



THE UNIVERSITY OF ZAMBIA
SCHOOL OF MEDICINE

**FACTORS ASSOCIATED WITH LOSS TO FOLLOW-UP AT
UNIVERSITY TEACHING HOSPITAL AMONG FEMALE
VICTIMS OF SEXUAL VIOLENCE IN LUSAKA:
A PROSPECTIVE COHORT STUDY**

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DISSERTATION SUBMITTED IN PARTIAL FULFILLMENT OF THE
REQUIREMENT AND FOR THE DEGREE OF MASTER OF MEDICINE
IN OBSTETRICS AND GYNAECOLOGY

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DEDICATION

This work is dedicated to:

My loving and tolerant wife Loveness Chimwemwe Mbulo for her support and patience during my long working hours.

My dearest children Ritah Langa Mapalo Kawimbe and Joseph Kasunga Kawimbe for the moments of their childhood that I could not be a father for them as I worked on this research.

All victims of sexual assault past and present for whom it is my wish that God will grant them excellent care, justice and mental liberation from what they have innocently suffered.

DECLARATION

I ALEXANDER BAMBALA KAWIMBE DO HEREBY DECLARE THAT THIS DISSERTATION HEREIN PRESENTED FOR THE DEGREE OF MASTER OF MEDICINE IN OBSTETRICS AND GYNECOLOGY HAS NOT BEEN PREVIOUSLY SUBMITTED WHOLLY OR IN PART FOR ANY OTHER DEGREE AT THIS OR ANY OTHER UNIVERSITY, NOR IS IT BEING CURRENTLY SUBMITTED FOR ANY OTHER DEGREE.

SIGNED _____

DR. ALEXANDER BAMBALA KAWIMBE

APPROVED BY _____

DR BELLINGTON VWALIKA (SUPERVISOR)

STATEMENT

I HEREBY STATE THAT THIS DISSERTATION IS ENTIRELY THE RESULT OF MY OWN PERSONAL EFFORT. THE VARIOUS SOURCES TO WHICH I AM INDEBTED HAVE BEEN CLEARLY INDICATED IN THE ACKNOWLEDGMENT AND REFERENCE LIST.

SIGNED

DR ALEXANDER BAMBALA KAWIMBE

APPROVAL

THE DISSERTATION OF DR ALEXANDER BAMBALA KAWIMBE IS APPROVED
AS FULFILLING PART OF THE REQUIREMENT FOR THE AWARD OF THE
DEGREE OF MASTER OF MEDICINE IN OBSTETRICS AND GYNAECOLOGY BY
THE UNIVERSITY OF ZAMBIA.

SIGNATURES

ABSTRACT

Introduction: Up to 20% of Zambian women between 15 and 49 years of age have experienced some form of sexual violence. Despite a growing public recognition of gender-based violence (GBV) and its attendant health consequences, less than 50% of survivors ever reach a health facility and of these, less than 60% complete their prescribed follow-up care, which includes return at 1 week, 1 month and 3 months etc depending on the case. There is currently no reliable data to know who or why there is such a huge loss to follow-up.

Methods: A prospective cohort study of all survivors of sexual violence in Lusaka, presenting to University Teaching Hospital (UTH) between June and September 2012, to determine factors associated with failure to return for review. File review was conducted after three months of being seen to assess care received at the hospital and adherence to follow-up.

Results: A total of 158 eligible survivors were seen out of which 115 patient files were analyzed and the following data relate to these 115. Survivors of sexual assault were mainly teenagers between 13 and 19 years of age (n = 83, 72.2%), single (n = 106, 92%), unemployed (n = 109, 94.8%) and with no income (n = 93, 81.6%). The perpetrator was known to his victim in most cases (n = 98, 85.2%) and usually considered a friend or relative (n = 62, 61.4%). Almost half of the survivors were threatened or injured (n = 51, 45.1%) but injuries requiring treatment were uncommon (n = 2, 11.8%). A large number of survivors (n=99, 86.1%) did not come for review at 3 months and were deemed lost to follow-up while 16 (13.9%) returned for follow-up. The odds of being lost to follow-up were significantly increased in survivors that knew the assailant and in survivors whose files did not show that an appointment for review was given. Marital status [OR 0.41, 95% CI 0.16 – 1.05] and average monthly income [OR 0.69, 95% CI 0.37 – 1.30] were not significantly associated with loss to follow-up.

Conclusion: Loss to follow up at UTH among survivors of sexual violence in Lusaka was high and associated with knowing the assailant and not being given an appointment for review by the attending doctor.

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CONTENTS

Dedication.....	i
Declaration.....	ii
Statement.....	iii
Approval.....	iv
Abstract.....	v
Acknowledgement.....	vi
Contents.....	vii
List of charts.....	viii
List of tables.....	viii
Abbreviations and acronyms.....	ix
1.0 Introduction.....	1
2.0 Literature review.....	3
3.0 Study justification and rationale.....	8
4.0 Significance of study.....	9
5.0 Research question.....	10
6.0 General Objective.....	10
7.0 Specific Objectives.....	10
8.0 Methodology.....	11
9.0 Ethical considerations.....	15
10.0 Results.....	16
11.0 Discussion.....	34
12.0 Study limitations.....	36
13.0 Conclusion.....	37
14.0 Recommendations.....	38
References.....	39

LIST OF CHARTS	PAGE
Figure 1: Study profile.....	16
Figure 2: Proportion of survivors of sexual violence by entry point.....	21
Figure 3: Age distribution of survivors of sexual violence	22
Figure 4: Proportion by age group among survivors of sexual violence.....	22
Figure 5: Marital status of survivors of sexual violence	23
Figure 6: Education status of survivors.....	24
Figure 7: Average monthly income.....	25
Figure 8: Age at first sexual assault.....	26
Figure 9: Relationship with assailant.....	27
Figure 10: Threats, Injury and Treatment of injuries.....	28
Figure 11: Waiting time at the hospital.....	29
Figure 12: Quality of follow up among those who returned for review.....	30

LIST OF TABLES

Table 1: Study variables stratified by whether LTFU or not.....	18
Table 2: Determinants of loss to follow-up.....	31
Table 3: Logistic regression analysis of factors associated with loss to follow-up.....	33

ABBREVIATIONS AND ACRONYMS

AIDS – Acquired Immunodeficiency Syndrome

CSAC– Child Sexual Abuse Centre

CSO – Central Statistical Office

DHS – Demographic and Health Survey

EC – Emergency Contraception

GBV – Gender Based Violence

GRZ – Government Republic of Zambia

HIV – Human Immunodeficiency Virus

LTFU – Loss to follow-up

PEP – Post Exposure Prophylaxis

STIs – Sexually Transmitted Infections

SV – Sexual Violence

TDRC – Tropical Diseases Research Centre

USA – United States of America

UTH – University Teaching Hospital

UNZABREC - University of Zambia Biomedical Research Ethics Committee

1.0 INTRODUCTION

Worldwide, an estimated one in every three women will experience some form of gender-based violence (GBV) in their lifetime (1). Defined broadly, GBV includes all forms of physical, psychological and sexual violence that are related to the victim's gender or gender role in a society or culture (2). The term "sexual violence" (SV) as defined by the World Health Organization (WHO) means "... Any sexual act, attempt to obtain a sexual act, unwanted sexual comments and advances or acts to traffic or otherwise directed against a person's sexuality using coercion, by any person regardless of their relationship to the victim..." (3) while being cognizant of other terms, such as rape and sexual assault, which are often used interchangeably.

Sexual violence can result in negative short and long-term health outcomes, including physical trauma such as vaginal fistula, HIV infection, unwanted pregnancy and unsafe abortion where abortion is legally restricted. Vulnerability to sexually transmitted infections (STIs), including HIV, may be higher than in consensual sex due to genital trauma and in cases of multiple perpetrators. Resulting psychological trauma can have a negative effect on sexual behavior and relationships, the ability to negotiate safer sex, and increased potential for drug abuse.

The health sector is at the nexus of prevention, treatment and rehabilitation following sexual violence. It should provide clinical treatment, preventive therapy, psychological support, and information and advice, commonly referred to as "Post-rape care" services. These need to interface with HIV services for HIV testing and counseling, and HIV post exposure prophylaxis (PEP) administration and adherence counseling. They also need to interface with reproductive health services for treatment of physical/genital trauma, emergency contraception (EC), abortion, and STI prophylaxis and treatment. The health sector should collect, store, analyze evidence of the effects of the violence, and deliver that

evidence to the criminal justice system for purposes of its investigations and use in any trial.

