<td>1.62(0.60-4.32)</td>
<td>0.32</td>
</tr>
<tr>
<td>No</td>
<td>7(5)</td>
<td>11(8)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Friends/Associates aware of status</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Yes</td>
<td>69(51)</td>
<td>57(43)</td>
<td>1.43(0.88-2.32)</td>
<td>0.14</td>
</tr>
<tr>
<td>No</td>
<td>65(49)</td>
<td>77(57)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Sought treatment from other except clinician</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Yes</td>
<td>58(43)</td>
<td>24(18)</td>
<td>3.49(2.01-6.11)</td>
<td>&lt;0.05</td>
</tr>
<tr>
<td>No</td>
<td>76(57)</td>
<td>110(82)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Belonged to an apostolic sect</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Yes</td>
<td>54(40)</td>
<td>36(27)</td>
<td>1.83(1.10-3.07)</td>
<td>&lt;0.05</td>
</tr>
<tr>
<td>No</td>
<td>80(60)</td>
<td>98(73)</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Those who sought treatment elsewhere other than health facility were 3.49 times likely to present late for HIV/AIDS care (95% CI= 2.01-6.11), while those who belonged to an apostolic sect were 1.83 times likely to present late for HIV/AIDS care (95% CI=1.10-3.07).
4.2.4 Patient related factors associated with late presentation for HIV/AIDS Care

Table 7 below illustrates the patient related factors associated with late presentation for HIV/AIDS care.

Table 7 Patient related Factors Associated with Late Presentation for HIV/AIDS Care, Harare City, 2015

<table>
<thead>
<tr>
<th>Factor</th>
<th>Cases n=134(%)</th>
<th>Controls n=134(%)</th>
<th>OR(95% CI)</th>
<th>p-value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Illness reason for HIV test</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Yes</td>
<td>88(66)</td>
<td>22(16)</td>
<td>10.1(5.6-18.3)</td>
<td>&lt;0.05</td>
</tr>
<tr>
<td>No</td>
<td>46(34)</td>
<td>112(84)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Experienced HIV stigma</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Yes</td>
<td>98(73)</td>
<td>65(49)</td>
<td>2.93(1.75-4.89)</td>
<td>&lt;0.05</td>
</tr>
<tr>
<td>No</td>
<td>36(27)</td>
<td>69(51)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Drank alcohol</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Yes</td>
<td>66(49)</td>
<td>39(29)</td>
<td>2.33(1.41-3.87)</td>
<td>&lt;0.05</td>
</tr>
<tr>
<td>No</td>
<td>68(51)</td>
<td>95(71)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Perceived ARVs as having side effects</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Yes</td>
<td>74(55)</td>
<td>55(41)</td>
<td>1.8(1.11-2.93)</td>
<td>&lt;0.05</td>
</tr>
<tr>
<td>No</td>
<td>60(45)</td>
<td>79(59)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Had relative who died of AIDS related illness</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Yes</td>
<td>120(90)</td>
<td>123(92)</td>
<td>0.69(0.29-1.63)</td>
<td>0.41</td>
</tr>
<tr>
<td>No</td>
<td>14(10)</td>
<td>11(8)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Received information on HIV</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Yes</td>
<td>88(66)</td>
<td>113(84)</td>
<td>0.33(0.18-0.61)</td>
<td>&lt;0.05</td>
</tr>
<tr>
<td>No</td>
<td>46(34)</td>
<td>21(16)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Went for routine HIV testing and counselling</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Yes</td>
<td>39(29)</td>
<td>66(49)</td>
<td>0.42(0.25-0.69)</td>
<td>&lt;0.05</td>
</tr>
<tr>
<td>No</td>
<td>95(71)</td>
<td>68(51)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Disclosed positive status to family</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Yes</td>
<td>96(72)</td>
<td>87(65)</td>
<td>1.33(0.79-2.24)</td>
<td>0.27</td>
</tr>
<tr>
<td>No</td>
<td>38(28)</td>
<td>47(35)</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Significant risk factors for late presentation were illness being reason for HIV test (OR=10.1, 95% CI= 5.6-18.3); experienced HIV stigma (OR=2.93, 95% CI=1.75-4.89); drinking alcohol (OR=2.33, 95% CI=1.41-3.87) and; perceiving ARVs as having side effects (OR=1.8, 95% CI=1.11-2.93). Significant protective factors were receiving information on HIV (OR=0.33, 95% CI=0.18-0.61) and going for routine HIV testing and counselling (OR=0.42, 95% CI=0.25-0.69).
4.2.5 Health system related factors associated with late presentation to HIV/AIDS Care

