Seropositivity and Risk Factors of HBV and HCV in Transgender Population in an Urban Area of Bangladesh

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Abstract

Background: The burden of HBV and HCV infections in the transgender population remains an underestimated issue. Determining the prevalence of these infections in transgender people could be important for health policymakers and health workers to develop a screening programs and hepatitis B vaccination program for this high-risk group. The study aimed to determine the prevalence of HBV and HCV infection and the risk factors for HBV and HCV infections among the transgender populations of Chattogram, Bangladesh.

Materials and methods: This was a cross sectional study was conducted from January to June 2022. A conveniently selected 231 transgender individuals from health awareness campaign programs, private chambers and different health facilities of Chattogrm, Bangladesh, were included. Self-reported risk factors data were collected, and blood samples were obtained from the subjects and sent for Hepatitis B surface Antigen (HBsAg) and antibody to HCV (anti-HCV) tests.

Results: The prevalence of HBsAg (+) and anti-HCV (+) was respectively 4.8% (11/231) and 0.4% (1/231), and 12.6% had a positive family history of HBV. Seventy-one (30.6%) had received dental treatment, 21 (9.1%) received blood transfusion, 75 (32.5%) were sharing nail cutter, 13 (5.2%) were shaving in the saloon, 5 (2.2%) had history of substance abuse, 221 (95.7%) pierced nose/ear, 55 (23.8%) painted tattoo on their body, and 72 (31.2%) were homosexual. Only 3.5% of the participants reported being vaccinated against HBV, and 121 (52.4%) used condoms during intercourse.

Conclusions: The serological prevalence of HBV and HCV was low. Nevertheless, vaccination program needs to be strengthened in transgender populations.

Key words: Hepatitis B; Hepatitis C; Transgender.

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Introduction

Transgenders are people who are phenotypically born male at birth but are known as women or vice versa. These people face numerous health, social and medical risks which expose them to various infections, especially sexually transmitted and blood-borne diseases like hepatitis C, hepatitis B, and AIDS.[1] In addition, this population encounter many problems such as rejection by families and friends, social stigma, discrimination, mental and psychological issues,lack of proper access to health services and many economic and social challenges that make them perform risky sexual and non-sexual behaviors. Sex trade, having several partners, taking numerous therapeutic and illegal hormones, drugs, and alcohol consumption are among the most common high-risk behaviors associated with many common infections such as Hepatitis B Virus (HBV) and Hepatitis C Virus (HCV) infections in this group.[2-4]

Therefore, policymakers should modify this high-risk group's ongoing prevention and treatment protocol related to HCV and HBV. In this regard, information on the prevalence of HCV and HBV among transgender are essential. Based on the current data, policymakers could modify the existing treatment and screening program for transgender. Achieving the 2030 goals of controlling viral hepatitis requires attention to high-risk groups.[5-7] Few studies have been conducted to determine the prevalence of hepatitis C and B in transgender people, but the obtained values are controversial, and none of them included the transgender population of Bangladesh.[8-10]

This study aimed to determine the prevalence seropositivity of HBV and HCV among the transgender populations of an urban area of

Bangladesh and to determine the burden of different parenteral/percutaneous risk factors that result in HBV and HCV infections. By knowing the seropositivity of HBV and HCV among this group will help to reduce the incidence of chronic hepatitis B and C and their complications including HCC in this underprivileged and neglected group of society.

Materials and methods

A cross-sectional study was conducted in Chattogram city of Bangladesh from January 2022 to June 2022. The protocol was approved by the Ethical Review Committee of Chittagong Medical College. Informed consent was obtained from the participants after explaining the study aims and procedures.

The study included a conveniently selected 231 transgender individuals who attended the health awareness campaign programs, private chambers, and different health facilities of Chattogrm during the study period. Those who denied providing consent were excluded from the study.

Self-reported risk factors data were collected by a pretested, structured data collection form. Blood samples were obtained from the subjects and sent for Hepatitis B surface Antigen (HBsAg) and antibody to HCV (anti-HCV) tests.

Data were entered into a Microsoft Xcel data sheet to generate a master data sheet for analysis. Only descriptive statistics in the form of frequency and percentage were used in the study.

Results

A total of 231 transgender participated in the study. They were predominantly young adults (Mean age: 25±4 years). Their educational level was described in Table I, which depicted that, about three quarter of the participants had no formal education and only 20 (8.7%) had education up to or above secondary level.

Table I Educational level of the transgender participants (n=231)

Educational level	Frequency	Percent (%)
No formal education	164	71.0
Primary or below	47	20.3
Secondary	15	6.5
Higher Secondary	5	2.2

Distribution of the risk factors related to HBV and HCV infection is shown in Table II. The transgender population were at risk of HBV and HCV infection due their risk behaviour, like 95.7% pierced their ear, near about half of them were engaged in unprotected sexual activities, having surgery, sharing nail cutter, dental treatment and painting tattoo.

