Knowledge, Attitude and Practices of Barbers About Hepatitis B and C Virus Transmission

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Abstract:

Background:
Hepatitis B and C infections are serious global health problems including Bangladesh. Barbers and clients infected by viral hepatitis may not be aware of the disease. During haircut or shave, barbers may accidentally expose to their clients' blood or transmit their own infection to the clients, or transmit the infection from one client to another. Thus the barber has a potential role in expansion of infections.

Objectives:
To assess the knowledge, attitude and practices of barbers regarding Hepatitis B & C transmission.

Methods:
This descriptive type of cross-sectional study was conducted among 160 barbers aged 15 to 60 years who were selected by multistage sampling method in barbers' shop of Rangpur city of Bangladesh. Data on knowledge and attitude of barbers were collected and their practices were observed and recorded.

Results:
Only 8.1% knew hepatitis B & C causing liver disease. 3.8% to 8.1% knew different mode of transmission including 5.6% by shaving. Only 4.4% barbers had knowledge on HBV vaccination. Only 8.1% agreed to perform test for these infections. Almost all barbers used new blade on new client and all (100.0%) barbers used disinfectants after shaving on client.

Conclusion:
Knowledge and attitude about disease transmission were very poor. But their practices regarding the use of new blades and antiseptic lotion were very good. The majority had no idea that HBV and HCV were preventable. Awareness of barbers would play a vital part in prevention and control of these viruses.

Key words: Hepatitis B virus (HBV), Hepatitis C virus (HCV), Barbers, Knowledge, Attitude and Practice.

Introduction:

Hepatitis B and C infections are spreading throughout the developing world. These viruses are the main causes of liver disease including chronic hepatitis, cirrhosis, hepatocellular carcinoma and end stage liver disease. These viruses are causing heavy burden on national economies and individual families due to costs associated with high morbidity and mortality. Globally 2 billion people have the evidence of infection with the hepatitis B virus, of which more than 350 million have chronic infections[1]. Another 170 million people are chronically infected with hepatitis C virus[2]. The prevalence of hepatitis B in Bangladesh from different studies has shown 0.8 to 5.4%[3-5]. According to WHO records the prevalence of HCV in Bangladesh is 1%-2.5%[6]. In many developing countries HBV and HCV continue to spread because of the contribution of unsafe sexual practice and non-sexual risk factors such as lack of routine screening of donated blood, mother to child transmission, increasing illicit intravenous drug use, unsafe injections, contaminated medical equipments and beauty treatments (tattooing, piercing, manicure, pedicure and barber shops shaving) with instruments which are not properly sterilized[7-11]. Therefore, rigorous sterilization procedures are

