



**THE UNIVERSITY OF ZAMBIA
SCHOOL OF MEDICINE**

**AN ASSESSMENT OF FEMALE ADOLESCENT
HEALTH SERVICES**

**A CASE OF SEXUALLY TRANSMITTED INFECTIONS
PREVENTION IN LUSAKA ZAMBIA**

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



DEDICATION

To my friend and wife Cheswa, daughter Kondwani and sons Mwiza and Mubanga.

All of whom I am very proud of.

It was hard to believe that this work would finally be completed...

Thank you for being my source of encouragement especially during the many times I felt like
giving up.

ACKNOWLEDGEMENTS

A number of people made the completion of this work possible....

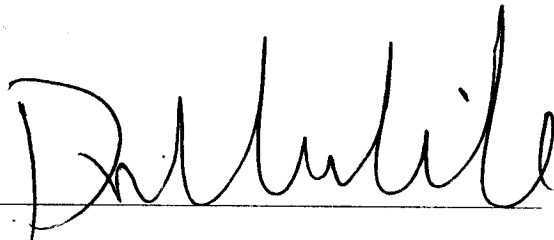
1. My wife Cheswa for tirelessly typing the whole work from the initial ideas to the final document.
2. My children for the joy and laughter that gave me relaxing moments and kept me going.
3. Dr Siziya and Dr Nzala for their valuable comments on my proposal.
4. Dr Mkumba my supervisor for her direction.
5. All senior doctors in the department of Obstetrics and gynecology for their constructive criticism.
6. Research assistants Chisha, Phiri and Chileshe for their dedication and hard work.
7. Health Information System Manager Clement Mwakamui who assisted with data entry and analysis.
8. All the female adolescents who consented to take part in the study.

STATEMENT

I HEREBY STATE THAT THIS DISSERTATION IS ENTIRELY THE RESULT
OF MY OWN PERSONAL EFFORT.

THE VARIOUS SOURCES TO WHICH I AM INDEBTED HAVE BEEN CLEARLY
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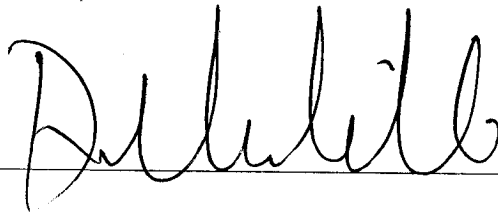
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DR BELLINGTON VWALIKA

DECLARATION

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WHOLLY OR IN PART FOR ANY OTHER DEGREES AT THIS OR ANY
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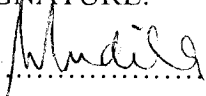
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ABSTRACT

Adolescents form a significant portion of Zambia's population and are being viewed as a target group for health messages and services.

Adolescents engage in sexual activities at a very early stage for various reasons. They are therefore exposed to a lot of STIs for which they need to be treated. STIs and especially the lack of treatment for them exposes these adolescents to the deadly HIV and AIDS.

Not all adolescents have access to the health centers for treatment of STIs. In trying to find answers, 397 female adolescents who were attending 8 health centers in Lusaka for a period of 17 days were surveyed. The aim was to determine the level of availability of health services as related to STIs management among female adolescent and also to determine what problems are faced in the investigation, diagnosis and treatment of STI.

The findings were that many adolescents failed to access management of STIs for many reasons. Among these were lack of money, poor attitudes from health workers, poor laboratory facilities, drug shortages and lack of privacy.

Because of these problems many female adolescents preferred to have health centers specifically for adolescents.

A fulfilling and positive experience in STI management is as important as a good outcome. Most of the factors noted above can be easily improved upon to contribute positively to the adolescents welfare.

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ABBREVIATIONS

AIDS	Acquired Immuno-deficiency syndrome
CBoH	Central Board of Health
CDC	Center for Disease Control
CSO	Central Statistics Office
HVS	High Vaginal Swab
HIV	Human Immuno-Deficiency Virus
JSI/SEATS	John Snow Incorporated / Services Expansion and Technical Support
KAP	Knowledge, Attitude and Practice
LUDHMB	Lusaka Urban District Health Management Board
MOH	Ministry of Health
STD	Sexually Transmitted Diseases
STIs	Sexually transmitted infections
UN	United Nations
UNAIDS	Joint United Nations Program on AIDS
UNICEF	United Nations International Children and Education Fund
UNZA	University of Zambia
USAIDS	United States Agency for International Development
UTH	University Teaching Hospital
VCT	Voluntary Counseling and Testing
VDRL	Venereal Disease Research Laboratory
WHO	World Health Organization
ZSS	Zambia Sexual Survey

INTRODUCTION

Adolescents form a significant proportion of Zambia's population and are increasingly being critically viewed as the target group for health messages and services. The question in point is the increasing incidence of STIs among adolescents coupled with the associated increased mortality from HIV/AIDS among them. Youth sexuality has resulted into serious consequences of adolescent reproductive health problems requiring interventions (Likwa , 1994).

Adolescents engage in sex for various reasons, which range from peer pressure, pleasure, revenge from contracting STIs, proving maturity to economic gains especially among the females (Baboo et al, 1997).

Untreated STIs are associated with increased mortality from HIV/AIDS among adolescents. And as CDC recently concluded ,HIV epidemics can not be controlled without effectively preventing High-risk group transmission.