Early medical attention therefore ensures administration of comprehensive post-rape care services that include the above mentioned. It also ensures follow up of victims of sexual violence for the purposes of management of any conditions that may arise from this vice.

Anecdotal information indicates that loss to follow-up at UTH among survivors of sexual violence in Lusaka is high. Apparently, this formed part of the basis for establishing the “One-stop centre” among other reasons. This information, which is lacking, is vital in the management and planning of care for this group of women.

Previously, an assessment of the impact of the “One-stop centre” on the management and care after child sexual assault has been carried out by Chomba et al (5). In their report, they indicated that loss to follow-up was still a major challenge. However, there has been no formal search for answers about whom, why or when patients fall out of care (5).

This study focused specifically on one form of GBV, sexual violence (SV), defined under Zambian law as rape of adult women or defilement of children under the age of sixteen. The study aimed to determine the factors that are associated with failure to adhere to post rape/defilement care follow-up services.

2.0 LITERATURE REVIEW

A number of studies suggest that between 13% and 25% of women experience sexual assault at some time in their lives (10, 11, 12, 13 and 14). While public recognition of GBV is growing in Zambia, there is limited reliable data on the nature and extent of such violence (15). The 2007 Zambia Demographic and Health Survey (DHS) give some insight into prevalence of physical and sexual violence in the country, although it is widely believed to be an underestimate due to methodological constraints.

The survey demonstrates that Zambian women experience higher rates of physical violence than their counterparts in Malawi and Kenya do, and that husbands or other intimate partners are the most common perpetrators of such violence (15). The DHS data also shows that 20 percent of Zambian women between the ages of 15 and 49 years have ever experienced some form of sexual violence (3). This proportion does not take into account sexual violence occurring to girls younger than 15 years old.

A survey conducted by the Population Council in 2007 found that GBV was a common experience among young women in urban Lusaka. Seventy percent of those surveyed said girls in their school were teased or sexually harassed verbally, and 53 percent said girls in their school were sometimes molested, touched or sexually harassed. Thirty six percent of respondents had heard of a schoolgirl in their community who was forced to have sex with a teacher, 23 percent had heard of a girl forced to have sex with a classmate, and 48 percent had heard of a girl forced to have sex with a relative from within her household (1).

The risks associated with GBV, especially sexual violence among young women, are numerous and increasingly well documented. Immediate health consequences include unwanted pregnancy, physical trauma, emotional distress and transmission of STIs

including HIV that causes AIDS. The prevalence of Human Immunodeficiency Virus among convicted male sexual assault assailants may be twice as high as in the general male population that emphasizes the higher risk of HIV exposure following sexual assault (16). Research indicates that the risk of sero-conversion following forced sex is likely to be higher than following consensual sex, especially among children in Kenya (16). The increased violence associated with forced intercourse, and the lack of lubrication, can result in both microscopic and macroscopic mucosal tears (16). Forced anal penetration is thought to carry a commensurably higher risk of HIV transmission. The increased risk of infection is especially pronounced in the high HIV prevalence settings of sub-Saharan Africa. Women in Zambia, where there is currently a generalized HIV epidemic, are particularly at risk of increased HIV transmission due to sexual assault.

Despite these risks, many victims of sexual assault are lost to follow-up for recommended medical and psychological care once discharged from the emergency department as indicated by studies in USA and Australia (17, 18). For instance, in Boston USA, only 21% of sexual-assault victims who accepted HIV prophylaxis at the time of the emergency department visit completed the prescribed month of treatment (19). The majority of victims who started HIV prophylaxis (55%) failed to keep the follow-up appointments intended to assist them adhere to the medication regimen (19). The internet has promise to reach this elusive population for follow-up health care information and nursing research (4). This may however only be amenable in societies with highly affordable and readily available internet usage and not in low-income countries like Zambia.

Despite the high prevalence of sexual assault in the US, only 35.5% of victims were found to have received the recommend medical or psychological care after a hospital forensic exam (17). Telephone calls and mailings have been found to be ineffective as follow-up

mechanisms (20). For example, only 23% of victims who agreed to be contacted 3 months after the assault could be reached by telephone (20).

Research has demonstrated that the police are often the first, and only, point of contact for sexual violence survivors in Zambia (3). Of those who sought institutional support, nearly all (91 percent) reported to the police first. Records indicate that these survivors were inconsistently issued with a medical report form, which must be completed at the hospital and returned to the police with a doctor's signature to begin legal proceedings. Only 45 percent of the forms issued were returned to the police. Less than half as many survivors reported to health facilities $n = 1,077$ (32.8%) than to Police stations $n = 2,203$ (67.2%), suggesting that many who present to the police first do not go on to seek medical care (3).

Observations at the "One-stop centre" at UTH in Lusaka as reported by Chomba et al. reveals that in 2010, over 1400 victims of sexual violence were attended to (5). This demonstrated an increase in the number of cases being reported to the hospital since the inception of the one stop center at the pediatrics unit about 5years ago (5). However despite this increase, loss to follow up is still a major challenge as only 60% of the clients afford to complete their PEP and even many more are lost by the end of 3 months of care (5). No formal research has been done to look into this issue.

Victims' decisions to follow recommended care are influenced by many factors, including characteristics of the assault, lack of primary-care provider, medical-insurance status, availability of transportation and childcare, and comprehension of emergency-department discharge instructions (20). The high poverty levels in Zambia may be a major factor in deciding whether to return for review or to follow up with legal proceedings. Lack of follow-up after sexual assault may also be influenced by psychological factors. Victims may experience shame and guilt, depression, Post-Traumatic Stress Disorder (PTSD), or

other psychiatric concerns that contribute to the failure to seek and obtain health care (17). With so many possible factors interfering with victims' ability to comprehend and recall discussions about medications and recommended medical and psychological care, the follow-up appointment may be as important as the forensic exam itself (20).

As in many countries, South African health care providers often lack the training to provide quality care for rape survivors, provider attitudes may be negative, there are often no post-rape care protocols, service delivery may be uncoordinated, and there is little trauma counseling and psychosocial referral (21). At health facilities in Zambia, support services for SV survivors have been reported to be uniformly weak or inconsistent (3). Provision of these services was concentrated in a limited number of facilities, and was not consistently or correctly provided to eligible survivors. While few community members were aware of either emergency contraception (EC) or post exposure prophylaxis (PEP), they noted that unwanted pregnancy and HIV transmissions were the most detrimental consequences of sexual assault (3). A key barrier to seeking services was the "grey" fees charged at both the health and police facilities for signatures and forms.

Research has also indicated that survivors were routinely charged illegitimate fees for Police and health services in Zambia (3). At the police station, survivors were often required to provide 10,000 Kwacha (about 2.50 USD) to cover "photocopy charges" associated with the medical report form. At the health facility, a "signing fee" of 10,000 Kwacha was frequently asked for to ensure that a doctor completed and signed the medical report form (3). Such fees have been identified as a deterrent to seeking services, especially medical care. The government of Zambia is currently drafting a set of comprehensive guidelines that outlines coordinated responses to be taken by the health, police and social services sectors. The basic elements of such a response include clinical management of immediate injuries, police investigation and prosecution, and providing

immediate and long-term psychosocial support to survivors. Central to each sector's response is its ability to coordinate with the other sectors. This is especially pronounced concerning the police and health services, which are often the first points of contact for the survivors. Both medical and legal responses are required to ensure the health and safety of the survivor and are best done as soon as possible after the assault because evidence collection and efficacy of some treatments may be highly time dependent.

According to a study in British Columbia Canada, the characteristics predicting loss to follow-up include denial and avoidance behavior, lack of a telephone number or forwarding address, history of a psychiatric condition, a disability (e.g., deafness), characterization as a "street person," a high degree of violence or injury in the assault, and threat by the assailant (22).

Decisions regarding how to vigorously track patients with a complaint of sexual assault can tentatively be based on the characteristics of the victim and of the assault. It seems quite evident therefore that various factors come into play to influence whether to return for follow up appointment or not, after sexual assault. Understanding which of these factors influence victims of sexual violence the most is imperative in tailoring care that is orientated at minimizing loss to follow up. Proactive follow-up is necessary to increase the likelihood of PEP completion and address the mental health and HIV risk needs of survivors. Adherence interventions and targeted risk reduction counseling should be provided to minimize HIV acquisition (23).

3.0 STUDY JUSTIFICATION AND RATIONALE

There is adequate information on sexual violence, its outcome and implications. The women who are often the victims need to be educated, protected, supported and empowered against such vice.

