

**SEXUAL BEHAVIOUR AMONG ADOLESCENTS LIVING WITH HIV IN
ZIMBABWE**

by

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DEDICATION

In memory of my late parents, remembered for their hard work and commitment to things that mattered most. Their love will always be cherished.

STUDENT NUMBER: 43418562

DECLARATION:

I declare that **SEXUAL BEHAVIOUR AMONG ADOLESCENTS LIVING WITH HIV IN ZIMBABWE** is my own work and that all the sources that I have used or quoted have been indicated and acknowledged by means of complete references and that this work has not been submitted before for any other degree at any other institution.

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30 NOVEMBER 2013

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ABSTRACT

This study described sexual behaviours among adolescents living with the Human Immunodeficiency Virus (HIV) in Zimbabwe. This study utilised a quantitative descriptive design. Data was collected using structured questionnaires from 341 adolescents living with HIV. Findings revealed that some adolescents were sexually active and had early onset of sexual activity (before their sixteenth birthday). A good proportion of sexually active adolescents were noted not to practise safer sex and the main reason was condom inaccessibility and some had multiple sex partners. Factors independently associated with being sexually active included exposure to erotic content on television programmes, having a psychiatric diagnosis, discussions of sexuality with health worker and older age. Adolescents' behaviours living with HIV and the issue of availability of condoms may play a part in the spread of HIV. More discussions and research on sexuality of adolescents are recommended.

KEY CONCEPTS

Adolescents, HIV, unprotected sex, safer sex, sexual activity, sexual behaviour

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CHAPTER 1: ORIENTATION TO THE STUDY

1.1. INTRODUCTION

The advent of antiretroviral therapy has changed the whole clinical picture of Human Immunodeficiency Virus (HIV) or Acquired Immuno-Deficiency Syndrome (AIDS) by reducing morbidity and mortality (Highleyman 2010:3). A once fatal disease has been transformed into a chronic lifelong disease (Colvin 2011:2). Uptake of Prevention of Mother to Child Transmission (PMTCT) has been low in Zimbabwe, with more than 17000 children infected through vertical transmission each year (Ferrand, Bandason, Musvaire, Larke, Nathoo, Mujuru, Ndhlovu, Munyati, Cowan, Gibb and Corbett 2010:11). However, children who are perinatally infected with HIV are taking up treatment with antiretroviral drugs which has led to a reduction in mortality rate in the population (Ferrand et al 2010:11). Reduction of mortality in children who are perinatally infected with HIV means that they can live longer as well as grow to adolescence and beyond.

Adolescence is a challenging phase characterised by physical, mental, social and emotional development. There is, for example, the emergence and escalation of conflict between young adolescents and their parents (Allison 2000:1). For adolescents living with HIV, this may be even more difficult due to behavioural and emotional limitations that they experience like being teased by their peers because of their losing weight or short stature, a function of stunting and stigmatisation. Taking into account some of these problems, more efforts may be needed from health care providers and other caregivers to make sure that adolescents do not engage in risky sexual behaviours like unprotected sexual intercourse that put those around them at risk of being infected with HIV (Brown, Lourie and Pao 2000:83). It is also important to state that the incidence of HIV infection is growing among adolescents in Zimbabwe (Horney 2003:15). The causes for this growth remain unclear. However, it could be attributed to the sexual behaviours of adolescents who are already living with HIV (Gray 2010:5). It is for the reason that this study is aimed at exploring sexual behaviours among adolescents living with HIV. Specifically, this study outlines issues to do with sexual behaviour of adolescents living with HIV in Zimbabwe. It encompasses discussions relating to the research problem, the research methods, ethical considerations and the limitations of the study.

1.2. RESEARCH PROBLEM

1.2.1. Source of and background to the problem

1.2.1.1. *Source of the research problem*

In Zimbabwe, the health needs of adolescents living with HIV who are receiving care are regularly reviewed and addressed by their health care providers. Generally, they are provided with counselling and information concerning their lifestyles and health, which may include sexual and reproductive information. In the main, these adolescents tend to socialise with other adolescents who are not living with HIV. It must be stressed that the former hardly disclose to the latter their HIV statuses. This is a concern as individuals living with HIV may engage in unprotected sexual intercourse. Such behaviour increases the chance of “spreading” the virus to uninfected individuals.

The author monitored adolescents living with HIV under his care especially those that became pregnant and noted that some presented to the clinic cases of other sexually transmitted infections. These observations led to the conclusion that despite the efforts being made to counsel them, adolescents do engage in unprotected sex.

Thus, taking into account the rising population of adolescents living with HIV among the general population (Horney 2003:15), it is critical to explore their sexual behaviour. Doing so would help in the development of health education and health promotion programmes for addressing this growing problem. Hence, there is need to find out what the actual sexual behaviour of adolescents living with HIV is like.

1.2.1.2. *Background to the research problem*

Sub-Saharan Africa bears the brunt of the HIV and AIDS burden of the world (Kironde and Lukwago 2002:127). This region, which makes 9% of the world population, carries two thirds of the total HIV burden of the world (WHO 2007:3). In Zimbabwe, the current HIV prevalence is 14.3% (UNGASS Report 2010:4). Approximately 10% of the people living with HIV in Zimbabwe are children under 18 years old. In 2007, approximately 120 000 children were living with HIV in Zimbabwe (Ferrand, Lowe, Whande, Munaiwa,

Langhaug, Cowen, Mugurungi, Gibb, Munyati, Williams and Corbet 2009:428). Generally, this problem is compounded by the fact that the uptake of Prevention of Mother to Child Transmission (PMTCT) has been poor in Zimbabwe (21% being tested) (Ferrand et al 2010:11). The problem of HIV in children is likely to continue unless the uptake of PMTCT improves in Zimbabwe.

In Zimbabwe, the primary focus of paediatric HIV-care programmes has been on infants and young children, for whom management challenges are very different from those of adolescents living with HIV (Ferrand et al 2009:432). These authors also claim that young children have issues, such as malnutrition which tends to reflect their dependence on caregivers. In contrast, for adolescents, the main problems were psychosocial issues, like mental health problems, low self esteem and poor social support resulting in poor drug adherence (Ferrand et al 2009:432). These psychosocial needs of adolescents, including their sexual needs, have not been adequately addressed.

HIV is spread primarily through heterosexual contact in Zimbabwe, accounting for 80-90% of all HIV infections in the country (Zimbabwe National AIDS Council 2005:8). Early sexual debut often leads to a high number of sexual partners in a lifetime, which is believed would lead to higher risk of continued spread of HIV among adolescents (Erickson 1998:123). Moreover, health-risk behaviours such as unprotected sexual intercourse, are often established during adolescence and they usually extend into adulthood (CDC 2010:1). In a study conducted in the United States of America (USA) on adolescents living with HIV, it was noted that 28% (mean age of 16.6 years) of 40 HIV-positive adolescents or young adults were sexually active and often engage in unprotected sex (Wiener, Battles and Wood 2007:473). Similar findings were observed elsewhere. In Uganda, despite counselling efforts to delay sexual initiation among adolescents living with HIV, the adolescents were not only observed to fantasize about love and sex, but were frequently noted to engage in sexual intercourse with some participating in unprotected intercourse (Birungi, Mugisha, Obare and Nyombi 2009:185). A study which generically explored sexual activities among South African female youths and adolescents aged between 15-24 years, reported that 47% of the studied adolescents claimed to have experienced sexual intercourse (Manzini 2001:46). Now that the sexual pattern of behaviours among adolescents in other countries have been reported, it is time to briefly examine its prevalence and incidence in Zimbabwe.

A study by Campbell and Mbizvo (1994:246) on Zimbabwean students aged 11 to 23 years old reported that close to 40% of the participants had experienced sexual intercourse, up to 63% had had more than one sex partner and up to 40% of the sexually active, practised unprotected sex. Also, 24% of a sample of Zimbabwean rural secondary school students reported ever experiencing sexual intercourse with 49% of the sexually active students engaging in unprotected sex (Gwede, McDermott, Westhoff, Mushore, Mushore, Chitsika, Majange and Chauke 2001:619).

Talking to adolescents about their sexuality helps in enabling them to adopt healthier sexual lifestyles. In the USA, it was noted that discussions about condoms that started before sexual debut were associated with greater condom use during sexual intercourse (Miller, Levin, Whitaker and Xu 1998:1543). Sex and HIV education programmes have also been noted to have an influence on sexual behaviours of adolescents (Kirby, Laris and Roller 2006:4). In Zimbabwe, the Zimbabwe National Family Planning Council (ZNFPC) launched the promotion of a youth responsibility project which aimed to encourage young people to adopt behaviours that reduce the risk of pregnancy and sexually transmitted infections (STIs), including HIV. This programme resulted in an increase in condom use in the campaign areas (Kim, Kols, Nyakauru, Marangwanda and Chibatamoto 2001:11).

Following the findings above and the fact that the incidence and prevalence of HIV infection is growing among adolescents in Zimbabwe (Horney 2003:15), and the fact that the author has followed up adolescents living with HIV who became pregnant under his care, it is apparent that there is a need to explore the sexual behaviours of adolescents living with HIV.

1.2.1.3. *Statement of the research problem*

The prevalence and incidence of HIV positive adolescents are noted to be increasing in Southern Africa (Kironde and Lukwago 2002:127). This is also the case in Zimbabwe, as the prevalence and incidence of adolescents living with HIV are growing in this state (Horney 2003:15). This increase is sometimes attributed to the role of HAART in enabling children living with HIV to live up to and beyond reproductive stages of their lives. Children living with HIV who reach adolescence do actively interact with one

another and even with those who are not living with HIV. An example of such interactions is sexual activity with and without effort to protect them from HIV. In the main, the increase in incidence and prevalence of HIV among adolescents can hypothetically be attributed to the sexual behaviours of those who are already living with the virus. Although this could be the case, the evidence for the exact nature and scale of sexual behaviours, such as engaging in unprotected sexual intercourse of adolescents living with HIV and factors influencing these behaviours remain scanty (Kironde and Lukwago 2002:128). This study focuses on the sexual behaviour of adolescents living with HIV which include engaging in unprotected sexual intercourse and factors that may influence this behaviour. The extent of risky sexual behaviour among adolescents who are living with HIV remains unclear (Kironde and Lukwago 2002:128). This study therefore sets out to examine these risky behaviours among this population.

1.3. AIMS OF THE STUDY

1.3.1. Research purpose

The purpose of this study is to describe the sexual behaviour of adolescents living with HIV in Zimbabwe.

1.3.2. Research objectives

- To determine the proportion of adolescents living with HIV in the Harare Metropolitan Province, aged 13 to 19 years who are sexually active.
- To determine the proportion of sexually active adolescents living with HIV in the Harare Metropolitan Province who practise unprotected sex.
- To determine the proportion of sexually active adolescents living with HIV in the Harare Metropolitan Province who practise safer sex.
- To determine the factors that are associated with the onset of sexual activity among adolescents living with HIV in the Harare Metropolitan Province

1.4. SIGNIFICANCE OF THE STUDY

This study examined the sexual behaviour, including unprotected sexual intercourse amongst Zimbabwean adolescents living with HIV. It also identified and examined factors that are associated with the sexual behaviour. It is thus believed that the outcome of this study will help healthcare professionals in developing health promotion strategies that may reduce the spread of HIV among adolescents by early identification of patterns of unprotected sexual behaviours and factors associated with the same. Arguably, reduction in the spread of HIV if achieved over a significant period of time would lead to a reduction in the growth or incidence and prevalence of HIV infection among adolescents.

The outcome of this study may also serve as a baseline for understanding the pattern of sexual behaviours among adolescents living with HIV/AIDS. The recommendations of this study would contribute to the improvement of health and social care offered to adolescents living with HIV.

1.5. DEFINITION OF KEY CONCEPTS AND OPERATIONALISATION

- **Adolescents:** the WHO defines an adolescent as a young person aged between 10 to 19 years old (Olukunle 2007:1). In this study an adolescent is a person aged 13 to 19 years.
- **Adolescent living with HIV:** this refers to an adolescent who has been tested positive with HIV (Wiener, Battles and Wood 2007:473). In this study an adolescent living with HIV is a young person aged 13 to 19 years old and is living with HIV in Zimbabwe. The diagnosis of HIV infection is made by testing a blood sample for antibodies against HIV. If the antibodies are present then one is termed HIV-infected.
- **Early onset of sexual activity:** initiation of sexual intercourse before the sixteenth birthday (Feltoe 2005:107). This explanation is adopted in this study.
- **Sexual behaviour:** the manner in which humans experience and express their sexuality (Haeberle 1983:2). Sexual intercourse is an example of sexual behaviour and it involves penetration between partners, for example, penile-vaginal intercourse (Oxford Advanced Learner's Dictionary of Current English 2005:567). For this study,

sexual behaviour is described in terms of the proportion of the adolescents living with HIV who:

- ❖ have experienced sexual intercourse,
 - ❖ have practiced protected sexual intercourse,
 - ❖ have practiced unprotected sexual intercourse
 - ❖ have engaged in sexual intercourse before their sixteenth birthday.
- **Risky sexual behaviour:** Sexual activity in which the participants put themselves at risk of experiencing negative outcomes which include STIs, unwanted pregnancies and emotional distress. For this study, risky sexual behaviour is described in terms of adolescents living with HIV who:
 - ❖ have engaged in unprotected sexual intercourse.
 - ❖ have had multiple sexual partners.
 - **Unprotected sexual intercourse:** an act of sexual intercourse performed without the use of a condom and thus, involves the risk of sexually transmitted diseases, including HIV (Oxford Advanced Learner's Dictionary of Current English 2005:577). This study adopted this explanation
 - Human Immunodeficiency Virus (HIV): a virus which, if it infects human beings, causes progressive failure of their immune system (Kaur, Ghosh and Bhatia 2012:5). This definition is utilised in this study.

1.6. RESEARCH DESIGN

1.6.1. Research paradigm

A paradigm is a world view or perception that helps researchers to understand phenomena under investigation (Morgan 2007:50). They are usually embedded with a range of assumptions. It is important to mention at this point that healthcare research is generally carried out within two broad paradigms, positivists and naturalistic, which in essence can be referred to as quantitative and qualitative respectively. The researcher of this study opted for positivist paradigm (quantitative). The researcher believes that there is a single truth or reality of the phenomenon being investigated, impact of unprotected sex among adolescents who are HIV-positive on the incidence and prevalence of HIV. The researcher believes that this can be understood by the use of a

structured questionnaire or a tool. These beliefs are consistent with the assumptions of positivist or quantitative paradigm. Hence, it is preferred for this study. Taking these assumptions seriously, it is critical for the tool to contain the key components of the subject explored. Thus, the researcher ensured that the concepts, such as HIV, adolescents and unprotected sexual intercourse are reflected in the questionnaire and consistently applied to all study participants.

1.6.2. Research design

This is a quantitative study that utilised a descriptive cross sectional design. A cross sectional study is a type of research where data is collected at a defined time from a whole population or, as in this case, a subset of a population in order to describe and/or to determine associations of an outcome of interest at that point in time (Friis and Sellers 2009:256). It provides a snapshot of what is happening at a particular point in time (Grimes and Schulz 2002:146). The researcher chose the cross sectional design since this study aims to examine the proportion of adolescents living with HIV who are sexually active, including their sexual behaviours. This information will be obtained from the participants through structured interviews using a questionnaire. Cross sectional studies can also be used to investigate associations between exposures and outcomes of interest (Mann 2003:56). An example of this would be, say, trying to establish an association between watching pornographic movies (exposure) and engaging in sexual intercourse (outcome). This also makes it ideal to examine factors associated with engagement in unprotected sexual intercourse and factors associated with early onset of sexual intercourse amongst adolescents living with HIV by use of socio-demographic data collected from this population.

1.7. RESEARCH METHODS

1.7.1. Population and sample selection

1.7.1.1. *Study population*

- **Respondent population:** The population universum for this study comprised all adolescents living with HIV in Harare, Zimbabwe. The target population is a subset of the population universum. It is a group about whom the researcher wanted to know more about and from whom the sample was drawn. Specifically, the target population for this study were adolescents living with HIV aged between 13 and 19 years old in Harare who were aware of their HIV status, not married or living with a sexual partner. In Harare, there were five main centres that provide care to adolescents living with HIV. The adolescents who met the above criteria and were in follow up at these centres namely, Harare Central Hospital, Parirenyatwa Group of Hospitals, Newlands Clinic, Wilkins Infectious Diseases Hospital and Beatrice Road Infectious Diseases Hospital, formed the target population of this study.
- **Respondent accessible population:** The accessible population is the portion of the target population to which the researcher has reasonable access (Johnson and Christensen 2010:257). It is also the population to which the researcher can apply their conclusions. The accessible population for this study were those members of the target population who attended the Harare Central Hospital for follow up visits during the data collection period.

1.7.1.2. *Sample size*

- **Respondent sample size:** At the moment there are no data on the sexual behaviour, such as the proportion of adolescents living with HIV who have engaged in sexual intercourse or have engaged in unprotected intercourse in Zimbabwe. However, as noted above, Birungi et al (2009:187) studied sexual behaviours of adolescents living with HIV in Uganda. The sample size for this study was therefore be calculated using the statistics from the Ugandan study. In Uganda, the study noted that 33% of adolescents living with HIV reported that they had experienced sexual intercourse. This study was done in a country in sub-Saharan Africa and the characteristics of the population can be considered

to be similar to Zimbabwean adolescents. Based on the results of the Uganda study, the minimum required sample size for this study was 340 participants as per the calculation below, a figure also consistent with that offered by statistician following intense consultations with the same.

$$n = \frac{(z_{\alpha/2})^2 p(1-p)}{e^2} = \frac{1.96^2 0.33(1-0.33)}{0.05^2} = 340$$

Where

$\alpha = 0.05$ is the significance level for the 95% confidence interval

$(z_{\frac{0.05}{2}}) = 1.96$ is a critical value from the normal distribution tables.

p is the estimate of the proportion of adolescents aged 13 to 19 years who are sexually active

ϵ – margin of error (5%)

1.7.1.3. **Sample selection**

- **Respondent sampling technique:** A non probability sampling method was used in this study. Non probability sampling means that during selection of subjects, each unit in the sample does not have a calculable non zero probability of being selected in the sample (Hales 2010:64). The sampling technique employed was convenience sampling. This is a sampling technique where respondents are selected because of their convenient accessibility and proximity to the researcher (Seifert 2010:4). Respondents were selected at the convenience of the researcher, as they attended scheduled follow up visits. The main advantage of this type of sampling is the ease of access to the population. The sampling technique is not only fast and inexpensive, but it is also easy to execute, as it has few rules governing how the respondents should be selected (Joubert and Katzenellenbogen 2007:100). Interviewers are stationed in the clinics where the adolescents receive their medical attention. For adolescents who were less than 18 years old, they were seen and interviewed with their respective caregivers as well given information about the study. Adolescents and caregivers who were willing to participate in the study were encouraged to complete assent and consent forms respectively. A similar approach was adopted for adolescents who were 18 years and older. They offered information about the study and only

encouraged to complete a consent form when they express willingness for participation. Only adolescents who completed consent and assent forms were interviewed.

