

# Sexually Transmitted Diseases at Monkey Bay Community Hospital in Mangochi, Malawi; an Analysis of Characteristics of Common Sexually Transmitted Diseases

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## Abstract

We present the characteristics of the commonly diagnosed sexually transmitted infections (STI) at a clinic of Monkey Bay community hospital by a retrospective study. We conducted an audit of patients' hospital records from a STIs clinic at Monkey Bay community hospital in Mangochi District (Malawi) covering a period from January 2019 to June 2019 (18 months). Data was tabulated in excel and analyses were made based on sex, age, male circumcision status, pregnancy and the pattern of STIs diagnosed within the chosen study period. A total number of 659 clients presented at STI clinic of Monkey Bay community hospital between January 2018 and June 2019. Out these clients, 409 (62%) were females and 250 (38%) were males. Most of the patients were in the age range of 25 years or above (447, 68%). Majority of the patients were HIV negative (523, 79%). Out of the 250 males, 113 (45%) were circumcised. Among female patients 56 of the 409 (14%) were pregnant. The most common presentations for all cases put together were lower abdominal pain (253, 38%), then urethral discharge (189, 29%), abnormal vaginal discharge (141, 21%), genital ulcer disease (64, 10%), in that order. Syphilis, genital warts, inguinal bubo and scrotal swelling were less common. The most common presentation in males was urethral discharge (178, 71%), while in females it was lower abdominal pain (214, 52%). Our audit showed that in Mangochi (Malawi) sexually transmitted diseases of various types are more

common among young adults, females and uncircumcised men. There was no much difference in the percentage of STI's between HIV positive and HIV negative people. These results point to an alarmingly high level of risky sexual behaviors among sexually active age groups in this part of Malawi, a country which still has one of the highest HIV prevalence in sub-Saharan Africa. This calls for continued and better research and control for transmission of STIs in the district.

## Keywords

Sexually Transmitted Infections (STIs), Mangochi, Malawi

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## 1. Introduction

Sexually transmitted diseases (STDs) are among the most frequently occurring infections worldwide. There are an estimated 376 million new infections yearly with one of the following Sexually Transmitted Infections (STIs): chlamydia, gonorrhoea, syphilis and trichomoniasis [1] [2]. More than 500 million people are estimated to have genital infection with herpes simplex virus (HSV) and more than 290 million women are infected with human papilloma virus [3] [4]. Up to 80% of curable STIs occur in developing countries. Adolescents and young adults have the highest rates of these STIs [5].

In developing countries including, Malawi, STIs and their complications are among the top reasons why adults seek healthcare services [6] [7]. Among women of child-bearing age curable STIs account for a larger number of disability-adjusted life-years lost than any other group of diseases apart from maternity related disorder [8]. Sexually transmitted infections are a known risk factor for HIV transmission [8] [9] and figures released by UNAID (2001) [10] showed that HIV prevalence among male STI Patients in major urban areas of Malawi was as high as 54.8% and currently ranges from 37.7% to 70% [11].

In a study conducted in 2015 in Malawi, 15% of women and 10% of men aged 15 - 49 reported having an STI and/or its symptoms [12]. The majority of STIs have no symptoms or have only mild symptoms [13].

In developing countries like Malawi, laboratory diagnosis of every sexually transmitted infection is not feasible due to limited resources at clinic level. Due to this challenge Malawi adopted a syndromic approach to STI management in 1993 under the John Snow Incorporated/support to AIDS and Family Health (JSU-STAFH) project. The syndromic management implies an approach in which clinical algorithms, such as decision trees, for commonly presenting signs and symptoms (e.g. urethral discharge or genital ulcer) are used in case management [14].

Data from Malawi shows that algorithms for the diagnosis and treatment can be effective. Urethral discharge and genital ulcer disease in men had cure rates of 87% - 99% and 68% - 98% respectively. The sensitivities for the algorithms for

vaginal discharge ranged from 73% to 93% for index cases, and from 29% to 86% for contacts of index cases [15]. Effective syndromic management of STIs requires recognition of common and consistent combinations of signs and symptoms of STIs, knowledge of the most common causative organisms for the various syndromes, knowledge of the socio-behavioral characteristics of people with STDs as well as knowledge of health-seeking behavior of STIs patients [16]. In Malawi, most of these data are from urban settings. We conducted a clinical audit with an aim of assessing characteristics of sexually transmitted diseases among clients presenting at one of rural hospitals in Malawi (Monkey Bay Hospital in Mangochi).