Improvements in adolescent health services as related to STI diagnosis and treatment would greatly reduce the incidence and prevalence of STIs among this vulnerable group. The Zambia Health Facility Surveys in 1998 showed that only 16% of the STI patients were diagnosed and treated correctly (CSO , 1998). The rapid and effective treatment of treatable STIs is known to be an effective intervention in the transmission of HIV.

The sexual survey also showed that of the 286 adolescent women who ever had sexual intercourse 44% had been pregnant. As this study also involved pregnant adolescents, integration of STI management in antenatal care services was determined.

This study which was done at UTH department of Obstetrics and Gynecology, UTH Dermato-venereology clinic, the 5 major LUDHMT clinics of Chawama, Chilenje, Kanyama, Matero and Chelstone aims to assess availability of adolescent health services as it relates to STIs diagnosis and treatment.

Each health institution visited was graded and given a score to determine whether it is appropriate to treat STIs. Any institution providing all of the services in appendix 11 was deemed fully appropriate to treat STIs and a score of 1 will be given to it while a score of 2 will *be given if only some of them are provided: Provider trained in STIs management, laboratory* able to do VDRL, swab microscopy, culture and sensitivity, HIV testing, providing drugs to treat STIs and contact tracing.

This information was obtained by way of questionnaire administered to the in-charge of a particular health center.

LITERATURE REVIEW

Adolescent health and health services have recently received national and international attention. According to USAID, young people between ages 10-24 comprise more than a third of the population in Zambia and are increasingly viewed as a critical age group for targeting health messages and services (USAID, 1999). Zambia's population is very young with 47% of it being under 15 years and that child bearing begins early i.e. 60% of female Zambians have children or are pregnant before the age of 19 (Wilson, 1999).

Major causes of ill health among Zambian female adolescents arise from their reproductive roles with maternal mortality, HIV and STD contributing to half of the burden (Wilson, 1999). With the advent of HIV / AIDs bias has been given only towards adult population as evidenced by research reports giving HIV prevalence rate of 26% among adults in Lusaka. No figures exist for adolescents. (MOH expert group report). The epidemiology of STI is less well characterized in Zambia as evidenced by the only data available on it dating back to 1992 which showed an increasing trend. Even if data is extremely limited, sexually transmitted infections remain a major public health in Zambia with Lusaka accounting for 34.6% (Wilson, 1999). Interventions so far have concentrated only on adult sex workers, truckers and commercial fishermen (CBoH, MOH, 1997; Wilson, 1999).

The fundamental principles of equity in the provision of medical care are imbedded in the UN Charter on Human Rights developed in 1948. This provides for provision of equal rights to medical care for all citizen (UN Charter, 1948). In this context, equity referred to the provision of acceptable health care to all citizens regardless of age, sex, color and geographical location. However, recent changes in health sector particularly reform initiatives and financial mechanisms, have challenged the traditional meaning of equity. The shrinking health budget due to economic realities has precluded free health care and introduced new methods of cost sharing. Equity in this changing context refers to fair allocation of resources based on need as well as ability to pay (Sichone and Mulenga, 1998). Despite having this new meaning of equity, important dimensions such as location, gender, age, burden of disease, income and other factors that influence health status are rarely applied.

Lack of understanding of and cynicism towards equity has led to lack of services for population at risk. The concept which seeks to address reproductive needs from infancy and beyond is new in Zambia, having been introduced only in 1996 (Safe Motherhood in Reproductive Health, Policies and Guidelines, GRZ, MOH, draft 1999). An example of lack of equity can be seen in the high incidence of STIs among the adolescents. Like many sub Saharan African countries, Zambia is experiencing a dramatic increase in incidence and prevalence of STIs among adolescents with its associated HIV/AIDS (Goliber, 1997).

The failure of decline of STIs morbidity rates among adolescents in Zambia as they have for other countries suggest that social , cultural and economic factors may be related to the level of knowledge about these STIs and which may act as barriers to receiving medical attention when they have become sick. HIV /AIDS epidemics are largely related to STI infections and as the CDC recently concluded, HIV epidemics can not be controlled without effectively preventing high risk group transmission which plays such a critical role fueling both emerging and mature epidemics (CBoH, USAID, 1999). In this context, adolescents are a high-risk group!

Previous studies have tried to find reasons why adolescents are deterred from attending local clinics for medical attention in Zambia (CARE, 1997). Among these reasons are that fees are too high, shortage of drugs, poor attitudes from nurses, lack of privacy / confidentiality. Some have feared being embarrassed or reprimanded by the nurses. The adolescents have also been scared to be told to bring their sexual partners. Others have feared the infections while some want to transmit the disease to others as a form of revenge (Webb, 1997). Similarly, in a participatory assessment of adolescent sexual and reproductive health in New Kanyama Compound - Lusaka, Mupela and Feters, 1997 found that adolescents were unlikely to visit the clinic for illnesses related to sex. They would rarely go to the clinic when suffering from STIs or they became pregnant, because they were embarrassed by nurses who scold them and shout at them. Among preferred alternatives for STIs treatment and pregnancy were traditional healers who were said to be capable of keeping secrets and never run out of medicines.

OBJECTIVES

1. General objective of the study.

To determine the level of provision of adolescent health services in relation to STIs among female adolescents in Lusaka

2. Specific objectives

- ◆ To determine the prevalence of STIs among female adolescents
- ◆ To determine the level of availability and accessibility of adolescent health services in relation to STIs among female adolescents.
- ◆ To determine factors associated with screening for STIs in female adolescents
- ◆ To determine the level of STIs management integration in antenatal care services among female adolescents
- ◆ To identify fundamental barriers to diagnosis and treatment of STIs among female adolescents

METHODOLOGY

This was an institutional based cross sectional study. A structured questionnaire was administered to female adolescents seeking medication at 8 health facilities in Lusaka by trained research assistants and the author. An informed consent was obtained (appendix 10).