1.7.2. Data collection

Data was collected through structured face to face interviews, which involved individual discussions with the adolescents who were willing to be interviewed using a questionnaire (Kelley, Clark, Brown and Sitzia 2003:262). The structured interviews were preferred over self completed questionnaires. This is because they have the potential of improving the reliability of the study as they enable respondents to seek clarification on any issues they might not understand. Reliability problems commonly result when the respondents do not understand questions asked or are asked about something they do not clearly recall. A questionnaire is a quick and practical way of collecting data. It enables researchers to collect information from many people in a relatively cost effective way (Katzenellenbogen and Joubert 2007:108).

Interviewers (field workers) were identified and trained not only for ensuring understanding of the content of the tool, but also for ensuring consistency in its application. It is important to emphasize that the training of interviewers was very important to ensure validity and reliability. The need for maintaining confidentiality was also included in the training. It is also important to state that interviewers were comfortable with the two languages that were spoken by the majority of the respondents, English and Shona. The adolescents who provided assent and/or consent had the one-to-one interviews with interviewers.

1.7.3. Data analysis

Data collected was entered using the Epi Info version 3.5.1 (Centres for Disease Control and Prevention, Atlanta, GA). Epi Info is an epidemiological statistical software capable of electronic questionnaire creation, data entry and data analysis. Data was exported and analyzed using STATA 10 (College Station, Texas).

Patients' characteristics were summarized using proportions for categorical variables and medians (interquartile range) for non normal continuous outcomes. Differences in

adolescents who engage and those who do not engage in unprotected sexual intercourse were examined using the chi-square test for categorical variables. This was used to determine if there are significant differences in social backgrounds between adolescents who engage in these sexual behaviours (for example protected versus unprotected sex). Chi-square test is a statistic that is used to test whether distributions of categorical variables differ from one another and hence it was considered the most suitable test for this purpose (Hennekens and Buring 1987:249).

Multivariate logistic regression was used to determine factors independently associated with early onset of sexual activity among HIV-positive adolescents. Variables were included into the multivariate model provided their P values were less than 0.2, which indicates a weak association in the univariate analysis. Backward elimination method was used in the multivariate model to come up with factors independently associated with early onset of sexual activity.

The backward elimination method starts with all respondent variables, tests them one-by-one for statistical significance, deleting them if they were not significant. The Hosmer-Lemeshow test was used to assess for goodness of fit. The results of the logistic regression analyses were expressed as odds ratios (ORs) and their 95% confidence interval (CI). It was necessary to show the confidence intervals since they provided a range of values which were likely to contain the population parameter of interest (Kirkwood 1988:235). An association was considered to be statistically significant if $P \leq 0.05$, the level of significance adopted in the calculation of the sample size.

1.8. VALIDITY

1.8.1. Research design

- **Internal validity**

This refers to the extent to which the independent variable can accurately be stated to produce the observed effect. In other words, internal validity is about the approximate truth of an inference or reality. This means the notion of validity is relative; it is about degrees or levels, such as high, medium or low rather than one of presence or absence. Internal validity is the degree to which observed changes in a dependent variable can be attributed to changes in an independent variable. The descriptive cross sectional

research design helped enhance insight into this area of study. It was also noted that it enabled the researcher to develop strategies that would eliminate or at least reduce the impact of confounding variables. This design ensured that the study outcomes were in the main a function of the independent variables. In other words, the descriptive cross sectional correlational research design was internally valid or has internal validity.

- **External validity**

This refers to the extent to which the results of a study can be generalized beyond the sample (Polit and Beck 2008:236). The use of convenience sampling limits the generalisability of the results because the sample that was used was not representative of the general population. It relates to inferences about relationships between, for example, sex and use of condoms. External validity is about inferences, and this was a critical concern for researcher of this study, as he aimed to yield evidence for understanding sexual behaviours of the study population.

1.8.2. Data gathering instrument

- **Reliability**

Measures the extent to which the instrument yields the same result on repeated trials. Reliability problems commonly result when the respondents do not understand the question or are asked about something they do not clearly recall. This was countered by use of trained interviewers and use of face-to-face structured interviews which allow respondents to seek clarification on any issues they might not understand. Training of interviewers was done initially by giving the materials (protocol, the data collection tool and the informed consent forms) to go through on their own. They were then gathered on a selected day and the researcher went through the documents with them which were the protocol, informed consent forms and data collection tool. Role plays were carried out to ensure that the interviewers had the same understanding of the data collection tool and informed consent forms.

- **Validity**

Validity is the degree to which a test measures what it is supposed to measure. After a thorough literature review, a conceptual framework was developed. The framework helped the researcher to cover all the relevant variables for the topic in question. Questions that addressed these variables were then formulated in a way that ensured they were not ambiguous. The options available for each question were as exhaustive as possible and the researcher also made sure that the scales that were designed to measure different attributes were made up of items that measure the respective attributes in question. The data collection instrument was then subjected to piloting before use to check its content validity which refers to the appropriateness of the content of the instrument. All the above were cross-checked in advance by an experienced research supervisor before finalizing it. The use of pre-tested questionnaires, the scientific analysis of the data collected using statistical procedures, and a thorough scientific interpretation of these data were expected to enhance the rigour of this study.

1.9. ETHICS

Ethics is a “set of moral principles” or a “system of moral values” which guide the practice of researchers towards research respondents (Polit and Beck 2008:553). Ethics is a set of rules and behavioural expectations which should guide researchers about what is deemed as an appropriate conduct towards research respondents (De Vos et al 2011:114). Although the well-being of research respondents is at the core of research ethics, other aspects such as plagiarism, misconduct, manipulation of design and methods should also be taken under consideration (Terre Blanche, Durrheim and Painter 2006:61; Brink et al 2012:44). So, interviewers were selected from the nurses and/or counsellors who worked in the clinics and had relationships with respondents. They were stationed in the clinics where the adolescents received their medical attention. Only adolescents expressed willingness for participation demonstrated by completing consent or assent forms were interviewed. In other words, only adolescents who were willing to be interviewed were allowed to participate in the study. This study enrolled adolescents aged between 13 and 19 years. Those who were not willing to participate were not prejudiced in any way for their refusal to participate. The respondents were given the freedom to withdraw from the study at any time during the

interview if they feel like doing so and this will not jeopardise their care in any way. Respondents were also informed that a publishable report will be compiled from the results of the study. The results, if published, may then be seen by many people but they will not be traceable back to any of the respondents. Confidentiality and anonymity was maintained throughout the study period. The respondents will not receive any monetary benefits for participating in this study.

1.10. LIMITATIONS OF THE STUDY

The study was carried out in the Harare region, an urban setting which may not be representative of other communities like farming, mining and rural. People sexual behaviours may vary from one region to another, as they are influenced by the way individuals socialise in their communities. Thus, claims that will be made in this study may not be applicable to all communities in Zimbabwe. However, it will indicate sexual behaviours, such as unprotected sexual intercourse of adolescents living with HIV and factors influencing such behaviours within the context of the Harare Metropolitan Province.

Convenience sampling was used, as it has advantages of being quick and cheap. However, it generally does not give a sample that is representative of the target population.

CHAPTER 2: LITERATURE REVIEW

2.0. INTRODUCTION

Literature review is a systematic process of identifying, scrutinising and summarising written information about a specific research problem (Levy and Ellis 2006:181). According to Olufemi (2008:5), the review is not just a description of what other people have published but a critical discussion that presents insight and an awareness of the different arguments, approaches and theories related to the topic.

This literature review about sexual behaviour among adolescents living with the Human Immunodeficiency Virus (HIV) aims to identify baseline data on what is known about the topic. Part of this review looks at the methods and methodology. Here, a systematic overview of the data search strategies used within the review is clearly articulated. A critical account of the process undertaken is provided. The findings of all the materials analysed are also critically discussed in this review and emergent themes are highlighted. Within that part of the review, a range of discussions are presented to consider the implications of the findings and what practice recommendations emanate from the same.

2.1. PURPOSE OF LITERATURE REVIEW

Generally, a literature review aims to establish what is known regarding the topic of interest. Ellis and Levy (2008:17) state that the work of a researcher should be built on the works of others. By so doing, the literature review helps in minimising chances of duplication. It also increases chances of coming up with new information. A substantial body of evidence shows that a significant proportion of adolescents tend to engage in sexual activities. However, attention is needed to discuss this more specifically with regard to adolescents living with HIV. Literature shows that research has been done on sexual behaviours among adolescents living with HIV (Swenson, Rizzo, Brown, Vanable, Carey, Valois, Di Clemente and Romer 2010:1175), but no information to date about sexual behaviours among adolescents living with HIV in Zimbabwe. This is the reason for conducting this study.

2.2. QUANTITATIVE-QUALITATIVE DEBATE

Healthcare research is generally carried out within two broad paradigms; positivists and naturalistic, which in essence can be referred to as quantitative and qualitative respectively. There has been an ongoing uncertainty about which methodological (qualitative or quantitative) approach is most suitable for exploring health care issues. Discussions in this context about which methodological approach is superior or inferior have been ongoing for decades, but they tend to focus mainly on rigour, validity and reliability of research studies (Polit and Beck 2004:114).

Historically, researchers have perceived 'scientific methods' of research to consist of only quantitative research. This is because it is founded on a systematic and objective process, deemed to provide a more sound knowledge-base to guide health care practice than qualitative research (Porter, Millar and Reid 2012:31). On the other hand, advocates of qualitative research sustain that this approach is more effective for enhancing people's understanding of human experiences, such as sexual behaviours (Wertz 2011:79). The same author also states that qualitative research concentrates on discovery and understanding of a subject from all angles, a methodology that is in keeping with the holistic philosophy of nursing. According to Finlay and Gough (2003:79), qualitative approaches regard the use of a subjective approach as a necessity for understanding lived experiences and people.

Acknowledging the discussions thus far presented, dependence on either qualitative or quantitative research would be inappropriate in the quest to understand sexual behaviours among adolescents living with HIV. Each paradigm has its own strengths and weaknesses. In combining the two paradigms, the researcher intends to maximise on the strengths of each paradigm and also hopes that the weaknesses of one will be made up for by the strengths of the other. Hence, articles on sexual behaviours of adolescents living with HIV from both paradigms, qualitative and quantitative, are employed or used in this study.

2.3. SEARCH STRATEGY

To ensure that this literature review explores the subject in a sound, inclusive and a reproducible manner, a systematic approach was undertaken to thoroughly search and explore all the sources of literature. Initially, the University of Zimbabwe Medical School library was used to search for books and journals that are related to the topic of sexual behaviour and adolescents living with HIV. The use of electronic databases like the Cochrane database, OVID, Medical Literature Analysis and Retrieval System Online (MEDLINE) and HINARI were also used to offer a wider range of literature. The following words and phrases were used as search terms: “adolescence”, “living with HIV” and “sexual behaviour”. Each of the search terms were initially used individually, and then combined using Boolean operators AND and OR.

The inclusion and exclusion criteria outlined below were used:

Inclusion criteria

- Studies that explored sexual behaviours of adolescents in general.
- Studies that explored sexual behaviours of adolescents living with HIV.
- Studies that examined factors that influence sexual behaviours among adolescents.
- Literature from validated academic sources like HINARI was used.
- Studies that were published in English.

Exclusion criteria

- Studies that did not explore sexual behaviours of adolescents in general.
- Studies that did not explore sexual behaviours of adolescents living with HIV.
- Studies that did not examine factors that influence sexual behaviours among adolescents.
- Studies published before the 1990s.
- Studies published in languages other than English.

2.4. APPRAISAL OF IDENTIFIED STUDIES

The table in appendix 1 gives a summary of the studies included within this literature review. The critical appraisal skills programme (CASP) was used to appraise the articles (Critical Appraisal skills programme 2011:8). The studies were evaluated in terms of their rigour: validity, reliability, dependability, generalisability and transferability to the practice context. The articles were also reviewed in terms of the clarity of the research question(s) and the methods of data collection and analysis. The limitations of the studies were addressed in the appraisal. Several themes emerged from the appraisal. Some of the themes were deemed essential to addressing the subject in question. These are elaborated in the next section.

2.5. EMERGENT THEMES

Themes that were considered to be pertinent to addressing the research question in focus are listed below:

- Reasons for engaging in sexual activity
- Adolescence
- Sexual behaviour and HIV infection during adolescence
- Talking to adolescents about sex
- Early onset of sexual activity
- Safer sex
- Drug use among adolescents and its effect on sexual behaviour

2.5.1. Reasons for engaging in sexual activity

There are various reasons why people engage in sexual activity. The reasons can be grouped into two main categories: recreational and procreation. In some cases however, sexual activity is done for both reasons. Apart from these, there are other reasons for engaging in sexual activity. Examples of these include attainment of psychological intimacy, obligation to satisfy the sexual needs of a partner, monetary gain and forceful attainment of immediate sexual gratification. It is necessary to

examine these reasons in detail because they do play part in shaping sexual behavioural patterns that are observed in humans.

2.5.1.1. Recreation and satisfying sexual desire

Birungi et al (2009:185) and Gwandure (2012:417) stated that adolescents (including those living with HIV) do experience sexual desire. This was indicated by some adolescents involved in this study as one of the reasons they engaged in sexual activities. Prabhu (2010:5) reports that adolescence is associated with maximum sexual drive. In an Ethiopian cohort of high school adolescents, 30.3% of those who were sexually active did it because of sexual drive (Seme and Wirtu 2008:169).

The pleasure derived from sexual activity forms a major part of sexual acts. It encompasses emotional pleasure, erotic pleasure, sensual pleasure and pleasurable thoughts (Gwandure 2012:418). This pleasure, however, is not talked about in many societies and cultures due to fear of encouraging sexual activity among youths (Francoeur and Noonan 2004:755). In Zimbabwe, sex is generally not discussed in households (Kambarami 2006:3). Those who do, tend to emphasize on the negative outcomes of sexual activity, like unwanted pregnancies, sexually transmitted infections, including HIV (Carrol 2009:212). In the Zimbabwean Shona culture, the sexual desire is repressed and is only encouraged to be expressed in controlled circumstances like a marriage setting (Gwandure 2012:416). Despite this general silence on the pleasures of engaging in sex and emphasis on negative outcomes, adolescents still engage in sexual activities. Apart from the pleasure of engaging in sex, some people engage in sex for procreation as elaborated below.

2.5.1.2. Procreation

This relates to individuals engaging in sexual activity solely for reproductive purposes. In some religions and cultures, sex is considered as a dirty activity, and only reproductive reasons can justify this behaviour (Crooks and Baur 2011:9). This reason may play a part in the delay of onset of sexual activity in some adolescents in communities with these beliefs.

2.5.1.3. *Seeking psychological intimacy*

Kambarami (2006:2) stated that women in the Zimbabwean society socialise in such a way that they seek to be attached to a man for them to be viewed as complete beings. Seeking psychological intimacy is therefore another possible reason for engaging in sexual activity. Schmied and Tully (2009:6) reported that lack of family intimacy and family discord predispose adolescents, especially girls to delinquent behaviour, which included high risk sexual activity, like unprotected sexual intercourse with multiple partners. Such behaviours expose adolescents to STIs, including HIV and unwanted pregnancies.

A study by Ferrand et al (2010:4) on adolescents living with HIV in Harare reported that 80% of the adolescents were orphans. One may anecdotally conclude that adolescents living with HIV may lack intimacy and love in family settings as a result of broken families and may resort to sexual activity to obtain this satisfaction.

Adolescents in general may make the error of taking intimacy and sex to be the same thing. Rather than exploring a deep emotional attachment first, some adolescents are of the opinion that engagement in sexual activities brings or creates an emotional attachment (Ruffin 2009:4). This is therefore a possible reason for engagement in sexual activity in an attempt to gain intimacy. Next to be discussed is the role of peer pressure, described in the next section.

2.5.1.4. *Peer pressure*

In some studies, peer pressure has emerged as the major reason for adolescents to engage in sexual activity (Patrick, Parlem, Caldwell, Gleeson, Smith and Wegner 2011:468). These authors stated that adolescents may engage in sex to feel accepted by their peers. The same authors claim that the mere feeling that other adolescents are engaging in sexual activities may perpetuate an adolescent`s desire to do the same.

Gwandure (2012:418) describes the way in which Zimbabwean Shona girls discuss among themselves their sexual experiences. Adolescent girls can talk about how powerful they are in arousing their boyfriends, admirers and their potential to arouse their future husbands. Furthermore, the author described how these discussions enabled other adolescents to also desire to achieve the same milestones so that they

do not feel like they are lagging behind. Smith (2009:14) however, addressed this concern as an issue of what the adolescent perceives as the norm. The adolescents are likely to practise what they view as normal and this is likely to be what they observe from their peers. Sibanda (2011:16) highlighted adolescent sexual activity as one of the causes of early marriages and goes on to explain that the sexual activity may be triggered by peer pressure. Apart from peer pressure, adolescents can also engage in sex for monetary gain.

2.5.1.5. *Monetary gain*

Sibanda (2011:14) highlighted poverty as the major driver for adolescent involvement in sexual activity. This author claims that adolescents sometimes partake in sexual activity for monetary gain. The adolescent sexual activity may be as a result of the young person especially girls being forced by the circumstances to engage in sexual activity so that the adolescent alone or the whole family may benefit financially.

2.5.2. *Adolescence*

According to Schmied and Tully (2009:1) adolescence can be defined as the period of transition from childhood to adulthood as it involves development of independence, a career, relationships, starting a family or living alone. This is a period characterised by physical and psychological development and spans from onset of puberty to complete growth and maturity (Schmied and Tully 2009:1). The World Health Organisation (WHO) (2007b:7) stated that adolescence covers the ages from 10 to 19 years. During adolescence, young people develop moral philosophies including rights and privileges (Jenkins 2007:1571). It is during this phase that they establish and maintain satisfying personal relationships by learning to share intimacy without inhibition or dread. They also move gradually towards a more mature sense of identity and purpose. It is through learning to share intimacy that some adolescents then engage in sexual activity which then shapes their sexual behaviour, which is what this research intends to explore. Puberty, which occurs during adolescence, is the period during which the secondary sex characteristics begin to develop and the capability of sexual reproduction is attained (Schmied and Tully 2009:1).

There is continued brain development that also happens during adolescence. Studies suggest that the connections between neurons affecting emotional, physical and mental abilities are incomplete in adolescents and only get complete at the end of this phase (Strauch 2003:45). This could explain why some adolescents seem to be inconsistent in controlling their emotions, impulses, and judgments and this affects their decisions concerning sexuality.

During adolescence young people become physically mature enough to reproduce. They also become cognitively advanced enough to think about sex (Huebner 2012:2). The same author also notes that given this, the adolescent years are the prime time for the development of sexual behaviours. Thus, how adolescents are educated about and exposed to sexuality will largely determine whether or not they develop a healthy sexual identity.

