

Original Article

Awareness and practice of safety measures related to Transmission of Hepatitis B & C among Barbers and Saloon workers of Lahore, Pakistan

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Abstract

Background: Hepatitis B & C are emerging public health issues in Pakistan. One of the responsible factors for transmission of these diseases is use of razors by barbers and use of instruments on nails by saloon workers. **Methodology:** A cross sectional survey was conducted in Lahore depending upon zonal distribution from January to August 2016. 396 barbers and saloon workers were selected through cluster sampling technique. Data was collected through a structured questionnaire after informed consent following guideline of IRB. Cross tabulations were done on the basis of gender distribution after application of Chi square test of significance and p value was fixed at ≥ 0.05 . **Results:** Major of the barbers and saloon workers ranged in the age bracket of 26-35 years (40.2%). Females constituted 232 (58.6%) whereas males were 164 (41.4%). Formally trained participants were 220 (55.6%). An alarmingly high percentage, 213 (53.9%) & 182 (46.1%) were unaware of the transmission of Hepatitis B & C respectively. Major source of information regarding Hepatitis was TV167 (42.2%). Still a large proportion 102 (25.8%) were not using disposable blades for shaving and 40% never had concept of sterilizing instruments. A significant difference was observed in knowledge of female workers who were formerly trained in their occupation ($p=0.00$). **Conclusion:** A significant fraction of participants were unaware that their occupation is a source of infection transmission of Hepatitis B & C. Increase health education and awareness campaigns are required to increase knowledge to stop the chain of transmission.

Key words: Barbers; Hepatitis; Sterilization

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INTRODUCTION

Worldwide 240 million people are chronically affected with hepatitis B and 130-150 million have hepatitis C infections^{1,2}. According to WHO, areas with high endemicity ($>8\%$) of hepatitis B consisted largely of underdeveloped countries like South-East Asia, Sub-Saharan Africa, the Amazon Basin, parts of the Middle East³. The burden of Hepatitis C was also found to be high ($>3\%$) in Latin America, Eastern Europe, Africa, the Middle East and South Asia with the highest rate being found in Egypt^{4,5,6}. In Pakistan it is estimated that there are 13 million chronic carriers of hepatitis B and C with the prevalence of hepatitis C being second only to Egypt^{5,7,8}. Hepatitis B and C share

common epidemiological characteristics. Among the more common causes of the spread of both diseases is the reuse of therapeutic injections⁹, transmission from mother to child^{10,11}, blood transfusions, unsafe sexual practices and being shaved by barbers.¹² The role of barbers and saloon workers in transmission of HBV and HCV is gaining increased importance, especially in underdeveloped countries. The rates of transmission related to this occupation are showing upward trends because of low literacy and inadequate access to healthcare¹²⁻¹⁵. Barbers and saloon workers continue to reuse razors and other perforating instruments on multiple customers without sanitizing the equipment¹²⁻¹⁶. They are the

potential source of transmission from client to client.¹⁷ A study conducted in Turkey found barbers to be at a greater risk of exposure than the general population.¹⁸ 6.6% of the reused razors carried HBV DNA in Turkey.¹⁹ A survey of salon workers found that 82% of the respondents had inadequate knowledge about sterilization techniques and only 45% used personal protective equipment like gloves.^{20,21} While in Italy, 93% of the barbers interviewed had adequate knowledge regarding the transmission of Hepatitis.²² There is a dearth of data regarding knowledge of barbers and salon workers regarding HBV and HCV transmission in Lahore, Pakistan so this study targets to assess awareness level and safety practices in this population. This information can help in formulating a more focused approach to prevent the spread of the disease.