The questionnaire included socio-demographic characteristics, questions related to knowledge about STIs / HIV, clients reproductive health needs and appropriateness of the health institutions in providing for treatment of STIs (appendix 13).

Approval was obtained from the University of Zambia Research and Ethics Committee for conducting this study.

Patient interviews were conducted at UTH in the department of Obstetrics and gynecology and dermatovenereology clinic and in the 5 major clinics of Lusaka Urban District Health Management Board of Chawama, Chilenje, Chelstone, Matero and Kanyama. A 1 in 10 method of systematic random sampling of adolescent females visiting these health centers in the morning was done. For 8 health facilities, with at least 30 of them visiting each center per day, 3 out of 30 were systematically sampled on daily basis for each health center giving a yield of 24 clients per day. The required sample size was 397 and this was achieved in 17 days. No subjects refused to participate when approached.

STANDARDISATION / PILOTING

All research assistants were trained to administer the questionnaire so that similar answers were obtained. The questionnaire was pilot tested. Interviews were carried out in a separate room where privacy was ensured. An informed consent was signed before the interview. The local languages as well as English, the official language were used. The answers were entered on an answer sheet which did not in any way identify the patient. It took approximately 30-40 minutes to administer the questionnaire.

The data was analyzed using Epi Info Software Version 6. Selected variables were analyzed against the other in cross tables to determine problems adolescents faced in being diagnosed and treated for STIs, factors associated with being screened or not and to determine the magnitude of STIs among female adolescents.

All the totals presented in the results section would add up to 397 (total number of subjects) Analysis was mainly by chi square. The odds ratio and 95% confidence intervals were calculated.

RESULTS

1. Demographic description of subjects assessed (n=397). The median age of the subjects was 17.0 (table 1).

Table 1: Age distribution of adolescents attending the clinics

Age	Frequency	Percentage
12	1	0.3
14	13	3.3
15	26	6.5
16	63	15.9
17	107	27.0
18	117	29.5
19	70	17.6
	397	100

2. Marital Status and sources of income

There were more married subjects than unmarried ones (51.6 % Vs 48.4 %) the majority of subjects were unemployed or had no source of income (56.2 %). The source of income was described by the nature of their job, or that of the spouse or guardian as shown in table 2

Table 2 : Source of income of subjects described by occupation

Source of income	Frequency	Percentage
Bus conductor	3	0.8
Businessman	8	2.0
Businesswoman	3	0.8
Call boy	1	0.3
Clerk	4	1.0
Hairdresser	5	1.2
Housewife	120	30.5
Maid	1	0.3
Marketer	13	3.2
Soldier	3	0.75
Secretary	1	0.3
General worker	7	1.75
Unemployed dependant	223	56.2
	397	100

3. Knowledge of STIs

194 out of 397 subjects (48.9 %) were able to describe symptoms of STIs as discharge from the vagina. 28.3% and 17.9% were able to describe genital sores and abdominal pains respectively. Refer to table 3

Table 3 : Knowledge of STIs by symptoms

Symptom	Frequency	Percentage
Vaginal discharge	194	48.9
Genital sores	112	28.3
Abdominal pain	71	17.9
Itching vaginal area	14	3.5
Burning on micturition	3	0.8
Pain during sex	2	0.5
Loss of weight	1	0.3
	397	100

4. Knowledge about HIV

Out of all the subjects interviewed (n= 397) only 42 (10.6%) had ever had a blood test for HIV. This is despite many of them knowing where to obtain free VCT services (255 Vs 141). 255 (64.2%) knew that anti-retroviral drugs prolong the lives of HIV positive people.69(17.4%) believed in traditional medicines to prolong the lives of HIV positive people. More subjects (59.4 % Vs 40.6%) knew the benefits of knowing the sero-status for HIV. 184 (46.3 %) thought it was good so that they can stick to one partner while 137 (34.5%) just wanted to know their status. 63 (15.9%) thought by knowing they would live positively while 10 (2.5 %) wanted to know so that they protect their babies while they are pregnant. Only 3 (0.8%) wanted to know so that they could find treatment for themselves. (Sec table 4)



Table 4 : Known benefits of knowing sero-status for HIV

Reason for knowing sero-status	Frequency	Percentage
Just want to know status	137	34.5
Seek treatment to protect baby	10	2.5
Live positively	63	15.9
Seek treatment for self	3	0.8
Stick to one partner	184	46.3
Total	397	100

5. Effect of health facility environment on attendance

229 (57%) of subjects thought the reception at the clinic / hospital was bad for adolescents as opposed to 168 (42.3%) who thought it was good. Of those who said the reception was bad, most of them 201 (50.6%) said it was because health workers thought they were too young to have STIs (72% Vs 28%). Therefore more subjects do not go for review.(69.2% Vs 30.8%) As a result, more subjects preferred to have clinics for adolescents only (80.4% Vs 19.6%)

6. STI Management in antenatal subjects

Few subjects were found to be pregnant (24.2% Vs 75.8%) Investigations done were urine 10 (25%), blood 274 (69%) mainly VDRL, scan 18 (4.5%) and swab microscopy 95 (23.9%). The importance of investigations was explained to more subjects 261(65.7%) Vs 136 (34.3%). These percentages refer to all patients interviewed. Most pregnant subjects described the attitude of health workers as helpful and kind 79.8% while 18.9% thought it was hostile. More subjects (64.7% Vs 35.3) preferred a separate facility for antenatal for adolescents. If they had an STI, most thought they would prefer to go to the nearest clinic 340 (85.6%) see table 5

