

Sexually Transmitted Diseases and Associated Risk Factors Among Transgenders in Peshawar

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ABSTRACT

Background: Transgenders, male to female, are exceptionally predominant in India-Pakistan, dreaded to be alarming for sexually transmitted diseases. The objective of this study was to determine the frequency of sexually transmitted diseases and their associated risk factors among transgenders.

Methodology: This cross-sectional study was conducted amongst transgenders at Institute of Paramedical Sciences (IPMS), Khyber Medical University Peshawar from January to July, 2021. About two ml of venous blood was collected in a gel tube under aseptic conditions among 100 individuals to check for HBsAg, anti-HCV, HIV and syphilis by ICT rapid strip method. Positive samples of HBsAg and anti-HCV were confirmed by Polymerase Chain Reaction (PCR), while positive cases of syphilis were confirmed by Treponema Pallidum Hemagglutination (TPHA). Chi-square test was applied to determine the association between sexually transmitted disease and associated risk factors.

Results: Out of 100, seven (7%) samples were positive for HBsAg, five (5%) for anti-HCV and nine (9%) were positive for syphilis while there were no positive cases of HIV. HBV infection was significantly associated with blood transfusion, a drug injection history and some surgical procedure ($p < 0.05$). For syphilis, the data were significantly associated with a history of blood transfusion and drug injection ($p < 0.05$).

Conclusion: Frequency of HBV, HCV and syphilis infections are high in transgenders with common associated risk factors to be sexual activities, drug injection, unsafe blood transfusion and surgical procedures.

Keywords: Chromatography, Hepatitis B surface antigen, Hepatitis C Antibodies, HIV, Syphilis, Transgenders

Authors' Contribution:

^{1,2}Conception; Literature research; manuscript design and drafting; ^{3,4}Critical analysis and manuscript review; ^{5,6}Data analysis; Manuscript Editing.

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Introduction

Individuals whose gender presentation differs from their assigned sex at birth are referred to as transgender. Various identities that fall under the umbrella of transgender are trans men, trans women, gender queer, non-binary, sister girl,

brother boy, gender nonconforming, gender fluid or two-spirited. ⁽¹⁾

Viral hepatitis is a global health issue in which viral types A, B, C, D, and E are the main pathogenic agents. In 2013, 1.45 million people died as a result of hepatotropic viruses, with chronic hepatitis B

and C virus infections accounting for 91 percent of the deaths. ⁽²⁾ Almost two billion individuals are infected by HBV worldwide and the number of chronic carriers is 350 million. Every year, the HBV virus kills one million people. In Latin America, 400,000 new cases are recorded each year, with 10 to 70% of them progressing to hepatocellular carcinoma. ⁽³⁾ On the basis of HBV infection epidemiology, the environment was categorised into high, middle, and low endemicity zones. Infection rates of more than 8% are considered high, 2–8% are considered intermediate, and less than 2% are considered low endemicity zones. Pakistan is one of the countries with the highest rates of chronic viral hepatitis infection in the world. ⁽⁴⁾

Hepatitis C virus (HCV)-related liver disease is a serious public health concern that affects millions of individuals around the world. ⁽⁵⁾ HCV infection is spread mostly by contact with contaminated devices and tools, haemodialysis, infected blood or blood products, IV medication misuse and organ donation. ⁽⁶⁾ The prevalence of HCV infection in transgender men was 8.0% and 3.7% in transgender women. ⁽⁷⁾

The World Health Organization (WHO) Predicted in 2015 that by 2030, viral hepatitis incidence and mortality would be reduced by 90% and 65%, respectively. However, in order to offer current prevalence/incidence figures, this global goal will necessitate regional Studies ⁽⁸⁾

Despite on-going attempts to manage HIV outbreaks, in 2019 a total of 1.7 million new HIV infections occurred, with Sub-Saharan Africa having the highest disease burden. With almost 35 million deaths and counting, HIV continues to be a serious hazard to public health, and in 2016, there were still over 2 million infected individuals. ⁽⁹⁾

The frequency of HIV for transgender women was 17.7% according to a meta-analysis of ten middle and low-income countries. ⁽¹⁰⁾ In Indonesia, among 1,150 transgender women who were frequently involved in sexual activities, 26.8% had syphilis,

24.4% HIV and 47% rectal sexually transmitted infections. ⁽¹¹⁾

In Indo-Pak regions, transgender individuals are intensely demoralized as they are considered a major social taboo in society, therefore, they live in isolated communities. Transgenders usually undergo unsafe sexual activities due to lack of education. This study was conducted to determine the frequency of sexually transmitted diseases and their associated risk factors among transgenders in Peshawar that may help in devising strategies to create health awareness among this group.