Follow-up medical examinations are recommended after sexual-assault examinations to confirm successful prevention of STIs and pregnancy (4). Additionally follow-up visits offer an opportunity for victims to talk about their response to the trauma and its effect on their lives.

Similarly, mental-health follow-up visits provide an opportunity to address the psychological impact of a sexual assault, including posttraumatic stress disorder (PTSD) (6,7) and substance misuse (7, 8 & 9).

Considering the adverse effects of sexual violence against women and the apparent large loss to follow up at UTH among survivors of sexual violence, it was hoped that this study would find out the contributing factors to this situation and allow management decisions and policy changes to improve care for the victims. This study aimed to find out any factors that were connected with the victims of sexual violence who are lost to follow up.

4.0 SIGNIFICANCE OF STUDY

Sexual violence is a common problem in Zambian society. It is associated with shame, physical and genital trauma, infections such as HIV and other sexually transmitted diseases, depression and posttraumatic stress disorder, infertility and suicide. Many victims of sexual assault are lost to follow up for the recommended medical and psychological care once discharged from the emergency department. Without appropriate health care follow-up to address the risks of infections, pregnancy and mental health sequelae, victims may suffer significant consequences (4). Observations have shown that most victims of sexual violence at UTH do not return for review particularly beyond three months despite being counseled and scheduled to do so (5). This could be due to stigma and disclosure. However, women are still exposed to the many consequences of SV without medical follow up. These consequences may take the form of physical, social or psychological ill health which may not manifest immediately but sometime later after the incidence. Without follow up, these consequences may go unnoticed and may escalate. It is not known which survivors of sexual violence are most at risk of being lost to follow up. Currently every victim is managed same as any other which may be a huge loophole in the health system. Medical records are meticulously stored for many years after the victim has presented to the hospital. Without follow up care, they may not be useful.

5.0 RESEARCH QUESTION

To what extent is loss to follow-up among female victims of sexual violence seen at UTH and what are the contributing factors?

6.0 GENERAL OBJECTIVE

To determine the factors associated with loss to follow up at UTH among victims of sexual violence

7.0 SPECIFIC OBJECTIVES

7.1 To determine the magnitude of loss to follow up among victims of sexual violence.

7.2 To establish the socio-demographic factors associated with loss to follow among sexual violence victims.

7.3 To determine the patterns of presentation of victims of sexual violence who are lost to follow up.

8.0 METHODOLOGY

This was a prospective cohort study conducted between June and November 2012. The study was observational on routine hospital post-sexual violence care. Patient files for survivors of sexual violence that were enrolled were stored in a confidential and secure manner by the hospital as a routine and were retrieved at the end of three months using file numbers.

Eligible survivors of sexual violence were recruited either on arrival or soon after being seen by a medical officer while waiting for laboratory investigations and treatment. A standardized questionnaire was administered at enrollment to all consenting female victims of sexual violence. Unique serial numbers were assigned to each participant and indicated on the patients file to avoid duplicate enrollments.

The questionnaire was interviewer administered by study nurses or counselors that were trained in questionnaire administration and in how to obtain the required information as per research requirements. The nurses either were qualified psychosocial counselors or had basic knowledge in psychosocial counseling. A pilot study was undertaken in order to minimize errors and allowed for adjustments in the questionnaire design. The survivor's social demographic aspects were addressed in the questionnaire as well as details of the sexual assault and steps taken after the assault. Clients were also asked questions about previous sexual violence against them, the care that they received at the hospital concerning waiting time, payment of fees and counseling.

At 3 months from date of enrollment, patient files were retrieved and reviewed to assess adherence to follow up care. Questionnaires and patient files were tallied using the unique serial numbers that were assigned at enrollment.

Loss to follow up was defined as failure to return for a visit within 12 weeks of enrollment as scheduled in the plan of care.

Enrollment was made between 8th June and 21st August 2012 and the last review was on the 21st November 2012. Data analysis was commenced in December 2012, after a window of one month from last review and was restricted to traceable patient files with complete data.

Target population:

The target population was all females of Lusaka who were victims of sexual violence.

Study population:

The study population was female victims of sexual violence in Lusaka who accessed post rape/defilement care services at University Teaching Hospital (UTH), met the eligibility criteria and agreed to be enrolled. As UTH was the only place during the study period offering post rape/defilement health services in Lusaka, it was the selected study site.

Eligibility criteria:

All female victims of sexual violence accessing post rape/defilement services at UTH were eligible for the study. The following eligibility criteria were used:

- Any female with complaint of sexual assault coming to UTH for care
- Any age
- Provided consent if 18 years old and above
- Parent or guardian gave permission and/or child assented to the study if less than 18 years of age

Exclusion criteria

The following categories of survivors of sexual assault were excluded from the study:

- Non-consenting women
- No permission from parent/guardian or no assent from child less than 18years old
- Male survivors of sexual assault accessing services at UTH
- Women residing outside of Lusaka

Sampling method:

Convenient sampling method of survivors of sexual violence seen at UTH during the study period was used.

Sample size calculation:

Using OpenEpi, Version 2, open source calculator was used. A single proportion sample size calculation with the formula:-

Sample size $n = [DEFF * Np(1-p)] / [(d^2 / Z^2_{1-\alpha/2} * (N-1) + p*(1-p)]$ where

The population of Lusaka was 2million with 20.5% prevalence of sexual violence

Population size of females in Lusaka (N): 685551

That 50% of survivors of sexual violence reports their cases to hospital and percent (%)

frequency of sexual assaults reported to UTH (p): 10% +/- 5

Confidence limits as % of 100(absolute +/- %)(d): 5%

Design effect (for cluster surveys- $DEFF$): 1

The confidence level was set at 95%. This gave a required sample size of 139.

Data collection and analysis:

Data was collected using interviewer administered questionnaires then it was coded and entered on SPSS statistics 17.0 for analysis. Each entry was considered complete after three months when a file review was carried out for assessment of care received at the hospital and adherence to follow up.

Operational definitions:

Data was analyzed based on the following operational definitions:

Victim of sexual violence was any female, regardless of her age, presenting with the complaint of having been sexually assaulted.

Loss to follow-up was failure to return for any visit as scheduled in 3 months.

In this study, factors associated with loss to follow-up were analyzed based on the following three broad groups:

- Social demographic factors
- Circumstances of the sexual assault and
- Care received at UTH.

Means, medians and standard deviations were calculated. A two-sided Fisher's exact significance test was used whenever Pearson's chi-square test did not meet the expected count of five. Odds and Odds ratios were calculated for the effect of various independent variables on LTFU. A multivariate logistic regression was used for the effect of confounders on loss to follow up at 95% confidence interval (CI) with a p-value set at <0.05.