Table 5 : Choice of treatment for STIs

Choice of treatment	Frequency	Percentage
Nearest clinic	340	85.6
Private clinic	43	10.8
Traditional healer	9	2.3
Self medication	3	0.8
Others unspecified	2	0.5

Most subjects thought they would choose a facility because of good treatment received there. 169 (42.6%) See table 6

Table 6 : Reason for choosing health Center

Reason	Frequency	Percentage
Nearest to home	109	27.5
Cheaper costs	29	7.3
Privacy	12	3
Good treatment	169	42.6
Availability of drugs	22	5.5
Good clinician	56	14.1

However , these adolescents experienced problems which deterred them from attending these institutions. Among them were lack of drugs (37.7%) and others see table 7

Table 7 : Problems encountered in seeking treatment for STIs.

Problem	Frequency	Percentage
Lack of drugs	149	37.5
Rude and hostile staff	31	7.8
Bad attitude of health workers	2	0.5
No privacy	9	2.3
Long queues	10	2.5
None	196	49.4
Total	397	100

7. Health center assessment

8 health centers in Lusaka were assessed to determine their appropriateness in treatment of STIs. Any health center able to do the following; have provider trained in STI management, do VDRL testing, swab microscopy, culture and sensitivity, HIV testing, provide drugs to treat STIs and provide contact tracing was deemed appropriate to treat STIs. In this regard, 75% of these centers had capacity to provide treatment for STIs. However, privacy was offered only in 50% of the centers while contact tracing was low at 25%.

Drugs prescribed to treat STIs were available in stock of the health center all the time in only 50% of times. In 37.5% centers were found to have inconsistent supply of drugs while 12.5% of centers reported never having drugs at all.

Health education on STIs was provided in these centers in 75% of cases. Light source for examining patients was available all the time in 37.5% of cases. Another 37.5% reported having light sources only sometimes while 25% of the time the light source was not available.

In 87.5% of the health centers, screening of pregnant women was done for STIs. All the centers were able to do the VDRL test but only provided treatment 62.5% of the time. A functional laboratory was always present in 75% of health centers. High vaginal swab was done 62.5% of the time.

8. Prevalence of STIs among the subjects

105 subjects acknowledged ever suffering from STI (both treated and untreated) giving a prevalence of 26.4%. Of these, 69 (69.7%) said they had a genital discharge while 27 (25.7%) had genital ulcers. 9 (8.6%) mentioned non specific infections and symptoms.

9. Overall factors associated with receiving medical treatment for STIs

20 variables were noted to be relevant. All related to receiving medical treatment for STIs. Contingency tables were made for some variables against the others. Analysis by chi square and odds ratios were calculated. Odds ratio (OR) are presented together with 95% confidence interval CI. The "P" value of chi square is also presented where possible.

Most subjects in all age groups (260) thought they could not attend clinic/hospital because they had no money.

89 were prevented because of poor services at these health facilities. (Chi square 71.36, $P = 0.000000002$) which is statistically significant. However, most subjects (116) in all age groups had no source of income though statistically this seemed insignificant.

231 of the subjects who preferred separate clinics for adolescents thought the bad attitude against them from health workers was because they were thought to be too young to have STIs as against 88. (odds ratio 1.10, 95% CI $< OR < 1.97$; chi square 0.11, $P=0.7$) though this was statistically insignificant. 203 subjects who preferred clinic for adolescents also thought that the attitude of health workers was poor ($OR\ 3.5$, 95 % $2.00 < OR < 6.4$, chi square 23.58, $P=0.0000120$)

Of the pregnant subjects more (50 out of 96) thought they would choose health center nearest to home. The response was the same if they were found to have STIs and pregnant, they would prefer to be treated at the nearest health center. Chi square 0.00, $P=1.0$) However, this was statistically insignificant. Besides most chose these facilities because of expected good treatment. Chi square 0.0, $P=1.0$)

However, when asked about recent past experience, most of the subjects who thought the reception was poor at clinic/ hospital, also cited lack of drugs and other facilities as their problems.

Of all the subjects attending the health facility 96 were pregnant giving a prevalence of 24.2% and majority first had intercourse at age 18 (chi square 23.3, $P=0.0007$.)

33 Vs 63 subjects attending antenatal were had also suffered from STI giving a prevalence of 34.4%

Out of 74 investigated subjects attending antenatal the main investigation done was blood tests, 68 (92%) while only 1 subject (0.1%) had urine test done and 4 (0.05%) had HVS. Although statistically insignificant (chi square 0.0, $P=1.0$) this is an important finding suggestive of lapses in laboratory services. This is despite the fact that most pregnant subjects (62) or 83.8 % were told about the importance of investigations in pregnancy .

Subjects who were ever pregnant mainly chose health facility nearest them and when referred. This compared with subjects non pregnant.

Most subjects who ever had STIs and pregnant knew the importance of knowing the sero-statistics for HIV 24 Vs 9 ($n=33$). However overall subjects who ever had STIs treatment and took HIV tests was small 11(0.1%)

This was despite these subjects knowing where to obtain free VCT 61 Vs 44 ($n=105$)

Finally, most of these subjects receiving treatment for STIs knew that they could ask the health worker about retroviral drugs to prolong life of HIV positive people 61(58%) (n=105) while an equal number neither heard of them or knew any traditional medicines 22(21%) (n=105)

DISCUSSION

The results illustrate that various factors affect the provision of health services as it relates to STIs among female adolescents.