2.5.3. Sexual behaviour during adolescence

Sexual activity usually starts during adolescence, a period that patterns of behaviours are established by an individual. Individuals tend to exhibit the same patterns during the rest of their lifetime (Kim et al 2001:11). A study by Campbell and Mbizvo (1994:246) on Zimbabwean students aged 11 to 23 years old reported that close to 40% of the participants had experienced sexual intercourse, and up to 63% have had more than one partner. In another study by Gwede et al (2001:619) in Zimbabwe, it was noted that 24% of a sample of Zimbabwean rural secondary school students reported ever experiencing sexual intercourse. It is important to state that currently there are no data concerning the sexual behaviours of adolescents living with HIV in Zimbabwe. In Uganda, however, Birungi et al (2009:185) showed that 33% of adolescents living with HIV reported to have experienced sexual intercourse. No difference in the proportions of sexually active adolescents was noted between adolescents living with HIV and their HIV-negative peers. One other crucial area is “talking to adolescents about sex”, which is reviewed in detail in the next section.

2.5.4. Talking to adolescents about sexuality.

Talking to adolescents about their sexuality helps in changing their sexual behaviours or in making the right decisions about their sexuality from the beginning of their sexual escapades (Gwandure 2012:415). In the USA, it was noted that discussions about condoms that started before sexual debut were associated with greater condom use during intercourse (Miller et al 1998:1543). Sex and HIV education programmes have also been noted to have an influence on sexual behaviours of youths (Kirby et al 2006:4).

Historically, Zimbabweans had a cultural way of teaching adolescents about sexuality which was tightly knit to the family set-up that existed then. Gwandure (2012:416) stated that in the Zimbabwean Shona society, there are people (aunts and uncles) whose role was to develop sexual fantasy in children and adolescents. In the Zimbabwean Shona culture, when girls reached puberty, all teachings were directed towards pleasing their future husbands (Kambarami 2006:3). This was done through formal talks by the aunts, through fairy tales and games that were passed from generation to generation (Gwandure 2012:417). The family unit and set up has been disrupted by urbanisation and a shift from extended family set up to a nuclear family set up (Mawoneke, Sexton and Moyo 2001:9). Despite this development, efforts are being made to encourage caregivers to talk about sexual issues with adolescents under their care.

Efforts are also being made at national level to educate the adolescents about sexuality. In 2001 in Zimbabwe, the Zimbabwe National Family Planning Council (ZNFPC) launched the promotion of youth responsibility project which aimed to encourage young people to adopt behaviours that reduce the risk of pregnancy and STIs, including HIV. This programme resulted in an increase in contraception use in campaign areas (Kim et al 2001:11).

Zimbabwe also introduced sex education in secondary schools in the year 1991 and sixteen sex-related topics were included in the Education for Living syllabus (Schatz and Dzvimbo 2001:131). The Zimbabwean Ministry of Education, Sport and Culture together with UNICEF introduced sex education in primary schools in Zimbabwe in 2006. The objectives of this exercise were not only to provide knowledge about HIV and

AIDS to learners, but also to promote healthy lifestyles, positive values and attitudes and responsible behaviour among learners (MOESC 2003:5).

The Zimbabwe national family planning council (ZNFPC) introduced youth friendly clinics. The drive was to integrate these into existing college clinics. Adolescents can visit these clinics and get counselling, education and treatment for sexually transmitted infections and also get help with any reproductive health issues they may have (Phiri and Erulkar 1997:20).

Adolescents living with HIV slightly differ from their peers in that they also regularly visit their health care providers for HIV care (Landolt, Lakhonphon and Ananworanich 2011:2). They also then are assumed to receive counselling on matters affecting their lives including matters of sexuality. Some also attend support groups where they get information from peers and other leaders concerning sexuality. To sum up, adolescents living with HIV are likely to get more information on sex related issues from health care workers than their HIV-negative counterparts. Whether this information will translate into a healthier sexual behaviour is what this study intends to explore.

2.5.5. Early onset of sexual activity

Early onset of sexual activity in this work is considered to be onset of sexual activity before the sixteenth birthday. Legally in Zimbabwe, the age of consent to sexual activity is 16 years (Criminal Law (Codification and Reform) Act 2004). The risks of early sexual activity include a high turnover of sexual partners. According to Rector, Johnsson, Noyes and Martin (2003:5) girls who begin sexual activity at age 13 or 14 have a partner turnover rate four times higher than those who initiate sex activity in their early twenties. Early onset of sexual activity is also associated with a higher risk of acquiring STIs, a higher risk of pregnancy in unmarried persons (Buston, Williamson and Hart 2007:222). According to Smith (2009:10) there are four levels of factors that determine when one is likely to engage in sexual intercourse for the first time. These factors are grouped as individual, family, environmental and societal factors. They are reviewed in detail below:

2.5.5.1. Individual factors.

It has been noted generally that sexual activity begins after puberty (Kim et al 2009:11). The age of onset of puberty differs between individuals. This may therefore have a bearing on the age of onset of the sexual activity of an individual. Generally, puberty is now occurring earlier than before (Bellis, Downing and Ashton 2006:910). Early puberty, leads to early risk taking amongst adolescents, including high risk sexual behaviour, such as unprotected sex with multiple partners (Downing and Bellis 2009:2). On the contrary, puberty in adolescents living with HIV may be delayed because of their chronic ill-health. In a study by Ferrand et al (2010:4) the proportion of adolescents who were more than 14 years old and still at Tanner stage 1 or 2 was 15% among adolescents living with HIV compared to only 2% among those not living with HIV. Tanner staging is a scale used to describe the onset and progression of pubertal changes, with stage 1 being the least developed and stage 5 the most developed. This delay in puberty onset may translate to a delay in the onset of sexual activity amongst adolescents living with HIV and all the dangers associated with the same.

An individual's religiosity has also plays a major part to play in delaying the onset of sexual activity. The more religious an individual is, the later the age of onset of sexual activity is likely to be (Jones, Darroch and Singh 2005:281). A desire to delay sexual activity in an adolescent was noted to translate in an actual delay in onset of sexual activities (Fatusi and Blum 2008:7). Family dynamics or factors can also influence adolescents' sexual activities. They therefore deserved some discussion.

2.5.5.2. Family factors

Gwandure (2012:416) stated that the Zimbabwean family set up discourages adolescents to think about sex until a time when they are ready for marriage. Perception of strict disciplinary measures from parents or caregivers was also noted to be associated with delay in onset of sexual activity among adolescents (Babalola, Awasum and Quenum-Renaud 2002:18). Eighty percent (80%) of adolescents living with HIV in Zimbabwe are orphans having lost one or both parents to HIV (Ferrand et al 2010:3). In the light of the effect of family factors on sexual activity, poor family structures, such as being extremely controlling and limited or no sex education, could lead to early onset of

sex in this population. Studies also show that there are environmental factors that can lead to early onset of sexual activity as illustrated below.

2.5.5.3. Environmental factors

Exposure to print and electronic media with erotic content is an environmental factor that has been noted to contribute to early onset of sexual activity. In a national longitudinal survey of 1792 American adolescents, Collins, Elliot, Berry, Kanouse, Kunkel, Hunter and Miu (2003:280) showed that youths in the 90th percentile of television sex viewing had a predicted probability of intercourse initiation that was approximately double that of youths in the 10th percentile. Internet use in Zimbabwe increased from 0.8% of the total population in 2001 to 11.8% in 2010 (The global economy.com 2012). Adolescents may have access to internet through mobile phone broadband and access information on sex and sexuality. This exposure would be expected to lead to earlier onset of sexual activity. Apart from environmental factors, societal factors also play a role in early onset of sexual activity as described below.

2.5.5.4. Societal factors

Some societies accept early sexual activity. In Zimbabwe, 21% of girls are married before the age of 18 (Sibanda 2011:2). Sibanda also states that in such societies there is a higher chance of having adolescents who engage in sexual activities early and even outside marriage (Sibanda 2011:2).

In the Zimbabwean Shona culture, the uncles have the right to stimulate their nieces sexually but not to have sex with them (Gwandure 2012:417). This is meant to sharpen their appetite for sex in preparation for marriage. Some adolescents however go ahead and experiment with sex before marriage (Gwandure 2012:417). In conclusion, a society which tolerates early onset sexual activity is likely to have adolescents engaging in sexual activity before the sixteenth birthday.

2.5.6. Safer sex

Safer sex is sexual activity engaged in by people who have taken precautions to protect themselves against sexually transmitted infections, where body fluids namely semen, vaginal fluids or blood do not pass from one person to another. The opposite is unsafe sex, where no such precautions are taken. It needs to be stated however that abstaining from sexual activity is the only method that is 100% effective in preventing pregnancy and sexually transmitted infections (STIs). Condoms however, can also be used for safer sex. Use of condoms among adolescents and its challenges are highlighted below.

2.5.6.1. Condom use among adolescents

Condoms (male and female) remain the mainstay of safer sex. Condoms reduce transmission of HIV by 80% if used correctly and consistently (Weller and Davis-Beate 2007:3). Reasons for condom failure include failure to use them correctly, condom breakage, and condom slippage (Lane and Palacio 2006:4). In a study amongst Rwandan youths aged 15 to 25 years, only 26% of sexually active boys and 15% of sexually active girls reported condom use during their recent sexual intercourse (Babalola et al 2002:17). In the same study, only 13.7% of boys and 7% of girls reported consistent condom use during the last 12 months. In Uganda, 37% of adolescents living with HIV used a barrier method to prevent re-infection with HIV or other STIs (Birungi et al 2009:185).

Campbell and Mbizvo (1994:249) report on a study on condom uses among Zimbabwean students. They noted 60% of students who had engaged in sexual intercourse used a condom at some point. It is critical to mention that such a high rate of condom usage does not guarantee that the use was correct and consistent.

2.5.6.2. Access to condoms for adolescents

Access to condoms for adolescents is an issue of concern in Zimbabwe. According to Marindo, Pearson and Casterline (2003:5) no public or religious school provides condoms for adolescents. These authors also state that Government policies promote abstinence and not condom use as the major drive in the sex education curriculum. In

Zimbabwe, the National AIDS council proposed the distribution of condoms in high schools in 2011. The Zimbabwe National Family Planning Council (ZNFPC), however, issued a press statement to the effect that since the distribution was not sanctioned by the Zimbabwean Parliament, it was not going to be effected (ZNFPC 2011:3). Anecdotal data indicate that distribution is reportedly being tightly monitored because authorities presume that easy access to condoms leads to high rates of sexual activity. This is probably not always the case. According to Blake, Ledsky, Goodenow, Sawyer, Lohrmann and Windsor (2003:959), adolescents in Massachusetts high schools, where condoms were readily available, were more likely to receive condom use instructions. In the same survey, it was noted that the availability of condoms led to an increase in condom use among adolescents who were already sexually active. They also noted that condom availability did not lead to an increase in sexual activity among the adolescents, as the proportion of sexually active adolescents remained unchanged.

2.5.7. Drug use among adolescents.

Adolescence is generally associated with risk taking, such as engaging in unprotected sex and intravenous drug use (Steinberg 2006:55). The same author claims such risk taking behaviours are functions of adolescents' difficulties of resisting peer pressure and orientating themselves to future consequences of their actions. Drug and alcohol use is common among adolescents and frequently referred to in the literature as public health problem of this population (Steinberg 2006:55). In a study by Rudatsikira, Maposa, Mukandavire, Muula and Siziya (2009:217) 9% of 1984 adolescents reported ever using marijuana or glue. Munodawafa, Marty and Gwede (1992:472) noted in their study that 17% and 5% of Zimbabwean secondary school pupils had used alcohol and marijuana respectively in seven days prior to being interviewed. Eide and Acuda (1995:1521) also showed that 26.4%, 41.2% and 9% of 2783 Zimbabwean secondary school adolescents used tobacco, alcohol and marijuana respectively. The use of these drugs was associated with other risky behaviours like unprotected sexual activity. This study also intends to explore the rates of drug use among adolescents living with HIV and to determine the relationship, if any, with their sexual behaviour.

2.6. CONCLUSION

The literature review has shown that there is sexual activity among adolescents living with and those not living with HIV. The sexual behaviour among adolescents living with HIV has been described elsewhere. Information on the sexual behaviour of adolescents living with HIV in Zimbabwe could not be found. There is need to assess the sexual behaviour of this group. Understanding this may help in the development of information package and prevention strategies. Development of Information package for this group of individuals may reduce the spread of HIV to other adolescents who are HIV-negative.

CHAPTER 3: RESEARCH METHODS

3.0. INTRODUCTION

This chapter describes the design and research methodology that was implemented to describe the sexual behaviour among adolescents living with HIV in Zimbabwe. It includes a description of the sample size and characteristics, the research settings, the procedures for sample recruitment, data collection, and human rights protections. Finally, this chapter describes the instruments used as well as the data analysis procedures.

3.1. RESEARCH DESIGN

The research design of this study was non-experimental, descriptive and cross sectional with a correlational component. This was the ideal study design since it involves data that is collected at a defined time from a whole population or a subset of a population in order to describe and/or to determine associations of an outcome of interest at that point in time (Friis and Sellers 2009:256). It provides a snapshot of what is happening at a particular point in time (Grimes and Schulz 2002:146). Correlational studies examine the relationships between two or more variables and provide the opportunity to determine the pattern and the strength of the existing relationships and also allow for hypotheses generation. A correlational relationship indicates association between variables in a synchronized manner that does not imply causal relationship. This was adopted in this study as the researcher made an attempt to examine relationships between variables, such as sexual risk behaviours and peer pressure, television programmes and drug use. non-experimental, descriptive and cross sectional designs are commonly used because many human characteristics, such as attitudes cannot be manipulated experimentally, but their associations with other variables or behaviours like condom use can be examined (Burns and Grove 2005:146; Polit and Beck 2008:55).

3.2. POPULATION, SAMPLE AND SAMPLING PROCEDURE

This section describes the steps that were taken in selecting the sample and the ethical issues related to sampling.

3.2.1. Population

Polit and Beck (2004:563) refer to a population as the entire set of individuals who have common characteristics that are sometimes referred to as the “universe”. It is therefore not surprising for De Vos et al (2011:223) to refer to a study population as a term that sets boundaries on the study units which are in essence considered as individuals or objects in the universe who possess certain characteristics. In this study, the population consisted of all the adolescents who were living with HIV in Zimbabwe during the research study period. Although already briefly mentioned in chapter one, the target population was the group of adolescents aged between 13 and 19 years in Harare who were HIV-positive, aware of their HIV status not married or living with a sexual partner. The accessible population on the other hand, was adolescents of the target population who visited the opportunistic infections (OI) clinics around greater Harare Metropolitan Province for follow-up during the data collection period. It is the population to which the researcher had reasonable access (Johnson and Christensen 2010:257).

3.2.2. Sampling

Calculation of the required sample size was done by a statistician using the significance level for the 95% confidence interval, a 5% margin of error, critical values from normal distribution tables and the estimated proportion of adolescents aged 13 to 19 years old who are sexually active based on a study by Birungi et al (2009: 185).

Respondents were recruited from the Harare Central Hospital Paediatric Opportunistic Infections Clinic, a clinic that follows up on adolescents living with HIV. The letter from the hospital giving the permission to interview the respondents is included in this work as an appendix (see appendix B). A convenience sampling approach or technique was employed as the adolescents who met the study eligibility were identified and recruited as they attended the Paediatric Opportunistic Infections Clinic for their respective scheduled follow up visits. Respondents were selected because of their convenient,

accessibility and proximity to the researcher (Seifert 2010:4). Additionally, this approach to sampling is inexpensive and easy to apply (Joubert and Katzenellenbogen 2007:100).

Adolescents and, caregivers were given information on the study and those who were willing to participate were asked to provide written consents if over 18 years old. Assent to express willingness for participation was sought and obtained from adolescents who were 13 to 17 years old. For these adolescents, consent or agreement for participation was also obtained from their respective caregivers. Adolescents who offered consent or assent and whose caregivers supported their participation in the study were interviewed. Care was taken to separate the adolescents from their caregivers during the interviews to eliminate social desirability bias.

Nurses who followed up the subjects and had relationships with the adolescents conducted the interviews. All the interviews took place at the clinics which were familiar to the adolescents. Conducting the interviews in familiar surroundings by interviewers known to the adolescents made them to feel relaxed during the interview process. This approach enabled the adolescents to freely offer information about their sexual activity and experiences.

3.2.2.1. Sample

As already stated, this study used a convenience sample of 340 adolescent males and females living with HIV aged between 13 and 19 years. The inclusion criteria for study participation were adolescents aged 13 to 19 years old, living with HIV, knew own HIV status, were not married, not living with a sex partner and had the ability to answer questions through personal interviews. The age criterion of 13 to 19 years was adopted in this study as it is a stipulation of the World Health Organisation. It is revealed from the literature reviewed that 10 to 12 years of age individuals are claimed not to have much knowledge about sex and sexuality as well as unlikely to be sexually active (Birungi et al 2009:185). The reason for recruiting adolescents who knew their HIV status was to avoid accidental disclosure during interviews.

3.3. Ethical issues

Study approval was sought from the Department of Health Studies Ethics Committee UNISA (appendix A). Study approval was also obtained from the Harare Hospital ethics committee (appendix B). The study proposal was then sent to the Medical Research Council of Zimbabwe (MRCZ) and they also approved and stamped all the informed consent forms that were used in the study (Appendix D through G). For respondents aged less than 18 years old, the caregiver provided a written consent and the respondents assented to participate in the study. Respondents aged 18 years or older provided written consent on their own. Respondents' respect, privacy and information confidentiality was protected using a numbered code on all the questionnaires. The researcher assigned a study identification number to each respondent in the order in which the research respondents were enrolled in the study. No names or identifying information was noted on the questionnaires. Subjects were informed that they were free to withdraw from the study even during the data collection process. The researcher kept all questionnaires in a locked and secure file cabinet in the researcher's home until analysis. The data were entered into EPIINFO version 3.5.1 using only the numeric identification code to identify respondents. The data entry was performed only by the researcher. All of the administered questionnaires were destroyed using a paper shredder after completing data analysis.

3.4. Data collection

3.4.1. Data collection approach and method

A questionnaire was used as the data collection tool (Appendix H and I). A questionnaire is a quick and practical way of collecting data which enables researchers to collect information from many people in a relatively cost effective way (Katzenellenbogen and Joubert 2007:108). A questionnaire is also considered to be an objective way of collecting information. Use of questionnaires however is subject to recall bias, particularly in instances where they contain open ended questions. For that reason the questionnaire that was used in this survey had close ended questions. Noting that the aim of the researcher was to enable subjects to freely express themselves at interviews and to be honest about their experiences, they were reassured of confidentiality. This meant that the information that was gathered and kept in confidence was accessible only to the researcher.