Methodology

This cross-sectional study was conducted in Peshawar among transgenders from Jan 2021 to July 2021 at Institute of Paramedical Sciences (IPMS), Khyber Medical University. The study was approved by the undergraduate ethical committee of IPMS. A self-designed questionnaire was used for the risk assessment, based on previous literature. One hundred participants were included in this study, selected through convenience sampling technique. According to the census 2017, the total transgender population in K.P.K is 913 and the total population of transgenders in Peshawar is 292. Using the Raosoft sample size calculator, the estimated sample size was 167 with confidence interval of 95% and margin error 5% but many refused to participate in the study with only 100 willing participants. Transgenders between 18 to 50 years of age were included while those who had chronic liver disease were excluded from the study. Informed consent was taken from all individuals. About two ml of venous blood was collected in a gel tube under aseptic conditions and centrifuged at 2500 rpm for 10 minutes to procure the serum. For screening of HBV, HCV, HIV and syphilis, Immune chromatography technique (ICT) was used. All positive samples were confirmed by Polymerase Chain Reaction (PCR) and Treponema Pallidum Hemagglutination (TPHA) techniques. The data

were analysed using SPSS v22.0. For descriptive statistics, the frequencies were calculated and presented in tabulated form. For categorical variables, Fisher's exact test was applied to determine the association with risk factors.

Results

Out of 100, seven (7%) were positive for HBV, five (5%) for HCV infection, and no positive case for HIV was reported. Nine (9%) individuals had syphilis infection. The frequency of HBV, HCV, HIV and Syphilis within their associated risk factors was also

determined such as the previous history of blood transfusion, drug injection history, sexual behavior, surgical procedures, family history and organ piercing for jewelry. HBV and syphilis infections were frequent among transgenders having a blood transfusion, drug injecting history, sexual behaviors, having surgical procedures and organ piercing for jewelry purposes, while HCV infection was common in transgenders involved in sexual activities and organ piercing for jewelry purposes (Table 1)

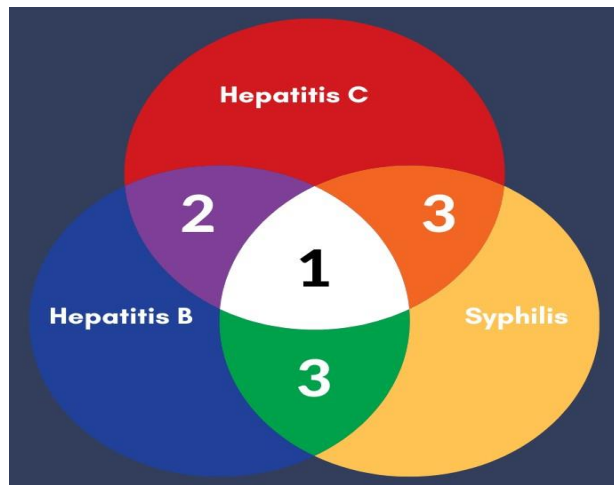
Table I: Frequency of HBV, HCV, HIV and Syphilis with Associated Risk Factors Among Transgenders

Risk Factors	Parameter	Frequency (%)	Hepatitis B Status		P value	Hepatitis C Status		P value	Syphilis Status		P value	HIV Status					
			Positive (%)	Negative (%)		Positive (%)	Negative (%)		Positive (%)	Negative (%)							
Blood transfusion	Yes	33 (33)	5(5)	28(28)	0.0377	2(2)	31(31)	0.99	6(6)	27(27)	0.055	None of the Participants was diagnosed with the HIV Infection					
	No	67(67)	2(2)	65(65)		3(3)	64(64)		3(3)	64(64)							
Drug injection	Yes	41(41)	6(6)	35(35)	0.018	2(2)	39(39)	0.99	7(7)	34(34%)	0.055		None of the Participants was diagnosed with the HIV Infection				
	No	59(59)	1(1)	58(58)		3(3)	56(56)		2(2)	57(57)							
Sex Behaviour	Yes	79(79)	4(4)	75(75)	0.15	4(4)	75(75)	0.99	7(7)	72(72)	0.17			None of the Participants was diagnosed with the HIV Infection			
	No	21(21)	3(3)	18(18)		1(1)	20(20)		2(2)	19(19)							
Surgical Procedure	Yes	17(17)	5(5)	12(12)	0.0014	1(1)	16(16)	0.99	3(3)	14(14)	0.99				None of the Participants was diagnosed with the HIV Infection		
	No	83(83)	2(2)	81(81)		4(4)	79(79)		6(6)	77(77)							
Family History	Yes	12(12)	2(2)	10(10)	0.197	2(2)	10(10)	0.108	2(2)	10(10)	0.151					None of the Participants was diagnosed with the HIV Infection	
	No	88(88)	5(5)	83(8)		3(3)	85(85)		0	4(4)							84(84)
Organ piercing (for jewellery purpose)	Yes	48(48)	4(4)	44(44)	0.7075	3(3)	45(45)	0.66	6(6)	4(42)	0.30						None of the Participants was diagnosed with the HIV Infection
	NO	52(52)	3(3)	49(49)		2(2)	50(50)		3(3)	49(49)							

