

## Special Article - Hepatitis

# Magnitude of Hepatitis B Virus among Barbers in Addis Ababa, Ethiopia

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Received: August 27, 2018; Accepted: October 10, 2018; Published: October 17, 2018

## Abstract

**Background:** Viral hepatitis is a major health problem worldwide. Hepatitis B is very contagious compared to other blood born viruses. For barbers, the use of blades and razors is part of their occupation, which can expose them to blood of customers while shaving and hair cutting.

**Methods:** A work place based cross sectional study was conducted among 400 barbers in selected sub cities of Addis Ababa, Ethiopia. Study subjects were selected by using convenience sampling method. Data on sociodemographic factors and associated factors were collected using pretested questionnaires. HBsAg was done using ELISA technique and data was analyzed by using SPSS version 20.

**Results:** Out of 400 barbers tested, 15 were positive for HBsAg giving an overall magnitude of 3.75% (15/400). Among unmarried or single participants 11 (3.92%) were positive ( $\chi^2=0.45$ ,  $P=0.93$ ). The overall serological results were not statistically associated with socio demographic characteristics.

**Conclusion:** The magnitude of HBsAg was 3.75%. In this study, most barbers had poor knowledge about the etiology, symptom, transmission and prevention of hepatitis B. Moreover, all of the study participants did not vaccinated due to lack of knowledge about the presence of HBV vaccine.

**Keywords:** HBsAg; Magnitude; Barbers

## Introduction

Viral hepatitis is a major health problem worldwide. Hepatitis B virus (HBV) is of the greatest concern due to its burden of illness and death. WHO and the U.S Centers for Disease Control (CDC) estimate that over 500 million people are currently living with chronic viral hepatitis and globally around 2 billion people have been infected with hepatitis B virus with around 1 million people die every year due to complications of hepatitis B, including cirrhosis and liver cancer [1,2]. HBV can cause both acute and chronic diseases [3,1]. Hepatitis B virus is 50-100 times more infectious than human immunodeficiency virus (HIV) and 10 times more infectious than hepatitis C virus (HCV) and an infectious dose is so low that a contaminated razor or blade can easily transmit the infection [4,5].

The hepatitis B virus can survive in the environment for at least 7 days. During this time, the virus can still cause infection if it enters the body of a person who is not protected by the vaccine. It can also spread by percutaneous or mucosal exposure to infected blood and various body fluids, as well as through saliva, menstrual, vaginal, and seminal fluids. Infection in adulthood leads to chronic hepatitis in less than 5% of cases. In addition, infection can occur during medical, surgical and dental procedures, through tattooing, or through the use of razors and similar objects that are contaminated with infected blood or during barbershop shaving [1].

Razor sharing and shaves from the barbers have been identified as an important risk factors for blood-borne viruses spread as several investigations carried out all over the world demonstrate this facts.

In many parts of Africa and Asia, the widespread cultural practice of shaving at a shop or roadside barber is an underestimated route of blood-borne viral disease transmission [6]. For barbers, the use of blades and razors is part of their occupation, which can expose them to blood of customers while shaving and hair cutting. This exposure can put them at risk of many blood-borne diseases including viral hepatitis [7].

In Ethiopia different studies tried to show prevalence rates of Hepatitis B virus infections in various groups like pregnant women, health care workers, blood donors, medical waste handlers and others [8-10]. However, there is no data in Ethiopia on magnitude of Hepatitis B virus infection among barbers.

## Methodology

A work place based cross-sectional study design was used to determine the magnitude of Hepatitis B virus among 400 barbers in selected Sub cities of Addis Ababa Ethiopia. A structured pretested questionnaire was given to each participant by trained health professionals. The participants were free to seek further explanation or clarification from the trained personnel or investigator on the sections of the questionnaire that are not clear to them. From barbers who gave consent blood sample was obtained and tested for presence or absence of HBsAg by using ELISA method. All data obtained from the study was analyzed. Statistical calculation was done using SPSS version 20. Chi square ( $X^2$ ) test was employed to examine the significant association between variables where applicable. Statistical significance was set at 0.05.

**Table 1:** Socio demographic characteristics of barbers working in five sub cities of Addis Ababa, Ethiopia, 2017 (n= 400).

Variables	Frequency	Percent
<b>1. Gender</b>		
Male	350	87.5
Female	50	12.5
Total	400	100
<b>2. Age in years</b>		
<20	17	4.25
20-24	113	28.25
25-29	162	40.5
30-34	62	15.5
35-39	27	6.75
40+	19	4.75
<b>3. Marital status</b>		
Single	281	70.3
Married	108	27
Widowed	1	0.3
Divorced	10	2.5
<b>4. Work experience in years</b>		
<5	249	62.25
05-Sep	99	24.75
Oct-14	30	7.5
15-19	13	3.25
20-24	8	2
25+	1	0.25
<b>5. Work load per day</b>		
<3	13	3.25
03-Jul	225	56.25
08-Dec	146	36.5
13+	16	4

The study was conducted after getting ethical clearance from the Department of Research and ethical review committee (DRERC) of Addis Ababa University, College of Health Science Department of Medical Laboratory Science.

## Results

A total of 400 barbers were screened for HBsAg and asked about their knowledge towards Hepatitis B virus infection prevention methods. About 82 (20.5%), 85 (21.25%), 81 (20.25%), 87 (21.75%) and 65 (16.25%) barbers were from A/kalitiy, Kolfe, Arada, Gulelle and A/Ketema sub cities respectively. The majority 162 (40.5%) of the participants were found between 25-29 years of age, followed by 20-24 with 113 (28.25%), with a mean age and SD of 27.13+6.06 years and the minimum and maximum ages were 18 and 59 years respectively. Two hundred twenty five (56.25%) of barbers had an average of 3-7 customers per day. As indicated in Table 1 below the majority of the barbers 350 (87.5%) were males (Table 1).