Data was collected through structured face-to-face interviews, which involved individual discussions with the adolescents who were willing to be interviewed using the questionnaire (Kelley, Clark, Brown and Sitzia 2003:262). A structured interview is a data gathering tool that involves a standard set of questions asked in the same manner and order (Katzenellenbogen and Joubert 2007:107). Face-to-face interviews had an advantage in that the interviewer got to establish rapport with interviewees, which enhanced the latter's willingness for participation. Additionally, these types of interviews had the advantage of allowing ambiguous responses from respondents to be clarified (Williams 2003:246).

Interviewers were identified and trained not only for ensuring understanding of the content of the tool, but also for ensuring consistency in its application. The need for maintaining confidentiality was also included in the training and was also addressed by using nurses and counsellors as the interviewers who worked in the respective clinics and knew the HIV statuses of the adolescents. It is important to state that interviewers were comfortable with both languages that were used, English and Shona.

3.4.2 *Data collection instrument: preliminary investigation*

The questionnaire was piloted or subjected to preliminary investigation before use. This helped to check if the questions were worded in a way that achieved the desired result and to check if the questions were placed in the best order. Piloting the questionnaire also enabled the researcher to find out whether instructions to interviewers were adequate and also whether there were questions that needed to be more specified or even removed from the questionnaire.

The first 20 respondents of this study comprised the sub-sample that evaluated possible language barriers, the level of comprehension and the internal consistency of the questionnaire. The inclusion criteria, settings and recruitment process of this sub-sample were identical to those of the principal study. The analysis of the data gathered during the pilot testing was focused on internal consistency. Difficulties in comprehension were also assessed at the end of the process through the use of an

open-ended question (Are any words or sentences difficult to understand?). The pilot study or preliminary investigation helped in enhancing the tool. Amendments were made to the tool after the pilot study or preliminary investigation.

3.4.3. *Characteristics of the data collection instrument*

The questions in the questionnaire were ordered in such a way that they flowed from general questions to more specific questions towards the end of the same. The questionnaire consisted of four sections, section 1 to section 4. Section 1 collected demographic data and had questions on age, sex, family history, dates of HIV tests, dates when subjects started taking antiretroviral drugs, frequency of exposure to erotic media content and parent`s or caregiver`s roles were also included in this section.

Section 2 of the questionnaire contained questions on the sexual history of subjects, relationships and sexual activeness. For those who were sexually active, information on age at first intercourse, contraceptive use, number of sexual partners, reasons for sexual intercourse, disclosure of HIV status to sexual partners and disclosure of STIs was also collected. For those who were not sexually active, it contained questions on reasons for not being sexually active and intentions to become sexually active.

Section 3 of the questionnaire had questions on talking about sexuality to different people in society. It also contained questions on the sexual subjects that the respondents discussed and with whom.

Section 4 contained questions on drug use and had questions on what drugs respondents had used before, if any and how frequent the drug use was.

3.4.4. *Data collection process*

After obtaining consent from the respondents to participate in the study, the field workers carried out the face-to-face interviews with respondents using the data collection tool described above. The consenting process and the interviews took about 45 minutes to complete. The researcher was available to answer questions during the completion of the questionnaires. Once the questionnaires were completed, the

researcher checked for any missing data, before the respondents left and placed the data in a closed envelope.

3.5. Data analysis

Data was entered using the Epi Info version 3.5.1 (Centres for Disease Control and Prevention, Atlanta, GA). Epi Info is an epidemiological statistical software capable of electronic questionnaire creation, including data entry and data analysis. Data was exported and analyzed using STATA 10 (College Station, Texas).

Patients' characteristics were summarized using proportions for categorical variables and medians (interquartile range) for non normal continuous outcomes. Differences in adolescents who engaged and those who did not engage in unprotected sexual intercourse were examined using the chi-square test for categorical variables. This was used to determine if there were significant differences in social backgrounds between adolescents who engaged in these sexual behaviours (for example protected versus unprotected sex). Chi-square test is a statistic that is used to test whether distributions of categorical variables differ from one another and hence was the most suitable test for this purpose (Hennekens and Buring 1987:249).

Multivariate logistic regression was used to determine the factors independently associated with early onset of sexual activity among the adolescents living with HIV. Variables were included into the multivariate model provided their P values were less than 0.2, which indicated a weak association in the univariate analysis. Backward elimination method was used in the multivariate model to come up with factors independently associated with early onset of sexual activity. The backward elimination method started with all candidate variables, tested them one by one for statistical significance, deleting them if they were not significant. The Hosmer-Lemeshow test was used to assess for goodness of fit. The results of the logistic regression analyses were expressed as odds ratios (ORs) and their 95% confidence interval (CI). It was necessary to show the confidence intervals since they provided a range of values which is likely to contain the population parameter of interest (Kirkwood 1988:25). An association was considered to be statistically significant if $P \leq 0.05$, the level of significance adopted in the calculation of the sample size.

The data analysis was performed according to the research questions.

3.6. INTERNAL AND EXTERNAL VALIDITY OF THE STUDY

External validity refers to the extent to which the results of a study can be generalized beyond the sample. The use of convenience sampling limits the generalisability of the results of this study because the sample that was used is not representative of the target population. Internal validity refers to the extent to which the independent variable can accurately be stated to produce the observed effect. Use of a data collection tool and interviewers who were trained to administer the data collection tool ensured internal validity of this study.

3.7. CONCLUSION

This chapter presented the descriptive cross sectional design that was used to explore the sexual behaviour of adolescents living with HIV in Zimbabwe. Sample characteristics, settings, sample recruitment, data collection procedures, including human rights protection were discussed. The study questionnaires, data analysis procedure and the pilot test to evaluate the data collection instrument language, level of comprehension and internal consistency were also described. The following chapter presents the results of the study and associated discussions.

CHAPTER 4: RESULTS

4.0. INTRODUCTION

This chapter presents the results of the statistical data analysis. The purpose of the study was to describe the sexual behaviour among adolescents living with HIV in Zimbabwe. This chapter presents the results of the study sample.

4.1. SAMPLE CHARACTERISTICS

4.1.1. Demographic characteristics

The descriptive characteristics of the entire sample (n=341) are presented in table 4.1. The median (Inter-quartile range) age of the respondents was 15 (14-17) years. One hundred and seventy four respondents (51%) were female. One hundred and eighteen respondents (34.6%) had lost both parents and were staying with another relative. One hundred and seventy five participants (51.3%) were single orphans, and of these 90 (51.4%) had lost their mother and 85(48.6%) had lost their father. Only 14.1% of the respondents had both parents still living (Table 4.1).

Most of the respondents (68.6%, n=234) were in secondary school. Sixty eight respondents (19.9%) were in primary school. Only three respondents (0.9%) were attending tertiary education. Twenty eight respondents (8.2%) were informally employed, three respondents (0.9%) were formally employed and five (1.5%) were unemployed (Table 4.1).

Most of the respondents (92.4%) were taking antiretroviral drugs (ARVs) and 245 (77.8%) of those taking ARVs had taken them for more than 36 months (Table 4.1). Eleven respondents (3.2%) had a psychiatric diagnosis and had been treated by a psychiatrist.

Table 4.1: Demographic characteristics of sample

Characteristic	Frequency (N=341)
Gender: Female	174 (51%)
Age, median (IQR)	15 (14-17)
Occupation	
Primary school	68 (19.9%)
Secondary school	234 (68.6%)
Informally employed	28 (8.2%)
Tertiary education	3 (0.9%)
Formally employed	3 (0.9%)
Unemployed	5 (1.5%)
Paternal orphans	175 (51.3%)
Double orphans	118 (34.6%)
Taking ART	315 (92.4%)
Treated by a psychiatrist	11 (3.2%)
Exposed to erotic content	
Television	159 (46.6%)
Movies	125 (36.7%)
Novels	71 (20.8%)
Magazines	62 (18.2%)
Internet	51 (15%)
Caregiver strictness	
Very strict	83 (24.3%)
Strict	95 (27.9%)
Lax	118 (34.6%)
Very lax	45 (13.2%)

*Data are n (%) unless otherwise stated

4.1.2. Sexual history

The sexual history of the sample is summarised in table 4.2. One hundred and ten respondents (32.2%) were involved in some form of romantic relationship at the time of the study. A total of 145 (42.5%) had been involved in present or past romantic relationships. Nineteen respondents (5.5%) had ongoing relationships with more than one boy or girl friends.

Table 4.2: Sexual history of sample

Characteristic	Frequency n (%)
Relationship status (n=341)	
Currently involved in a romantic relationship	110 (32.2%)
Ever involved in a romantic relationship	145 (42.5%)
Currently have more than one boyfriend/girlfriend	19 (5.5%)
Engaged in sexual intercourse (n=37)	
Female	24 (65%)
Male	13 (35%)
More than one sexual partners	11 (30%)
Disclosed HIV status to sex partner(s)	9 (24%)
Reason for engaging in sex (n=37)	
Satisfy sexual desire	14 (38%)
Pressure from partner	2 (5%)
Met the right person	18(49%)
To be closer to partner	4(10%)
To be like peers	2(5%)
Early onset of sexual activity (n=18)	
Male	6(33%)
Female	12(67%)
Use of contraception (n=37)	
Condoms used sometimes	15(40.5%)
Hormonal contraception	3(8.1%)
Did not use a condom always (n=37)	
Condom not readily available	27(73%)
Did not want to use a condom	4(11%)
Don't know how to use a condom	3(8%)
Reduces sexual pleasure	3(8%)
Engaged in other erotic activities (n=304)	
Kissing	48(16%)
Fondling	52(17%)
Self masturbation	22(7%)
Fantasizing about love and sex	49(16%)
Mutual masturbation	1(0.3%)
Reason for not being sexually active (n=304)	
Feel too young	226(74%)
Fear of spreading HIV	31(10%)
Religious beliefs	25(8%)
Fear of pregnancy	7(2%)
Fear other STIs	6(2%)
Fear of HIV re-infection	4(1%)

*Data are n (%) unless otherwise stated

Thirty-seven respondents (10.9%) had been involved in sexual intercourse. Sixty-five percent of those who had engaged in sexual intercourse were females. Out of those who had engaged in sexual intercourse, 11 respondents (30%) had multiple sex partners and only nine respondents (24%) had disclosed their HIV status to their partners before having sex with them. Those who did not disclose status to partners feared rejection 20(54%), felt the partner should have asked them first 5 (14%), did not know their status at the time of sexual intercourse 3(8%). Almost half of the respondents indulged in sex because they felt they had met the right person, 38% wanted to satisfy their sexual desire, 10% wanted to be closer to partner, 5% gave in to pressure from their partner to have sex and another 5% wanted to be like their friends (Table 4.2).

Eighteen respondents (5%) had had their sexual debut before their sixteenth birthday and two-thirds of these were females. The youngest respondents to engage in sexual intercourse were 11 years old at the time they had their first sexual intercourse. Of the 37 respondents who reported being sexually active, 15(40.5%) had used a condom at some point when they had sex. None of the respondents, however, reported having used a condom every time they had sex. Reasons given for not using condom every time included: condom not readily available (73%), did not want to use a condom (11%), did not know how to use a condom (8%) and reduces sexual pleasure (8%). None of the respondents had suffered from any sexually transmitted infection.

Three hundred and four participants had not engaged in sexual intercourse, of these however, some had been involved in other forms of erotic activities. Forty eight (16%) of these had kissed their boy or girlfriend, 52(15.3%) had been involved in touching their boy or girlfriend in ways that they considered erotic, 32(9.4%) had been involved in fondling with their boyfriend or girlfriend. Eighteen adolescent males (10.8%) reported indulging in self masturbation, and none of the adolescent girls reported indulging in this behaviour.

On a multiple response question on exposure to erotic content, 46.6% had been exposed to content that aroused their sexual desire (erotic content) through watching television programmes, whereas 125(36.7%) had been exposed through watching movies. Very few, 51(15%), 62(18.2%) and 71(20.8%) had been exposed to erotic content via the internet, magazines and novels respectively (see Table 4.1).

4.1.3. Discussions on sexuality

Table 4.3 and table 4.4 summarise the frequency and nature of sex-related issues discussed with primary caregivers, friend, health workers and other relatives. One hundred and thirty eight respondents (40.5%) had discussed sex related issues with their friends and 88 (26%) had discussed sex-related issues with a health worker. Only 51 respondents (15%) had discussed sex-related issues with their primary caregivers and 28(8.2%) discussed with other relatives. These relatives included brothers (2.6%), sisters (1%), aunts (2.3%) and grandparents (2.3%).

Several reasons were given for not discussing sexuality with the people stated above. Among those who did not discuss sexuality with their primary caregivers, 47% of them felt they were too young to discuss sexuality with their primary caregivers, 36% were afraid, 15% were shy and 3% felt their primary caregivers were too busy to discuss such issues with them. Of those who did not discuss sexuality with their health worker, 49% felt they were too young, 19% were shy, 19% were afraid and 13% felt the health workers were too busy to discuss sexuality with them. Of those who did not discuss sexuality with their friends, 56% felt they were too young and 33% were too shy.

Generally less than 10% of the sample had subject-specific sexuality discussions with the caregivers, health workers and friends (see Table 4.4). Exceptions included dating and relationships which was discussed by 35% of the adolescents with their friends. Issues to do with having sex were discussed by 24% of the adolescents with their friends, dating and relationships were discussed by 13% of the adolescents with a health worker and 10% of the adolescents discussed issues to do with menstruation with their health worker.

Only 7% of the adolescents discussed methods of birth control with a health worker. None of the adolescents discussed methods of birth control with their caregiver, other relative or their friends.

Table 4.3: Discussions on sexually

Characteristic	N(%)
Discussed sexuality with (N=341):	
Friends	138 (41%)
Primary caregiver	51 (15%)
Other relative	28 (8%)
Health worker	88 (26%)
Reason for not discussing sexuality with primary caregiver (n=290)	
Feel too young	137 (47%)
I am afraid	104 (36%)
I am shy	43 (15%)
They are too busy	9 (3%)
Reason for not discussing sexuality with health worker (n= 259)	
They are too busy	33 (13%)
I feel too young	128 (49%)
I am shy	49 (19%)
I am afraid	49 (19%)
Reason for not discussing sexuality with friends (n=216)	
I feel too young	120 (56%)
I am shy	71 (33%)
I am afraid	25 (11%)

4.1.4. Drug use

Generally, drug use was low in this sample. Only thirteen adolescents (3.8%) had consumed alcohol at some point and only two respondents (0.6%) had smoked cigarettes. None of the respondents had used marijuana, inhalants or any other drug.

Table 4.4: Subjects discussed

Subject discussed	N=341		
	Primary caregiver	Health worker	friends
Menstruation	13 (4%)	33 (10%)	19 (6%)
Dating and relationships	25 (7%)	43 (13%)	120 (35%)
Having sex	7 (2%)	7 (2%)	82 (24%)
Methods of birth control	0 (0%)	23 (7%)	0 (0%)
Reasons for having sex	7 (2%)	3 (1%)	20 (6%)
How pregnancy occurs	17 (5%)	28 (8%)	14 (4%)

*Data are n (%) unless otherwise stated

4.2. FACTORS ASSOCIATED WITH EARLY ONSET OF SEXUAL ACTIVITY, PRACTICE OF UNPROTECTED SEX

Further data analysis was done to determine factors that are associated with being sexually active. The findings are summarised in table 4.5. In the univariate analysis, factors associated with sexual activity include older age (OR=1.56, $p<0.001$) and being treated by a psychiatrist (OR=47.9, $p<0.001$). Discussing sexuality with friends (OR=4.6, $p<0.001$), health worker (OR=5.2, $p<0.001$) and relatives other than primary caregiver (OR=3.1, $p=0.017$) were all associated with sexual activity. Exposure to erotic television programmes, erotic movies, magazines with erotic content and erotic internet sites were also associated with sexual activity.

When adjusted in the multivariate model, older age (OR=1.91, $p<0.01$), discussing sexuality with health worker (OR=5.4, $p=0.001$), being treated by a psychiatrist (OR=96.2, $p<0.001$) and exposure to erotic television programmes (OR= 3.9, $p=0.04$) indicated an association with sexual activity (see Table 4.5).

Table 4.5: Factors associated with being sexually active

	Univariate analysis	P-value	Multivariate analysis	P-value
	OR (95% CI)		AOR (95% CI)	
Age	1.56 (1.27-1.92)	<0.001	1.91 (1.38-2.64)	<0.01
Gender: male	0.52 (0.25-1.1)	0.07	0.86 (0.34-2.16)	0.75
Paternal orphans	1.45 (0.47-4.46)	0.52	-	
Double orphans	1.36 (0.42-4.41)	0.61	-	
*Exposed to erotic content				
Television	6.9 (2.82-17.24)	<0.001	3.9 (1.00-14.76)	0.04
Movies	3.7 (1.79-7.48)	<0.001	1.7 (0.54-5.39)	0.36
Magazines	2.8 (1.33-5.84)	0.007	2.3 (0.83-6.36)	0.11
Caregiver strictness				
Very strict	0.78 (0.29-2.1)	0.62	-	
Strict	0.15 (0.04-0.60)	0.007	-	
Lax	0.64 (0.25-1.65)	0.36	-	
Very lax	1			
†Discussed sexuality with:				
Friends: Yes	4.6 (2.16-9.91)	<0.001	0.62 (0.22-1.79)	0.38
Primary caregiver: Yes	1.1 (0.43-2.79)	0.84	-	
Other relative: Yes	3.1 (1.22-7.92)	0.017	2.6 (0.83-7.87)	0.10
Health worker: Yes	5.2 (2.56-10.63)	<0.001	5.4 (1.93-15.28)	0.001
Treated by psychiatrist				
Yes	47.9 (9.86-232.6)	<0.001	96.2 (14.2-650.7)	<0.001

*NB: for each media the participants were exposed to, the reference is those not exposed to that particular media with erotic content

4.3. CONCLUSION

The results from the analysis of the data collected in a sample of adolescents living with HIV in Harare were presented in this chapter. A total of 10.9% of the sample had engaged in sexual intercourse. Approximately 60% of the sexually active adolescents did not practise safe sex. Only 5% had early onset of sexual activity. Factors independently associated with being sexually active included exposure to erotic content in television programmes, being treated by a psychiatrist, discussing sexuality with health worker and older age. The ensuing chapter focuses on discussion of the findings using extant literature and recommendations.

CHAPTER 5: DISCUSSION AND RECOMMENDATIONS

5.1. INTRODUCTION

This chapter presents a discussion of the research results within the perspective of previous research literature. The organisation of this chapter follows the main study concepts. Limitations of this study and recommendations are also presented in this chapter.

5.2. DEMOGRAPHIC CHARACTERISTICS

In this study, 85% of the adolescents were orphans. This is in keeping with the finding by Birungi et al (2009:184) that 80% of the adolescents that participated in their study were orphans. Since majority of the adolescents were infected with HIV through parent to child transmission, it follows that the parents might have died due to HIV-related illnesses. This explains the high rate of orphanhood seen in this cohort.