An association was established between HBV infection and risk factors. There was statistically significant association between HBV and associated risk factors such as blood transfusion ($p=0.03$), drug injected history ($p=0.01$) and surgical procedure

($p=0.00$), while insignificant association with family history, sexual behaviors and organ piercing with p -value > 0.05 . In case of HCV, there was no significant association with any parameter ($p>0.05$). (Table 1)

Two individuals had both HBV and HCV infection, while three individuals had both HBV and syphilis infection. Three individuals had HCV and syphilis, while one individual had HBV, HCV and syphilis.



Discussion

In this study, we determined the frequency of HBV, HCV, HIV and syphilis and their associated risk factors among transgenders. According to this study, 7% of transgenders were found to have hepatitis B infection, 5% HCV, while positive cases of HIV were not reported. The frequency of syphilis was 9%, which was highest among others.

The current study revealed that 33% of transgenders were having previous history of blood transfusion, out of which 5% were positive for HBV, 2% for HCV and 6% had syphilis, while 67% had no history of blood transfusion. Blood transfusion is a common transmission route for HBV, HCV, syphilis and blood parasites because of inappropriate blood screening facilities in Pakistan. ⁽¹²⁾ In Pakistan, 3.27% of donors were found to be infected with transmissible transfusion infection leading to infection in patients during transfusion. ⁽¹³⁾ In the present study, 79% of the transgenders had a sexual history with one or multiple sex partners. Among them, 4% were diagnosed with hepatitis B and C, while 75% were negative for both hepatitis B and C. Transgenders involved in sexual activities have the highest frequency of syphilis that is 7%.

Because of social discrimination and stigma, transgender individuals are deprived of higher education or initial compulsory education, leading to poor literacy and hence live in isolated societies. It is hard for them to get jobs in societies that indulge them to be involved in sexual activities for accomplishing their daily necessities. ⁽¹⁴⁾ In addition unprotected sexual relationship with partners may increase the risk of transmission of hepatitis B and C. ⁽¹⁵⁾

In a study conducted in Rawalpindi, it was reported that the prevalence of HBV and HCV among transgender people was 2.94% and 25.5% respectively. In this study, majority of the transgenders were involved in sexual activities with one or multiple partners. ⁽¹⁶⁾ Our results differed from this study because of the small sample size and geographical difference. In another study, it was reported that most transgender people were aware that using a condom during sex with their partners ⁽¹⁷⁾ could be another reason of reducing the prevalence of HBV, HCV and syphilis in Peshawar.

The current study reported that needle exchange for drug injection is another risk factor among transgenders. Among drug addicts, the frequency of HBV, HCV, and syphilis were 6%, 2%, and 7%, respectively. According to Awan et al, it was reported that exchanging needles for drug injection is a risk factor for transmitting viral hepatitis, syphilis and HIV infections. ⁽¹³⁾ A study conducted in Sindh reported that using unsterilized syringe is a risk factor for transmitting HBV and HCV infections. ⁽¹⁸⁾ Another study from Pakistan reported that majority of the transgenders were involved in sharing drug injection needle with one another. ⁽¹⁹⁾ Needle sharing is most common cause of transmitting infection among transgenders. ⁽²⁰⁾ Hence needle sharing for drug use is a risk factor among transgenders for transmitting HBV, HCV, syphilis and HIV infections.

In this study, another significant risk factor among transgender was organ piercing (ear, nose, and

tattoos) for jewelry purposes. Transgender people with a history of organ piercing were 48%, while 52% had no history. Among 48% individuals, 4% were HBV positive, 2% HCV positive and 6% syphilis. Transgenders live in a community where they love to dress in female clothing and wear pieces of jewelry. For this purpose, they are piercing the ear, nose and make tattoos on various parts of the body using shared instruments/needles leading to a rise in HBV, HCV and other transmissible diseases.⁽²¹⁾

The strength of this study is that it is the first study conducted in Peshawar to determine the frequency of sexually transmitted diseases (HBV, HCV, HIV, syphilis) and their associated risk factors among transgender individuals. Positive cases were confirmed using a gold standard method. However, this study has a few limitations. First, this study has a small sample size as most of the transgenders were reluctant to participate in this study. Second, the ICT method was used for screening the transgender population due to limited resources.

Conclusion

Frequency of syphilis is highest, followed by Hepatitis B and C in the transgender community in Peshawar. The common associated risk factors are unsafe blood transfusion, exchange of needles for drugs, sexual behavior and organ piercing. An appropriate screening program is essential for transgender individuals to prevent sexually transmitted infections.

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