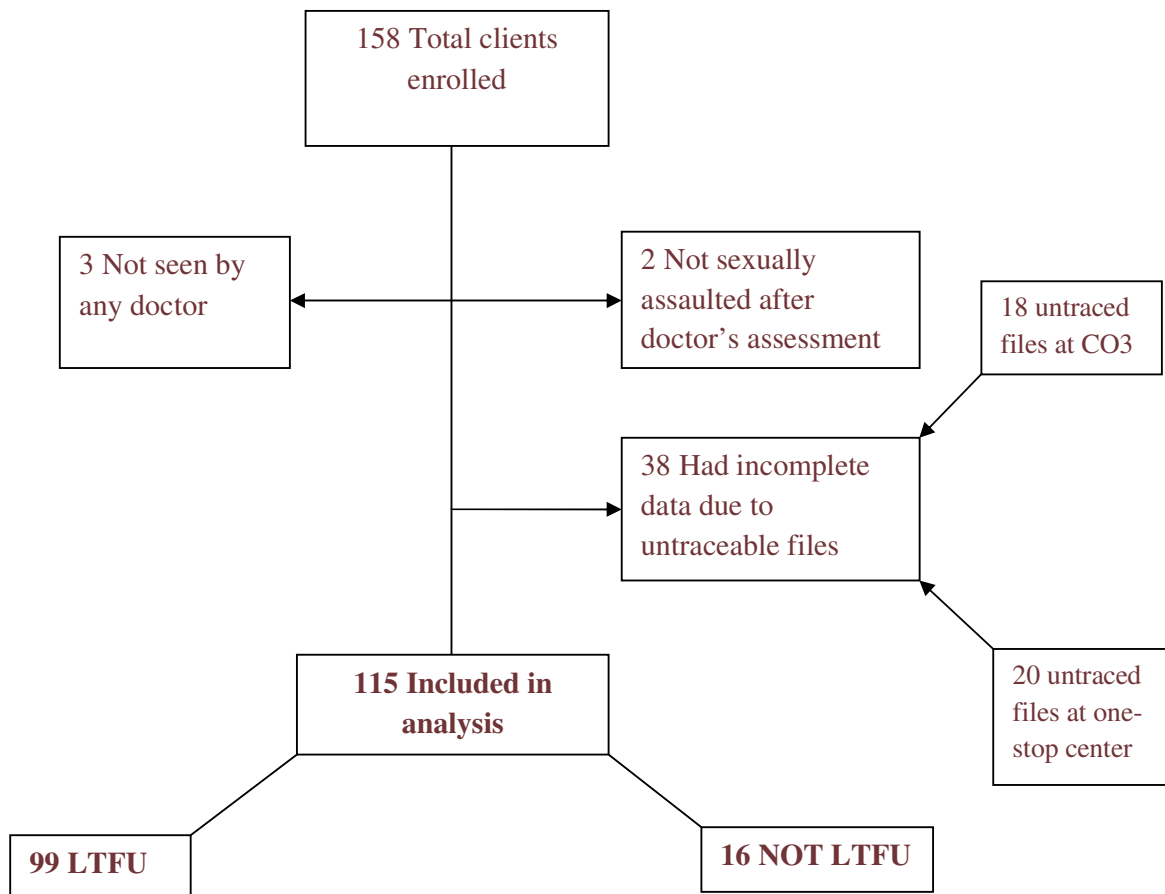
9.0 ETHICAL CONSIDERATIONS

In carrying out this study, it was acknowledged that human participants were involved and provided personal information. The records were kept with utmost confidentiality for the purposes of research alone. All participants were required to consent before taking part in the study, personally for those who were 18 years old and above or by their parent or guardian if younger than 18 years old. The study was observational and therefore it was reasonably not foreseeable to cause or bring harm to the participants. It was acknowledged that there was the likelihood of loss of privacy and confidentiality during questionnaire administration. As such, care was taken to create as normal an environment as was possible in order to allow voluntary participation. The interest of the participant was given top priority. Participants were also required to spend extra time in the hospital to allow the study questionnaire to be administered. For this reason, they were compensated with ZMK 20,000 transport refund. The research was approved by the University of Zambia Biomedical Research Ethics Committee (UNZABREC).

10.0 RESULTS

A total of 158 survivors of sexual violence were enrolled into the study. Two respondents were found not to have been sexually assaulted by the attending doctors, three were not attended to by doctors making it impossible to determine whether or not they were sexually assaulted and 38 files could not be traced, [18 (47.4%) from CO3 and 20 (52.6%) from one-stop center] therefore these 43 were excluded from the analysis. See figure 1 below.

Figure 1: Study profile



UNTRACEABLE PATIENT RECORDS – N=38

Among the thirty-eight survivors of sexual assault whose hospital records could not be traced at the end of the study period for analysis, it was noted that the age range was from 6 to 72 years of age and majority of them were 14 years old [n=09, (23.7%)] while 63.2% were between 13 and 19 years of age among which 73.7% were assaulted at or before age of 16 years.

Twenty files were not traceable at the one stop center and eighteen files could not be traced at CO3. This revealed that there was relatively more files untraced at CO3 than at the one stop center [n= 18 of 51, (35.3%) versus n= 20 of 102, (19.6%)].

Thirty-four (89.5%) out of the thirty-eight survivors were single, sixteen (42.1%) had been to primary school while thirty-five (92.1%) were not employed and thirty (78.9%) had no income.

There were ten (26.3%) survivors reporting repeat sexual assaults among which eight (80.0%) were first assaulted before their 16th birthday.

The perpetrator was a friend (34%) or other person (84.2%). Threats and injuries were reported among 60.5% and 36.8% respectively. However injuries requiring treatment were among 2.6% of the survivors.

About 18.4% of those whose files could not be traced had to wait for more than two hours before they could be attended to at UTH while 34.2% and 28.9% were seen within half an hour or immediately after arrival respectively.

Counseling was received by 89.5% of the survivors and 10.5% had to pay fees of whom 66.7% paid for medical investigations while 33.3% paid for other purposes such as photocopying of police forms.

ANALYSIS OF THOSE WITH FILES AVAILABLE (N=115)

Of the initial 158 enrolled, 115 (72.8%) survivors were studied for factors associated with loss to follow-up. Of these 115, 16 (13.9%) came for follow-up while 99 (86.1%) were lost to follow-up (see table 1 below).

TABLE 1: STUDY VARIABLES STRATIFIED BY WHETHER LTFU OR NOT

VARIABLE		LTFU (NO) N (%)	LTFU (YES) N (%)	P- VALUE	95% CI
LTFUP		16 (13.9)	99 (86.1)		
Age group	06-12 years	01 (06.3)	13 (13.1)	0.496	0.404 – 0.587
	13-19 years	11 (68.8)	72 (72.7)		
	20-35 years	03 (18.8)	12 (12.1)		
	> 35 years	01 (06.3)	02 (02.0)		
Entry point	CO3	05 (31.3)	28 (28.3)	0.774	
	CSAC	11 (68.8)	71 (71.7)		
Education status	None	01 (06.3)	10 (10.1)	0.513	0.422 – 0.604
	Primary	07 (43.8)	56 (56.6)		
	Secondary	08 (50.0)	30 (30.3)		
	Tertiary	00 (0.00)	03 (03.0)		
Marital status	Single	13 (81.3)	93 (93.3)	0.035	0.001 – 0.068
	Married	01 (06.3)	02 (02.0)		
	Divorced	00 (00.0)	02 (02.0)		
	Separated	02 (12.5)	00 (00.0)		
	Widowed	00 (00.0)	02 (02.0)		
Formal Employment	Yes	01 (06.3)	05 (05.1)	1.000	
	No	15 (93.8)	94 (94.9)		
Average monthly income (X 1000ZMK)	None	10 (62.5)	83 (84.7)	0.026	<0.001 – 0.055
	<500	04 (25.0)	12 (12.2)		
	500 – 1000	02 (12.5)	01 (01.0)		
	1000 – 5000	00 (00.0)	02 (02.0)		
Smoking	Yes	00 (00.0)	01 (01.0)	0.860	
	No	16 (100)	97 (99.0)		
Use alcohol or drugs	Yes	03 (18.8)	13 (13.1)	0.390	
	No	13 (81.3)	86 (86.9)		
Taken alcohol or drugs at time of assault	Yes	01 (10.0)	10 (19.6)	0.673	
	No	09 (90.0)	41 (80.4)		