The proportion of adolescents who had been treated by psychiatrists in this cohort was 3.2%. This is much less than that observed elsewhere. In an American cohort of adolescents living with HIV, 48% of the adolescents had a psychiatric diagnosis like depression and had been treated by a psychiatrist (Wood, Shah, Sttenhoff and Rutstein 2009:1862). These authors also stress the need to have a high index of suspicion and to actively look for signs and symptoms of psychiatric conditions in adolescents living with HIV. It might be the case in the study setting that most of the adolescents have undiagnosed and untreated psychiatric illnesses. This may be because staff in the clinics may have failed to actively screen adolescents for psychiatric illnesses.

5.3. SEXUAL BEHAVIOUR

The proportion of adolescents who was sexually active in this sample was 10.9%. This is less than 33% of that noted in the study by Birungi et al (2010:185). This is thought to be case because of the age group they studied, which was 15 to 19 years. This age group was older than the age group this study looked at. In their study they excluded the 13 and 14 year olds. This can be problematic as sexual activity usually begins after

puberty. In a study by Ferrand et al (2012:5), it is claimed that puberty is delayed in adolescents living with HIV. The low rate of sexual activity in this cohort can be attributed, at least in part, to the delayed puberty onset among adolescents living with HIV.

Only 5% of the adolescents engaged in sexual intercourse before their sixteenth birthday in this cohort. The rate noted by Campbell and Mbitvo (1994:246) was that 35% of adolescent males had engaged in sex by the time they turned sixteen years. This may also be explained by the late onset of puberty and sexual activities in adolescents living with HIV. The other factor that could also have contributed is the difference in the communities or geographical locations of the two cohorts. The former is an urban dwelling, while the later was from both urban and rural communities.

The number of adolescents who disclosed their HIV status to their partners before sexual intercourse is very low, 24%. This implies that 76% of sexually active adolescents did not disclose their status to their partners before having sex with them. This may in turn imply that the adolescents without HIV may have had unprotected sex with a partner living with HIV without knowing the status of the latter. This may have led to the spread of HIV among the adolescents. The spread of HIV therefore may be fuelled by such adolescents who do not disclose their HIV status coupled with the difficulties of accessing condoms as discussed below.

The issue of difficulties in accessing condoms by adolescents may also contribute to the spread of HIV. None of the adolescents used condoms every time they had sex. Approximately 60% of the sexually active adolescents never used a condom during sex. Unprotected sex with an adolescent living with HIV may lead to onward transmission of HIV.

5.4. DISCUSSIONS ON SEXUALITY

Amongst the groups of people that the adolescents discussed sexuality with, most adolescents discussed with friends (41%) as opposed to health worker (26%), or caregivers (15%) and other relatives (8%). The fact that adolescents seemed to be comfortable speaking to their friends about sexuality may be applied to practical

situations by enrolling adolescents as peer educators and counsellors. One may not always know if the information the adolescents share is correct unless some of the adolescents are trained as peer educators. Training adolescents will help in ensuring that the trained adolescents make informed decisions in their lives and they also share correct information with their peers. Health workers also need to increase their discussions with adolescents about sexuality as they come to the clinics for routine HIV care.

It is also important to note that primary caregivers and friends never discussed contraception with the adolescents. Discussions on contraception can enable adolescents to make informed decisions when it comes to their sexuality. Such discussions have also been associated with greater condom use (Miller et al 1998:1543). Most of the adolescents indicated that they did not speak to their caregivers about sexual issues because they felt they were too young. Some indicated that they were afraid. Upon further discussions with some adolescents, they indicated the fear stems from the fact that when an adolescent asks their caregiver about sexual issues, the caregiver would assume that the adolescent intends to start indulging in sex and disciplinary actions would be instituted. The education that is being given to adolescents emphasizes abstinence and teaching them about contraception is thought to encourage promiscuity. This also explains why 73% of sexually active adolescents had problems accessing condoms. Health workers, however, spoke to the adolescents about contraception.

5.5. FACTORS ASSOCIATED WITH SEXUAL ACTIVITY

Older age was independently associated with being sexually active in this sample. This is similar to a finding made by Campbell and Mbizvo (1994:246) in their study where 21% of Zimbabwean adolescent males aged 12 years reported to have had sexual intercourse and this proportion was predicted to increase with age.

Watching erotic content on television was noted to be independently associated with being sexually active. This is also in keeping with findings by Collins et al (2003:280) where adolescents who viewed television more were at risk of being sexually active.

Discussing sexuality with health worker was also found to be independently associated with being sexually active. This is not consistent with some expectations made in the literature, which in essence relate to the view that discussions about sex are usually associated with delay in onset of sexual activities (Gwandure 2012:415). Anecdotal data from the nurses and counsellors in the clinics who attend to the respondents however highlighted that they tend to discuss sexuality issues with those whom they suspect to be sexually active or those whom they know are already sexually active and not with every adolescent. This anecdotal data may indicate that there is selection bias among the counsellors as to who they discuss sexuality with. This may have given rise to this unexpected association.

Lastly being treated by a psychiatrist was found to be independently associated with being sexually active. This is in keeping with findings from elsewhere. Psychiatric illnesses like depression are known to be associated with early onset of sexual activity in adolescents (Donenberg, Bryant, Emerson, Wilson and Pasch 2003:248).

5.6. LIMITATIONS OF THE STUDY

Convenience sampling which was used in this study means that the findings of this study can only be used in the sample from which the findings were drawn and are cannot be generalised to all the adolescents living with HIV in Zimbabwe. It is however important to note that most of the findings are in agreement with findings that have been made elsewhere as discussed above. The findings can therefore be adopted in other urban settings similar to the setting in which the study was conducted.

5.7. RECOMMENDATIONS

About half of the adolescents did not discuss sexuality with the caregivers, health workers and friends because they felt they were too young. There is therefore need to equip the health workers and caregivers to initiate the discussions with the adolescents before the adolescence start indulging in sexual activities. The discussion on contraception and safer sex should also be started early and the authorities may need to consider improving condom availability to adolescents.

There were very few adolescents with diagnosed mental illnesses. This might be because the health workers are not actively screening adolescents for signs and symptoms of mental illness. There is therefore a need to increase awareness among the health workers and train them to actively screen adolescents living with HIV for any signs and symptoms of mental illnesses. It is thus believed that the outcome of this study may help policymakers in setting up health promotion strategies that may reduce the spread of HIV among adolescents by early identification of patterns of early onset of sexual activity and unprotected sexual behaviours and factors associated with the same. Arguably, reduction in the spread of HIV if achieved over a significant period of time would lead to a reduction in the growth or incidence and prevalence of HIV infection among adolescents.

Future studies may be carried out in using a sample that is representative of all adolescents living with HIV in Zimbabwe. This may be done through random sampling and focusing on multiple centres where adolescents get their treatment. Findings that can be generalised would be more useful to policy makers.

5.8. CONCLUDING REMARKS

This study, which utilised a quantitative descriptive design, has described sexual behaviours among adolescents living with the Human Immunodeficiency Virus (HIV) in Zimbabwe. Adolescents living with HIV are claimed to experience delayed sexuality. This is in contrast to those with this disorder. This has implications for practice and health education, as adolescents who are HIV-negative may engage in sexual activity with their HIV-positive counterparts without knowing the status of the later. These sexual activities are believed to play a part in the continuing increase of the incidence and prevalence of HIV among adolescents. As adolescents respond well to other adolescents, in other listen to their advice, it is critical for all health education activities to include adolescents and health educators. Achieving this may help to contribute to the spread of HIV, in other words it growing incidence.

6. LIST OF REFERENCES

- Allison, BN. 2000. Parent-adolescent conflict in early adolescence: research and implications for middle school programmes. *Journal of Family and Consumer Sciences Education* 18(2):1-6.
- Babalola, S, Awasum, D & Quenam-Renaud, R. 2002. The correlates of safe sex practices among Rwandan youth: a positive deviance approach. *African Journal of AIDS Research* 1: 11–21
- Bellis, MA, Downing, J & Ashton. JA. 2006. Adults at 12? Trends in puberty and their public health consequences. *Journal of Epidemiology and Community Health* 60:910-911.
- Birungi, H, Mugisha, JF, Obare, F & Nyombi, J. 2009. Sexual behaviour and desires among adolescents perinatally infected with Human Immunodeficiency Virus in Uganda: implications for programming. *Journal for Adolescent Health* 44(2): 184-187.
- Blake, SM, Ledsky, R, Goodenow, C, Sawyer, R, Lohrmann, D & Windsor, R. 2003. Condom availability programmes in Massachusetts High schools: relationships with condom use and sexual behaviour. *American Journal of Public Health* 93:966-962.
- Brannon, L & Feist, J. 2009. *Health psychology: an introduction to behaviour and health*; 7th edition. Belmont: Cengage Learning Inc.
- Brown, L, Lourie, KJ & Pao, M. 2000. Children and adolescents living with HIV and AIDS: A review. *Journal of Child Psychology and Psychiatry* 41(1): 81-96.
- Brink, AG, Coats, JC, & Rankin, FW. 2012. Who's the Boss? The Economic and Behavioral Implications of Various Characterizations of the Superior in Participative Budgeting Experiments. Available at SSRN: <http://ssrn.com/abstract=2132107>
- Burns, N & Grove, SK. 1997. *The practice of nursing research: conduct, critique and utilization*. Philadelphia: WB Saunders.
- Burns, N & Grove, SK. 2005. *The practice of nursing research: conduct, critique and utilization*. Philadelphia: WB Saunders.
- Buston, K, Williamson, LM, Hart G. 2007. Young women under 16 with experience of sexual intercourse: who becomes pregnant?. *Journal of Epidemiology and Community Health* 61:221-5

- Campbell, B & Mbizvo, MT. 1994. Sexual behaviour and HIV knowledge among adolescent boys in Zimbabwe. *Central African Journal of Medicine* 40(9): 245-250.
- Carlson, MDA & Morrison, RS. 2009. Study design, precision, and validity in observational studies. *Journal of Palliative Medicine* 12(1): 77-82.
- Carrol, JL. 2009. *Sexuality now: embracing diversity*. Wadsworth Cengage Learning Inc. Canada.
- Centers for Disease Control and Prevention (CDC). 2010. Youth risk behavior surveillance - United States, 2009 . *Surveillance Summaries. MMWR* 2010:59(SS-5):1-142.
- Collins, RJ, Elliot, MN, Berry, SH, Kanouse, DE, Kunkel, D, Hunter SB & Miu, A. 2003. Watching sex on television predicts adolescent initiation of sexual behaviour. *Paediatrics* 114: 280-289.
- Colvin, CJ. 2011. HIV/AIDS, chronic diseases and globalisation. *Globalization and Health* 7(31): 1-10
- Criminal Law (Codification and Reform) Act 2004 Chapter 9:23
- Critical appraisal skills programme.2011.
- Crooks, RL & Baur, K. 2011. *Our sexuality*. Wadsworth Publishing.
- Davies, PT & Windle, M. 1997. Gender specific pathways between maternal depressive symptoms, family discord and adolescent adjustment. *Developmental Psychology* 33(4): 657-668.
- De Vos, AS, Strydom, H, Fouché, CB. & Delport, CSL. 2011. *Research at Grass Roots: For the Social Sciences and Human Service Professions: 4th edition*. Pretoria: Van Schaik Publishers.
- Donenberg, GR, Bryant, FB, Emerson, E, Wilson, HW & Pasch, KE. 2003. Tracing the Roots of Early Sexual Debut Among Adolescents in Psychiatric Care. *Journal of the American Academy of Child and Adolescent Psychiatry* 42(5): 594-608.
- Downing J & Bellis MA. 2009. Early pubertal onset and its relationship with sexual risk taking, substance use and anti-social behaviour: a preliminary cross-sectional study. *BMC public health*. 9:446. doi:10.1186/1471-2458-9-446.

Eide, AH & Acuda, W. 1995. Drug use among secondary school students in Zimbabwe. *Addiction* 90(11):1517-1527.

Ellis, TJ & Levy, Y. 2008. Framework of problem-based research: a guide for novice researchers on the development of a research-worthy problem. *Informing Science Journal* 11: 17-33.

Erickson, K. 1998. *Sexual activity and the youth*. The Institute for youth Development: Washington.

Fatusi, AO & Blum, RW. 2008. Predictors of early sexual initiation among a nationally representative sample of Nigerian adolescents. *BMC Public Health* 8 (136): 1-14.

Feltoe, G. 2005. *A Guide to Criminal Law of Zimbabwe* University of Zimbabwe.

Ferrand, R, Bandason, T, Musvaire, P, Larke, N, Nathoo, K, Mujuru, H, Ndhlovu, C, Munyati, S, Cowan, FC, Gibb, DG & Corbett, E. 2010. *Causes of acute hospitalization in adolescence: burden and spectrum of HIV-related morbidity in a country with an early-onset and severe HIV epidemic: a prospective survey*. From: <http://www.ncbi.nlm.nih.gov/pmc/articles/PMC2814826/pdf/pmed.1000178.pdf> . (Accessed 12 April 2011).

Ferrand, R, Lowe, S, Whande, B, Munaiwa, L, Langhaug, L, Cowen F, Mugurungi, O, Gibb, D, Munyati, S, Williams, BG & Corbet EL. 2009. Survey of children accessing HIV services in a high prevalence setting: time for adolescents to count? *Bulletin of the World Health Organization* 88: 428-434.

Finlay, L & Gough, B. 2003. *Reflexivity: a practical guide for researchers in health and social sciences*. John Wiley & sons.

Fouka G & Mantrozou G. 2011. What are the Major Ethical Issues in Conducting Research? Is there a Conflict between the Research Ethics and the Nature of Nursing? *Health Science Journal* 5(1): 3-14.

Francoeur, RJ & Noonan .2004. *The continuum complete international encyclopedia of sexuality*. From <http://www.kinseyinstitute.org/ccies/pdf/ccies-nigeria.pdf>. (Accessed 10 October 2012).

Friis, RH & Sellers, TA. 2009. *Epidemiology for public health practice*. 4th Edition.

Gray, G E. 2010. *Adolescent HIV—Cause for Concern in Southern Africa*. Perinatal HIV Research Unit, University of the Witwatersrand. Johannesburg, South Africa. From: <http://www.ncbi.nlm.nih.gov/pmc/articles/PMC2820351/pdf/pmed.1000227.pdf> (Accessed 28 June 2011).

Grimes, GA & Schulz, KF. 2002. Descriptive studies: what they can and cannot do. *The Lancet* 359(3501): 145 – 149.

Gwandure, C. 2012. Sexual desire and expression among girls in a traditional Shona context. *Anthropologist* 14(5): 415-423.

Gwede, CK, McDermott, RJ, Westhoff, WW, Mushore, M, Mushore, T, Chitsika E, Majange, CS & Chauke, P. 2001. Health risk behaviour of rural secondary school students in Zimbabwe. *Health Education and Behaviour* 28(5):608-623.

Haeberle, EJ. 1983. The sex atlas. New popular reference edition: revise and expanded. http://www.sexarchive.info/GESUND/ARCHIV/ATLAS_EN/atlas.htm (accessed 14 Sep 2011).

Hales D. 2010. *An introduction to triangulation*. UNAIDS monitoring and evaluation fundamentals. UNAIDS. From http://www.unaids.org/en/media/unaids/contentassets/documents/document/2010/10_4-Intro-to-triangulation-MEF.pdf (Accessed 14 September 2011).

Hennekenes, CH & Buring, JE. 1987. *Epidemiology in medicine*. Toronto. Little brown and company.

Highleyman L. 2010. First-line Antiretroviral Therapy for People with HIV Infection. *HIV and Hepatitis.com* From: http://www.hivandhepatitis.com/recent/lipo/treatment_naive/Treatment_Naive_HIV_10.pdf (Accessed 28 June 2011).

Horney, J. 2003. *High HIV Prevalence and High Contraceptive Prevalence Rates in Botswana, Kenya and Zimbabwe: Is this Relationship Counterintuitive Considering the Determinants for HIV and CPR and the Populations Included in Prevalence Measurements?* Carolina Papers.

Huebner A. 2012. Teen social and emotional development. Family and child development, Virginia tech. From:

http://extension.udel.edu/fcs/files/2012/01/FMwebTeenSocialandEmotionalDev._002.pdf. (Accessed 10 November 2012).

Jenkins RR. 2007. The epidemiology of adolescent health problems. In: Kliegman RM, Behrman RE, Jenson HB, Stanton BF, eds. *Nelson Textbook of Pediatrics*. 18th Ed. Philadelphia, Pa: Saunders Elsevier.

Johnson, B & Christensen, LB. 2010. *Educational research: quantitative, qualitative and mixed approaches*; 4th edition. California: Sage publications

Jones, RK, Darroch, JE & Singh, SS. 2005. Religious differentials in the sexual and reproductive behaviours of young women in the United States. *Journal of Adolescent Health* 36:279-288.

Joubert, G & Katzenellenbogen, J (eds). 2007. *Epidemiology: a research manual for South Africa*. 2nd edition. Cape Town: Oxford University press.

Kambarami, M. 2006. Femininity, sexuality and culture: patriarchy and female subordination in Zimbabwe. *African regional resource centre*. From <http://www.arsrc.org/downloads/uhsss/kmabarami.pdf>. (Accessed 23 January 2012).

Katzenellenbogen, J & Joubert, G (eds). 2007. *Epidemiology: a research manual for South Africa*. 2nd edition. Cape town: Oxford University Press.

Kaur, N, Ghosh, M and Bhatia, BB. 2012. Modeling the spread of HIV in a stage structured population: effect of awareness. *International Journal of Biomathematics* 5(5) (doi: 10.1142/s1793524511001829).

Kelley, K, Clark, B, Brown, V & Sitzia, J. 2003. Good practice in the conduct of reporting of survey research. *International Journal for Quality in Health Research* 15(3): 261 – 266.

Kim, YM, Kols, A, Nyakauru, R, Marangwanda, C & Chibatamoto, P. 2001. Promoting sexual responsibility among young people in Zimbabwe. *International family planning perspectives* 27(1): 11-19.

Kirby, D. 2002. *HIV transmission and prevention in adolescents: University of California San Francisco*. From: <http://hivinsite.ucsf.edu/InSite?page=kb-07-04-03>. (Accessed 15 June 2011).

Kirby, D, Laris, BA & Rolleri, L. 2006. *Impact of Sex and HIV Education Programs on Sexual Behaviors of Youth in Developing and Developed Countries*. Family Health International, Research Triangle Park. NC.

Kirkwood, B R. 1988. *Essentials of medical statistics*. Oxford: Blackwell Scientific Publications.

Kironde, S & Lukwango, J. 2002. Corporate response to the HIV/AIDS epidemic in Uganda – time for a paradigm shift? *African Health Sciences* 2(3): 127-135.

Landolt, NTK, Lakhonphon, S & Ananworanich, J. 2011. Contraception in HIV positive female adolescents. *AIDS research and therapy* 8(19). From <http://www.aidsrestherapy.com/content/pdf/1742-6405-8-19.pdf>. (Accessed 25 April 2013).

