



Hepatitis B Infection among Commercial Sex Workers in Lyantonde Town, Central Uganda: Prevalence, Knowledge and Practices

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Authors' contributions

This work was carried out in collaboration among all authors. Authors ET, AA, SD, AI and YD participated in the study conception, design, data collection and analysis. Author ET wrote the manuscript. Author GA reviewed the manuscript. Author SPR supervised the study. All authors have read and approve the final manuscript.

Article Information

Editor(s):

(1) Dr. Renato Borges Fagundes, Professor, Federal University of Santa Maria (RS), Brazil.

Reviewers:

(1) Shri. P. S. Kore, Rajarambapu College of Pharmacy, India.
(2) N. Komal Kumar, St. Peter's Institute of Higher Education and Research, India.

Complete Peer review History: <http://www.sdiarticle4.com/review-history/57822>

Original Research Article

Received 10 April 2020

Accepted 15 June 2020

Published 29 June 2020

ABSTRACT

Aims: The study was conducted to determine the prevalence of hepatitis B infection among female commercial sex workers in Lyantonde town.

Study Design: A cross sectional study was conducted.

Place and Duration of Study: The study was carried out in Lyantonde town, Lyantonde district, central Uganda, from November 2019 to January 2020.

Methodology: Included were 207 consented commercial sex workers operating in Lyantonde town at the time of the study. A structured questionnaire was administered to collect information on bio-data, knowledge on hepatitis B infection and practices. Blood samples were then collected and transported to Mbarara Regional Referral Hospital Laboratory for analysis.

Results: Hepatitis B prevalence of 12.6% was established among the commercial sex workers. 207 participants with a mean age of 26 ± 3.801 were studied. 28.0% were married, 30.4% cohabiting, 12.1% single and 29.5% divorced. 15.0% had no formal education, 28.5% had primary level education and 56.5% had secondary level education. 60.4% lived on less than one dollar a day.

All the participants had ever heard of hepatitis B infection. 95.6% had awareness of its sexual transmission, 44.9% knew it spreads through sharing sharps, 4.8% had awareness of mother to child transmission during child birth and 38.6% thought the disease is unpreventable.

Thirty-five-point seven percent (35.7%) had ever tested for the disease but none vaccinated. All the participants reported irregular condom use during sex and non-confessed to intravenous or illicit drug use. 61.8% expressed desire to giving birth at home and not a hospital.

Conclusion: Hepatitis B infection at 12.6% is highly prevalent among female commercial sex workers in Lyantonde town majority of whom are unaware of their status and do not consistently practice safe sex e.g. condom use. A targeted testing and vaccination program including prevention awareness campaigns could go a long way in keeping this marginalized population safe.

Keywords: Hepatitis B infection; Lyantonde town; prevalence; Central Uganda.

ABBREVIATIONS

FSW : Female Sex Workers

RRH : Regional Referral Hospital

DRC : Democratic Republic of Congo

ELISA : Enzyme Linked Immunosorbent Assay

SPSS : Statistical Package for Social Science

Commercial sex worker: Street walkers, in-house girls and call girls engaging in sexual activities in exchange for money.

1. INTRODUCTION

Hepatitis B infection is an acute or chronic infection of the hepatic cells of the liver by the hepatitis B virus. Chronic carriers of this infection are at increased risk of death from liver cirrhosis, fulminant liver disease or hepatocellular carcinoma [1]. An estimated 257 million people are chronic carriers of hepatitis B infection with an annual death of about 887,000 which is mainly from the resultant liver cirrhosis and hepatocellular carcinoma. Majority of the affected are in East Asia and Sub-Saharan Africa. Additionally, between 5 to 10% of the adult population in Saharan Africa is chronically infected [2].

Hepatitis B among other ways is a sexually transmitted infection thus putting key minority populations such as commercial sex workers at particularly increased risk. Indeed, prevalence studies done on commercial sex workers world over support this assertion albeit with varied results, for instance a study in Brazil found prevalence of 17.1% [3], 10.6% in Bukina Faso

[4], 4.2% in the Democratic Republic of Congo [5], and 10.7% in China [6], among others. Apart from sex work, commercial sex workers are also known to be highly involved in illicit drug use further putting them at increased risk of infection from sharing needles and other sharp instruments [7].

Currently, all the approved drug regimen for managing hepatitis B infection do not provide cure for the disease, this therefore means that preventive measures such as vaccination remain paramount [8]. Luckily since 1982, a highly effective vaccine against Hepatitis B has been in existence and in use [9]. In 2015, the Government of Uganda rolled out a phased mass vaccination program targeting Ugandans of 15 years of age and above. By 2018, about 2.2 million people had been tested and vaccinated. However only 33% of them received all the three mandatory doses required to confer absolute protection from Hepatitis B infection meaning the remaining 66% did not receive the desired protection [10].