Although most health institutions have capacity (75%) to provide for STIs, this was hampered by lack of drugs. It is important to note that the assumption in this study was the chosen health centers were representative of the rest. Webb (1997) found lack of drugs as one of the principal deterrents to clinical attendance by adolescents. The drugs are available at all times in only 50% of times and sometimes only 37.5%. One of the principles in STIs management is that contact tracing be done to prevent re-infection from the partner. This was only rarely done in 25% of cases. This finding was also confirmed by Faxelid et al (1995) who looked at the quality of care of STIs in Zambia in the patients' perspective. Most patients said they were not satisfied with the quality of care because response to treatment and compliance with contact tracing was not satisfactory.

It is interesting to note that whilst a light source is necessary to examine patients with STIs, this was provided in only 37.5% of cases. Besides privacy was not accorded in 50% of times and this therefore was deterrent to clinical attendance. This practice has been seen before by Ndulo et al (1995) in their assessment of quality STD care in Zambia that most health centers lacked privacy. Investigative services in the health centers are limited. A functional laboratory is found in 75% of times whilst VDRL is the only investigation done (62.5%) apart from swab microscopy but no culture and sensitivity. This finding may be of relative importance in view of advocacy for syndromic management of STIs by Zambia National STI / HIV and AIDS Control Program. Only about 62.5% of those who tested positive for VDRL received treatment. The reason could not be found for this discrepancy but could probably be explained by the drug shortage as above. However, this finding is consistent with that of the Zambia sexual survey (1998) which showed that inadequate treatment in most instances was due to shortage of drugs or incorrect treatment practices. This shows that things have not improved in this regard and further amplifies the findings of Engvall et al (1997) who found that: there were no standards for case management of STIs, that few clinicians ever informed their patients to notify their partners and that few managed patients according to the syndromic approach recommended by the STD. Control Program of Zambia.

Further studies should attempt to explore the findings in relation to HIV infections. In spite of most subjects knowing where to obtain free VCT (64.2%) and also the benefits of knowledge of sero status very few subjects ever had a test for HIV (10.6%). This compares with Zambia Sexual Study (ZSS) of 1998 which showed that only 6% of adolescent females had a test for HIV. However only 4% knew the results. The findings were even more depressing in pregnant subjects who had STIs. Their knowledge of the benefits of knowing the sero status was good (72.2%) but only 0.1% ever had an HIV test.

33.4% of subjects attending antenatal services were also receiving treatment for STI. This figure compared favorable with the general prevalence of STIs among adolescent of 26.4%.

Contrasting figures were obtained in a convenient sample survey of youth (10-19) in 4 peri-urban Lusaka in which 8% boys and 4% girls reported ever having had an STIs. A lot of discrepancies however were noted in responses in this survey. However the adolescent STIs averaged 40% with higher proportions in female than male (CBOH, USAID, 1999) confirming that this is a major problem among the female adolescent. The disparity in the results could be explained by the fact that this study was health facility based while others were community based. There could have been self selection bias in this study with these adolescents attending the health facility with some other medical problem.

Regrettably, despite the existence of the STIs, many subjects could not attend the health centers to have a proper diagnosis and treatment. 65.5% of subjects cited lack of money as the reason. 22.4% mentioned poor services at these health facilities. 11.1% of subjects mentioned bad attitude against them from health workers while 0.01% preferred to see a traditional healer. Though difficult to quantify poor attitude has been mentioned in previous studies (Fetters et al 1997). The biggest portion of adolescents mentioned lack of money as their reason for not seeking medical attention (65.6%). In their evaluation of district level of cost sharing scheme, Bennet et al (1998) found that ability to pay was higher in urban areas particularly among those adolescents with some form of employment. Therefore this figure could be much higher in rural areas. The health workers thought that the adolescents were too young to have STIs. This finding had also been noted by Chibombamulilo (1997) who found many patients being turned away from health centers because they were young. In a participatory assessment of adolescent sexual and reproductive health in New Kanyama Compound, Lusaka, Mupela and Fetters (1997) found

that adolescents are unlikely to seek treatment for illnesses related to sex at health centers. This is because they were embarrassed by nurses who scolded them and so their main alternative were traditional healers who were able to keep their secrets.

In this study because of these bad attitudes, 51.1% preferred clinics for adolescents only. This *findings agree with the many of the findings by Webb (1997) who found the principal deterrents to clinical attendance as high fees, drug shortage, poor staff attitude, lack of privacy and confidentiality, fear of being reprimanded by the nurses that know them, fear of being asked to bring sexual partner and fear of infections such that many wanted to transmit the STIs as a forms of revenge.* In similar studies Shah (1996) concluded that formal health services are typically not user – friendly by young people in Zambia.