Health system related factors were analysed in Table 8 below

<table>
<thead>
<tr>
<th>Factor</th>
<th>Category</th>
<th>Case n=134(%)</th>
<th>Control n=134(%)</th>
<th>OR(95% CI)</th>
<th>p-Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Faced challenges</td>
<td>Yes</td>
<td>63(47)</td>
<td>50(38)</td>
<td>1.47(0.90-2.39)</td>
<td>0.11</td>
</tr>
<tr>
<td></td>
<td>No</td>
<td>71(53)</td>
<td>83(62)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Health workers</td>
<td>Yes</td>
<td>129(95)</td>
<td>126(95)</td>
<td>1.43(0.44-4.63)</td>
<td>0.54</td>
</tr>
<tr>
<td></td>
<td>No</td>
<td>5(4)</td>
<td>7(5)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>HIV services of good quality</td>
<td>Yes</td>
<td>41(31)</td>
<td>40(30)</td>
<td>1.02(0.60-1.72)</td>
<td>0.92</td>
</tr>
<tr>
<td></td>
<td>No</td>
<td>93(69)</td>
<td>94(70)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Would recommend services</td>
<td>Yes</td>
<td>111(83)</td>
<td>106(80)</td>
<td>1.22(0.66-2.27)</td>
<td>0.51</td>
</tr>
<tr>
<td></td>
<td>No</td>
<td>23(17)</td>
<td>28(20)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Member of a support group</td>
<td>Yes</td>
<td>22(16)</td>
<td>19(14)</td>
<td>1.18(0.61-2.31)</td>
<td>0.61</td>
</tr>
<tr>
<td></td>
<td>No</td>
<td>112(84)</td>
<td>115(86)</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Facing challenges in accessing HIV testing and counselling services was a risk factor for late presentation to care (OR=1.47, 95% CI=0.90-2.39).
4.2.6 Independent factors for Late Presentation for HIV/AIDS Care, Harare City, 2015

Forward stepwise logistic regression was conducted to determine independent factors associated with late presentation for HIV/AIDS Care in Harare City (Table 9).

Table 9 Independent Factors for Late Presentation for HIV/AIDS Care, Harare City, 2015

<table>
<thead>
<tr>
<th>Variable</th>
<th>Adjusted OR</th>
<th>95% C.I</th>
<th>P-value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Illness reason for HIV test</td>
<td>7.68</td>
<td>4.08-14.75</td>
<td>&lt;0.01</td>
</tr>
<tr>
<td>Experienced HIV stigma</td>
<td>2.99</td>
<td>1.54-5.79</td>
<td>&lt;0.01</td>
</tr>
<tr>
<td>Being male</td>
<td>2.84</td>
<td>1.50-5.40</td>
<td>&lt;0.01</td>
</tr>
<tr>
<td>Received information on HIV</td>
<td>0.37</td>
<td>0.18-0.78</td>
<td>0.01</td>
</tr>
<tr>
<td>Earned more than $250 per month</td>
<td>0.32</td>
<td>0.76-0.67</td>
<td>&lt;0.01</td>
</tr>
</tbody>
</table>

Independent risk factors for late presentation for HIV/AIDS care were illness being reason for test (AOR=7.68, 95% CI=4.08-14.75); Being male (AOR=2.84, 95% CI=1.50-5.40) and; experienced HIV stigma (AOR=2.99, 95% CI=1.54-5.79). Independent protective factors were receiving information on HIV (AOR=0.37, 95% CI=0.18-0.78) and earning more than US$250 per month (AOR=0.32, 95% CI=0.76-0.67).
4.3 Key Informants Results

4.3.1 Demographic characteristics of key informants

Table 10 shows the demographic characteristics of the 8 key informants who were interviewed.

<table>
<thead>
<tr>
<th>Variable</th>
<th>Category</th>
<th>Frequency n=8(%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sex</td>
<td>Male</td>
<td>1(13)</td>
</tr>
<tr>
<td></td>
<td>Female</td>
<td>7(87)</td>
</tr>
<tr>
<td>Median age (years)</td>
<td>36(Q₁=32, Q₃=39)</td>
<td></td>
</tr>
<tr>
<td>Designation</td>
<td>Medical Superintendent</td>
<td>2(25)</td>
</tr>
<tr>
<td></td>
<td>SIC</td>
<td>2(25)</td>
</tr>
<tr>
<td></td>
<td>Matron</td>
<td>2(25)</td>
</tr>
<tr>
<td></td>
<td>Primary Counsellor</td>
<td>2(25)</td>
</tr>
<tr>
<td>Median years in service</td>
<td>8(Q₁=6, Q₃=12)</td>
<td></td>
</tr>
</tbody>
</table>

Eight key informants were interviewed at the two city institutions. These were the Medical Superintendents; the Sisters In charge of Opportunistic Infections clinics; the hospital matrons and two Primary Care counsellors for each institution. The HIV focal person mentioned that all health facilities were implementing the 2013 WHO OI/ART Guidelines, which were fully adopted in January 2014. Hospital matrons indicated that 90% of all staff which include doctors, nurses and counsellors has been trained in HIV Intergrated Training focusing on support and supervision and monitoring and evaluation. The city implements mentorship visits on a” week in week out” basis. The average waiting time for patients was less than 10 minutes per facility.
A total of 27 sites initiate ART and have CD4 machines onsite. Support and supervision is conducted once every quarter to all facilities.

**4.3.2 Key informant perceptions on Late Presentation**

The table below shows the top 5 reasons for late presentation for HIV/AIDS care as mentioned by the key informants.

Table 11 Perceived Reasons of Key Informants about Late Presentation for HIV/AIDS Care in Harare City, 2015

<table>
<thead>
<tr>
<th>Reason</th>
<th>Frequency (n=8)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fear of HIV related stigma</td>
<td>8/8</td>
</tr>
<tr>
<td>No money for transport to facility</td>
<td>7/8</td>
</tr>
<tr>
<td>Patients in denial</td>
<td>7/8</td>
</tr>
<tr>
<td>Lack of education</td>
<td>6/8</td>
</tr>
<tr>
<td>No disclosure to relatives</td>
<td>4/8</td>
</tr>
</tbody>
</table>

Majority of the respondents (8) mentioned that fear of HIV related stigma was the main reason for late presentation for care. The least number of respondents (4) mentioned that lack of disclosure to relatives could be a possible reason for late presentation for care.
CHAPTER 5

5.0 DISCUSSION

The following discussion focuses on major finding of the study.