Lane, T & Palacio, H. 2006. *Safer sex methods*. From <http://hivinsite.ucsf.edu/inSITE?page=kb-07-02-02>. (Accessed 10 November 2011).

Levin, KA. 2006. Study design III: cross-sectional studies. *Evidence Based Dentistry* 7:24-25.

Levy, Y & Ellis, TJ. 2006. A systems approach to conduct an effective literature review in support of information systems review. *Informing Science Journal* 9: 181-212.

Mann, CJ. 2003. Observational research methods. Research design 2: cohort cross sectional and case control studies. *Emergency Medicine Journal* 20: 54-60.

Manzini, N. 2001. Sexual initiation and childbearing among adolescent girls in KwaZulu Natal, South Africa. *Reproductive Health Matters* 9(17): 44-52.

Marindo, R, Pearson, S & Casterline, JB. 2003. *Condom use and abstinence among unmarried young people in Zimbabwe: Which strategy, whose agenda?* Population council: Policy research division. From <http://www.popcouncil.org/pdfs/wp/170.pdf>. (Accessed 11 January 2013).

Mawoneke, S, Sexton, A & Moyo K. 2001. *AIDS and street children in Zimbabwe*. SAT programme. From: [http://cfsc.trunky.net/uploads/Publications/6.AIDS and Street Children in Zimbabwe.pdf](http://cfsc.trunky.net/uploads/Publications/6.AIDS%20and%20Street%20Children%20in%20Zimbabwe.pdf). (Accessed 28 October 2012).

Miller, KS, Levin, ML, Whitaker, DJ & Xu, X. 1998. Patterns of condom use among adolescents: the impact of mother-adolescent communication. *American Journal of Public Health* 88(10):1542-1544.

Ministry of Health and Child Welfare, Zimbabwe. 2003. *The HIV/AIDS epidemic in Zimbabwe*. Harare: Government Printer.

Morgan, DL. 2007. Paradigms lost and paradigms regained: methodological implications of combining qualitative and quantitative methods. *Journal of Mixed Methods Research* 1(1):48-76.

Munodawafa D, Marty PJ & Gwede C. 1992. Drug use and anticipated parental reaction among rural school pupils in Zimbabwe. *Journal of School Health* 62(10):471-474.

Myer, L & Karim, SA. 2007. *Epidemiology: a research manual for South Africa*. 2nd edition. Edited by Joubert G and Ehrlich R. Cape Town: Oxford University Press.

Nielsen, MB & Einarsen, S. 2008. Sampling in research on interpersonal aggression. *Aggressive Behaviour* 34(3): 265-272.

Oxford Advanced Learner's Dictionary of Current English. 2005. 7th edition. Oxford: Oxford University Press.

Olsen C & George DMM. 2004. Cross-sectional study design and data analysis. *The young epidemiology scholars program. College entrance examination board*. From: http://www.collegeboard.com/prod_downloads/yes/4297_MODULE_05.pdf (Accessed 15 October 2011).

Olufemi, A. 2008. A critical analysis of the literature review section of graduate dissertations at the University of Botswana. Communication Studies Department. University of Botswana. From: http://www.esp-world.info/articles_20/doc/graduate_writing_site.pdf. (Accessed 20 March 2013).

Olukunle, O. 2007. Adolescents transitions: the challenges and the way out (African perspective). From: <http://uaps2007.princeton.edu/papers/70720>. (Accessed 19 September 2013).

Patrick, ME, Parlem, L, Caldwell, L, Gleeson, S, Smith, E & Wegner, L. 2011. A qualitative assessment of South African adolescents' motivation for and against

substance use and sexual behaviour. *Journal of Research on Adolescents* 20(2): 456-481.

Phiri, A & Erulkar, AS. 1997. A situation analysis of the Zimbabwe National family planning council's youth centres. ZNFPC and Population services. From: http://pdf.usaid.gov/pdf_docs/PNADT131.pdf. Accessed 28 Oct 2012. (Accessed 19 September 2013).

Polit, DF & Beck, CT. 2004. *Nursing research: principles and methods* 7th ed. London: Lippincott Williams & Wilkins.

Polit DF & Beck CT. 2008. *Nursing research: generating and assessing evidence for Nursing practice*. Lippincott Williams & Wilkins.

Polit, DF & Hungler, BP. 1999. *Nursing research: principles and methods*. Philadelphia: Lippincott.

Porter, S, Millar, C & Reid, J. 2012. Cancer cachexia care. *Cancer Nursing* 35(6): 30-38.

Prabhu, V. 2010. Sex education to adolescents. *Health education library for people*. From: http://www.healthlibrary.com/reading_room.php?action=view&id=37&cid=363. (Accessed 13 November 12).

Rector, RE, Johnson, KA, Noyes, LR & Martin, S. 2003. *The harmful effects of early sexual activity and multiple sexual partners among women: A book of charts*. The Heritage foundation. Massachusetts.

Rudatsikira, E, Maposa, D, Mukandavire, Z, Muula A & Siziya S. 2009. Prevalence and predictors of illicit drug use among school-going adolescents in Harare, Zimbabwe. *Annals of African medicine* 8(4):215-220.

Ruffin N. 2009. *Adolescent growth and development*. Virginia State University publication 350-850.

Reproductive health research unit. 2003. *HIV and sexual behaviour among young South Africans: a national Survey of 15-24yr olds*. University of Witwatersrand. South Africa.

Schatz P & Dzvimbo KP. 2001. The adolescent sexual world and AIDS prevention: a democratic approach to programme design in Zimbabwe. *Health promotion international* 16(2):127-136.

Schmied, V & Tully, L. 2009. Effective strategies and interventions for adolescents in a child protection context. Centre for parenting and research. NSW department of community services. From: http://www.community.nsw.gov.au/docswr/_assets/main/documents/effective_adolescent_strategies.pdf. (Accessed 28 Oct 2012).

Seifert, LS. 2010. *A beginner's guide to behavioural research methods*. Clove press Ltd. From : <http://www.clovepress.com/BehaviorResearchMethodsGuideSeifert2010.pdf> (Accessed 14 Sep 11).

Seme, A & Wirtu, D. 2008. Premarital sexual practice among school adolescence in Nekemte town, East Wollega. *Ethiopian journal of health and development* 22(2): 167-173.

Sibanda M. 2011. Married too soon: child marriage in Zimbabwe. Research and advocacy unit. From http://www.google.co.zw/url?sa=t&rct=j&q=societies+which+promote+early+sex+in+Zimbabwe&source=web&cd=4&cad=rja&ved=0CCwQFjAD&url=http%3A%2F%2Fwww.researchandadvocacyunit.org%2Findex.php%3Foption%3Dcom_docman%26task%3Ddoc_download%26gid%3D110%26Itemid%3D90&ei=56ybUNGpBYeyhAel2YDYDQ&usg=AFQjCNGdD28mpP4kusz_AAaKeWncwqu KMA. (Accessed 08 November 2012).

Smith, JA. 1996. Beyond the divide between cognition and discourse: using interpretive phenomenological analysis in health psychology. *Psychology and Health* 11: 261-271.

Smith, G. 2009. Factors associated with early onset of sexual activity in aboriginal adolescents. Telethon institute of child health research. Western Australia.

Steinberg L. 2006. Risk taking in adolescence. *Annals of the New York Academy of Sciences* 1021(1): 51-58.

Strauch, B. 2003. *The Primal Teen*. New York: Doubleday.

Swenson, RR, Rizzo, CJ, Brown, LK, Vanable, PA, Carey, MP, Valois, RF, DiClemente, RJ & Romer, D. 2010. HIV knowledge and its contribution to sexual health behaviours

of low income African American adolescents. *Journal of National Medical Association* 102(12): 1173-1182.

Terre Blanche, MT, Durrheim, K & Painter, D. 2006. *Research in practice: Applied methods for the social sciences*. 2nd ed. Cape Town: University of Cape Town Press.

United Nations General Assembly Special Session.2010. *Report on HIV and AIDS. Zimbabwe country report. 2010*. Zimbabwe.

Weller, SC & Davis-Beaty, K. 2007. Condom effectiveness in reducing heterosexual HIV transmission. *Cochrane Database of Systematic Reviews* Issue 4. Art. No.: CD003255. DOI: 10.1002/14651858.CD003255. From: http://apps.who.int/whl/hiv_aids/cd003255/en/index.html (Accessed 08November 2012).

Wertz, FJ. 2011. The qualitative revolution and psychology science, politics and ethics. *The humanistic psychologist* 39: 77-104

WHO. 2007. *Helping parents in developing countries improve adolescents' health*. Geneva: WHO press.

Wiener, LS, Battles, HB & Wood, LV. 2007. A longitudinal study of adolescents with perinatally or transfusion acquired HIV infection: sexual knowledge, risk reduction self-efficacy and sexual behaviour. *AIDS Behaviour* 11: 471-478.

Williams A. 2003. How to write and analyse a questionnaire. *Journal of Orthodontics* 30:245-252.

Wood, SM, Shah, SS, Sttenhoff, AP & Rutstein, RM. 2009. The impact of AIDS diagnoses on long-term neurocognitive and psychiatric outcomes of surviving adolescents with perinatally acquired HIV. *AIDS* 23(14):1859-1865

Zimbabwe National AIDS Council (NAC). 2005. *Comprehensive review of behavioural change for prevention of sexual transmission of HIV in Zimbabwe*. Harare.

Zimbabwe National Family planning council. 2011. *Press release: Distribution of contraceptives in schools*. Harare. From http://www.znfpc.org.zw/index.php?option=com_content&view=article&id=20&Itemid=23 . (Accessed 12 Nov 20120.

APPENDIX B: HARARE CENTRAL HOSPITAL ETHICS APPROVAL

Telephones: 621100-19
Fax: 621157



Reference:

HARARE CENTRAL HOSPITAL
P. O. Box ST 14

SOUTHERTON

Harare

11 April 2013

Dr. T. Vhembo
609 Adylinn Park
Westgate
HARARE


Dear Dr Vhembo,

REF: SEXUAL BEHAVIOR AMONG ADOLESCENTS LIVING WITH HIV IN ZIMBAWE.

I am glad to advise you that your application to conduct a study entitled: **Sexual Behavior Among Adolescents Living with HIV in Zimbabwe**, has been approved by the Harare Hospital Ethics committee.

You are advised to avail the results of your study whether positive or negative to the hospital through the committee for our information.

Yours sincerely,

HARARE CENTRAL HOSPITAL
DEPARTMENT OF MEDICINE

11 APR 2013
DR. C. PASI, SOUTHERTON
HARARE

Chairman Harare Central Hospital Ethics Committee

PARENT/CAREGIVER INFORMED CONSENT (PARENT/CAREGIVER OF ADOLESCENT LIVING WITH HIV)

PROTOCOL TITLE: SEXUAL BEHAVIOUR AMONG ADOLESCENTS LIVING WITH HIV IN HARARE

NAME OF RESEARCHER: Dr Tichaona Vhembo

PHONE: 0773 406 516

PURPOSE OF RESEARCH STUDY

To explore the sexual behaviour of adolescents living with HIV in Harare and factors that may influence this behaviour.

YOUR RIGHTS

Before you decide whether or not to allow your child to participate in this study, you must understand its purpose, how it may help you and your child, the risks to you and your child and what is expected of you and your child. This process is called informed consent. Thank you for taking time to read or listen to this information. Please note that participation in this study is completely voluntary.

PROCEDURES INVOLVED IN THE STUDY

Your child will be asked to answer a set of questions about him/herself in general and about his/her sexual behaviour and this will take about 20 minutes of his/her time. Your child is free not to answer any questions that he/she is not comfortable with.

DISCOMFORTS AND RISKS

Psychosocial Harm

This can result from the invasion of your child's private life and possible judgement of your/your child's character by other people.

This harm will be minimised by treating all the information obtained from your child with utmost confidentiality. Information obtained from your child will be stored in a secure place and will be accessible only to the researcher. No personal information will be recorded on data collection.

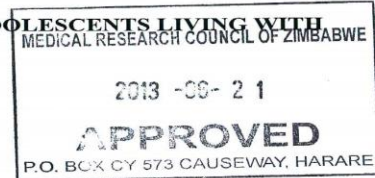
Your child will be asked to spare about 20mins of his/her time to respond to the questions that are prepared. There will be no additional costs to you/your child as a result of your child's participation in this study.

POTENTIAL BENEFITS

Neither you nor your child will get any immediate benefit from the research in terms of payment. But the outcome of the study will be used to improve the care of adolescents living with HIV in general.

WHAT OTHER CHOICES DOES YOUR CHILD HAVE BESIDES THIS STUDY?

Instead of being in this study, your child has the choice of just attending the clinic and getting your usual care without taking part in this study.



STUDY WITHDRAWAL

Taking part in this study is completely voluntary. You may choose not to allow your child to enter the study or he/she may withdraw from the study at any time without loss of benefits entitled to you/your child.

CONFIDENTIALITY OF RECORDS

Data will be stored in a secure place only accessible to the researcher. No personal information will be recorded on the data collection tools.

HOW WILL THE RESEARCH BE USED

We will tell you about new information from this or other studies that may affect your child's health, welfare or willingness to stay in this study. If you want the results of the study, please let the study staff know.

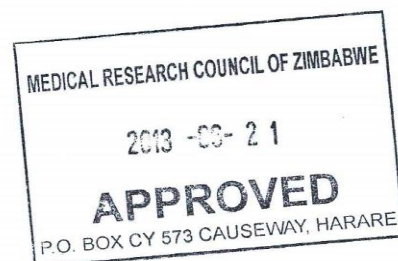
The findings of this study will be compiled into a publishable report that may end up being reported to a wide range of people who are involved in providing treatment and care to adolescents living with HIV. No information in these reports will be traceable back to you or your child.

PROBLEMS/QUESTIONS

Please ask any questions you may have about this research. If you have no questions and you are willing to allow your child to participate, you may want to provide your consent by signing this form. If you have any questions about this study in future please ask Dr Tichaona Vhembo on 0773 406 516.

For questions about your child's rights as a research subject, contact:

National Coordinator
Medical Research Council Of Zimbabwe
Josiah Tongogara/Mazoe Street
Harare
Phone: 791 792, or 791 193, or 0772 433 166.

**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 allow my child to be in this study: I know my child can stop being in the study at any time and I will not lose any benefits entitled to me or to my child. I will get a copy of this consent form.

Parent/Caregiver's Signature _____ Date _____

Parent/Caregiver's Name (Printed) _____

Researcher Signature _____ Date _____

Witness Signature (*optional*) _____ Date _____

For children 13 years old to 17 years old

My participation in this research study is voluntary. I have read or have been read and understood the above information, asked any questions which I had and have agreed to participate. I will be given a copy of this form to keep.

Name of Participant

Signature of participant



Appendix D: CAREGIVER SHONA INFORMED CONSENT

GWARO RETENDERANO KUMUBEREKI/MUCHENGETI WEWECHIDIKI ARI KURARAMA NEHUTACHIONA HWE-HIV

ONGORORO MAERERANO NETSIKA DZEPABONDE DZEVECHIDIKI VARI KURARAMA NEHUTACHIWANA HWEHIV MUHARARE

MUONGORORI: Chiremba Tichaona Vhembo

Nhamba dzenhare : 0773 406 516

ONGORORO IYI IRI KUITIRWEI?

Ongororo iyi iri kuda kutsvagurudza ruzivo rwuri maererano netsika dzepabonde dzevechidiki vari kurarama nehutachiwana hweHIV pamwe chete nekuongorora kuti nemhaka yei vechidiki ava vachiita tsika dzavanoita idzi.

KODZERO DZANGU NDEDZIPI?

Musati masarudza kuti munoda here kana kuti hamudi kuti mwana wenyu apinde muongororo iyi, munofanira kuti munzwisise kuti iri kuitirwei, kuti mungabatsirikane sei nayo, njodzi dzamungasangane nadzo uye kuti chinyi chinotarisirwa kubva kwamuri. Iri ndiro basa regwaro retenderano rino. Tinotenda nekutora nguva yenyu kuti muverenge kana kuteerera kune zviri mugwaro iri. Ndapota cherechedzai kuti kupinda muongororo ino isarudzo yenyu pasina kumanikidzwa.

CHII CHICHAITIKA KUMWANA WANGU KANA NDIKAMUBVUMIDZA KUPINDA MUONGORORO IYI?

Mwana wenyu achakumbirwa kuti apindure mibvunzo iri maererano neupenyu hwake uyewo nemibvunzo iri maererano netsika dzake dzepabonde. Izvi zvingangotora maminiti anokwana makumi maviri nguva yake. Mwana wenyu haamanikidzwe kupindura mibvunzo yaanenge asina kusununguka kupindura.

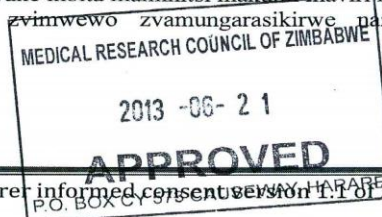
NDEDZIPI NJODZI NEZVINETSWA ZVANDINGASANGANA NAZVO KANA ZVINGASANGANA NEMWANA WANGU NEKUDA KWEKUPINDA KWEMWANA WANGU MUONGORORO IYI?

Kushungurudzika mupfungwa

.Izvi zvinogona kubva pakuzivikanwa kwezvakanzika zvehupenyu hwenyu nemwana wenyu uye kushorwa kungangoitwa unhu hwenyu kana hwemwana wenyu nevamwe vanhu.

Tinotarirwa kuti njodzi iyi haiitike kwamuri nokuti ruzivo rwese rwuchawanikwa kumwana wenyu ruchachengetedzwa pakavanzika, panongozivikanwa nemuongorori chete uyewo hatizosevenzese chero chipi chingaradidze kuti ruzivo rwatawana rwabva kuna ani zvakaita semazita, nhamba dzenhare, kero yenyu kana zvimwe zvakadaro.

Mwana wenyu achakumbirwa kuti atipewo nguva yake inoita maminiti makumi maviri kuti apindure mibvunzo yakagadzirwa. Hapana mari kana zvimweo zvamungarasikirwe nazvo nekuda kwekupinda muongororo iyi.



INI NEMWANA WANGU TINGABATSIRIKE SEI NEKUPINDA MUONGORORO IYI?

Hapana mari kana chimwe chamungawana nekupinda muongororo iyi. Zvichabuda muongororo iyi zvinogona kuzosevenzeswa kupundutsa betsero inopiwa vechidiki vari kurarama hehutachiwana hweHIV mune ramangwana.

KO KANA NDISINGADI KUTI MWANA WANGU APINDE MUONGORORO ?

Kupinda kwemwana wenyu muongororo ino isarudzo yenyu, pasina kumanikidzwa. Munogona kusarudza kuti mwana wenyu asapinda muongororo iyi kana kuti abude muongororo chero ipi nguva zvayo pasina kodzero yenyu yamunorasikirwa nayo.