Although most subjects, pregnant or not, preferred to choose a health center nearest to them in anticipation of good treatment, when asked about recent past experience, they still cited poor reception and lack of drugs and other facilities as their problems. Integration of STIs management among pregnant adolescents was poor. The only blood investigations most could do was VDRL (92%). This is despite many other investigations that can be done such as testing for HIV, bacterial vaginosis and gonorrhea. In fact in their study on sexually transmitted diseases in pregnant women in Lusaka, Ratman et al (1990) found a high prevalence of gonococcal and syphilis in pregnant women. In the absence of swab microscopy, gonorrhoea will not easily be diagnosed. Urine investigations also reveal a lot of pathologies which can affect the outcome of pregnancy including urinary tract infection but the investigation was only done in 0.10% of cases. Conditions like bacterial vaginosis can be detected by doing a high vaginal swab analysis but this investigation was disappointingly done in 0.05% cases. Simple and cheap tests like pH determination and whiff tests for bacterial vaginosis could not be done. Despite these low investigation rates most subjects (83.3%) had been duly told the importance of antenatal investigations.

The findings in relations to HIV was almost similar to non pregnant subjects. Despite many knowing where to obtain VCT (58%) and knowing the importance of knowing the sero-status in those with STIs (72.2%) only 0.1% took the HIV test.

Integration of STIs in pregnant adolescents therefore is crucial and not difficult. This is because according to (UNICEF, 1999) integration of health services doesn't mean starting from the beginning. Rather, it requires strengthening, co-ordination, linking or diversifying existing services, adding new services such as screening and treatment of STI/HIV and improving overall levels of quality.

Level of education seem to affect a lot of factors in the attendants. Most had low education (see appendix 2)

The incidence of STIs was high in people with lower education. Of the total 105 receiving treatment for STIs, the majority had low education: primary level 53 (50.5%), junior secondary 25 (23.8%) and senior secondary 26 (24.8%) see appendix 7. The findings were the same in adolescents who were pregnant. Low level education was associated with the highest number of pregnant subjects and those who had STIs.

Most pregnant women had low educational standard (see appendix 5). The compounding factors of being adolescent, low education and low income are likely to affect attendance at health institutions. As Likwa RN (1996) found, literacy levels are quite low among adolescents and early marriage is common. The incidence of STIs was more common among adolescents who were married 57(54.3%) as against 48(45.7%) see appendix 6. Whether these females get STIs from their husbands, is difficult to say.

Finally STIs are a real problem among female adolescents in Lusaka. Both pregnant and non pregnant individuals were affected with STIs with pregnant ones having a higher prevalence of 34.4% while non-pregnant STI prevalence is 26.4%. This could suggest married couples got infections from their spouses and most probably from re-infections.

LIMITATIONS OF THE STUDY

Sensitivity of some of the questions regarding STIs, sexual activity, HIV/ AIDS may have affected the interview process limiting the quality and quantity of information to be obtained even though confidentiality and anonymity is assured.

Limited funding made it difficult to carry out the study smoothly and on time.

CONCLUSION

Factors that affect the provision of adolescent health services in relation to STIs among female adolescents in Lusaka are not new and have been documented in literature.

In whatever clinic, the adolescents seeking medical attention for STIs in Lusaka, the deterrents to good service remain more or less the same. They can all be improved upon.

All that is needed is a little more effort by management of these health centers and more so by the staffthis does not require much technology.

RECOMMENDATIONS

Continued improvement in the delivery of health services as it relates to STIs Management among female adolescents should be encouraged. From this study, factors that have been found to significantly affect the provision of these health services to these adolescents should be improved upon.

Efforts should be made to recognize that adolescents start to have sexual intercourse at an early age and therefore should be accorded the total care for STIs to which they are exposed.

Besides, integration of STIs management in antenatal clinics should be improved together with laboratory performance.

With the declining national economy, poverty will continue affecting adolescents attendance at health centers and this only requires political will to change.

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Appendix 1 : Frequency of Investigations done at health institutions in treatment of STIs in Lusaka

Investigation	Frequency	Percentage
Urine	10	2.5
VDRL	274	71.5
Scan	18	76.1
Swab microscopy	95	23
	397	100

Appendix 2 : Education standard against number of adolescents seeking medical attention

Education level	Frequency	Percentage
No school	15	3.8
Primary	184	46.3
Junior secondary	117	29.5
Senior secondary	81	20.4
	397	100

Appendix 3 : Reason for not attending clinic / hospital against age

Age	Lack of money	Poor service	Prefer traditional healer	Poor attitude of nurses	Total
12	1	0	0	0	1
14	8	2	0	3	13
15	11	6	4	5	26
16	39	15	0	9	63
17	68	27	0	12	107
18	78	30	0	9	117
19	55	9	0	6	70
	260	89	4	44	397

Appendix 4 : Frequency of STI among adolescents

Ever had STI	Frequency	Percentage
Yes	105	26.4
No	292	73.6
	397	100

Appendix 5 : Education level against number ever been pregnant

Education level	Ever been pregnant	Never been pregnant	Total
No education	8	7	15
Primary level	33	151	184
Junior secondary	30	87	117
Senior secondary	25	56	81
	96	301	397

Appendix 6 : Marital status Vs STIs frequency

Marital status	Ever had STIs	Never had STIs	Total
Married	57	148	205
unmarried	48	144	192
	105	292	397

Appendix 7 Education level against number ever had STIs

Education level	Ever had STI	Never had STI	Total
No education	1	14	15
Primary	53	131	184
Junior secondary	25	92	117
Senior secondary	26	55	81
	105	292	397

Appendix 8 : Letter to respondent

The University of Zambia
School of Medicine
P O Box 50110
LUSAKA

Dear Respondent,

RE : Permission for your Inclusion in the study

I am carrying out a study to assess the availability of adolescent health services as it relates to the diagnosis, treatment and prevention of STIs in Lusaka- Zambia.

This study will in turn enable policy makers and health care providers audit their performance and determine strategies for improvement.