Having an HIV test due to illness was an independent risk factor associated with late presentation to HIV/AIDS care in Harare City. This factor was the most significant in this study. This finding is similar to what Abaynew found out where illness at first HIV positive test was significantly associated with late presentation (OR=2.61, 95% CI=1.26-5.43)\textsuperscript{37}. This is also supported by evidence from India where 83% of participants classified as late presenters had an AIDS defining illness or a sexually transmitted infection\textsuperscript{52}. This could mean that individuals are only coming to testing centres primarily when they have developed AIDS related conditions. This might also be due to stigma related issues both at community and health facility level. The public health message derived from this finding is that late presentation might be a direct consequence of late diagnosis of HIV and ultimately late linkage to care and treatment.

Experiencing stigma as a result of being HIV positive was independently associated with presenting late to HIV/AIDS care (OR=2.99, 95% CI=1.54-5.79). That stigma in community settings has the likely effects of hindering early presentation for care. This may be due to the fact there might be loss of material and/or emotional benefits if one’s status is known in the community, particularly in Harare City, where some occupations such as pirate taxi driving and vending are accompanied by verbal abuse thus patients who are in these occupations are stigmatized by their peers in the same trades\textsuperscript{53}. This finding gives credence to overwhelming...
evidence that HIV related stigma is a hindrance to early presentation for care in Africa and beyond\textsuperscript{32, 34, 45}.

In this study, being male was an independent risk factor for presenting late for HIV/AIDS care in Harare City. Several studies have also reported low uptake of HIV services among men as compared to women in different settings\textsuperscript{21, 29, 41}. This finding supports the notion that men generally do not seek testing and counselling services on a routine basis, thus leading to late diagnosis of HIV when they are already on late stage disease progression. Haskew, et al, reported that men had 1.4 times higher odds of presenting to the clinic late in the course of HIV infection compared to women\textsuperscript{54}. This finding may also be explained in the general sense, that women have more contact with the health facility on a more routine basis than men. Women attended antenatal care clinics and other maternal and child health related clinics hence are more likely to be tested as service provided in the continuum of care. The introduction of Option B+ on Harare City has also increased the likelihood of early presentation among women. Mujumdar, et al, in a study of an HIV-1 infected population in rural India found out that males were twice as likely to present late more than females\textsuperscript{52}. The study noted that however that the majority of the study population was males in the reproductive age group.

Receiving information on HIV was an independent protective factor for late presentation to HIV/AIDS care in Harare City (OR=0.37, 95% CI=0.18-0.78). Information sharing and dissemination is a form of empowerment which capacitates patients to make an informed decision, which, in this case is presenting early for care. Patients would have likely accessed information on HIV through the visual and print media and crucially when they went for routine HIV testing and counselling at VCT centres situated around the city of at outpatient departments at clinics. Ndawitz, et al, in Cameroon reported that living in a region with higher comprehensive
knowledge of HIV/AIDS was associated with not initiating ART late (aOR=0.8, 95% CI=0.6-1.0)\textsuperscript{42}. This suggests that information dissemination hugely increases awareness of the risks associated with HIV and this provides an opportunity for public health practitioners to craft messages for specific at risk populations in Harare City. The print and electronic media also play an active role in reaching out to communities and facilitate behavior change.

In this study, those who earned more than US$250 were less likely to present late for HIV/AIDS care (OR=0.32, 95% CI=0.76-0.67). It is plausible that when income is high, this might also reciprocate into better access to health services. Louis, et al, in Haiti reported that poverty i.e. earning below the poverty datum line was significantly associated with late presentation for HIV care at ART initiating clinics\textsuperscript{55}. Furthermore, those who earn below the poverty datum line are likely to be self-employed hence do not have access to work related testing and counselling services, which are enjoyed by their formally employed counterparts. Also, those who earn less are likely to be more preoccupied with selling their wares that they may not be cognizant of the need to visit the health facility regularly. In the study by Louis, it was also reported that extreme poverty (living below the poverty datum line of < $300) was a theme of all of the respondents.

Drinking alcohol was significantly associated with late presentation with HIV/AIDS care (OR\textsuperscript{-2.33}, 95% CI=1.41-3.87) although not significant after inclusion in the third regression model. This means that clients who consumed alcohol were not ready to enroll into care due to an impending suggestion to stop alcohol intake during their treatment. Studies in India and Ethiopia have also shown that alcohol intake is significantly associated with not receiving treatment\textsuperscript{53, 37}. This finding also suggests that alcohol intake may be responsible for a greater amount of denialism that is associated with presenting late for care. It is important to coin messages aimed at the risks of alcohol use when one tests positive and also for regular counseling and testing.
Going for routine HIV testing and counselling was significantly associated with presenting late for HIV/AIDS care (OR=0.42, 95% CI=0.25-0.69). Routine HIV testing gives clients the benefits of knowing their status thus are responsible for their own health. If one knows their status they are more likely to seek care earlier thus can access linkage to care. This finding is consistent with what Ddamulira, et al, reported in Uganda where knowledge of routine HIV testing and counselling services were significantly associated with early diagnosis and ultimately earlier linkage to care (aOR=2.31, 95% CI=1.21-4.72)\textsuperscript{56}. The public health message from this finding is that if one regularly goes for HIV testing and counselling, they are in a position to get early diagnosis and ultimately early initiation into care, with the right counselling. With this in mind, programme managers in Harare City ought to find strategies to encourage routine testing and counselling.