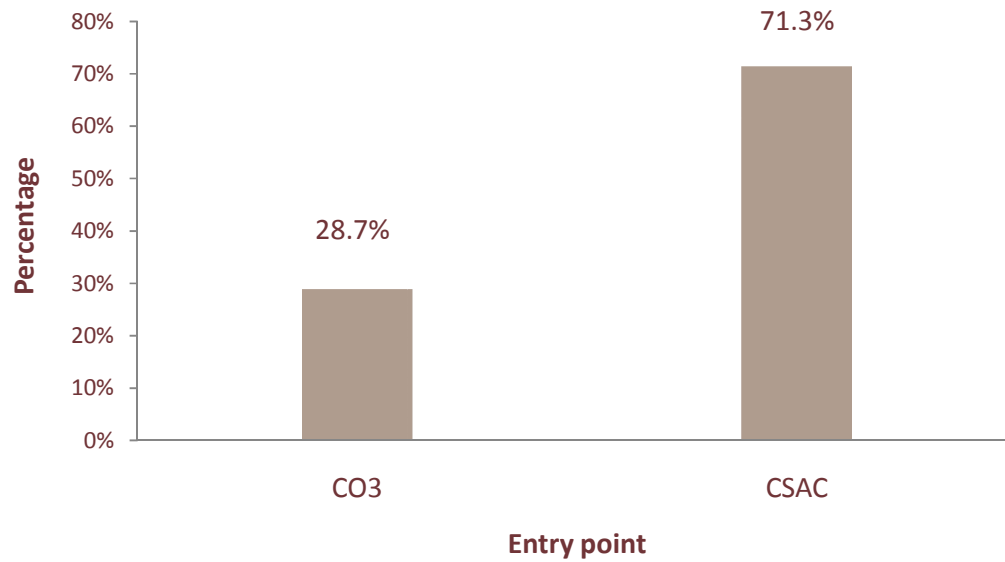
VARIABLE		LTFU (NO) N (%)	LTFU (YES) N (%)	P- VALUE	95% CI
Number of buses/taxis to reach UTH	None	02 (12.5)	06 (06.2)	0.157	0.090 – 0.223
	One	01 (06.3)	24 (24.7)		
	Two	12 (75.0)	64 (66.0)		
	Three	01 (06.3)	03 (03.1)		
Inform anyone about the assault	Yes	15 (93.8)	88 (88.9)	0.477	
	No	01 (06.3)	11 (11.1)		
Who you informed	Friend	03 (20.0)	11 (12.5)	0.330	0.244 – 0.416
	Parent	07 (46.7)	32 (36.4)		
	Guardian	01 (06.7)	25 (28.4)		
	Caregiver	00 (00.0)	03 (03.4)		
	Police	00 (00.0)	03 (03.4)		
	Other	04 (26.7)	14 (15.9)		
When did you report the assault?	Immediately	07 (46.7)	32 (36.4)	0.670	0.584 – 0.756
	Within 24hours	02 (13.3)	11 (12.5)		
	24 to 48 hours	04 (26.7)	19 (21.6)		
	48 to 72 hours	01 (06.7)	06 (06.8)		
	After 72hours	01 (06.7)	20 (22.7)		
First time to be assaulted	Yes	11 (68.8)	77 (79.4)	0.258	
	No	05 (31.3)	20 (20.6)		
Number of times of assault before	Twice	04 (80.0)	13 (68.4)	0.574	0.484 – 0.664
	Three times	01 (20.0)	02 (10.5)		
	>Three times	00 (00.0)	04 (21.1)		
Age at first assault	09 years	00 (00.0)	01 (05.3)	1.000	0.974 – 1.000
	10 years	00 (00.0)	01 (05.3)		
	11 years	00 (00.0)	01 (05.3)		
	12 years	00 (00.0)	02 (10.5)		
	13 years	01 (25.0)	03 (15.8)		
	14 years	02 (50.0)	08 (42.1)		
	15 years	01 (25.0)	02 (10.5)		
	19 years	00 (00.0)	01 (05.3)		
Same assailant as before	Yes	01 (20.0)	07 (36.8)	0.445	
	No	04 (80.0)	12 (63.2)		
Number of assailants	One	14 (87.5)	79 (82.3)	1.000	0.974 – 1.000
	Two	02 (12.5)	13 (13.5)		
	Three	00 (00.0)	01 (01.0)		
	>Three	00 (00.0)	03 (03.1)		
Identify assailant	Yes	16 (100)	96 (97.0)	0.635	
	No	00 (00.0)	03 (03.0)		

VARIABLE		LTFU (NO) N (%)	LTFU (YES) N (%)	P- VALUE	95% CI
Knowledge of assailant	Yes	08 (50.0)	90 (90.9)	<0.001	
	No	08 (50.0)	09 (09.1)		
Relation to assailant	Brother	00 (00.0)	02 (02.2)	0.157	0.090 – 0.223
	Uncle	01 (11.1)	07 (07.6)		
	Cousin	01 (11.1)	00 (00.0)		
	Friend	05 (55.6)	45 (48.9)		
	Fiancé	00 (00.0)	01 (01.1)		
	Other	02 (22.2)	37 (40.2)		
Live with assailant	Yes	02 (13.3)	25 (25.5)	0.249	
	No	13 (86.7)	73 (74.5)		
Sexual engagement	Penile/ vaginal	16 (100)	95 (96.9)	0.633	
	Penile/ vaginal/ oral	00 (00.0)	03 (03.1)		
Threats	Yes	07 (46.7)	44 (44.9)	0.557	
	No	08 (53.3)	54 (55.1)		
Injury	Yes	02 (12.5)	15 (15.2)	1.000	
	No	14 (87.5)	84 (84.8)		
Injury requiring treatment	Yes	00 (00.0)	02 (13.3)	0.772	
	No	02 (100)	13 (86.7)		
Lost consciousness	Yes	03 (20.0)	10 (10.1)	0.232	
	No	12 (80.0)	89 (89.9)		
Waiting at UTH before being seen	Immediately	04 (25.0)	35 (36.1)	0.852	0.787 – 0.917
	Within 30 minutes	06 (37.5)	31 (32.0)		
	Within 1 hour	04 (25.0)	14 (14.4)		
	Within 2 hours	01 (06.3)	09 (09.3)		
	> 2 hours	01 (06.3)	08 (08.2)		
Pay any fees	Yes	04 (25.0)	13 (13.1)	0.189	
	No	12 (75.0)	86 (86.9)		
Counseling received	Yes	15 (93.8)	91 (91.9)	0.636	
	No	01 (06.3)	08 (08.1)		
Appointment given	Yes	13 (81.3)	08 (08.1)	<0.001	
	No	03 (18.8)	91 (91.9)		
Doctor make follow-up plan	Yes	09 (56.3)	09 (09.1)	<0.001	
	No	07 (43.8)	90 (90.9)		

PLACE WHERE SEEN AT UTH

Out of the 115 survivors, 33, (28.7%) were seen at the gynecology emergency department (Ward C03) while 82, (71.3%) were seen at the child sexual assault “One stop centre” (CSAC) (figure 2).

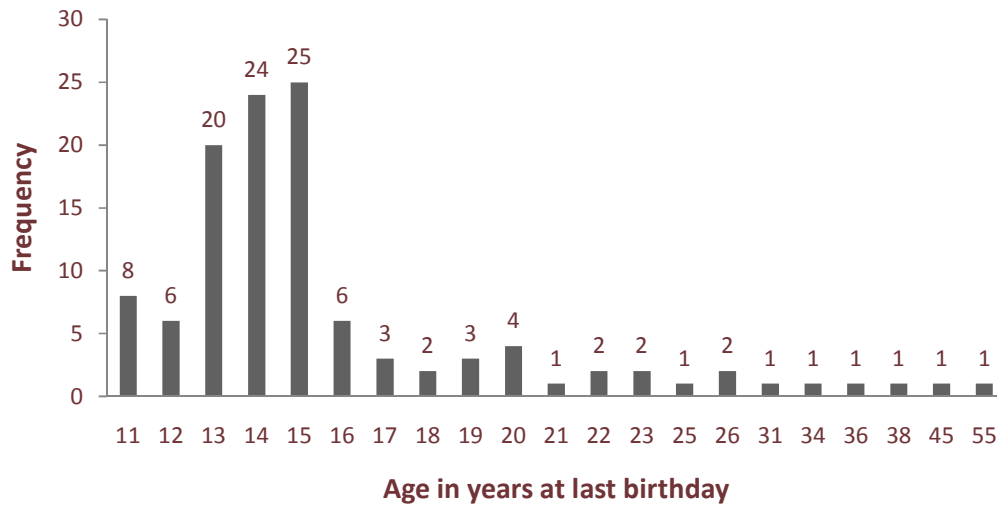
Figure 2: Proportion of survivors by entry point (n=115)



AGE DISTRIBUTION OF SURVIVORS OF SEXUAL ASSAULT

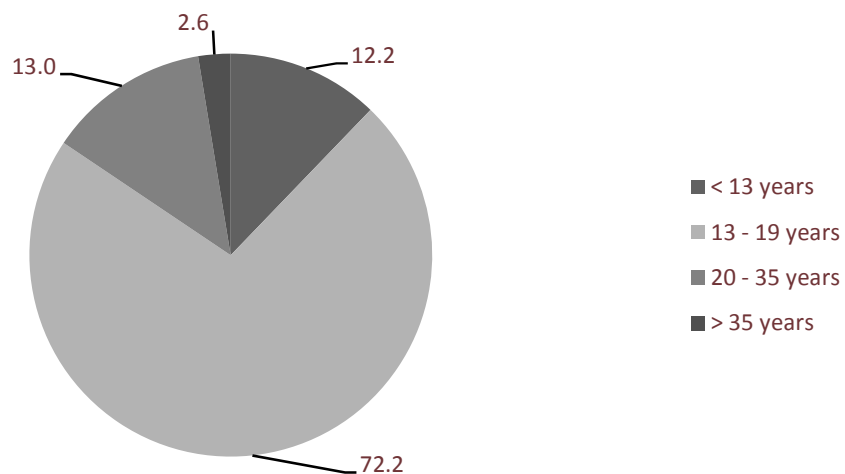
The age ranged from 11 to 55 years of age while the mean age was 16.3 years with most survivors of sexual assault being 15 years old. The interquartile range was from 13 to 16 years of age. See figure 3.

Figure 3: Age distribution of survivors (n=115)



The most affected age group was between 13 and 19 years of age [83, (72.2%)]. See figure 4 below. Eighty-nine survivors (77.4%) were sexually assaulted before their 17th birthday.