KO DZIMWE SARUDZO DZANDIINADZO KUNZE KWEONGORORO INO NDEDZIPI

Kunze kweongororo ino, munogona kusarudza kuti mwana wenyu angoonekwa nevanomurapa mukiriniki semazuva ese asingapinde muongororo.

RUZIVO RWUCHACHENGETWA SEI?

Ruzivo rwuchachengetwa panzvimbo yakavanzika inongozikanwa nemuongorori chete. Hapana chinoratidza kuti ruzivo rwabva kuna ani chakaita semazita, nhamba dzenhare, kana kero yako chichashandiswa muongororo ino..

ZVICHABUDA MUONGORORO IYI ZVICHASHANDISWA SEI?

Tichakuzivisai kana paine umboo hutsva hunenge hwabuda kubva paongororo ino kana dzimwewo ongororo hwunogona kuve nechekuita nehutano hwemwana wenyu. Kana muchida kuziviswa zvichabuda muongororo ino, tapota taurirai muongorori. Muongorori achaedza zvole zvinokwanisika kukuzivisai zvichabuda muongororo ino.

Zvichabuda muongororo ino zvichashandiswa kugadzira chinyorwa chinogona kuzoverengwa nevanhu vakawanda vanobatsira vechidiki vari kurarama nehutachiwana hweHIV. Chinyorwa ichi chinenge chisina umboo hunoratidza kuti ndiani akapinda muongororo iyi.

KO KANA NDIINE MIBVUNZO YANDIINAYO?

Ndapota bvunzai mibvunzo yese yamungadai muinayo maererano neongororo iyi. Kana musina mibvunzo, muchida kuti mwana wenyu apinde muongororo iyi, muchakumbirwa kuti musaine pepa rino. Kana mukazoita mibvunzo nezveongororo ino mune remangwana munogona kubvunza Dr Tichaona Vhembo panhamba dzenhare dzinoti 0773 406 516.

Kana muine mibvunzo pamusoro pekodzero dzemwana wenyu semunhu ari mutsvakurudzo taurai na

National Coordinator
Medical Research Council Of Zimbabwe
Josiah Tongogara/Mazoe Street
Harare

Nhare dzinoti: (04)791 792, kana (04)791 193, kana 0772 433 166.

MVUMO

Ndaverenga kana kuti ndaverengerwa pepa rino. Ndanzwisisa njodzi dzandingasangane nadzo kana dzingasangane nemwana wangu uye betsero ingabude muchirongwa ichi. Kupinda kwemwana wangu muongororo iyi isarudzo yangu pasina kumanikidzirwa.

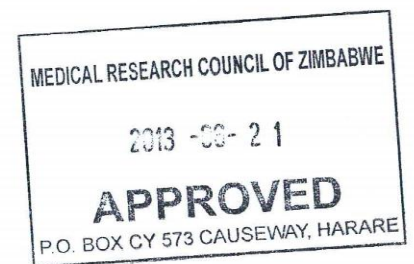
Ndasarudza kuti mwana wangu apinde muongororo ino. Ndinogona kusarudza kuti mwana wangu abude muongororo ino chero ipi nguva zvayo pasina kurasikirwa nekodzero dzangu kana dzemwana wangu. Ndichapiwa gwaro rino kuti ndichengete.

Siginecha yemubereki/muchengeti _____ Zuva _____

Zita remubereki/muchengeti (Nyora zvinoverengeka) _____

Siginecha yemuongorori _____ Zuva _____

Siginecha yemufakazi (*inogona kuiswa kana kusaiswa*) _____ Zuva _____



Kuvana vane makore 13 kusvika 17

Kupinda kwangu muongororo ino isarudzo yangu, pasina kumanikidzwa. Ndaverenga, kana kuti ndaverengerwa ndikanzwisisa gwaro rino, mibvunzo yangu yose yapindurwa uye ndabvuma kupinda muongororo ino. Ndichapiwa gwaro rino kuti ndichengete.

Zita reari kupinda muongororo

Siginecha yeari kupinda muongororo



APPENDIX E: ADOLESCENT ENGLISH INFORMED CONSENT

PARTICIPANT INFORMED CONSENT (ADOLESCENT LIVING WITH HIV)**PROTOCOL TITLE: SEXUAL BEHAVIOUR AMONG ADOLESCENTS LIVING WITH HIV IN HARARE****NAME OF RESEARCHER: Dr Tichaona Vhembo****PHONE: 0773 406 516****PURPOSE OF RESEARCH STUDY**

To explore the sexual behaviour among adolescents living with HIV in Zimbabwe and factors that may influence this behaviour.



MEDICAL RESEARCH COUNCIL OF ZIMBABWE

2013 -09- 2 1

APPROVED**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. Thank you for taking time to read or listen to this information. Please note that your choice to participate in this study is completely voluntary.

PROCEDURES INVOLVED IN THE STUDY

You will be asked to answer a set of questions about you in general and about your sexual behaviour and this will take about 20 minutes of your time. You are free not to answer any questions that you are not comfortable with.

DISCOMFORTS AND RISKSPsychosocial Harm

This can result from the invasion of your private life and possible judgement of your character by other people.

This harm will be minimised by treating all the information obtained from you with utmost confidentiality. Information obtained from you will be stored in a secure place and will be accessible only to the researcher. No personal information will be recorded on data collection.

You will be asked to spare about 20mins of your time to respond to the questions that are prepared. There will be no additional costs to you as a result of your participation in this study.

POTENTIAL BENEFITS

You will not get any immediate benefit from the research in terms of payment. But the outcome of the study may be used to improve the care of adolescents living with HIV in future.

WHAT OTHER CHOICES DO I HAVE BESIDES THIS STUDY?

Instead of being in this study, you have the choice of just attending the clinic and getting your usual care without taking part in this study.

STUDY WITHDRAWAL

Taking part in this study is completely voluntary. 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

Data will be stored in a secure place only accessible to the researcher. No personal information will be recorded on the data collection tools.

HOW WILL THE RESEARCH BE USED

We will tell you about new information from this or other studies that may affect your health, welfare or willingness to be in this study. If you want the results of the study, please let the study staff know.

The findings of this study will be compiled into a publishable report that may end up being reported to a wide range of people who are involved in providing treatment and care to adolescents living with HIV. No information in these reports will be traceable back to you.

PROBLEMS/QUESTIONS

Please ask any questions you may have about this research. If you have no questions and you are willing to participate, you may want to provide your consent by signing this form. If you have any questions about this study in future please ask Dr Tichaona Vhembo on 0773 406 516.

For questions about your rights as a research subject, contact:

National Coordinator
 Medical Research Council Of Zimbabwe
 Josiah Tongogara/Mazoe Street
 Harare
 Phone: (04)791 792, or (04)791 193, or 0772 433 166.

AUTHORIZATION

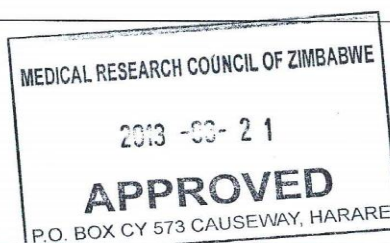
I have read this paper about the study or it was read to me. I understand the possible risks and benefits of this study. I know being in this study is voluntary. I choose to be in this study: I know I can stop being in the study and I will not lose any benefits entitled to me. I will get a copy of this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

Participant's Signature _____ Date _____

Participant's Name (Printed) _____

Researcher Signature _____ Date _____

Witness Signature (optional) _____ Date _____



Protocol version 1.1 of 20 Jun 2013. English child informed consent version 1.1 of 20 Jun 2013

APPENDIX F: ADOLESCENT SHONA INFORMED CONSENT

GWARO RETENDERANO KUNE WECHIDIKI ARI KURARAMA NEUTACHIWANA HWEHIV

ONGORORO MAERERANO NETSIKA DZEPABONDE DZEVECHIDIKI VARI KURARAMA NEHUTACHIWANA HWEHIV MUHARARE

MUONGORORI: Chiremba Tichaona Vhembo

Nhamba dzenharembozha : 0773 406 516

ONGORORO IYI IRI KUITIRWEI?

Ongororo iyi iri kuda kutsvagurudza ruzivo rwuri maererano netsika dzepabonde dzevechidiki vari kurarama neutachiwana hweHIV pamwe chete nekuongorora kuti nemhaka yei vechidiki ava vachiita tsika dzavanoita idzodzo.

KODZERO DZANGU NDEDZIPI?

Usati wasarudza kupinda kana kusapinda muongororo iyi, unofanira kuti unzwisise kuti iri kuitirwei, kuti ungabatsirikane sei nayo, njodzi dzaungasangane nadzo uye kuti chinyi chinotarirwa kubva kwauri. Iri ndiro basa regwaro retenderano rino. Tinotenda nekutora nguva yako kuti uverenge kana kuteerera kunyaya iyi. Ndapota cherechedza kuti sarudzo yekupinda kwako muongororo ino ndeyako pasina kumanikidzwa.

CHII CHICHAITIKA KWANDIRI KANA NDIKABVUMA KUPINDA MUONGORORO IYI?

Uchakumbirwa kuti upindure mibvunzo iri maererano neupenyu hwako uyewo nemibvunzo iri maererano netsika dzako dzepabonde. Izvi zvingangotora maminiti anokwana makumi maviri enguva yako. Mukupindura mibvunzo uku, haumanikidzwi kupindura mibvunzo yausina kusununguka kupindura.

NDEDZIPI NJODZI NEZVINETSWA ZVANDINGASANGANA NAZVO NEKUDA KWEKUPINDA MUONGORORO IYI?

Kushungurudzika mupfungwa

Izvi zvinogona kubva pakuzikanwa kwezvakanzika zveupenyu hwako uye kushoorwa kungangoitwa unhu hwako nevamwe vanhu.

Tinotarirwa kuti njodzi iyi haiitike kwauri nokuti ruzivo rwese rwuchawanikwa kwauri ruchachengetedzwa pakavanzika, panongozivikanwa nemuongorori chete uyewo hatizosevenzesi chero chipi chingaradidze kuti ruzivo rwatawana rwabva kuna ani zvakaita semazita. nhamba dzenhare, kero yako kana zvimwe zvakadaro.

Uchakumbirwa kuti utipewo nguva yako inoita maminiti makumi maviri kuti upindure mibvunzo yatakagadzira. Hapana mari kana zvimwewo zvaungarasikirwe nazvo nekupinda muongororo iyi.

CHINYI CHANDINGABATSIRIKE NACHO NEKUPINDA MUONGORORO IYI?

Hapana mari kana chimwe chaungawana nekupinda muongororo iyi. Zvichabuda muongororo iyi zvinogona kuzosevenzeswa kupundutsa betsero inopiwa vechidiki vari kurarama hehutachiwana hweHIV mune ramangwana.

KO KANA NDISINGADI ZVEONGORORO ?

Kupinda muongororo ino isarudzo yako, pasina kumanikidzwa. Unogona kusarudza kusapinda muongororo iyi kana kubuda muongororo chero ipi nguva pasina kodzero yako yaunorasikirwa nayo.

KO DZIMWE SARUDZO DZANDIINADZO KUNZE KWEONGORORO INO NDEDZIPI

Kunze kweongororo ino, unogona kusarudza kungoonekwa nevanokurapa mukiriniki semazuva ese usingapinde muongororo.

RUZIVO RWUCHACHENGETWA SEI?

Ruzivo rwuchachengetwa panzvimbo yakavanzika inongozikanwa nemuongorori chete. Hapana chinoratidza kuti ruzivo rwabva kuna ani chakaita semazita, nhamba dzenhare, kero yako chichashandiswa muongororo ino

ZVICHABUDA MUONGARORO IYI ZVAICHASHANDISWA SEI?

Tichakuzivisa kana paine umboo hutsva hunenge hwabuda kubva paongororo ino kana dzimwewo ongororo hwunogona kuve nechekuita nehutano hwako. Kana uchida kuziviswa zvichabuda muongororo ino, tapota taurira muongorori. Muongorori achaedza zvose zvinokwanisika kukuzivisa zvichabuda muongororo ino.

Zvichabuda muongororo iyi zvichashanda kugadzira chinyorwa chinogona kuzoverengwa nevanhu vakawanda vanobatsira vechidiki vari kurarama nehutachiwana hweHIV. Chinyorwa ichi chinenge chisina umboo hunoratidza kuti ndiani akapinda muongororo iyi.

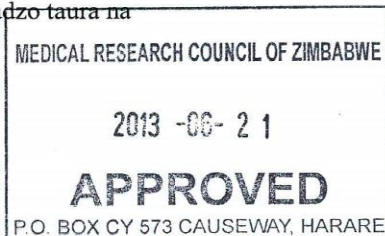
KO KANA NDIINE MIBVUNZO YANDIINAYO?

Ndapota bvunza mibvunzo yese yaungadai uinayo maererano neongororo iyi. Kana usina mibvunzo, uchida kupinda muongororo iyi, uchakumbirwa kuti usaine pepa rino. Kana ukazoita mibvunzo pamusoro peongororo ino mune remangwana unogona kubvunza Tichaona Vhembo panhamba dzenhare dzinoti 0773 406 516.

Kana uine mibvunzo pamusoro pekodzero dzako semunhu ari mutsvakurudzo taura na

National Coordinator
Medical Research Council Of Zimbabwe
Josiah Tongogara/Mazoe Street
Harare

Nhare dzinoti: (04)791 792, kana (04)791 193, kana 0772 433 166.

**MVUMO**

Ndaverenga kana kuti ndaverengerwa pepa rino. Ndanzwisisa njodzi dzandingasangane nadzo uye betsero ingabude muchirongwa ichi. Kupinda kwangu muongororo iyi isarudzo yangu pasina kumanikidzirwa. Ndasarudza kupinda muongororo ino. Ndinogona kusarudza kubuda muongororo chero ipi nguva pasina kurasikirwa nekodzero dzangu. Ndichapiwa gwaro rino kuti ndichengete.

Runyoro rweari kupinda muongororo _____ Zuva _____

Zita reari kupinda muongororo (Nyora zvinoverengeka) _____

Runyoro rwemuongorori _____ Zuva _____

Runyoro rwemufakazi (*runogona kuiswa kana kusaiswa*) _____ Zuva _____

APPENDIX G: ENGLISH DATA COLLECTION TOOL

SEXUAL BEHAVIOUR AMONG ADOLESCENTS LIVING WITH HIV IN ZIMBABWE QUESTIONNAIRE

Part 1: Demographic Characteristics

1.1 Age (years)

Description	Code	Choices
1.2 Sex	01	Female
	02	Male
1.3 Where do you live?	01	<hr style="width: 100%; border: 0.5px solid black; margin-bottom: 5px;"/> (please specify suburb in space provided)
1.4 What is your occupation?	01	Primary school
	02	Secondary school
	03	formally employed
	04	informally employed
	05	Other(specify)_____
1.5 Are your biological parents alive?	01	Both parents alive
	02	Only mother is alive
	03	Only father is alive
	04	Both parents dead
1.6 Can you tell me you parents' HIV status	01	only mother was/is HIV positive
	02	only father was/is HIV positive
	03	both parents were/are HIV positive
	04	both parents were/are HIV negative
	05	don't know
1.7 If you are not staying with your parent(s), who is your primary carer	01	grandparent
	02	aunt
	03	uncle
	04	brother
	05	sister
	06	cousin
	07	Other(specify)_____
1.8 For how long have you known your HIV status?	01	less than 6 months
	02	7 to 12 months
	03	13 to 35 months
	04	more than 36months
1.9 Are you taking antiretroviral drugs	01	yes

(ARVs)		
	02	No <i>(go to question 1.11)</i>
1.10 If you are taking ARVs, for how long have you been taking them?	01	Less than 6months
	02	7 to 12months
	03	13 to 35months
	04	more than 36 months
1.11 if you are not taking ARVs, please tell me why?	01	CD4 count still high
	02	Current sickness
	03	They made me sick
	04	Other reason (specify)
1.12 Have you ever been treated by a psychiatrist after receiving your HIV status?	01	yes
	02	No

How often do you get exposed to any of the following media with content that arouses your sexual desire (erotic content)?

	often	sometimes	never
	01	02	03
1.13 TV programmes			
1.14 magazines			
1.15 novels			
1.16 internet			
1.17 movies			

In your perception, how would you describe your caregiver/parents' strictness in disciplining you in the following areas?

	very strict 01	strict 02	lax 03	very lax 04
1.18 Watching television				
1.19 Doing homework				
1.20 Going out with friends				
1.21 Concerning issues of religion				

Part 2: Sexual History

2.1 When do you think is the right time to engage in sexual intercourse ?	01	when you are 16years or younger
	02	when you are 17 to 20years old
	03	When you are 21 years old or older.
	04	Only after marriage, despite your age
	05	Other(specify)_____
2.2 Do your parents/caregiver approve of sexual activity before the age of 16years?	01	They approve
	02	They are neutral
	03	They do not approve
2.3 Does the community you live in approve of the initiation of sexual activity before the age of 16years?	01	It approves
	02	It is neutral
	03	It disapproves
2.4 Did you ever have an intention to engage in sexual intercourse before the age of 16yrs	01	Yes
	02	No(<i>go to question 2.5</i>)

2.4a If yes, please state why	01	my friends are doing it
	02	cannot wait
	03	satisfy sexual desire
	04	other(specify) _____
2.5 Do you have a boyfriend/girlfriend?	01	Yes, I have one(<i>go to question 2.6</i>)
	02	Yes, I have more than one
	03	No(<i>go to question 2.8</i>)
2.5a If you have more than one boy/girlfriends, please tell me why?	01	makes me feel acceptable
	02	they give me different things
	03	for fun
	04	peer pressure
	05	other (specify) _____
2.6 do you have plans to get married to your	01	Yes(<i>go to question 2.8</i>)
boy/girlfriend?	02	No
2.7 If no, please state the reason	01	feel too young for marriage
	02	just want to have fun
	03	want to finish school first
	04	other(specify) _____
2.8 how many boyfriends/girlfriends have you had in the past?	01	none
	02	one
	03	two to five

	04	more than five
2.8a Do you have any friends who are sexually active?	01	yes
	02	No <i>(go to question 2.9)</i>
2.8b If yes, do you also feel that you want to be sexually active like them?	01	yes
	02	no
	03	maybe
2.9 Have you ever had sexual intercourse?	01	Yes <i>(please answer questions 2.10 to 2.17)</i>
	02	No <i>(Please go to section 2.18 and 2.19)</i>
2.10 How old were you at first intercourse?	01	____ years <i>(indicate age in space provided)</i>
	02	don't remember
2.11 How many people have you had sex with?	01	one
	02	two
	03	three
	04	more than three
2.12 What was (were) your reason(s) for having sex? (Please tick all that applies to you).	01	met the right person
	02	was curious
	03	to satisfy sexual desire
	04	wanted to be closer to partner
	05	pressure from partner
	06	wanted to be famous
	07	friends were doing it
	08	other(specify) _____ _____
2.13 Did you tell your partner(s) that you are you are living with HIV?	01	Yes <i>(go to question 2.13b)</i>

	02	No
2.13a If you did not tell your partner (or any of your partners) that you are living with HIV please tell me why?		_____ _____ (please state your reason in the space provided)
2.13b Did your partner or any of your partners tell you their HIV status	01	yes
	02	No
2.14 Have you ever suffered from a sexually transmitted infection(STI)?	01	yes(indicate the STI) Chlamydia syphilis Herpes gonorrhoea other_____
	02	No

2.15 How often did you use the following forms of contraception (*please select one response for each method of contraception*)

	always	often	sometimes	Never	N/A
	01	02	03	04	05
a. Male condom					
b. Female condom					
c. hormonal(e.g. pill, injections, implants)					
d. Withdrawal					
e. Other, specify _____					

2.16 If you did not use a condom every time you had sex, please tell me why?	01	did not want to use a condom
--	----	------------------------------

	02	could not find one
	03	don't know how to use it
	04	partner did not want to use one
	05	reduces sexual pleasure
	06	other(specify)_____
2.17 if you used any contraception, please tell me the reasons for your choice	01	protection from HIV re-infection
	02	protecting partner from HIV
	03	protection from pregnancy
	04	was the only method available
	05	I know how to use that one
	06	other(specify)_____
<i>Please go to question 3.1</i>		
2.18 What is your reason for not being sexually active?	01	fear of pregnancy
	02	fear of HIV re-infection
	03	fear of spreading HIV
	04	fear other STIs
	05	feel too young
	06	religious reasons
	07	other(specify)_____

2.19 Have you engaged in any other forms of erotic stimulation (actions that arouse your sexual desire) (please tick Yes or No for all the actions indicated below)

	yes	no
	01	02
Kissing a girl/boyfriend		
Touching a boy/girlfriend		
Fondling with a boy/girlfriend		
Self masturbation		
Mutual masturbation		
Fantasizing about love and sex		
Other, specify _____		

Part 3: Discussions on sexuality.