Limitations of the study

The study relied on patients’ self-reporting of historical events, thus creating recall bias. This was minimized by selecting patients initiated in the 2014 cohort, who were more likely to remember events more vividly. Characteristics of patients who never attended OI/ART clinics at Beatrice and Wilkins Hospital could not be established, which could have affected generalizability of the study results.
CHAPTER 6

6.0 CONCLUSIONS AND RECOMMENDATIONS

6.1 Conclusions
Late presentation to HIV/AIDS care in Harare City affected both males and females. Multiple factors were associated with late presentation to HIV/ADIS care in Harare City. Getting an HIV test due to illness, being male and experiencing HIV related stigma were identified independent risk factors associated with late presentation in the city. Receiving information on HIV and earning more than US$250 monthly were independent protective factors associated with late presentation for HIV/AIDS care in the city. The findings of this study guided AIDS and TB programme managers, particularly the Prevention, Testing and Counselling section on addressing late presentation in Harare City.

6.2 Recommendations
1. To develop information, education and communication material targeting males and particularly in male dominated settings such as workplaces and leisure centres- National Advocacy, Communication and Social Mobilization Officer.
2. To incorporate anti HIV stigma strategies in all health plans in the City. For example providing anti stigma messages in water and sanitation, nutrition and immunization program plans- Health Promotion Officer, Harare City Health Department.
3. To increase awareness on the risks of late disclosure of HIV status by partnering organizations for people living with HIV for development of an “early test” campaign.- Health Promotion Officer and Principal Nursing Officer, Harare city Health Department
4. Further research on the uptake of HIV testing and counselling in Harare City is strongly suggested- Public Health Officer-Harare City Health Department
REFERENCES


23. UNAIDS, 90 90 90- an ambitious target to help end the AIDS epidemic. UNAIDS, October 2014.


49. Dahab M et al. that is why I stopped the ART: patients and provider perspectives on barriers to and enablers of HIV treatment adherence in a South African workplace programme. BMC Public Health 2008 (8):63.


## APPENDICES

### Appendix 1: Project Budget

<table>
<thead>
<tr>
<th>Item</th>
<th>Unit Cost (USD)</th>
<th>Quantity</th>
<th>Total cost (USD)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fuel</td>
<td>1.49</td>
<td>80L</td>
<td>111.20</td>
</tr>
<tr>
<td>Bond paper</td>
<td>5.00</td>
<td>1</td>
<td>5.00</td>
</tr>
<tr>
<td>Pen</td>
<td>0.20</td>
<td>4</td>
<td>1.0</td>
</tr>
<tr>
<td>JREC fees</td>
<td>50</td>
<td></td>
<td>50</td>
</tr>
<tr>
<td>Council fees</td>
<td>50</td>
<td></td>
<td>50</td>
</tr>
<tr>
<td>Lunch (PHO)</td>
<td>10</td>
<td>10 days</td>
<td>100</td>
</tr>
<tr>
<td><strong>Grand total</strong></td>
<td></td>
<td></td>
<td><strong>317.20</strong></td>
</tr>
</tbody>
</table>
APPENDIX 2A

PARTICIPANT INFORMED CONSENT

PROTOCOL TITLE: Factors Associated with Late Presentation to HIV/AIDS Care in Harare City, 2015

NAME OF RESEARCHER: Howard Nyika

PHONE: 0777 995 940

PROJECT DESCRIPTION:

You have decided to take part in the research study named above. The study will collect your information about your age, gender and income, place of residence and risk factors for late presentation to HIV/AIDS Care in Harare City. This consent form gives you information about the collection, storage and future use of data collected from you. Please ask if you have any questions. You will be asked to sign or make your mark on this form to indicate whether or not you agree to participate in the study. You will be offered a copy of this form to keep and will keep the other form for at least 3 years.

YOUR RIGHTS

Before you decide whether or not to volunteer for this study, you must understand its purpose, how it may help you, the risks to you, and what is expected of you. This process is called informed consent.

PURPOSE OF RESEARCH STUDY

The study seeks to determine factors Associated with Late Presentation to HIV/AIDS Care in Harare City, 2015. The factors being looked at are divided into client related, health service related, economic and cultural. You will also be asked on your perceived benefits of presenting early for HIV treatment.
PROCEDURES INVOLVED IN THE STUDY

Data will be collected using an interviewer administered questionnaire and checklists. The questionnaire you will respond to consists of open ended and closed ended questions and also a closed-ended rating scale question.

DISCOMFORTS AND RISKS

There are ethical risks related to storing your information. It is possible that if others find out information about you in the questionnaire, it could cause you problems of stigmatization. To minimise this risk your information will be strictly put under lock and key. Information collected from you will be used only for academic purposes.

POTENTIAL BENEFITS

There are no immediate benefits to you from having your information stored. You and others could benefit in the future from research done on you.

STUDY WITHDRAWAL

You may choose not to enter the study or withdraw from the study at any time without loss of benefits entitled to you.
CONFIDENTIALITY OF RECORDS

Completed questionnaires and checklists will be kept under lock and key for at least 3 years after which they may be destroyed. To keep your information private, your name will not be written on the questionnaire.