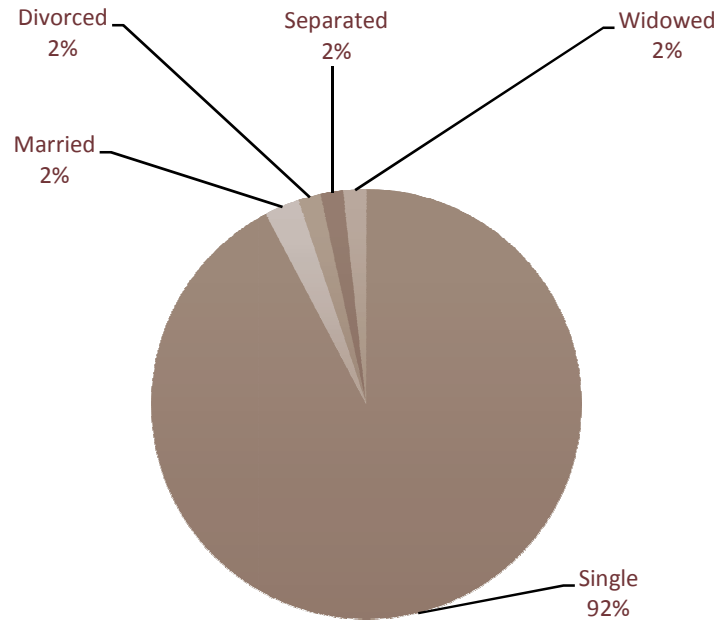
Figure 4: Proportion by age group among survivors of sexual violence



DISTRIBUTION BY MARITAL STATUS

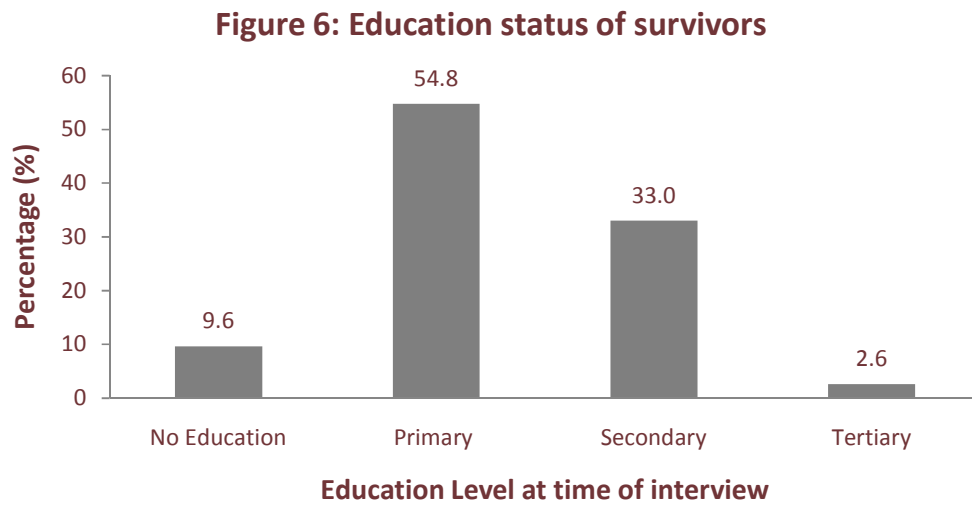
The survivors of sexual assault were mainly single [n = 106, (92.2%)] (see figure 5).

Figure 5: Marital Status of survivors



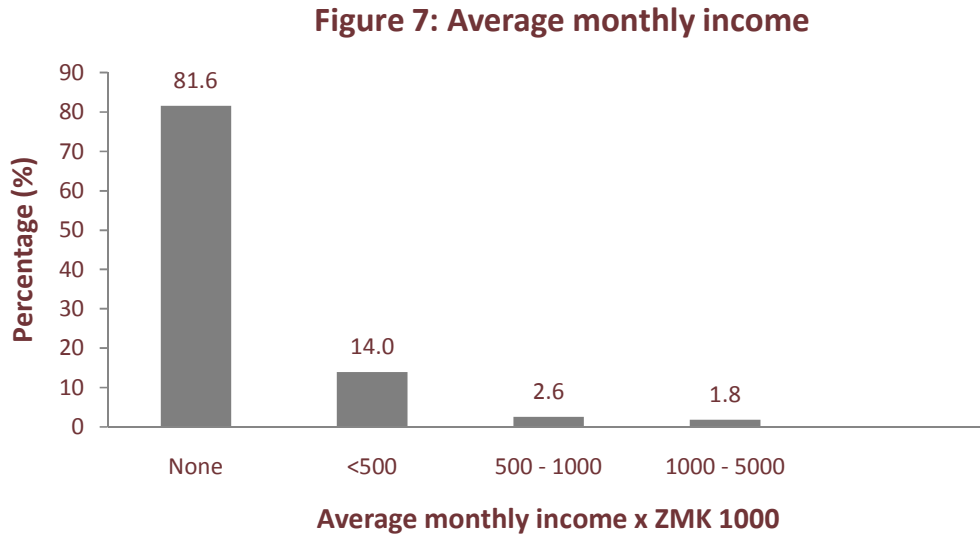
EDUCATIONAL STATUS OF SURVIVORS

The majority of survivors reported having a primary school level of education [n = 63 (54.8%)] while few had tertiary level of education [n = 3, (2.6%)]. See figure 6.



AVERAGE MONTHLY INCOME

Most of the survivors reported having no income [n = 93, (81.6%)] while few reported an average monthly income of between one and five million Kwacha [n = 2, (1.8%)] (see figure 7 below).



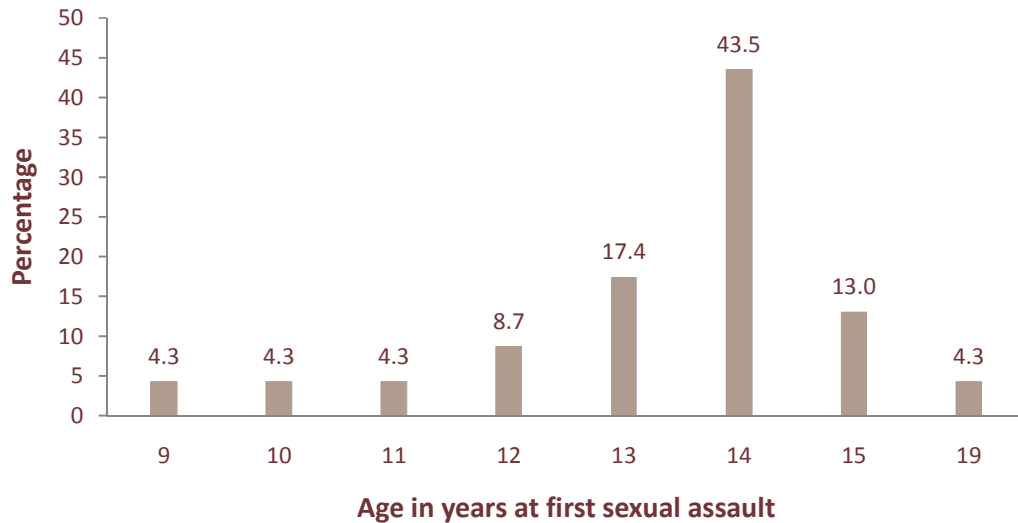
SMOKING, ALCOHOL AND RECREATIONAL DRUG USE

This was uncommonly reported among survivors of sexual assault. One survivor (0.9%) admitted to smoking while 16 (13.9%) reported being users of alcohol and/ or recreational drugs. Use of any alcohol or drugs at the time of sexual assault was reported by 11 (9.6%) survivors.