MATERIAL AND METHODS

A cross sectional survey was conducted in both high and low socioeconomic areas of Lahore, dividing it into eight zones during January to August 2016. A probability type of cluster sampling technique was used to collect a sample of 395 barbers and salon workers above 18 years of age. IRB clearance was obtained before data collection and certificate was issued after result compilation with reference number FMH-02-2017-IRB-199-M. Data was collected through interviewing with the help of a structured questionnaire after informed consent. The questionnaire had different components, including socio demographic profile of barber or saloon worker, their knowledge regarding vaccines and different modes of transmission of HBV and HCV, risk factors, use and reuse of razors on various clients and anti-septic techniques used. The questionnaire was designed and pretested with Cronbach alpha value of 0.76 and Kappa value of 0.86. Data was entered and analyzed in SPSS 21. The SPSS is desktop academic version with license number _092910_. Data was presented in the form of frequency tables, pie charts and bar charts. Knowledge and safety practices were cross tabulated with gender after application of Chi square test of significance and p value was fixed below or equivalent to 0.05 as significant.

RESULTS

Major of respondents were in the age bracket of 26-35 years (n= 159, 40.2%) followed by 18-25 years (n=125, 31.6%). Female saloon workers constituted 232(58.6%) whereas Barbers were 164(41.4%). Majority of the participants

362(91.6%) were under matric. Formally trained were 220(55.6%). Out of 396, 145(36.6%) had a lengthy tenure of work experience of 5 – 10 years. The percentage of respondents with greater than four workers in their staff was highest being 223(56.3%). 258 (65.2%) of the respondents had greater than 10 customers per day. 219(55.3%) of the participants were earning more than Rs10, 000 per month. (Table 1) An alarmingly high percentage of the participants, 213(53.9%), were unaware of the transmission of Hepatitis B and 182 (46.2%) about transmission of Hepatitis C due to their occupation. 296 (74.7%) of the participants believed that Hepatitis B & C are curable. Only 102(25.8%) had under gone for diagnostic test of Hepatitis of any kind. Sero-prevalence of Hepatitis B and C was found positive in only 1.5% and 2.5% respectively. Fifty four percent 214 of the participants were unaware of the presence of vaccination for prevention of Hepatitis B, being a part of the EPI program in Pakistan. Cross tabulation of gender with Educational level and Awareness about transmission of occupational health hazard, significant difference was observed between two genders. Despite of the fact that females had much more high level of education (p = 0.000) and more formal training of their occupation (p = 0.000), Males had a better knowledge of risk of transmission of occupational health hazards. Males had better knowledge about transmission of Hepatitis B (p=0.024) Hepatitis C, (p=0.027) and HIV (p = 0.007). Female workers had a better knowledge about transmission of Skin infections and fungal infections through their occupation with p value of 0.000 and 0.003 respectively. (Table 2). the instruments used in this profession. There was no significant difference observed in knowledge of male and female workers regarding routes of transmission. A small proportion believed in vertical route of transmission of Hepatitis B&C. A vast majority had no knowledge about correct modes of transmission (Figure1). Majority of the participants were aware that Hepatitis B & C are transmitted through Blood and Significant difference was observed in status of males and females regarding testing and seroprevalence of Hepatitis C. Female participants had better knowledge of inclusion of Hepatitis B vaccination in EPI program of Pakistan with p value of 0.004 and vaccination in adulthood with p value of 0.000. 167 (42.2%) participants obtained information regarding hepatitis from television whereas only 23 (5.8%) obtained it

through radio. Newspapers were the 2nd most common source of information at 19.7%. (Fig 2)

Table 1: Socio-Demographic profile of the Barbers and Saloon owners (n= 396)

Age of Participant	Categories	Frequency	Percent
	18-25 Years	125	31.6
	26-35 Years	159	40.2
	36-45 Years	78	19.7
	46-50 Years	34	8.6
Gender of Participant	Male	164	41.4
	Female	232	58.6
Education Level	Illiterate	41	10.4
	Primary School	123	31.1
	Matriculate	132	33.3
	Intermediate	61	15.4
	Graduate	33	8.3
	Masters	6	1.5
Formal Training	Yes	220	55.6
	No	176	44.4
Work Experience	3 Months-1 Year	53	13.4
	1-2 Years	81	20.5
	2-5 Years	117	29.5
	5-10 Years	145	36.6
Number of Workers at one place	Only 1	30	7.6
	2	58	14.6
	3	85	21.5
	More than 4	223	56.3
Number of Customers	Less than 6	60	15.2
	7-9	76	19.2
	More than 10	260	65.7
Income Of Participants	Less than Rs 10,000	178	44.9
	More than Rs10,000	218	55.1