## 2. Methods and Materials

### 2.1. Setting

The study was done in STI clinic at Monkey Bay community hospital in Mangochi (Malawi) which is a referral center to many other health centers and clinics in the district with close to 1 million inhabitants.

### 2.2. Design

#### Selection Criteria

Case records of all patients who attended the STIs clinic at the Monkey Bay community hospital in Mangochi, Malawi from January 2019 to June 2019 were retrieved, included in the study and studied. Data was entered into excel by sex, age, circumcision status, pregnancy status and the pattern of STIs syndromic diagnoses.

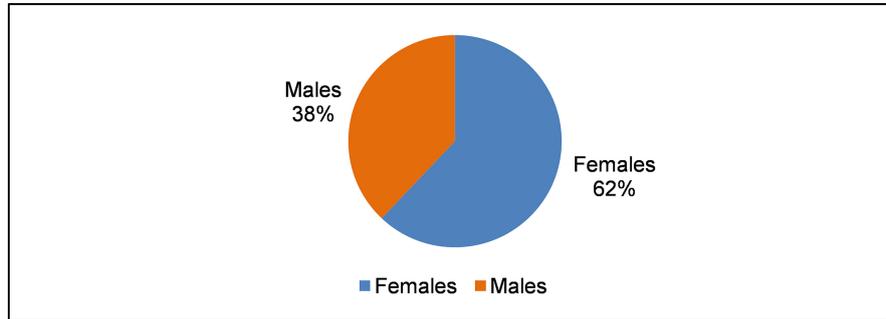
### 2.3. Data Analysis

Using excel frequency tables and graphs were generated using targeted variables of sex, age, circumcision status, pregnancy status and the pattern of STIs syndromic distribution. Only patient who presented with STIs related symptoms were considered for analysis.

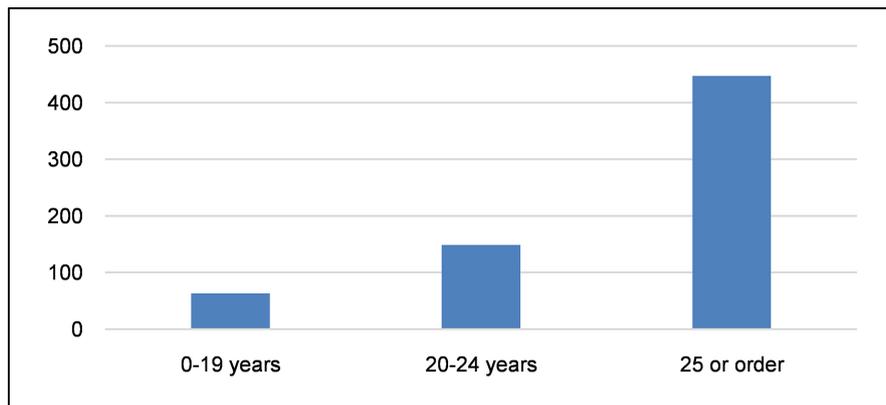
## 3. Results

### 3.1. Patient Characteristics

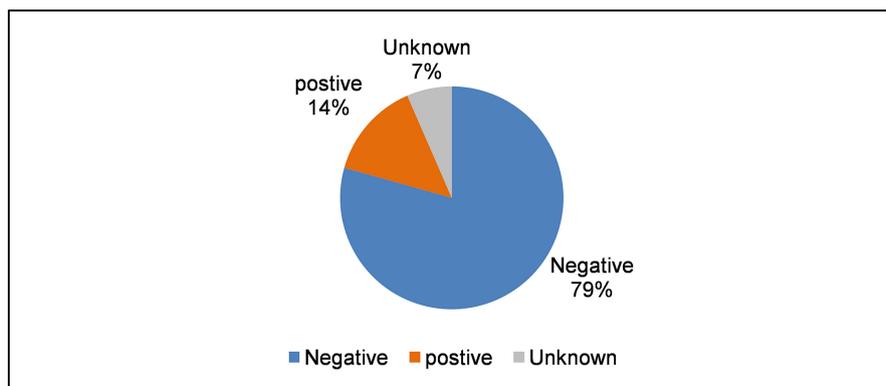
**Figures 1-3** and **Figure 6** show the characteristics of 659 clients who presented at STI clinic of Monkey bay community hospital between January 2018, to June 2019. Out these clients, 409 (62%) were females and 250 (38%) were males. Most of the patients were in the age range of 25 years or above (447, 68%), then 20 - 24 years (149, 23%) and 0 - 19 years (63, 9%). **Table 1** shows that majority of the patients were HIV negative (523, 79%), 93 (14%) were HIV positive and the remaining 43 (7%) had unknown HIV status. **Figure 6** shows that out of the 250 males, only 113 (45%) were circumcised versus 137 (55%) uncircumcised. In females 56 of the 409 (14%) were pregnant versus 353 (86%) non pregnant.