PREVIOUS SEXUAL ASSAULT

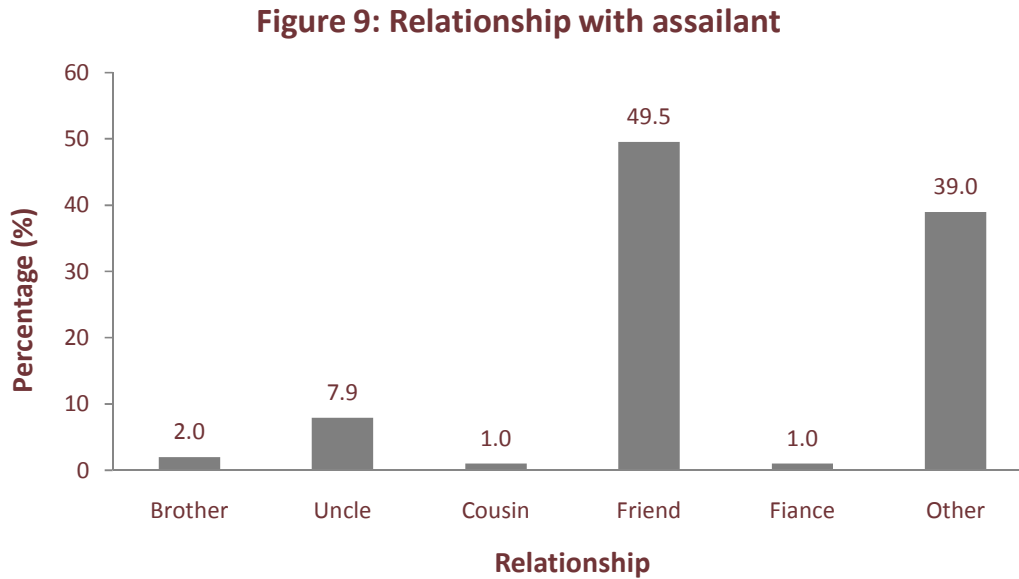
Just over one fifth of survivors suffered another sexual assault before the index assault at the time of the interview (n=24, 20.9%). Out of these 24 survivors who suffered a repeat sexual assault 22, (95.7%) were first sexually assaulted before their 16th birthday, see figure 8. The mean, median and mode age at first assault were 13.5, 14.0 and 14.0 years old respectively with a standard deviation of 1.95.

Figure 8: Age at first sexual assault (n = 24)



RELATIONSHIP WITH ASSAILANT

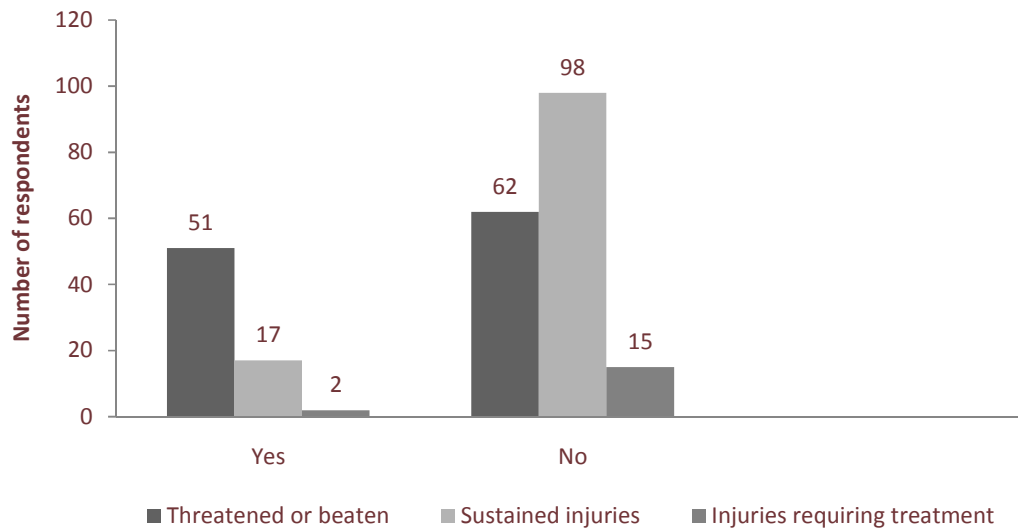
All survivors of sexual assault in this study were assaulted by male assailants (100%), who they knew or could readily identify, (n = 98, 85.2%). In about half the cases, the male assailant was said to have been a friend (n = 50, 49.5%). 39 (38.6%) survivors reported other persons such as a neighbour or stranger to have been their assailants. See figure 9.



THREATS OF VIOLENCE AND INJURY DURING ASSAULT

Threats of violence or injury were reported by 51 (45.1%) survivors while 62 (54.9%) did not. Actual injuries were less commonly reported. Seventeen survivors (14.8%) sustained injuries while 98 (85.2%) did not. Those who sustained injuries were even less likely to require treatment. Two (11.8%) required treatment of injuries while 15 (88.2%) did not. See figure 10.

Figure 10: Threats, Injury and Treatment of injuries

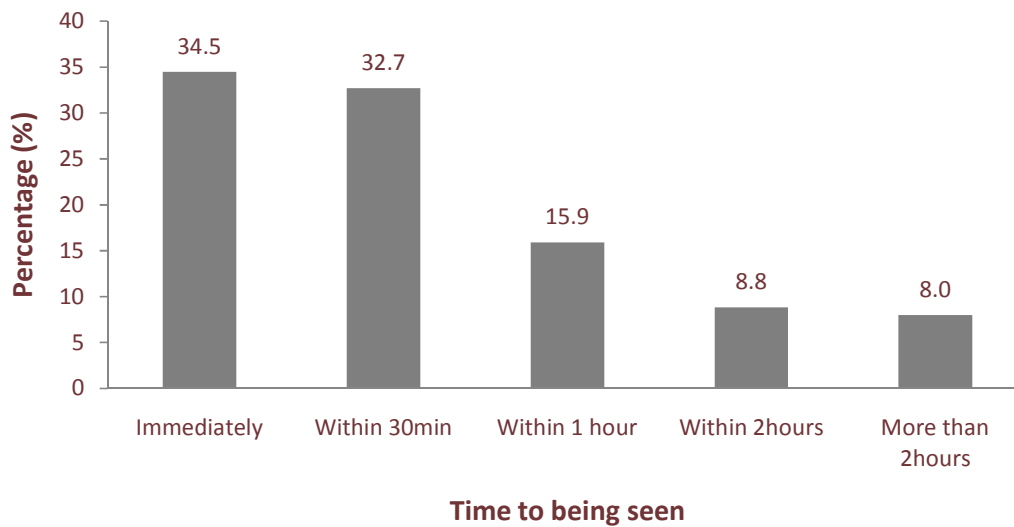


CARE RECEIVED AT UTH

Waiting time:

Waiting at the hospital between time of arrival and time of being attended to by medical personnel varied from immediate attention to attention after a waiting period more than 2 hours. Thirty-nine (34.5%) participants received immediate attention while 104 (92%) survivors were seen within 2 hours of arrival at the hospital, and it took more than 2 hours for nine (7.8%) survivors before they could be seen, (see figure 11).

Figure 11: Waiting time at the hospital



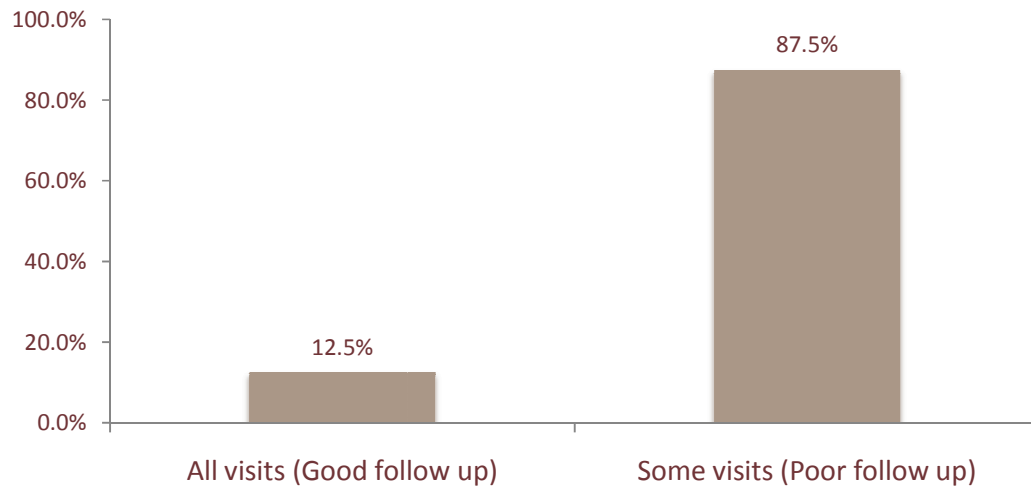
Payment of fees

Seventeen (14.8%) respondents were required to pay fees at the hospital. Of these, 11 (64.7%) paid fees for medical investigations while 6 (35.3%) had to pay fees towards police medical forms. Psychosocial counseling other than that for HIV testing was offered to 106 (92.2%) survivors, the rest reported not to have received any such psychosocial counseling.

LOSS TO FOLLOW-UP:

Loss to follow-up was observed among 99 (86.1%) survivors during the study period while 16 (13.9%) returned for review. Out of the 16 who returned for review, 2 (12.5%) came back for all scheduled visits while 14 (87.5%) came for some but not all scheduled visits, see figure 12 below. It was not determined which visits were skipped during the three months period.