essential to avoid any contamination of blood-borne viruses of therapeutic and beauty instruments, particularly, because HBV is not easily inactivated by drying, simple detergents or alcohol[11] and HCV can survive in plasma, after drying and environmental exposure to room temperature, for at least 16 hours[12]. A barber is a person whose occupation is mainly to cut, dress, groom, style and shave of men's hair or beard. Razor sharing and shaves from the barbers have been identified as an important risk for blood-borne viral spread in several investigations carried out all over the world. Exposure to HBV and HCV during shaving and beauty procedures is a risk reported in studies in different countries[13-15]. Razor shaving is identified as the most significant risk factor associated with HCV infection in Japan[16]. In Italy tattooing, ear piercing and barber shop shaving were significantly associated with parenterally transmitted HCV and HBV infection, while attendance at a manicurist or chiropodist was associated only with HBV infection[17]. In Hubei, China, barbers showed higher seroprevalence of hepatitis B surface antigen (HBs Ag), hepatitis B surface antibody and antibody to HCV than departmental store employee controls[14]. Moreover, several other epidemiological studies have supported the correlation between tattooing, barbering and hepatitis C infection in Taiwan[18] and in New Mexico[19]. In Egypt, a study on HCV seroprevalence had shown that high prevalence of HCV infection among people who shaved at community barber shops[20]. Besides therapeutic injections, daily facial shave has also been identified as risk factors for HCV in Pakistan[21]. The prevalence of saloon or roadside barber shaving has been reported to be as high as 34 - 49% in countries such as Ethiopia, Pakistan, and Bangladesh[21-23]. In many parts of Africa and Asia the widespread cultural practice among men of community shaving at a shop or roadside barber is an underestimated and largely unaddressed route of blood-borne viral disease transmission$_{24}$. Barbers in third-world countries are usually unaware of the concept of transmission and inactivation of infectious agents. So they are using razors and scissors repeatedly for different customers without intervening sterilization. Barbers and clients infected by viral hepatitis may not be aware of the disease. During haircut, shave or pedicure, barbers may be accidentally exposed to their client's blood, or transmit their own infection to the clients, or transmit the infection from one client to another. Thus the barber has a potential role in expansion of hepatitis B and C. Moreover, international literature shows less data on knowledge, attitude and practices related to barber activities. Only few studies were available in developed[25] and developing countries[26-28]. These viruses are highly prevalent in developing countries (like Bangladesh) due to lack of awareness and health education about HBV and HCV. It is important to know how barbers perceive the risks in relation to prevention of transmission between themselves and customers. In Bangladesh no such study has been carried out to find out the knowledge, attitude and practices of barbers about hepatitis B and C virus transmission. Therefore, this study has been designed to assess the knowledge, attitude and practices of barbers in Rangpur city, northern zone of Bangladesh. In essence, this study will pave the way to design and implement appropriate prevention and intervention strategies to harbor safe shaving practices among barber's community in Bangladesh perspective.

Materials and methods:

This study was designed as a cross-sectional observational study in the barber's shops of Rangpur city. This study was conducted from December 2012 to May 2013 over a period of six (6) months. A total of 160 barbers were included in this study.

Sampling method(s)

Multistage sampling method was adopted for the study. Among the 33 words of Rangpur city, 10 wards were selected by simple random sampling (Lottery). Then 10 barber's shops were selected from each ward by simple random sampling. Then 16 barbers were selected from barbers of each 10 shops of each 10 wards by simple random sampling (lottery).

Selection Criteria of Subjects:

Inclusion criteria: 1) Age more than 15 years. 2) Barbers willing to participate in the study. Exclusion criteria: Barbers unwilling to participate in the study.

Procedures of collecting data

Before starting data collection, the research team

reviewed thoroughly the questionnaire. The interviewers received orientation training on communication skills and were trained on the methods of data collection. The validity of the questionnaire was tested by expert and peer reviewed and the reliability was tested by the test–retest method in a pilot study including 10 barbers not included in the study sample. Therefore necessary changes were made before the actual collection of data. Then trained medical interviewers visited the selected barbers' shops and requested barbers to participate in the study after taking informed consent. Face-to-face interview was conducted with participating barbers about their knowledge and attitudes and information was written down in a pretested Bangla versions questionnaire. Two forward and backward translations are performed independently by two bilingual translators (proficient in English and Bengali) whose mother tongue was Bengali. During the main interview, one of the interviewers was involved in data collection and another one observed the barber and assessed his practices regarding using instruments. The questionnaires included socio-demographic data of barbers (such as age, sex, education, income, marital status, residence and religion); Barber`s knowledge section covered the different modes of transmission of hepatitis and knowledge of vaccination against HBV and HCV; the attitudes section covered the type of media they use for information and entertainment, attitudes towards the hepatitis B and C infections, vaccination against these diseases; whether they were a substance abuser or not, history of blood transfusion, tattoos or surgical operation/stitches and their thinking about necessary to have periodic screening for blood borne diseases in general and whether they themselves would like to be tested for these diseases. The practices of barbers were observed on 2 occasions while they were attending clients and a checklist was used to record: hand-washing before servicing each client, sterilization of instruments with antiseptic, use and reuse of blades, and disposal of used blades and instruments. Participation in the survey was on a voluntary basis.

Statistical Analysis

Statistical analysis was performed by using window based computer software devised with Statistical Packages for Social Sciences (SPSS-20) (SPSS Inc, Chicago, IL, USA). The summarized data was interpreted accordingly and was then presented in the form of tables.