PROBLEMS/QUESTIONS

Please ask about this research or consent now. If you have any questions in future please ask.

AUTHORIZATION

I have read this paper about the study or it was read to me. I understand the possible risks and benefits of this study. I know being in this study is voluntary. I choose to be in this study. I know I can stop to be in this study and I know I will not lose any benefits entitled to me. I will get a copy of this consent form

__________________________________________________________________________

Client Signature or Mark                              Date

__________________________________________________________________________

Client Name (Printed)

__________________________________________________________________________

Researcher Signature                              Date

__________________________________________________________________________

Witness Signature                              Date
Appendix 2B

FOMU RECHIBVUMIRANO

MUSORO WE NYAYA: Factors Associated with Late Presentation to HIV/AIDS Care in Harare City, 2015

ZITA REMU WONGORORI : Howard Nyika

FONI : 0777 995 940

NHANGA NYAYA


MA RIGHTS ENYU

Kupinda mutsvakiridzo iyi hakumanikidzwi. Makasununguka kubuda mutsvakiridzo iyi nguva ipi zvayo tiri mutsvakiridzo yacho kunyange manga mambobvuma pekutanga uye kubuda mutsvakiridzo iyi hakukanganisi kurapwa kwenyu kwamanga muchiwana nguva dzose.

CHINANGWA

**MAITIRWO ACHAITWA TSVAKIRIDZO IYI**


**NJODZI KANA KUSHUNGURUDZIKA MUTSVAKIRIDZO IYI**

Pane zvinonogona kusakusunungurai zvingaitika patinenge takachengeta humbowo hwenyu. Zvinogona kuitika kuti umwe munhu anogona kuwona humbowo hwenyu zvingaita kuti magariro enyu mudunhu ange ane kushungurudzika. Kudzivirira izvi tichachengetedza zvakanyanya humbowo hwenyu. Hambowo hwenyu tichahushandisa kune zvekudzidza chete.

**ZVINGAKUYAMURAIWO PAKUPINDA MUTSVAKIRIDZO IYI.**

Hapana kuyamurika kwamunoita pakupinda mutsvakiridzo iyi munguva yamunenge muri mutsvakiridzo asi imwi nevamwewo munogona kuzoyamurika mune ramangwana.

**KUBUDA MUTSVAKIRIDZO**

Munokwanisa kubuda mutsvkiridzo iyi ichiri pakati kana pane ipi zvayo nguva. Izvi hazvichinji zvamunenge muchi fanira kuwana.
KUCHENGETEDZWA KWENYAYA YENYU

Ma Fomu aya acha chengetwa kwe ma kore anokwana kuita matatu, pedzezvo ozopiswa kuitira kuchengeta nyaya yenyu. Kuchengetedza chimiro chenyu, zita renyu haridiwi pabepa rine mubvunzo yamuchapindira.

MIBVUNZO

Munokwanisa kubvunza chero mubvunzo nezve tsvakiridzo iyi izvezvi. Kana muneimwe mibvuzo pa mberi muno kwanisa kubvunza zvakare.

SIMBA REKUENDA MBERI


_______________________________
Siganature ye ariku pindura                        Zuva

_______________________________
Zita Re ariku pindura

_______________________________
Signature ye Mutsvaki                          Zuva

_______________________________
Signature ye Mupupuri                          Zuva
Appendix 3

Interview Guide for Key Informants (English)

My name is Howard Nyika. I am an MPH Officer attached to the AIDS and TB Unit in Harare. I am conducting a study on Factors Associated with late Presentation to HIV/AIDS Care in Harare City, 2015. If possible I would like to take 20 minutes of your time interviewing you on the above mentioned topic. Whatever we discuss will remain private and confidential. The information you will provide will only be used for this study but it may be shared with the Health Studies Office and University of Zimbabwe lecturers where need arises. Your name will not be recorded in order to protect your identity. You will therefore not be victimized in any way based on the responses you give in this study. Your participation is strictly voluntary.

Do you agree or you would like more clarity? Agree [ ] Do not Agree [ ]

Participant Signature………………………………………………

Part A: Demographic characteristics

Sex (observe only) [ ] Female [ ] Male

1. Age (completed years) ……………………

2. How long have you been in service?...../…./…..

3. How long have you been in your current post?....../…/…

4. What is your marital status? [ ] Single [ ] married [ ] divorced [ ] widowed

5. What is your Religion? [ ] Orthodox [ ] Traditional [ ] Pentecostal [ ] Muslim [ ] None

6. What is the highest level of education you attained?) [ ] Never went to school [ ] Primary
Secondary  [ ] Tertiary

**Part B: HIV program management**

7. Are you implementing the 2013 WHO ART guidelines?  [ ] Yes (check availability)  [ ] No

8. Do you offer laboratory services at your facility?  [ ] Yes  [ ] No

9. Do you experience CD4 machine breakdowns at your facility?  [ ] Yes  [ ] No

10. Are the health workers (nurses, doctors, counselors) in your facility trained in HIV program management?  [ ] Yes  [ ] No

If yes, what proportion of health workers (nurses, doctors, nurse aids, EHPs) were trained in your facility? ________________________________

11. Do you offer outreach services for HIV  [ ] Yes  [ ] No

12. What is the average waiting time for patients seeking HIV related services?  [ ] <10 minutes  [ ] 10 minutes  [ ] >10 minutes

13. Does your facility have information, education and communication materials for HIV management? (Confirm presence)?  [ ] Yes  [ ] No

14. If yes, have these been distributed to the community?  [ ] Yes  [ ] No

15. What do you think could be the cause of patients presenting late for HIV/AIDS care? __________________________________________________________

16. In your opinion what do you think should be done to prevent late presentation to HIV/AIDS care? ............................................................