Figure 12: Quality of follow up among those who returned for review (n = 16)



Doctors gave appointments to 21 (18.3%) survivors and recorded follow-up plans in their notes for 18 (15.7%) survivors.

DETERMINANTS OF LOSS TO FOLLOW-UP

Table 1 (see above) illustrates the study variables that were investigated for association with loss to follow-up (LTFU) at UTH among victims of sexual violence in Lusaka. The following factors were significantly associated with LTFU:

- Marital status
- Average monthly income
- Knowledge of assailant
- Whether or not the doctor gave an appointment for review and
- Whether the doctor made a follow up plan.

Table 2 below illustrates these factors before adjusting for confounders.

TABLE 2: DETERMINANTS OF LOSS TO FOLLOW-UP

Variable	P value	95% confidence interval
Marital status	0.035	0.001 – 0.068
Average monthly income	0.026	<0.001 – 0.055
Knowledge of assailant	<0.001	<0.001 – 0.026
Review appointment given by doctor	<0.001	<0.001 – 0.026
Follow up plan made by doctor	<0.001	<0.001 – 0.026

About 90% of each of those who knew their assailant, those who were not given appointments for review and those in whose files the doctor did not record a follow-up plan did not return for review.

The risk of being lost to follow-up if the survivor knew her assailant was increased 1.7 times (RR 1.7, 95% CI 1.1 – 2.7).

Survivors in whose files there was indication that an appointment for review was given were less at risk of being lost to follow up (RR, 0.39, 95% CI 0.23 – 0.68). The risk was

increased to almost 20 times if the survivor's file had no indication of being given an appointment for review (RR 19.4, 95% CI 6.06 – 62.05).

When the attending doctor documented a follow-up plan in the patient's file, the risk of being lost to follow up was significantly reduced, (RR 0.54, 95% CI 0.34 – 0.86). On the other hand, if the doctor did not make a follow up plan, the risk of being lost to follow up was increased almost seven times (RR 6.93, 95% CI 2.96 – 16.21).

LOGISTIC REGRESSION ANALYSIS

Further analysis was done by dichotomizing the study group based on loss to follow-up into survivors who were lost to follow-up (n = 99, 86.1%) and those who were not lost to follow-up (n = 16, 13.9%), regardless of whether they returned for all or some of the scheduled visits. Adjusting for confounders, a logistic regression model was developed. Survivors of sexual assault in this cohort were less likely to return for follow up if they knew their assailant (Adjusted OR 0.06, 95% CI 0.01 – 0.52) but they were more likely to return if they were given an appointment by the doctor (Adjusted OR 97.09, 95% CI 8.86 – 1064.17).

If on the other hand, a follow up plan was noted in the file, the odds of being lost to follow up were not significantly reduced (Adjusted OR 0.99, 95% CI 0.13 – 7.43). See table 3 below.

It shows therefore that there was a strong indication that victims who knew their assailant, those who were not given appointments for review and those whose files showed no indication of any plan to follow up were highly likely to be lost to care. There seemed to be a similar indication for survivors depending on their marital status and average monthly income.

TABLE 3: LOGISTIC REGRESSION ANALYSIS OF FACTORS ASSOCIATED WITH LOSS TO FOLLOW UP

Category	Variable	Wald	P value	Adjusted Odds ratio (OR)	95% confidence interval for OR
Social demographic factors	Marital status	3.464	0.063	0.408	0.159 – 1.049
	Average monthly income	1.312	0.252	0.691	0.368 - 1.300
Characteristics of the assault	Knowledge of assailant	6.586	0.010	0.063	0.008 – 0.520
Care received at UTH	Review appointment given by doctor	14.030	<0.001	97.093	8.859 – 1064.170
	Follow up plan made by doctor	<0.001	0.989	0.986	0.131 – 7.429

11.0 DISCUSSION

The magnitude of loss to follow up among this cohort of survivors of sexual violence was 86.1%. This was consistent with what has been reported in literature in other parts of the world. Previous reports from the one stop centre of the same institution (UTH) indicated high rates of loss to follow-up. Chomba E (2011) reported a 60% rate of loss to follow up at the one stop centre. The apparent increase in loss to follow up may be due to the inclusion in this study of the gynaecology emergency admission ward (CO3) which operates differently and independently of the one stop centre. However an independent analysis of the two sites was not possible due to the small number of participants. It may also be an indication that the problem has remained the same or was actually increasing.

What was most obvious also was the fact that more than two thirds of the victims of sexual assault were children and accordingly almost three quarters of the survivors of sexual violence were attended to at the one stop centre. This emphasises the fact that children 16 years of age and below were most affected. The 2007 ZDHS reports that 20% of Zambian women between ages of 15 and 49 years of age have ever experienced sexual violence. The DHS data however did not explore the prevalence of sexual violence in children under 15 years of age. Children may be more sexually abused because they are naïve and are usually dependent on adult carers who may end up abusing their trust. The high HIV prevalence in Zambian society has led to orphans and vulnerable children who may fall prey to potential abuse.

Smoking, alcohol and recreational drug use was uncommonly reported among survivors of sexual assault. It is not common for women in Zambia to smoke although alcohol use is prevalent though not in the young hence this apparent lack of alcohol use and smoking in this cohort of mainly under sixteens.

The assailant was known to the victim in 85.2% of those seen. This corresponds to what has been reported that the perpetrator is usually someone who is known to the victim or the victims family and commands some degree of trust from the victim (9).

Keesbury et al (2009) reported “survivors were routinely charged illegitimate fees for Police and health services in Zambia”. Despite efforts by the government to make services free for survivors of sexual violence there seems to be logistical constraints at various points that necessitate the need to pay some fees. This study did not however search for those constraints but did illustrate that fees were mostly needed for medical investigations (n = 11, 64.7%). This needs attention in order to know what medical fees these entail and therefore allow to make post rape/defilement care services at UTH in line with government policy. This will benefit survivors and limit how much more they suffer following sexual assault.

Out of the 16 who returned for review, 2 (12.5%) came back for all scheduled visits (good follow up) while 14 (87.5%) came for some but not all scheduled visits (poor follow up). It was not determined which visits were skipped during the three months period. The numbers were too small to do an analysis of determinants of good follow up versus poor follow up.

The results did however show that there was a strong indication that victims who knew their assailant, those who were not given appointments for review and those whose files showed no indication of any plan to follow up were highly likely to be lost to care. There seemed to be a similar indication for survivors depending on their marital status and average monthly income. The odds of return when the doctor gave an appointment for review indicates a wide confidence interval (OR 97.093, CI 8.859 – 1064.170), thus it gave an apparently weak association with LTFUP.

12.0 STUDY LIMITATIONS

This study did not assess factors associated with loss to follow-up as perceived by the survivors of sexual violence themselves. It would have been desirable to interview patients who had fallen out of care to obtain their views.

It was also not possible to do an independent critical observation of the post rape care management offered by UTH in order to obtain a more balanced opinion on the care received at the hospital. Data obtained in this respect was dependent on what was recorded in patients notes with the assumption that all patient-hospital contact is documented. Undocumented activities were deemed not to have taken place.

The failure to track thirty-eight files was unfortunate but I shall be quick to mention that even in the event that all the thirty-eight were found and did return for review, the magnitude of loss to follow up not have improved to any acceptable degree. This study did not intervene in patient care in anyway other than observatory on routine care at UTH.

13.0 CONCLUSION

- The magnitude of loss to follow up at University Teaching Hospital among the cohort of victims of sexual violence studied was 86.1%.
- The odds of being lost to follow up were significantly increased for knowing the assailant and for not having been given an appointment for review.
- Marital status (Adjusted OR 0.408, 95% CI 0.159 – 1.049) and average monthly income were not significantly associated with loss to follow up (Adjusted OR 0.691, 95% CI 0.368 – 1.300).
- Survivors of sexual assault were mainly teenagers between 13 and 19 years of age (72.2%) who were single (92%), unemployed (94.8%) and with no income (81.6%).
- The perpetrator was always a male who was known to his victim (85.2%) and usually considered a friend or relative (61.4%).
- 45.1% of survivors reported being threatened or injured but injuries requiring treatment were uncommon (11.8%)

14.0 RECOMMENDATIONS

- Further study of the factors associated with loss to follow-up is required with feedback from those who are lost to follow-up.
- Doctors should give an appointment for review to survivors of sexual violence and the follow-up plan need to be clearly outlined in the patient's notes. In the same vein, post rape/defilement care protocols need to be developed for the institution in order to allow uniformity in the discharge of care.
- There is urgent need to sensitize men and women in order to reduce or stop sexual assault.

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