Table II Distribution of the Transgender participants according to the parenteral/percutaneous risk factors that result in HBV and HCV infections (n=231)

HBV and BCV related factors	Frequency	Percent (%)
H/O piercing Nose/Ear	221	95.7
H/O not using condoms during intercourse	110	47.6
H/O Surgery	94	40.7
Sharing nail cutter	75	32.5
H/O Homosexuality	72	31.2
H/O Dental treatment	71	30.7
H/O painting tattoo	55	23.8
H/O maternal HBV	29	12.6
H/O Blood Transfusion	21	9.1
Shaving in saloon	13	5.6
H/O substance abuse	5	2.2

Figure 1 shows that, out of the 231 participants, only 8 (3.5%) participants reported to received HBV vaccine.

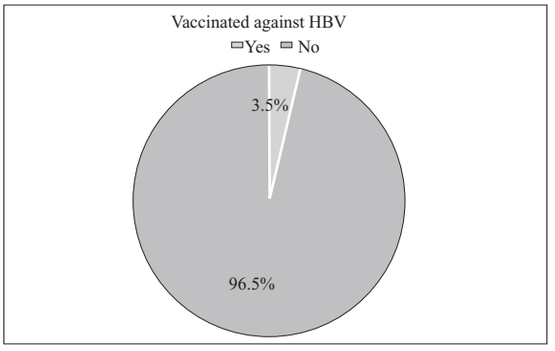

Figure 1 Vaccination status against HBV among the Transgender participants (n=231)

To find out the prevalence of hepatitis B and C in transgender population, screening have been done in 231 participants, 11 transgender shows HBV positive result while 220 transgenders are negative for hepatitis B virus. The overall prevalence for HBV in transgender population is 4.8% [95% Confidence Interval (CI): 2.04% to 7.56%). Out of 231 participants, only one had positive for anti-HCV test, giving the HCV prevalence of 0.4% (95% CI: 1.12-0.02).

Table III Prevalence of Hepatitis B and Hepatitis C in transgender Population (n=231)

Findings of HBsAg	Frequency	Percent (%)
HBsAg test results		
Positive	11	4.8
Negative	220	95.2
Anti-HCV test results		
Positive	1	0.4
Negative	230	99.6

Discussion

According to the 2017 WHO hepatitis report, chronic infections with HBV and HCV were responsible for 96% of the 1·3 million deaths caused by hepatitis viruses worldwide in 2015, of which 720 000 occurred at the cirrhosis stage.[11] In Bangladesh, the prevalence of HBV and HCV is 5.4% and 0.88%, respectively.[12,13] In order to find out the prevalence of hepatitis B and C in transgender population of Chattogram city, we conducted screening of 231 transgenders in different areas of the city. Eleven out of 231 transgenders are positive and the percentage for HBV positive transgenders is 4.8%. The prevalence of hepatitis C virus in transgender is comparatively very low, only 0.4%. Overall, the prevalence was lower than the general Bangladeshi population.[12,13] Waheed from Pakistan found a comparatively higher prevalence than the present study, which were 8% and 14%, respectively for hepatitis B and C virus after screening of 150 transgenders in different areas of Rawalpindi.[9] A recent systematic review identified the pooled prevalence of HCV and HBV in all transgender populations globally were 9% (95% CI 3–15%) and 11% (95% CI 2–20%), respectively, and concluded that the overall prevalence of HBV and HCV infections in transgender peoplewere higher than those in the general population.[10] This discrepancies among studies might be due to geographical variations and variation in the sample size and population characteristics.

Transgender people living in different Asian regions and countries, especially Southeast Asia, were exposed to high-risk behaviors. So, the risk and chance of developing viral infections in these people would be higher than transgender people in European countries.[10] In the present study it was found that risk behaviour like piercing ear/nose, unprotected sexual activities, homosexuality, having surgery, sharing nail cutter, dental treatment and painting tattoo are frequent among the participants. However, in Bangladesh, educational, counseling, and treatment services related to HBV and HCV were not readily available to transgender people because of more significant stigma and discrimination and the majority of people did not have proper access to the available services.[14,15]

Limitation

Due to the convenience sampling technique, the participants in this study may not be representative of the transgender community of Chattogram city and Bangladesh.

Conclusion

Conclusion to this research was that in transgenders population of the Chattogram city the prevalence of hepatitis B (4.8%) is also more than hepatitis C (0.4%), which were similar to those in the general population. Though they are at risk of HBV and HCV infection, most of them (96.5%) were unvaccinated.

Recommendation

As the infection of HBV and HCV infect millions of people in Bangladesh, it is recommended to speed up the screening procedure of HBV and HCV in Bangladeshi population to overcome the rate of infection. Measures should also be taken to bring the transgender people under the coverage of vaccination against HBV

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Contribution of authors

AAM-Conception, acquisition of data, drafting & final approval.
AG - Interpretation of data, critical revision & final approval.
AKR- Design, critical revision & final approval.
TS- Acquisition of data, data analysis, drafting & final approval.
MSSC- Data analysis, drafting & final approval.
ABMSG- Acquisition of data, critical revision & final approval.
DC- Data analysis, interpretation of data, drafting & final approval.

Disclosure

The authors declared no conflicts of interest.

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