**Figure 1.** Percentage of clients by sex, n = 659.



**Figure 2.** Age range of patient at STI clinic.



**Figure 3.** HIV status.

### 3.2. Distribution of Diagnosed STIs Conditions

**Figure 4** shows the distribution of the conditions of diagnosed using the syndromic approach as; Lower abdominal pain (LAP), urethral discharge (UD), abnormal vaginal discharge (AVD), genital ulcer disease (GUD), syphilis (VDRL+), scrotal swelling (SS), genital warts (GW) and inguinal bubo (BU).

The most common presentations were LAP (253, 38%), then UD (189, 29%), AVD (141, 21%), GUD (64, 10%), and others in that order. No case of balanitis was registered over the period of 18 month. The most common presentation in males was urethral discharge (178, 71%), while in females it was lower abdomin-

al pain (214, 52%).

### 3.3. Comparison by Circumcision Status

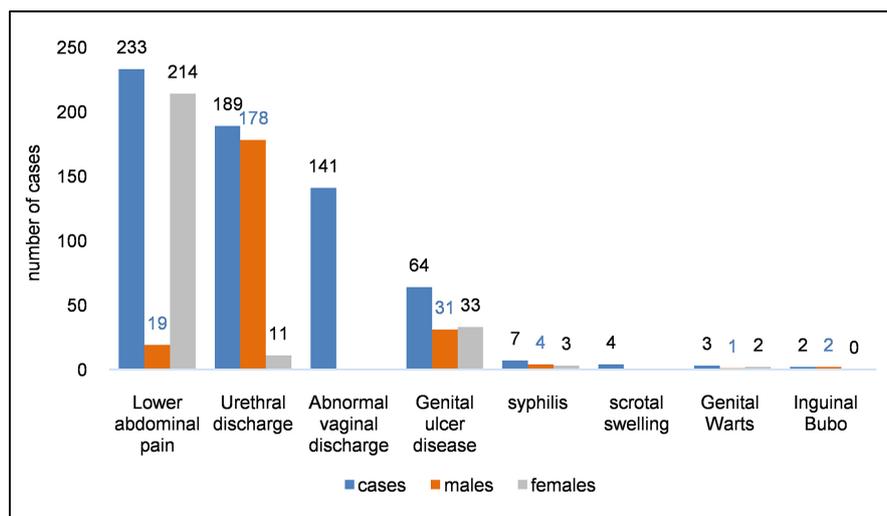
**Figure 5** shows the number of STI's were higher in non-circumcised male (marked as MNC in the chart) as compared to circumcised male (marked as MC in the chart) group. For example, genital ulcer disease was 1.5 times higher in non-circumcised men than in circumcised men.

### 3.4. Comparison by Age Group

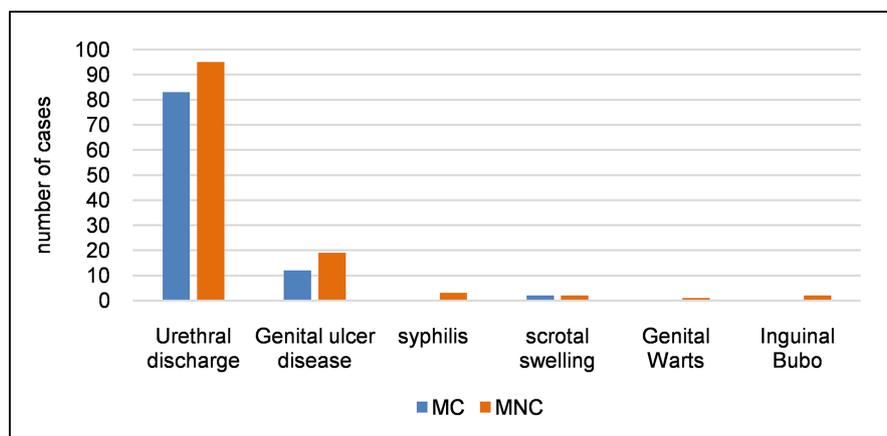
**Figure 6** shows that STI's were much more common in patients aged 25 or above. For example, lower abdominal pain and urethral discharge were at least three times more common in age range of 25 or above than in 20 - 24 age group.