The national prevalence of hepatitis B infection in Uganda stands at 4.3%, with regional variations ranging from 0.8% in Southwestern Uganda to 4.6% in the North. Central Uganda where Lyantonde district is located has an estimated prevalence of 2.7% [11]. Similar surveys conducted in Kiruhura, a district, neighboring Lyantonde showed a prevalence of 4.1% [12]. Published District Health Reports of Lyantonde District for the 2017/2018 financial year on which this study was conceived state that the prevalence of hepatitis B in Lyantonde town is 18.1%. This is 3 times higher than the National average of 4.3% [13].

Owing to its location along a major highway for truck drivers to the Democratic Republic of Congo and Rwanda, Lyantonde town has established a thriving commercial sex business that employs hundreds of women. Despite the existence of information on Hepatitis B in Uganda, there is evident paucity of information on the burden of the disease among commercial sex workers who are a marginalized high-risk population for the disease.

This study therefore aimed at determining the burden of hepatitis B infection among the commercial sex workers within Lyantonde Town, their knowledge of the disease and practices so as to generate information that can help inform policy on management of the disease in the district.

2. MATERIALS AND METHODS

2.1 Study Design, Setting and Population

A cross sectional survey was conducted on consented commercial sex workers operating in Lyantonde Town at the study time. Snow ball sampling was used. Three index participants were recruited, two from along the Lyantonde main street where they operate and one from a nearby night club. Each was interviewed and given a coupon to recruit three more participants from among their colleagues who also did the same and the chain continued till the targeted number was reached. The Town is located in Lyantonde District, Central Uganda approximately 200Km from Kampala the Capital of Uganda. GPS coordinates Latitude: 0°24' 11.02" N Longitude: 31°09' 25.99"E. Only female sex workers who consented in writing to participate in the study were recruited.

2.2 Data Collection

Following consent, a structured questionnaire was administered to each study participant to collect demographic information on age, marital status, level of education and income level. Similarly, information on their knowledge of hepatitis B infection and practices was collected. Each participant then gave a blood sample, collected into a red top vacutainer bottle from where serum would be obtained. Samples were transported to Mbarara Regional Referral Hospital Laboratory for analysis.

2.3 Laboratory Procedures

The clotted samples were each centrifuged for 5 minutes, serum was obtained and a rapid hepatitis B surface antigen test was conducted using the Abon Biopharm Rapid Test Kits. All the Hepatitis B surface antigen positive samples were further confirmed by Enzyme Linked Immunosorbent Assay (ELISA) technique of (Murex using Murex HepBsAg ELISA ver.3, Kit/480) from Mbarara Regional Blood Bank.

A known positive and negative sample each was used to quality control the rapid test kits before the tests were initiated.

2.4 Statistical Analysis

Data obtained from the laboratory together with data on the knowledge and practices from the questionnaires were entered into Microsoft excel, imported and analyzed using Statistical Package for Social Sciences (SPSS) Version 20.

3. RESULTS AND DISCUSSION

3.1 Results

3.1.1 Participants demographics

Two hundred and seven participants who met the inclusion criteria were recruited with a mean age of 26 ± 3.801 (years). Their characteristics are summarized in the Table 1.

3.1.2 Laboratory results

Two hundred and seven samples were screened all together. Twenty-six (12.6%) tested positive both on the rapid test kit and the confirmation test using ELISA from Mbarara Regional Blood bank. One hundred and eighty-one (87.4%) tested negative using the rapid test kits and thus were not retested using the ELISA technique. The result therefore established a prevalence of 12.6% in the study population.

3.1.3 Knowledge and practices

All the participants (100%) had ever heard of hepatitis B disease before and knew that the disease has no cure. 196 (95.6%) were aware that hepatitis B is sexually transmitted, 99 (44.9%) also agreed that the disease can be spread through sharing sharp objects while 10 (4.8%) knew that the disease can be spread from mother to child during birth. 80 (38.6%) thought the disease cannot be prevented.

Table 1. Participants demographic characteristics

Characteristics	Frequency/Percentages
Age bracket	
15 – 24	100 (48.3%)
25 – 34	74 (35.8%)
35 and above	33 (15.9%)
Marital status	
Single	25 (12.1%)
Cohabiting	63 (30.4%)
Married	58 (28.0%)
Divorced	61 (29.5%)
Level of education	
No formal Education	31 (15.0%)
Primary	59 (28.5%)
Secondary	117 (56.5%)
Income level	
Less than one dollar a day	125 (60.4%)
More than one dollar a day	82 (39.6%)

Seventy-four (35.7%) had ever tested for hepatitis B before but did not get vaccinated. None of the participants was vaccinated at the time of the study. All the participants reported irregular condom use during sex and non-confessed to intravenous or illicit drug use. One hundred and twenty-eight (61.8%) expressed desire to giving birth at home and not a hospital.