___________Thank you___________
Appendix 4A

Questionnaire for Study participants (English)

QUESTIONNAIRE FOR RESPONDENTS

My name is Howard Nyika. I am an MPH Officer attached to the AIDS and TB Unit in Harare. I am conducting a study on *Factors Associated with late Presentation to HIV/AIDS Care in Harare City, 2015*. If possible I would like to take 20 minutes of your time interviewing you on the above mentioned topic. Whatever we discuss will remain private and confidential. The information you will provide will only be used for this study but it may be shared with the Health Studies Office and University of Zimbabwe lecturers where need arises. Your name will not be recorded in order to protect your identity. You will therefore not be victimized in any way based on the responses you give in this study. Your participation is strictly voluntary.

Do you agree or you would like more clarity? Agree [  ] Do not Agree [  ]

Participant Signature…………………………… Date…………………….

Interviewer Signature…………………………….

QUESTIONNAIRE No. ………… Date of Interview…………………

1. Facility: Wilkins Hospital [  ] Beatrice Road Hospital [  ]

2. Status of Respondent Case [  ] Control [  ]

3. Age (Completed years)……………

4. Sex : Male [  ] female [  ]

5. Date of HIV test…………………

6. Date of entry into care………………….
7. Point of entry for care: PMTCT [ ] VCT [ ] Outpatients [ ] Ward [ ]
8. WHO Clinical Stage at Presentation: Stages 1[ ] 2[ ] 3[ ] 4[ ]
9. CD4 at presentation: ……….cells/uL
10. Marital Status: Married/Cohabiting [ ] Single [ ] Divorced [ ] Widowed [ ]
11. What is the highest level of Education you have attained? None [ ] Primary [ ] Secondary [ ] Tertiary [ ]
12. What was your religion? Pentecostal [ ] Apostolic [ ] Muslim [ ] Traditional [ ] Other (Specify)………..
13. What type of employment were you in? Formal employment [ ] Self-employed [ ] Unemployed [ ]
14. Where did you live? High density surub [ ] Medium density surub [ ] Low density surub [ ]
15. Who did you live with? Alone [ ] Spouse [ ] Relatives [ ] Friends [ ] Others (Specify)………………

Socio-economic Factors

16. What was your average monthly income? <$150 [ ] $150-$250 [ ] $250-$500 [ ] $500+ [ ]
17. Who owned the accommodation that you lived in? Owner [ ] Family [ ] Rented [ ] other (Specify)………..
18. How much money did you use to travel to the health centre?……..US$
19. How long did it take you to get to the health facility?……..minutes.

Socio-Cultural factors
20. Before enrolling in HIV care, did your church give you HIV related teachings Yes [ ]
   No [ ]

21. Did you seek treatment elsewhere before enrolling into HIV Care? Yes [ ] No [ ]

22. If Yes. Where did you seek treatment? ..............................................................

Client related factors

23. What was your reason for getting tested? Pregnancy [ ] Work related [ ]
   hospitalization [ ] Couple Testing [ ] Pushed by Significant others [ ]

24. If pregnant, how old was the pregnancy?.......months

25. Were you ill when you enrolled into care? Yes[ ] No [ ]

26. If yes, were you hospitalized due to this illness? Yes [ ] No [ ]

27. When were you hospitalized? ....../...../.....

28. Prior to enrolling for HIV/AIDS care, had you received any information on HIV
   testing and counselling? Yes [ ] No [ ]

29. If yes, please specify the source of information. Health worker [ ] Radio [ ] TV [ ]
   Campaigns [ ] other (specify).............

30. Prior to enrolling for HIV/AIDS care, did you go for routine HIV testing and
   counselling? Yes [ ] No [ ]

31. If yes, how many times per year? .......times

32. Prior to enrolling for HIV/AIDS care, did you perceive ARVs as having side effects?

   Yes [ ] No [ ]

33. Prior to enrolling for HIV/AIDS care did you perceive HIV as a stigmatizing disease?

   Yes [ ] No [ ]

34. Before enrolling into HIV/AIDS care, did you drink alcohol? Yes [ ] No [ ]
35. If yes, how many pints per day?........pints
36. How long had you been with your steady partner before enrolling into care?........months.

**Perceived benefits of early presentation to HIV/AIDS care**

37. Do you think early presentation for HIV/AIDS care has benefits? Yes [ ] No [ ]
38. Do you think stigma may prevent someone from presenting early for care? Yes [ ]
   No [ ]
39. Prior to enrolment into care, did you attend any counselling session?
40. If yes, how many?,,,,,,,,,,,,

**Health system related factors**

41. Before you enrolled into care, did you face any challenges accessing HIV testing services? Yes [ ] No [ ].
42. If yes, please specify these challenges. No money for transport [ ] stock out of testing kits [ ] other (specify)…………………………………………………………
43. Were health workers supportive and encouraging when you came to seek testing and counselling services? Yes [ ] No [ ]
44. How do you rate the quality of HIV/AIDS services at this facility? Good [ ] Fair [ ] Poor [ ]
45. Would you recommend these services to anyone seeking HIV/AIDS care? Yes [ ] No
46. Do you face challenges accessing drugs at this facility? Yes [ ] No [ ]
47. If yes, please specify these challenges………………………………………………
48. Are you a member of a support group? Yes [ ] No [ ]