I am therefore requesting you to take part in the study by answering all or some of the questions. You are free to withdraw from the study at any point.

The information obtained will be treated with the strictest confidentiality as neither your name nor home address will be included in the interview schedule. Only a number will identify the interview schedule.

You will be free to know the final results of the study by contacting me on the address below. If you agree to participate in the study, please sign below:

I have read the above statements and have understood the information given. I am willing to participate in the study.

Signature or thumb print.....

Date.....

If there are any queries, please contact

Dr Bellington Vwalika
University Teaching Hospital, Department of Obstetrics / Gynecology, Lusaka
Phone: 096 782971

Appendix 9 : Interview schedule

**University of Zambia - School of Medicine
Department of Obstetrics and Gynecology**

**Interview schedule
for the collection of Data on**

Assessment of Adolescent Health Services

**A case of Sexually Transmitted Infections Prevention in
Lusaka- Zambia**

Respondent No.....

Study location

Interview date.....

Interviewers' initials.....

Instruction to research assistants

1. Always introduce yourself to respondent
2. Explain the purpose of the study and ask for permission to do the interview
3. Request the respondent to sign consent before you start
4. If respondent declines to take part, do not force them
5. Do not write names of respondents on the questionnaire
6. Circle the numbers corresponding to the answers given by respondent

Appendix 10 : Client capture form

Section 1: Client back ground information

I would like to ask you about your background.

N0	Questions and filter	Coding categories
101	Circle sex of respondent	Female 1
102	What is your date of birth	Year Month day..... Don't know...
103	How old were you at your last birthday? Compare and correct 102 if necessary	Age in completed year
104	Are you married? Yes (1) No (2)	Other specify
105	What is your current employment / source of income?	Specify
106	Have you ever had sexual intercourse Yes (1) No (2)	
107	At what age did you first have sex? Specify	
108	How far did you go in school?	1.Primary 2.Junior secondary 3.Senior Secondary 4.Never been to school

Section 2 : Client's knowledge on STIs/ HIV

Now I would like to ask you questions on your knowledge about STIs / HIV

No	Question and filters	Coding categories
201	Have you ever heard of diseases that can be transmitted through sexual intercourse.	Yes 1 No 2
202	Can you describe any symptoms of STI in women Any other? Circle all mentioned more than one answer possible. Do not read out the symptoms	1. Abdominal pain 2. Discharge from vagina 3. Itching genital area 4. Burning on urinating 5. Pelvic pain during sex 6. genital ulcers / sores 7. Swellings in genitalia 8. Blood in urine 9. Failure to pass urine 10. Loss of weight 11. Inability to conceive 12. Other 13. Don't know any
203	Can you describe any symptoms of STI in men? Circle all mentioned more than one answer possible. Do not read out the symptoms	1. Abdominal pain 2. Discharge from penis 3. Itching genitals 4. Burning pain on urinating 5. Pain during sex 6. Genital ulcers / open sores 7. Swellings in genitalia 8. Blood in urine 9. Failure to pass urine 10. Loss of weight 11. Impotence 12. Other 13. Don't know any
204	Have you ever suffered from an STI?	Yes 1 No 2
205	If you ever received treatment for STI, which one did you have? Tick or specify	1. Genital discharge 2. Genital ulcers 3. Other (specify)
206	When you got an STI , did you do any of the following? A. Seek advice from a health worker in a clinic or hospital? B. Visit a traditional healer? C. Buy medicines in a shop or pharmacy? D. Ask friends and relatives for advice?	A Yes 1 NO 2 B. Yes 1 NO 2 C. Yes 1 NO 2 D. Yes 1 NO 2

	Other specify	
207	If you didn't attend clinic / hospital, any particular reason why? Specify	
208	If you attended clinic or hospital how was the reception from the members of staff there? Tick	Bad 1 Good 2
209	If bad, what do you think is the cause of this bad service ?	1.They think Iam too young to have STI. 2 They are bad to all .3 Do not know why
210	Did you go back for review?	Yes 1 No 2
211	How did you feel about the medical attention given to you?	1.Prefer clinic for adolescents 2.Don't mind 3.would choose other facility
212	Have you ever had a blood test for HIV?	Yes 1 No 2
213	Do you know of any benefits of knowing whether one is HIV positive or not?	Yes 1 No 2
214	If yes, what benefits do you know? Specify	
215	If no, do you know a place where you could obtain information on voluntary counseling and testing for HIV for free?	No 1 Yes 2 Know paying 3 Other 4
216	Have you heard of drugs which are used to prolong the life of HIV positive people?	Retroviral drug 1 Traditional medicines 2 Other 3

Section 3 : Clients reproductive health needs

Now I would like to discuss questions related to other reproductive health needs.