### 3.5. Comparison by HIV Status

**Table 1** shows that there was no clear difference in STI presentations between HIV positive and HIV negative patients (see **Table 1**).



**Figure 4.** Common STI presentation at the clinic by sex.



**Figure 5.** Comparison of STI's in male by circumcision status.

### 3.6. Seasonal Variations in STI's

Figure 7 shows that there was slight month-to-month variation in the number of patients presenting to the STI clinic. In from January to December of 2018, the monthly range of patients seen was between 19 and 81.

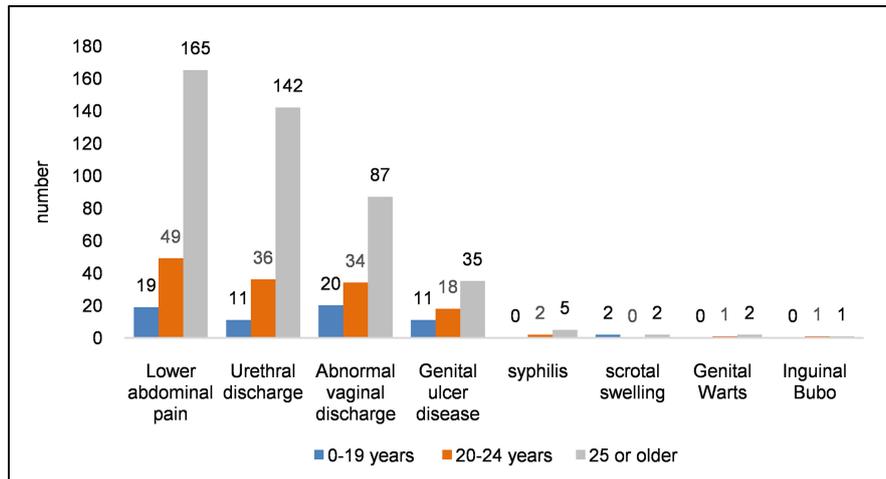


Figure 6. Comparison of STI's by age group.

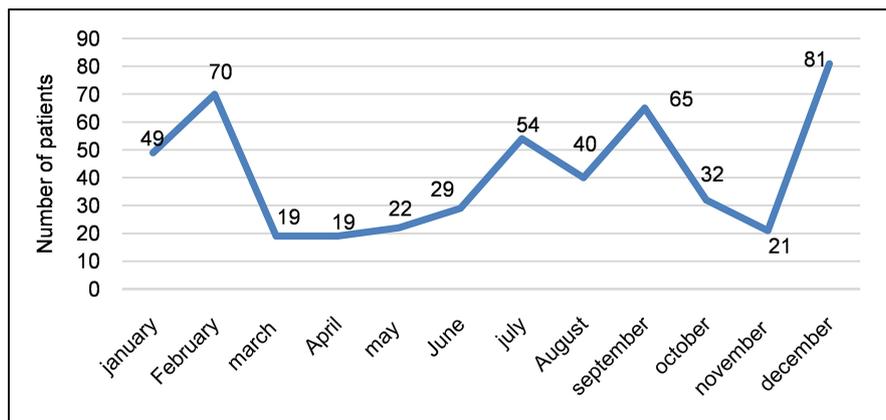


Figure 7. Trend of STI's by month in 2018.