3.1 have you ever discussed sexuality with your parent/caregiver?	01	yes
	02	No
3.2 Have you ever discussed sexuality with any other relative?	01	Yes (specify relationship) _____
	02	No
3.3 have you ever discussed sexuality with your health worker?	01	Yes
	02	No
3.4 have you ever discussed sexuality with your friends?	01	Yes
	02	No

3.5 If you answered yes to any of 20), 21) or 22) above, have you discussed any of the issues listed below?(please tick what applies to you)

	caregiver	Health worker	friends
	01	02	03
Menstruation			
Dating and relationships			
How pregnancy occurs			
Methods of birth control			
Having/not having children			
Having sex			
Wet dreams			
Reasons for having sex			
Masturbation			

3.6 If you answered No to any of the questions 3.1 to 3.4 above, please indicate the reason for not speaking to the people mentioned below by indicating YES or NO in each box below.

	parent/caregiver	health worker	other relative	friends
	01	02	03	04
I am afraid				
I am shy				
They are too busy				
I feel too young				
other(specify) _____				

Part 4: drug use

Have you ever used any of the following drugs? *(please tick often, sometimes or never for each of the substances indicated below)*

	often	sometimes	never
	01	02	03
4.1 Alcohol			
4.2 Cigarettes			
4.3 Marijuana			
4.4 Inhalants			
4.5 Other, specify _____			

Many thanks for taking part in this interview.

APPENDIX H: SHONA DATA COLLECTION TOOL

ONGORORO MAERERANO NETSIKA DZEPABONDE DZEVECHIDIKI VARI KURARAMA NEUTACHIONA HWEHIV

Gwaro retsvakaruzivo (questionnaire)

Chikamu 1: Ruzivo pamusoro pako

1.1 Une majore mangani?.....

Tsanaguro	Code	Sarudza mhinduro
1.2 Uri mukomana kana musikana?	01	Musikana
	02	Mukomana
1.3Unogara kupi?	01	_____
		(Nyora nzvimbo yaunogara)
1.4Unoita basa rei?	01	Ndiri kuchikoro chePrimary
	02	Ndiri kuchikoro chesecondary
	03	Ndinoenda kubasa
	04	Ndinozvishandira ndega
	05	Zvimwewo (zvinyore apa))_____
1.5Vabereki vako vapenyu here?	01	Vose vapenyu
	02	Mai voga ndivo vapenyu
	03	Baba voga ndivo vapenyu
	04	Vabereki vose vakashaya
1.6 Vabereki vako vanorarama/vairarama neutachiona hweHIV here?	01	Mai voga ndivo vaive/vane HIV
	02	Baba voga ndivo vane/vaive neHIV
	03	Vabereki vose vane/vaive neHIV
	04	Vabereki vose vaive vasina/havana HIV
	05	Handizivi
1.7 Kana usingagari nemubereki wako, ndiani anokuchengeta?	01	Sekuru/mbuya
	02	Mainini/maiguru/tete
	03	Babamudiki/babamukuru
	04	Mukoma/munin'ina
	05	Cousin
	06	Imwe hama_____
1.8 Wave nenguva yakadini uchiziva kuti une utachiona hweHIV?	01	Nguva iri pasi pemwedzi 6
	02	Mwedzi 7 kusvika 12
	03	Mwedzi 13 kusvika 35

	04	Mwedzi inopfuura 36
1.9 Uri kutora maARVs here	01	Hongu
	02	Kwete
1.10 Kana uri kutora maARVs wave nenguva yakadini?	01	Mwedzi iri pasi pe6
	02	Mwedzi 7 kusvika 12
	03	Mwedzi 13 kusvika 35
	04	Mwedzi inopfuura 36
1.11 Kana usiri kutora maARVs ndiudzewo chikonzero chacho?	01	CD4 ichiri yakakwira
	02	Ndiri kurwara
	03	Aindirwarisa
	04	Chimwewo chikonzero
1.12 Wakamborapwa nachiremba wepfungwa here kubva pawakaziva kuti une HIV?	01	Hongu
	02	Kwete

Unoona kana kuverenga zvinhu zvinoita kuti unzwwe kuda bonde kakawanda sei? ?

	Kazhinji	Dzimwe nguva	Kwete
	01	02	03
1.13 PaTelevision			
1.14 Mumamagazini			
1.15 Mumabhuku engano(novels)			
1.16 Painternet			
1.17 Mumabhaisikopu(movies)			

Pamaonero ako, vabereki/vachengeti vako vanoomesa zvakadini panyaya dzinotevera?

	Vanoomesa zvakananyisa 01	Vanoomesa zvishoma 02	Havaomesi havo 03	Havaomesi zvachose 04
1.18 Kuona TV				
1.19 Kuita homework				
1.20 Kuenda kunotamba neshamwari				
1.21 Pane zvekunamata				

Chikamu 2: Nhorondo yezvepabonde

2.1 Nguva yaunofunga kuti yakanaka kutanga kuenda pabonde ndeipi ?	01	Ndiri pasi pemakore 16
	02	Ndave nemakore 17 kusvika 20
	03	Ndave nemakore anopfuura 21.
	04	Kana ndaroorwa/ndaroorwa bedzi
	05	Imwewo nguva(nyora apa) _____
2.2 Vabereki vako vanokubvumira here kuenda pabonde usati wasvika 16years?	01	Vanobvumira
	02	Havakendenge
	03	Havabvumire
2.3 Nharaunda yaunogara inobvumira here kuenda pabonde usati wasvika 16years?	01	Inobvumira
	02	Haikendenge
	03	Haibvumire

2.4 Waimbodokwairira/Unombodokwairira kuenda pabonde usati wasvika 16years here?	01	Hongu
	02	Kwete
2.4a Kana wati hongu, ndiudzewo chikonzero chacho	01	Shamwari dzangu dziri kuzviita
	02	Hanichakwanisi kumirira
	03	Kuzadzisa havi yebonde
	04	Chimwewo chikonzeror(nyora apa) _____
2.5 Une mukomana/musikana wako here?	01	Hongu, ndine mumwe chete
	02	Hongu, ndine vanopfuura mumwe chete
	03	Kwete
2.5a Kana uine vakomana/nasikana vako vanopfuura mumwe chete, ndiudzewo chikonzero chacho?	01	Vamwe vangu vanobva vandiremekedza
	02	Vanodipa zvakasiyana-siyana
	03	Kungotamba hangu navo
	04	Ndizvo zviru kuita vamwe vangu
	05	Chimwewo chikonzero (nyora apa) _____
2.6 Une hurongwa hwekuroorana nemudiwa wako here?	01	Hongu
	02	Kwete
2.7 Kana usina hurongwa uhwu, ndiudzewo chikonzero chacho?	01	Ndichiri mudiki

	02	Ndoda kungotamba hangu
	03	Ndoda kutanga ndapedza chikoro
	04	Chimwewo chikonzero(nyora apa) _____
2.8 Wakamboita vakomana/vasikana vangani kare?	01	Handina
	02	Mumwe chete
	03	Vaviri kusvika vashanu
	04	Vanopfuura vashanu(five)
2.8 Une shamwari dzinoita zvebonde here?	01	Ndinadzo
	02	Handina
2.8a Kana uinadzo, unonzwawo kuti unoda kuzviitawo savo here?	01	Hongu
	02	Kwete
	03	Ndofunga kudaro
2.9 Wakamboita bonde here?	01	Hongu (pindura mibvunzo 2.10 to 2.17)
	02	Kwete (pindura mibvunzo 2.18 ne 2.19)
2.10 Waive nemakore mangani pawakatanga kuenda pabonde?	01	Makore____(nyora makore acho apa)
	02	Handicharangariri
2.11 Wakaenda pabonde nevanhu vangani?	01	Mumwe
	02	Vaviri
	03	Vatatu
	04	Vanopfuura vatatu
2.12 Ndezvipi zvikonzero zvakaita kuti uite bonde?	01	Ndakasangana nemudiwa chaiye

		wanditsvaga
	02	Ndaida kunzwa kuti zvinodii
	03	Ndaida kupedza havi yebonde
	04	Ndaida kuti tinyatsodanana nemudiwa wangu
	05	Mumwe mwangu aigara achindikumbira
	06	Ndaida kuti ndiite mbiri pane vamwe vangu
	07	Vamwe vangu vaizviitawo
	08	Chimwewo chikonzero(nyora apa)_____
2.13 Wakaudza here wawakaenda naye pabonde kuti uri kurarama neHIV?	01	Ndakamuudza
	02	Handina kumuudza
2.13a Kana usina kumuudza, ndiudzewo chikonzero?		_____ _____ (nyora chikonzero apa)
2.13b Wawakarara naye akakuudzawo here kana aine utachiwana hweHIV?	01	Akandiudza
	02	Haana kundiudza
2.14 Wakamborwara nechirwere chinotapuriranwa pabonde here?	01	Hongu(chipi chacho, ratidza pane zviru apa) Chlamydia Syphilis Herpes Gonorrhoea Chimwewo_____

	02	Kwete
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2.15 Wakashandisa nzira dzekuronga mhuri idzi kakawanda zvakadini?

	Nguva dzose	Kazhinji	Kashoma	Handina kumboshandisa
	01	02	03	04
a. Macondom echirume				
b. Macondom echikadzi				
c. Mapiritsi/ majekiseni				
d. Nzira yekurasira urume pasi				
e. Imwewo nzira(nyora apa)				

2.16 Kana usina kushandisa macondom nguva dzese, ndiudzewo chikonzero chacho?	01	Ndaisada kushandisa condom
	02	Ndaisakwanisa kumawana
	03	Handigoni kumashandisa
	04	Mumwe wangu aisada kumashandisa
	05	Anozikisa kunaka kwebonde
	06	Chimwewo chikonzero(nyora apa)_____
2.17 Kana wakashandisa nzira yekuronga mhuri, nemhaka yei wakasarudza nzira iyoyo?	01	Kuti ndisarambe ndichiwana utachiona hweHIV hutsva
	02	Kuti mumwe wangu asawane HIV
	03	Kuti pamuviri pasabate
	04	Ndiyo nzira yoga yaivepo
	05	Ndiyo yega yandinogona kushandisa
	06	Chimwewo chikonzero(nyora apa)_____
2.18 Nemhaka yei usati wamboita zvepabonde?	01	Ndinotyia kuita/kuitisa pamuviri
	02	Ndinotyia kuwana utachiona hutsva hweHIV
	03	Ndinotyia kuparadzira HIV
	04	Ndinotyia zvimwe zvirwere zvepabonde
	05	Ndichiri mudiki
	06	Hazvibvumidzwe kwandinonamata

2.19 Pane zvawakamboitawo here zvinomutsa havi yebonde (taridza hongu kana kwete pane zviripasi apa)

	Hongu	Kwete
	01	02
Kutsvodana nemusikana/mukomana wako		
Kuganzva musikana/mukomana		
Kubata-bata musikana/mukomana		
Kutamba nenhengo yako yesikarudzi(masturbation)		
Kutamba nenhengo yemusikana/mukomana wako yesikarudzi		
Kufunga zvakadzama nezvekuenda pabonde		
Zvimwewo(nyora pasi apa)		

Chikamu 3: Hurukuro dzine chekuita nezvepabonde.

3.1 Wakamboita hurukuro dzine chekuita nebonde nemubereki/muchengeti wako here?	01	Hongu
	02	Kwete
3.2 Wakamboita hurukuro dzine chekuita nebonde neimwe hama yako here?	01	Hongu (ndiudzewo ukama hwako nemunhu wacho)
	02	Kwete
3.3 Wakamboita hurukuro dzine chekuita nebonde nemushandi wezveutano here?	01	Hongu
	02	Kwete
3.4 Wakamboita hurukuro dzine chekuita nebonde neshamwari dzako here?	01	Hongu
	02	Kwete

3.5 Kana wati hongu kumibvunzo 3.1; 3.2; 3.3 kana 3.4; ndedzipi nyaya dzamakakurukura nezvadzo (taridza nekumaka nyaya yawakataura nezvayo nemunhu wawakataura naye)

	mubereki/muchengeti	mushandi weutano	Shamwari
	01	02	03
Kuenda kumwedzi			
Kudanana nevakomana/vasikana			
Kuti pamuviri panobata sei			
Nzira dzekuronga mhuri			
Kusava/kuva nevana			
Kuenda pabonde			
Kuzvirotera			
Zvikonzero zvekuenda pabonde			
Chimhandaramumaoko/ Kuzvifadza(masturbation)			

3.6 Kana wati kwete kune umwe wemibvunzo 3.1 kusvika 3.4, ndiudzewo chikonzero chekusataura nevanhu ava(taridza nekumaka pamunhu wega wega wausina kutaura naye .

	Mubereki/muchengeti	Mushandi weutano	Imwewo hama	Shamwari
	01	02	03	04
Ndinotyia				
Ndinonyara				
Havana nguva yaizvozvo				
Ndichiri mudiki				
Chimwewo chikonzero (ratidza apa) _____				

Chikamu 4: Kushandisa zvinodhaka

Wakamboshandisa zvinodhaka izvi here? (Pane chimwe nechimwe chinodhaka, ratidza kuti wakachishandisa kakawanda sei)

	Nguva zhinji	Nenguva dziri kure	Handina kumboshandisa
	01	02	03
4.1 Hwaha(kusanganisira mawaini)			
4.2 Mbanje			
4.3 Dzimwe fodya			
4.4 Zvekufembedza zvinodhaka			
4.5 Zvimwewo zvinodhaka, ratidza apa _____			

Tinotenda nekupinda kwako muongororo ino.

APPENDIX I: SUMMARY OF ARTICLES REVIEWED

Author and date	Research question	Sample	Methods of data collection	Findings
Gwandure, C 2012	Do girls who grew up in the traditional Shona culture experience sexual desire, sexual fantasy, sexual expression, fertility concerns and <i>mubobobo</i> ?	The study sample was made up of ten teenage girls aged between 18 and 19years old who agreed to participate in the study. The snowballing technique was to recruit participants	An interview schedule containing questions on sexual fantasy, sexual desire, sexual expression, girl fertility concerns and <i>mubobobo</i> was used.	The study revealed that girls had sexual fantasies like boys but the means of sexual expression were guided by the teachings and values the Shona culture. Even though the girls in this study were aware of modern ways of life, they felt that love, sex and marriage had to be guided and sanctioned by the values of the Shona culture.
Birungi, J et al 2009	To better understand the sexuality (desires, experiences, beliefs, and values) of adolescents perinatally infected	Adolescents perinatally infected with HIV. Sample size 732 Convenience	Survey data were collected using a structured questionnaire Focus Group Discussions were conducted	These adolescents are beginning or do desire to explore their sexuality 33% of the respondents reported having had sexual intercourse 41% believed that there was no reason why

	with HIV, and to identify anxieties or fears they have around growing up, love and loving, dating, pregnancy, fatherhood, motherhood, relationships and intimacy.	sample	Twelve in-depth interviews and case stories were also conducted .	someone who living with HIV should not have sexual intercourse
Campbell, B et al 1994	What is the sexual behaviour and HIV knowledge among adolescent boys in Zimbabwe	511 schoolboys from four schools. Purposive sampling	An anonymous self administered questionnaire	37% of the students reported that they had experienced sexual intercourse, with up to 63% reporting having had more than one partner. 21% of boys aged 12 years reported having had intercourse and the proportion increased with age. Knowledge about AIDS was high (93%).
Ferrand, R et al 2010	What is the prevalence of HIV and the spectrum of morbidity among	Patients aged between 10 and 18 years admitted to two major referral	Standardised investigations which included social and clinical history, height, weight, and Tanner	HIV is the commonest cause of adolescent hospitalisation in Harare, mainly due to adult-spectrum

	hospitalised adolescents aged 10–18 years in Harare, Zimbabwe?	hospitals with any acute medical or surgical condition, including trauma. Sample size 301	puberty staging, and laboratory investigations.	opportunistic infections plus a high burden of chronic complications of paediatric HIV/AIDS
Mawoneke, S et al 2001	Is the growing number of street children in Southern Africa a result of the AIDS epidemic?	150 street children were selected in each of two major cities in Zimbabwe from the registers of two programmes	the children were interviewed using a structured questionnaire Additional information was obtained through two focus group discussions with children and three focus group discussions with guardians of street children selected from the registers of the two programmes.	The main factors that led the children to the street were poverty, desire to handle their own money, ill treatment by guardians, orphanhood, spiritual influence, ill treatment by parents, and overcrowding at home. A large proportion of the children who were orphaned described the death of their parent in terms consistent with a diagnosis of AIDS.
Rudatsikira, E et al 2009	What is the prevalence and predictors of illicit	Form one to three students in the 13 to 15 age group	A self-completed questionnaire was used.	Nine percent of the subjects (13.4% males and 4.9% females) reported having ever used marijuana or

	drug use among school-going adolescents in Harare, Zimbabwe?	from the Harare province. Sample size 1984. A two-stage probability-sampling technique was used.		glue. Marijuana or glue use among adolescents may be associated with other behaviors such as teenage sexual activity, cigarette smoking and alcohol use.
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