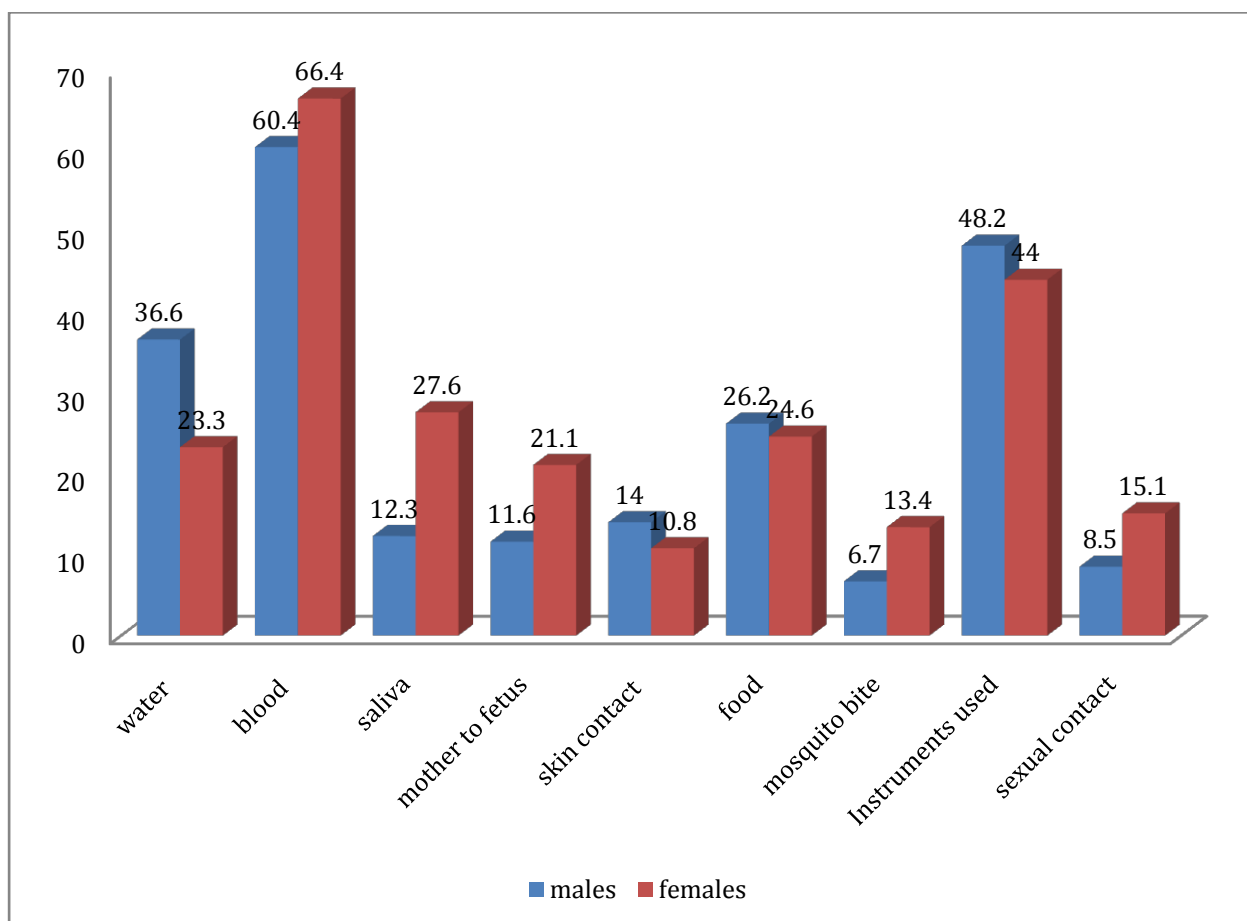


Figure1: Awareness of barbers and saloon workers regarding different modes of transmission of Hepatitis B & C in %