Table 1. Percentage of STI's in HIV positive and Negative people.

| Conditions                 | Percentage in HIV+ | Percentage in HIV- |
|----------------------------|--------------------|--------------------|
| Lower abdominal pain       | 34                 | 35                 |
| Urethral discharge         | 17.2               | 31                 |
| Abnormal vaginal discharge | 22                 | 22                 |
| Genital ulcer disease      | 11                 | 9.3                |
| syphilis                   | 2                  | 1                  |
| scrotal swelling           | 1                  | 1                  |
| Genital Warts              | 0.1                | 0.1                |
| Inguinal Bubo              | 0                  | 0.1                |

## 4. Discussion

Our study shows that an STI clinic in rural Malawi attends to high burden of patients with STIs. The results of the present retrospective 18-month study at an STI clinic of Monkey Bay community hospital reveal that STIs are more prevalent among females. This finding is similar to the Malawi Demographic and Health Survey (DHS) finding in 2016, where the percentage of females self-reporting STI symptoms was slightly higher (15%) than in men (10%) [12]. This shows that females in Malawi require interventions that will protect them from contracting STIs which also predisposes them to HIV infection. The difference between the numbers of male and female patients may also be attributed to the difference in health seeking behavior between males and female. An earlier study done in Mangochi reveals that 38.9% females with STI symptom sought care from health profession as compared to 33.9% men [16]. More studies are required to explain such differences for designing interventions that can be used to target both men and women in the fight against STIs among them.

This audit also showed that a significant number of people presenting to the study clinic and were diagnosed with STI are aged 30 and below. Young adults are the sexually active age group and also bear a high burden of HIV and other STD's [17]. This emphasizes the importance of behavioral change messages that are used to the control of STD's and HIV in these age groups. In a study that was done in Nigeria, not seeking treatment was more prevalent among those aged 15 - 18 (44%), as compared to the older age groups (68%) [18]. This shows that age influences the distribution of the STIs seen in audits like we did in this study.

The prevalence of STIs in our study is similar to an urban study done at Queen Elizabeth Central Hospital, in Blantyre Malawi, where urethral discharge and genital ulcer disease were among the four common STDs [16].

Our audit showed that STIs were more common among uncircumcised men as compared to circumcised men, which is similar to other studies done across Africa and the world. Circumcision has been shown to be associated with lower STI rates. Mehta SD *et al.* in his study reveals that male circumcision reduces genital ulcer disease (GUD) incidence with a risk ratio of 0.51 and 0.52 [19]. The risk for GUD is also shown to be decreased in female partners of circumcised males as for Chlamydia trachomatis infection [20], bacterial vaginosis, and trichomonas infection as well [21]. Circumcision also reduces the risk of other sexually transmitted diseases like genital herpes, syphilis as well as human papilloma virus infection [22].

In our study lower abdominal pain, abnormal vaginal discharge and Genital ulcer diseases (GUD) were the common presentations in females. Syphilis and genital warts were less common. This finding is also similar to other studies done in urban Blantyre [16]. Our audit also showed that STIs affected both pregnant and non-pregnant women.

In our study there was not much difference in STI's among HIV positive and HIV negative patients. This finding is different from other studies, which shows

that HIV positive people are more likely to have STI's than HIV negative people [23]. Kristensen showed that that 62.4% of 705 unselected patients at an STD clinic in Lilongwe (Malawi) were HIV sero-positive [24]. Mbizvo *et al.* and Fehler *et al.* showed that in Zimbabwe and South Africa respectively, STD patients had a 67% risk for contracting HIV. [25] [26]. Our study could have showed a different HIV distribution because of inadequate sample size.

A last finding in this study was seasonal variations of STI's in 2018. More STI's were registered in the months of December and February. This is different from a study which was done in Blantyre [16], where the number of cases in December was low. This may be attributed to the Christmas celebrations, when a lot of people come to Mangochi for celebrations and holidays. Usually during this time there is a presumed of increased sexual activities, which may explain the high number of STI's. The higher number of STI clients in February may be due to shortage of foods and other resources during this time, which may force more women to engage into transactional sex, for money to cater for their day to day needs.

## 5. Conclusions

Our audit indicates that the majority of clients seeking care at Monkey bay community Hospital STI clinic were younger people in productive sexual age, predominantly females, most of which presented with lower abdominal pain. Circumcision was associated with lesser STIs. Pregnant and nonpregnant females are equally affected with STIs. While, there was no clear distinction in the percentages of STIs between HIV+ and HIV- clients. Conclusion of the effect of seasonality in the number cases of STI in Monkey Bay requires more definitive studies.

Our study had limitations. Firstly, as a cross sectional study, the conclusions only apply to the study period. Secondly, the sample size on which the conclusions are based is fixed such that much broader conclusions can be made in larger studies that our audit has stimulated.

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## Conflicts of Interest

No conflicts of interest were declared in relation to this paper.

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