*THANK YOU FOR YOUR TIME, ENJOY YOUR DAY*
Appendix 4B

**Questionnaire for Study Participants (Shona)**


Munobvuma here kuita hurukuro? Hongu [ ] Kwete [ ]

Participant signature…………………………. Date…./…./

Questionnaire Number……………..Date of Interview……………………

1. Facility Wilkins hospital [ ] Beatrice Road Hospital [ ]
2. Status of respondent Case [ ] Control [ ]
3. Makore ekuberekwa (akazara)...........
4. Sex : Male [ ] Female [ ]
5. Date Of HIV Test…./…./
6. Date of entry into care……………………..
7. Point of entry into care : PMTCT [ ] VCT [ ] Outpatients [ ] Ward [ ]
8. WHO clinical stage at presentation: Stages 1 [ ] 2 [ ] 3 [ ] 4 [ ]

9. CD4 at presentation: …………………..cells/uL


11. Makasvikawo pachitanho chipi paku dzidza? None [ ] Primary [ ] Secondary [ ] Tertiary [ ]

12. Maipinda chitendero chipi? Pentecostal [ ] Apostolic [ ] Muslim [ ] Traditional [ ] Other (specify) …………………………………………

13. Maishanda bassa ripi? Formal employment [ ] Self-employed [ ] unemployed [ ]

14. Maigara kupi? High density surbub [ ] Medium density surbub [ ] Low density surbub [ ]

15. Maigara nani? Alone [ ] Spouse [ ] Relatives [ ] Friends [ ] others (specify)………………………………..

**Socio-economic factors**

16. Maiwana mari yakawanda sei pamwedzi? ,$150 [ ] $150-$250 [ ] $250-$500 [ ] $500+ [ ]

17. Ndiani aive muridzi we pamaigara? Owner [ ] Family [ ] Rented [ ] Other(specify)………………

18. Maishandisa mari yakawanda sei kuenda kuchipatara?........US$

19. Zvaitora nguca yakadii kuti musvike ku chipatara?..............minutes

**Socio-Cultural factors**

20. Musati mapinda pachirongwa, kereke yenyu yaiku dzidzisai nezve HIV? Yes [ ] No [ ]

21. Musati mave pachirongwa, pane kumwe kwamakambo tsvaga rubatsiro? Yes [ ] No [ ]
22. Kana kuriko, makaenda kupi? .................................................................

**Client related factors**

23. Chikonzero chei chakaita kuti muuye kuzowongororwa ropa? Pregnancy [ ] Work related [ ] Hospitalization [ ] couple testing [ ] Pushed by significant others [ ]

24. Kana maive makazvitakura, nhumbu yanga yakura zvakadi? ......weeks

25. Makanga mave kurwara here pamakazo pinda muchirongwa? Yes [ ] No [ ]

26. Kana mairwara, makapiwa mu bhedha ku chipatara here? Yes [ ] No [ ]

27. Makapiwa rini mubhedha? ....../../...

28. Musati mapinda pachirongwa, makanga mambowana ruzivo mairirano ne chirwere che HIV/AIDS? Yes [ ] No [ ]

29. Kana makawana ruzivo, makaruwana kupi? Health worker [ ] radio [ ] TV [ ] campaigns [ ] other(specify)...........

30. Musati mapinda pa chirongwa mainboenda here kunowongororwa ropa kutsvakurudza HIV? Yes [ ] No [ ]

31. Kana maienda, maienda kangani pa gore?......times

32. Musati mapinda pachirongwa, maifungidzira kuti ma ARV anogona ku kanganisa muviri here? Yes [ ] No [ ]

33. Musati mapinda pachirongwa, maifungidzira kuti HIV chaive chirwere chaikonzera rusarura here? Yes [ ] No [ ]

34. Musati mapinda pachirongwa mainwa doro here? Yes [ ] No [ ]

35. Kana minwa doro, mainwa ma paindi managani pa zuva?....pints

36. Musati mave pachirongwa manga mave nemudiwa wenyu kwenguva yakareba sei?............months.
Perceived benefits of early presentation to HIV/AIDS care

37. Semaonero enyu munofunga kuti kuuya kuchipatara kuzowana rubetsero nechikonzero che HIV/AIDS kunobetsera? Yes [ ] No [ ]

38. Munofunga here kuti kusarura kungaita kuti munhu asauya kuzowana rubetsero pachine nguva? Yes [ ] No [ ]

39. Musati mapinda pa chirongwa makamboita zvidzidzo zve HIV?

40. Kana makaita, zvingani?.............

Health system related factors

41. Musati mapinda pachirongwa, makambosangana ne dambudziko pakuwana kwekuongororwa ropa? Yes [ ] No [ ]

42. Kana makasangana nawo ,ndeapi? No money for transport [ ] stock out of testing kits [ ]
other (specify)..............................