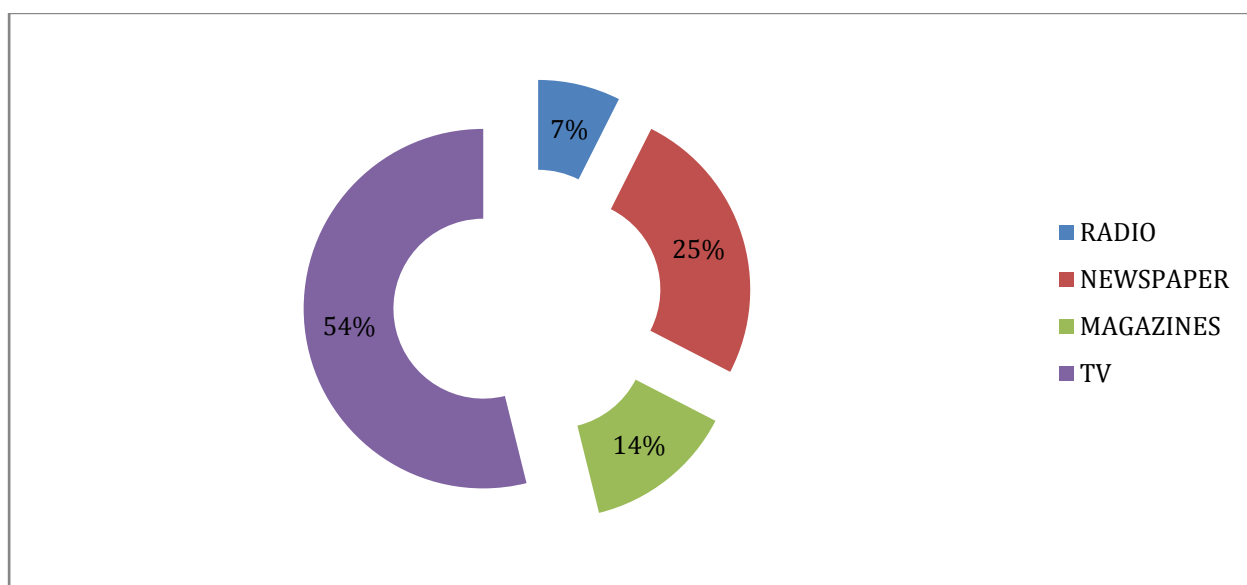


Figure 2:Medium used to obtain information regarding Hepatitis B

Table 2: Cross tabulation between gender, Education, Training and Awareness level

Gender	Educational Level						p value
	Illiterate	Primary	Matric	Inter	Graduate	Master	
Males	35 (21.3%)	76 (46.3%)	35 (21.3%)	10 (6.1%)	6 (3.7%)	2 (1.2%)	0.000**
Females	6 (2.6%)	47 (20.3%)	97 (41.8%)	51 (22%)	27 (11.6%)	4 (1.7%)	
Formal training of work							
	Yes			No			0.000**
Males	35 (21.3%)			129 (78.8%)			
Females	185(79.7%)			47(20.3%)			
Awareness about transmission of hepatitis C							
	Yes			No			0.024**
Males	98(60.1%)			65(39.9%)			
Females	115(49.6%)			117(50.4%)			
Awareness about transmission of hepatitis B							
	Yes			No			0.027**
Males	85(52.1%)			78(47.9%)			
Females	97(41.8%)			135(58.2%)			
Awareness about transmission of HIV							
	Yes			No			0.007**
Males	40(24.5%)			123(75.5%)			
Females	33(14.2%)			199(85.8%)			
Awareness about transmission of skin diseases							
	Yes			No			0.000**
Males	61(37.4%)			102(62.6%)			
Females	140(60.3%)			92(39.7%)			
Awareness about transmission of fungal infections							
	Yes			No			0.003**
Males	21(12.9%)			142(87.1%)			
Females	49(21.1%)			183(78.9%)			