3.2 Discussion

Commercial sex workers are key drivers of hepatitis B infection and other sexually transmitted infections in Africa due to the nature of their business [14]. This study conducted in Lyantonde Town, a transit and resting town for long distance truck drivers moving to Rwanda and the Democratic Republic of Congo similarly showed a high prevalence of hepatitis B infection in female sex workers at 12.6%. This is almost thrice the national average of 4.3% [11]. The prevalence is probably high because from the knowledge and practices of the sex workers on hepatitis B as reported in this study, all of them reported inconsistent use of condoms and none of them was vaccinated against hepatitis B, therefore their risk of infection is relatively higher. Studies on hepatitis B in the surrounding districts such as Kiruhura and the Lyantonde district health reports also show that the disease is prevalent in the locality meaning possibility of sleeping with infected clients is relatively high [12,13].

The significance of this finding is that the infection is concentrated in a key population whose sex business attracts not only the

Lyantonde men but also the neighboring districts and travelers from far, thus making these sex workers a major source of infection to others in addition to suffering the disease themselves.

Similar studies conducted elsewhere show varied results compared to ours, some higher like in Brazil 17.1% [3], while other relatively lower e.g. 10.6% in Bukina Faso [4], 10.7% in China [6], 4.2% in the DRC [5] and 2.5% in Rwanda [15]. This is probably due to the inter-state differences in policies towards commercial sex work as well as availability of direct health care policies towards commercial sex workers.

According to the Uganda Ministry of Health by 2015, 9 out of 10 Ugandans did not know their hepatitis B status despite the country being hepatitis B endemic with an estimated 52% life time exposure of the population [11]. In this study despite all the sex workers having knowledge of what hepatitis B is and a majority (95.6%) knowing that it is majorly sexually transmitted, only 35.7% had ever tested for the disease before, none vaccinated and all of them reported inconsistent practice of safe sex i.e. regular use of condoms during sexual intercourse. This is consistent with studies done elsewhere regarding sexually transmitted infections among sex workers e.g. Shively et al. [16]. in the USA found out that up to 35% of sex workers do not use condoms during sex and only about 47.0% knew their HIV status for example.

Our findings are worrisome because hepatitis B can take months to even years to produce symptoms rendering these women unknowing

spreaders of the infection to their clients, family and close friends through touch [17]. At the same time hepatitis B virus continues to silently destroy liver cells of the infected persons thus putting them at increased risk for liver cirrhosis and hepatocellular carcinoma [18].

In Uganda, by law prostitution is illegal and is generally considered a shameful act by the community thus stigmatization of sex workers is evident. This hinders interventions as the sex workers are often forced to operate in hiding and are suspicious of district officials. However, given their role in the spread of hepatitis B infection in Lyantonde town, deliberate programs tailored to addressing their sexual and reproductive health needs are needed.

4. CONCLUSION

In conclusion therefore, the prevalence of hepatitis B infection among female commercial sex workers in Lyantonde Town is high (12.6%) with majority unaware of their status and generally not adhering to safe sex practices. We recommend a deliberate and tailored intervention from the Lyantonde district health department such as mass immunization and hepatitis B prevention awareness campaigns so as to address the needs of this crucial yet marginalized group.

5. LIMITATIONS

- The study was self-funded and therefore lacked budget to explore the topic deeper.
- Less cooperation from some of the respondents who felt their time was being wasted and hence hurriedly responded and never answered some of the questions.
- Due to financial constraints, only participants with positive screening tests were considered for ELISA confirmation test.

CONSENT

All authors declare that written informed consent was obtained from all the study participants prior to the study. Copies of the consent forms are available for review by the Editorial Office/ Chief Editor/ Editorial Board members of this Journal.

ETHICAL APPROVAL

The research study was approved by the Mbarara University Faculty of Medicine Research

Ethics Committee (FREC). Permission to carry out the study was also sought and granted from the District Leadership of Lyantonde District and each study participant signed an informed consent form.

ACKNOWLEDGEMENTS

The authors would very much like to acknowledge the contributions of the Mbarara Regional Referral Hospital Laboratory and the Mbarara Regional Blood Bank management for allowing this study to be conducted in their laboratories. We also thank the Lyantonde District Health Office for allowing this study to be conducted in Lyantonde Town and the Chairperson commercial sex workers association for her support. This study was self-funded in equal contribution by the authors.

COMPETING INTERESTS

Authors have declared that no competing interests exist.

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Peer-review history:
The peer review history for this paper can be accessed here:
<http://www.sdiarticle4.com/review-history/57822>