43. Vashandi veutano pachipatara vaikurudzira here kuti muongorwe ropa pamaiuya ku chipatara? Yes [ ] No [ ]

44. Munowina sei kunaka kwe zvirongwa zve HIV/AIDS pa chipatara chino? Good [ ] Fair [ ]
Poor [ ]

45. Munga kurudzire here vamwe kuti vauye kuzowana rubatsiro rwe HIV pachipatara chino? Yes [ ] No [ ]

46. Munombo sangana nema tambudziko akanangana nekutora mapirotsi here pano? Yes [ ]
No [ ]

47. Kana muchisangana nawo, ndeapi?...............................................................................

48. Muri nhengo ye boka rinomirira vanorarama nehu tachiwana hwe HIV here? Yes [ ] No [ ]
TATENDA ZVIKURU NENGUVA YENYU, MOVA NEZUVA RAKANAKA
Appendix 5: Permission Letter: Harare City Health Department

CITY OF HARARE

18 May 2015

Mr Haward Nyika
University of Zimbabwe
Department of Community Medicine
College of Health Services
P Bag A178
HARARE

Dear Sir

RE: PERMISSION TO CONDUCT A STUDY AT WILKING AND BEATRICE INFECTIOUS DISEASES HOSPITAL

I acknowledge receipt of your letter in connection with the above

Permission has been granted for you to conduct a study entitled: “Factors associated with late presentation to HIV/AIDS in Harare City 2015” at Beatrice Road Infectious Diseases Hospital and Wilkins Infectious Diseases Hospital.

For further assistance please liaise with the Matron and Beatrice and Wilkins Infectious Diseases Hospitals.

Yours faithfully

DIRECTOR OF HEALTH SERVICES
IM/rm

c.c. Matron - BRIDH
        Matron - WIDH
        Ethics committee
Appendix 6: Ethics Approval Letter

Joint Research Ethics Committee
For The University of Zimbabwe,
College of Health Sciences and
Parirenyatwa Group of Hospitals

APPROVAL LETTER

Date: 10th June 2015
JREC Ref: 131/15

Name of Researcher: Mr Howard Nyika
Address: University of Zimbabwe, Department of Community Medicine

Re: Factors Associated With Late Presentation To HIV/AIDS Care In Harare City, 2015.

Thank you for your application for ethical review of the above mentioned research to the Joint Research Ethics Committee. Please be advised that the Joint Research Ethics Committee has reviewed and approved your application to conduct the above named study. You are still required to obtain MRCZ approval and if required by the nature of your study, RCZ approval as well, before you commence the study.

- APPROVAL NUMBER JREC/131/15
- APPROVAL DATE: 19th June 2015
- EXPIRY DATE: 18th June 2016

This approval is based on the review and approval of the following documents that were submitted to the Joint Ethics Committee:

a) Completed application form
b) Full Study Protocol
c) Informed Consent in English and/or appropriate local language
d) Data collection tool version:

After this date the study may only continue upon renewal. For purposes of renewal please submit a completed renewal form (obtainable from the JREC office) and the following documents before the expiry date:

a. A Progress report
b. A Summary of adverse events.
c. A DSMB report
- **MODIFICATIONS:**
  Prior approval is required before implementing any changes in the protocol including changes in the informed consent.

- **TERMINATION OF STUDY**
  On termination of the study you are required to submit a completed request for termination form and a summary of the research findings/results.

Yours sincerely

Dr N Madziva
For JREC Chairman
Appendix 7: Medical Research Council of Zimbabwe Approval

Ref: MRCZ/B/875
7 July, 2015

Mr Howard Nyika
Department of Community Medicine
College of Health Sciences
University of Zimbabwe
Harare

RE: - Factors Associated with late Presentation to HIV/AIDS care in Harare City

Thank you for the above titled proposal that you submitted to the Medical Research Council of Zimbabwe (MRCZ) for review. Please be advised that the Medical Research Council of Zimbabwe has reviewed and approved your application to conduct the above titled study. This is based on the following documents (among others) that were submitted to the MRCZ for review:

a) Research Protocol
b) Informed Consent forms (English and Shona)
c) Data Collection Tools, English and Shona

- APPROVAL NUMBER: MRCZ/B/875

This number should be used on all correspondence, consent forms and documents as appropriate.

- TYPE OF REVIEW: EXPEDITED
- EFFECTIVE APPROVAL DATE: 7 July, 2015

After this date, this project may only continue upon renewal. For purposes of renewal, a progress report on a standard form obtainable from the MRCZ Website should be submitted three months before the expiration date for continuing review.

- SERIOUS ADVERSE EVENT REPORTING: All serious problems having to do with subject safety must be reported to the Institutional Ethical Review Committee (IERC) as well as the MRCZ within 3 working days using standard forms obtainable from the MRCZ Website.

- MODIFICATIONS: Prior MRCZ and IERC approval using standard forms obtainable from the MRCZ Website is required before implementing any changes in the Protocol (including changes in the consent documents).

- TERMINATION OF STUDY: On termination of a study, a report has to be submitted to the MRCZ using standard forms obtainable from the MRCZ Website.

- QUESTIONS: Please contact the MRCZ on Telephone No. (04) 791792, 791193 or by e-mail on mrcz@mrcz.org.zw

Other
Please be reminded to send in copies of your research results for our records as well as for Health Research Database.
You’re also encouraged to submit electronic copies of your publications in peer-reviewed journals that may emanate from this study.

Yours Faithfully,

[Signature]

MRCZ SECRETARIAT
FOR CHAIRPERSON
MEDICAL RESEARCH COUNCIL OF ZIMBABWE

PROMOTING THE ETHICAL CONDUCT OF HEALTH RESEARCH