Table 3: Cross tabulation between Gender and Status of Hepatitis B & C

	Participant has been tested for Hepatitis C		P value
	Yes	No	
Males	42(25.6%)	122(74.4%)	0.050**
Females	42(18.2%)	189(81.8%)	
Participant has been tested for Hepatitis B			
Males	37 (22.6%)	127 (77.4%)	0.333
Females	47 (20.3%)	185 (79.7%)	
Participant is suffering from Hepatitis C			
Males	8(4.9%)	156(95.1%)	0.015**
Females	2(0.9%)	230(99.1%)	
Participant is suffering from Hepatitis B			
Males	1 (0.6%)	163 (99.4%)	0.210
Females	5 (2.2%)	227 (97.8%)	
Awareness about HB vaccination being part of EPI program Pakistan			
Males	62(37.8%)	102(62.2%)	0.004**
Females	120(51.7%)	112(48.3%)	
Awareness about vaccination in adulthood			
Males	75(45.7%)	89(54.3%)	0.000**
Females	184(79.3%)	48(20.7%)	

DISCUSSION

Barbers and saloon workers are subjected to various occupational health risks. Poor posture, prolonged standing, mechanical load on joints, long working hours and getting infected by hepatitis B and C are important health risks for barbers and saloon workers. Hepatitis is a major health problem in barbers and saloon workers, as they are potential source of transmission to different clients.²³ Razors, barber's scissors, nail files and body piercing instruments are risk factors responsible for spread of hepatitis B & C.²⁴ Though HBV and HCV are blood borne diseases,

it appears that virus is coming from community to house hold members and possible sources are treating physicians using a reused syringe, dentists & barbers. In developing countries like Pakistan, most of the barbers are illiterate and unoblivious of transmission of infectious agents through the repeated use of razors and scissors.²⁵ Our study indicated that 16.5% of the participants admitted that they were reusing blades on multiple customers. Education of barbers about significance of sterilization of their instruments may help in reducing the burden of community acquired infection with HBV, HCV and other blood borne

pathogens.²⁴The study showed that alarmingly high percentage of barbers and saloon workers were unaware of transmission of hepatitis B (53.9%) and hepatitis C (46.1%) from their occupation. Another study conducted in Pakistan showed that only 39.6% of the barbers had awareness about HBV and HCV as blood borne pathogens.²⁶Another study conducted in Rajasthan, India showed that 33.3% of the study subjects watch television for getting information regarding HIV, HBV and HCV.²⁷ While in this study 42.2% of the respondents watch television for gaining information about health matters. This emphasizes the importance of electronic media on creating awareness of hepatitis among barbers. We believe that national campaigns for HBV and HCV can successfully increase the awareness among general population as well as target population (barbers).²⁸This study revealed that only 46% of participants were aware of the facts that hepatitis B vaccination is the part of EPI program being run in Pakistan. Further, only 25.4% of the barbers' and saloon workers were screened for HBV and HCV. These results can be confirmed by another study where only 30% of the study subjects were screened for HBV and HCV.²⁹ It might be due to the reasons that socioeconomic status of the individuals didn't permit them to perform expensive screening tests. Moreover there are no regulatory authorities which could keep a check on screening of barbers for such a disease which is health hazard to their profession.

CONCLUSION

Majority of the barbers and saloon workers had inadequate knowledge about the modes of transmission of Hepatitis B and C irrespective of their educational status. A high percentage of the participants were unaware of the fact that Hepatitis B vaccination is a part of EPI schedule. Another significant fraction of study population was also unaware that their occupation is a source of infection transmission.

LIMITATIONS

It is a cross sectional study done only in Lahore, Pakistan. No rural areas were included in the study.

RECOMMENDATIONS

Awareness about HBV and HCV infections, transmission, prevention and treatment should be increased in at-risk and general population by media, health campaigns, seminars etc.

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