NO	Question and filters	Coding category
301	Do you know what family planning is?	Yes 1 No 2
302	Are you currently using any family planning method?	Yes 1 No 2
303	If yes to 302, what method are you using	Pill 1 Male Condom 2 Female condom 3 IUD 4 Injectibles 5 Natural Rhythm 6 Traditional 7 Other (specify)
304	Where did you obtain your method of choice?	Government clinic 1, Hospital 2 Private clinic 3, Traditional healer 4 Other Specify
305	If No in 302, do you know a place where you could obtain information on family planning?	Yes 1, No 2
306	If yes, in 302 what was the attitude of the health workers to you before you were given the family planning of your choice?	Receptive 1, Hostile 2 Other specify
307	If you became pregnant at this moment what would you do?	Keep to full term 1, Consider TOP 2, Other (specify)
308	If considering termination of pregnancy where would you go for this service?	Government clinic 1, Hospital 2 Private clinic 3 Traditional healer 4 Other(specify) 5 I don't know
308	Have you ever had a termination of pregnancy	Yes 1, No 2
309	If yes, were you given antibiotics before	Before Yes 1 No 2

	and after the TOP	After Yes 1 No 2
310	Have you had a miscarriage before?	Yes 1, No 2
311	If yes to 310 what caused the miscarriage?	Spontaneous A Induced B Other specify
312	If induced by whom?	Doctor 1, Clinical officer 2, Nurse 3, Traditional healer 4 Don't know Other Specify
313	Have you ever been or are you pregnant?	Yes 1, No 2
314	Do you or are you attending antenatal clinic?	Yes 1, No 2
315	If no to 314 is there a reason for not attending ANC. (Specify)	
316	Can you describe the importance of the antenatal care	Confirm pregnancy 1, Monitor problems in pregnancy 2, To deliver 3, Weighing on scale 4 Others specify
317	When do you think is the best time to start ante natal clinic. Circle months	1 2 3 4 5 6 7 8 9 on EDD Other specify
318	When you attended your first antenatal visit what investigations were done?	Urine 1, Blood 2, Scan 3 Other specify
319	If pregnant has someone mentioned importance of investigations in pregnancy to you?	Yes 1, No 2
320	What was the attitude of health workers at seeing you are pregnant?	Kind and helpful 1 Hostile 2 Other (specify)
321	How do you feel attending antenatal clinic and delivering in this place	Prefer separate facility 1 Don't mind 2 Other specify
322	If you were pregnant and delivered, where will you stay?	Own house 1, Father of baby's house 2, Parents house 3, Other specify
323	If you were pregnant and delivered, who will support you and the baby?	Mother alone 1, Father of child 2 Parents 3 Others specify
324	Why have you chosen this health facility rather than any other?	1- Referral 2. Nearest 3. Best 2- other specify
325	If you were told you had an STI, where would you prefer to be treated?	1..Here 2.Nearest clinic 3.Private clinic 4.Traditional healer 5.self medication 6.other specify
326	If you had an STI and were not pregnant but wanted to be treated , what sort of health facility would you prefer?	1. Here 2. Nearest clinic 3.Private clinic 4.Traditional healer 5.self medication 6. other specify
327	What are your reasons for choosing such a health facility?	1.Costs 2. Nearest to home 3. Privacy 4. good treatment 5. Availability of drugs 6. good clinician 7.Attitude of health workers
328	What factors would influence your choice of a health facility?	1.proximity.Attitudes of health workers3.Good treatment
329	What are some of the problems if at all have you experienced in the past when seeking medical care.	1.lack of drugs2.Rude nurses3.Bad attitude of health workers4.Hostile staff 5.No privacy 6.Long queues

Appendix 11 : Health institution assessment form

NO	Question and filter	Coding
401	Informant designation	1-trained in STIs management 2-Not trained
402	Is antenatal care provided here?	1-Yes 2- No
403	Are family planning services provided here?	1-Yes 2-No
404	Is STI care provided here?	1-Yes 2- No
405	Is syndromic management offered here?	1-Yes 2-No
406	Is there enough privacy for your patients?	1-yes always 2-sometimes 3-No
407	Is partner referral and treatment practiced here?	1-yes always 2-sometimes 3-No
408	Are STIs drugs dispensed at the clinic?	1-yes always 2-sometimes 3-No
409	If no to 408 , where do patients get their drug from? Specify	
410	Is health education provided?	1-yes always 2-sometimes 3-No
411	Are health manuals used?	1-yes always 2-sometimes 3-No
412	Are health education materials used?	1-yes always 2-sometimes 3-No
413	Are women who have come for other ailments screened for STIs?	1-yes always 2-sometimes 3-No
414	Are pregnant women screened for STIs?	1-yes always 2-sometimes 3-No
415	Are family planning clients screened for STIs?	1-yes always 2-sometimes 3-No
416	Do antenatal women have VDRL test done?	1-yes always 2-sometimes 3-No
417	Do you treat women who are VDRL positive?	1-yes always 2-sometimes 3-No
418	What other tests do you do on pregnant women?	Specify
419	Who treats pregnant women with STIs?	Specify
420	Are male or female condoms distributed free?	1-yes always 2-sometimes 3-No
421	Are oral contraceptives distributed free?	1-yes always 2-sometimes 3-No
422	Other Family planning methods provided free?	1-yes always 2-sometimes 3-No
423	Are vaginal speculums available?	1-yes always 2-sometimes 3-No
424	Are BP machines available?	1-yes always 2-sometimes 3-No
425	Are adult weighing scales available	1-yes always 2-sometimes 3-No
426	Are infant weighing scales available?	1-yes always 2-sometimes 3-No
427	Are injectable oxytocins available?	1-yes always 2-sometimes 3-No
428	Are there autoclaving machines available?	1-yes always 2-sometimes 3-No
429	Is light source available?	1-yes always 2-sometimes 3-No
430	Is there autoclaving facilities?	1-yes always 2-sometimes 3-No
431	Is a functional lab available?	1- yes always 2 –sometimes 3 –No
432	Are you able to do microscopy ,culture and sensitivity in your laboratory?	1- yes always 2 –Only microscopy 3 None
433	Are high vaginal swabs done?	1- yes always 2 –sometimes 3 –No