In this study 15 barbers were positive for HBsAg giving an

overall magnitude of 3.75% (15/400). Among unmarried or single participants, 11(3.92%) were positive ( $\chi^2=0.45$ ,  $P=0.93$ ). The highest prevalence was seen in the age group of 25-29 years from which 6 (3.7%) were positive; but the association of HBsAg and age group was not statistically significant ( $\chi^2=0.392$ ,  $P=0.996$ ). Regarding educational level 7 (4.86%) of the study participants did positive from primary education and 6 (2.71%) of the barbers were positive from secondary school. The overall serological results were not significantly associated with socio demographic characteristics (Table 2).

## Discussion & Conclusion

The culture of being shaved by a barber is common in Ethiopia. A barbershop is a potential place where people including barber themselves, can get exposed to blood of infected persons through contaminated instruments. Studies conducted so far have reported a risk of HBV and other blood born diseases transmission to clients due to shaving by barbers [11]. In this study, the magnitude of HBsAg among barbers was found to be 3.75% (15/400). The magnitude of HBsAg among barbers in this study was slightly greater than cross sectional study done on 385 barbers in Pakistan in 2014 which was 2.1% [11]. In another word when we compare the present study with a cross-sectional sero epidemiological study done on 267 participants in Morocco in 2007 and a descriptive cross-sectional study on 120 barbers in Ghana in 2015 it was much lower when compared to prevalence of 28.1% and 14.5% respectively [12,13].

A cross sectional study on 308 barbers in Egypt in 2007 determined the prevalence of hepatitis B among barbers 4.2% which was comparable with the present study. Again, in Assiut District of Egypt in 2015 by Abdelrahim S et al revealed seroprevalence of 8.6% [14]. Another study done in Turkey and Isfahan Province of Iran indicated high prevalence of HBsAg 39.8% and 6.6% respectively, which were greater than the present study [15,16]. Such deviation could be due to the differences in study area, socio-cultural environment, and barbers level of knowledge about HBV, sexual practices and medical exposure and the difference in hepatitis epidemiology in these countries.

Even though there is no similar study done in Ethiopia on the magnitude of HBV among barbers and their knowledge, attitude and practices, our finding was similar to studies done among other group of study subjects in Ethiopia like a cross sectional study on 493 pregnant women in 2005 in Jimma and a cross sectional study in 2013 in Bahir Dar City on 318 pregnant women, the prevalence was 3.7% and 3.8% respectively [17,8]. On the other hand another cross sectional study done in Addis Ababa in 2012 among 292 clients attending the voluntary counselling and testing Center and antiretroviral therapy clinic of St Paul's General Specialized Hospital and a cross sectional study on 252 medical waste handlers and non-medical waste handlers in Addis Ababa in 2011 indicated the prevalence of 5.7% and 6.3% respectively [9,10]. This difference is may be due to difference in study groups and sample size.

In this study, the magnitude of HBV was not associated with any one of socio demographic characteristics, suggesting that any effort to increase knowledge may improve barbers' negative attitudes towards HBV. According to the findings, there is a lack of understanding of the basics of infection control and the prevention of transmission of HBV. Therefore, Addis Ababa Health Bureau and FMHACA are responsible in developing safety guidelines for correct hair cutting

**Table 2:** Magnitude of HBV in relation to socio demographic characteristics among barbers working in five sub cities of Addis Ababa, Ethiopia, June 2017 (n=400).

Variables	N (%)	HBsAg Result		X <sup>2</sup>	P value
		Pos (%)	Neg (%)		
<b>Age</b>					
< 20	17(4.25%)	0(0%)	17(100%)		
20-24	113(28.25%)	5(4.42%)	108(95.58%)		
25-29	162(40.5%)	6(3.7%)	156(96.30%)	0.392	0.996
30-34	62(15.5%)	2(3.23%)	60(96.77%)		
35-39	27(6.75%)	1(3.70%)	26(96.30%)		
40+	19(4.75%)	1(3.70%)	18(94.74%)		
<b>Gender</b>					
Male	350(87.5%)	13(3.71%)	337(96.29%)	0.005	0.945
Female	50(12.5%)	2(4%)	48(96%)		
<b>Marital Status</b>					
Single	281(70.3%)	11(3.92%)	270(96.09%)		
Married	108(27%)	4(3.70%)	104(96.30%)	0.45	0.93
Widowed	1(0.3%)	0(0%)	1(100%)		
Divorced	10(2.5%)	0(0%)	10(100%)		
<b>Work experience in years</b>					
<5	249(62.25%)	10(4.02%)	239(95.98%)		
05-Sep	99(24.75%)	3(3.03%)	96(96.97%)		
Oct-14	30(7.5%)	1(3.33%)	29(96.67%)	12.194	0.788
15-19	13(3.25%)	0(0%)	13(100%)		
20-24	8(2%)	1(12.5%)	7(87.5%)		
25*	1(0.25%)	0(0%)	1(100%)		
<b>Work load per day</b>					
<3	13(3.25%)	1(7.69%)	12(92.31%)		
03-Jul	225(56.25%)	8(3.56%)	217(96.44%)	11.274	0.588
08-Dec	146(36.5%)	6(4.11%)	140(95.89%)		
13*	16(4%)	0(0%)	16(100%)		

and proper decontamination equipments used in barbershops.

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