Results and observations

A total of 160 questionnaires were completed from barbers' interviews

Table-I Socioeconomic and demographic characteristics of barbers participating in the study

Characteristic	Frequency	Percentage
Age		
15-20	20	12.5
21-30	68	42.5
31-40	35	21.9
41-50	26	16.3
>50	11	6.9
Religion		
Muslim	119	74.4
Hindu	41	25.6
Marital status		
Married	115	71.9
Unmarried	45	28.1
Education		
Illiterate	65	40.6
Primary	75	46.9
Upto 8th class	10	6.3
SSC	7	4.4
HSC	3	1.9
Monthly income (Tk.)		
2000-4000	2	1.3
4001-6000	7	4.4
6001-8000	36	22.5
8001-10000	73	45.6
>10000	42	26.3

The participant's characteristics demographic are shown in Table-I. Around (42.5%) of barbers were in age group 21 – 30 years. Most respondents 74.4% were Muslim. Maximum (71.9%) barbers were married. Around half (46.9%) of barbers were primary educated and (40.6%) were illiterate. Half respondents (45.6%) of barbers monthly income range was 8001-10000 Taka.

Table-II: Barber's knowledge about hepatitis B and C virus diseases and their mode of transmission

Knowledge item	Frequency	Percentage
Liver disease caused by Hepatitis B & C	13	8.1
Mode of transmission		
Contaminated water	10	6.3
Food	11	6.9
Shared utensils	11	6.9
Sexual contact	10	6.3
Intravenous drug use	11	6.9
Reuse of needles	12	7.5
Blood transfu sion	13	8.1
Dental procedures	9	5.6
Scissors/surgical instruments	11	6.9
Tattooing	11	6.9
Barbers shaving instruments	9	5.6
Ear / body piercing	7	4.4
Hepatitis B and C have the same mode of transmission	6	3.8
Protection		
A vaccine can protect the in dividual against hepatitis B infection	7	4.4
A vaccine can protect the individual against hepatitis C infection	7	4.4

Table-II showed barbers' knowledge about hepatitis B and C virus diseases and their mode of transmission. Only (8.1%) barbers knew that liver disease caused by hepatitis B & C. Regarding mode of transmission by different source or risk factors, ranging from (3.8%) knew that hepatitis B & C had the same mode of transmission to (8.1%) answered by blood transfusion. Only (4.4%) knew that a vaccine can protect the individual against hepatitis B and C infection.

Table-III: Barber's attitudes about hepatitis B and C virus diseases

Attitude item	Frequency	Percentage
Hashad bloodtransfusion	2	1.3
Is vaccinatedagainst hepatitis	0	0.0
Hashad tattoos	0	0.0
Hashad surgicaloperation or stitching	6	3.8
Seen television/ listened radio program on these diseases	10	6.3
Is currentlysubstance abuser/ IV drug abuser	0	0.0
Agree with periodic screeningfor HBVand HCV	12	7.5
Agree to be personally tested for these infections	13	8.1

Table-III showed barbers' attitudes about hepatitis B and C virus diseases. None of the barbers was vaccinated. None of them was substance abuser/ IV drug abuser. Only (6.3%) barbers had seen television/lessened radio program on these disease. Only (7.5%) barbers agreed with periodic screening and (8.1%) agreed to perform test for HBV & HCV.

Table-IV: Barber's shaving practices from observations of interactions with clients

Practice item	Frequency	Percentage
Washes hands before each client	0	0
Reuse of towel	120	100
Washes razor with tap water before use on new client	7	4.4
Washes razor with antiseptic solution after use	4	2.5
Uses new blade on new client	159	99.4
Uses same blade for armpit shaving	6	3.8
Disinfects skin cuts	8	5.0
Disposes of used blades in the garbage	156	97.5
Razor cuts observed on clients	8	5.0
Use disinfectants after shaving on client	160	100.0

Table-IV showed barbers' shaving practices from observations of interactions with clients. Only (1.3%) barbers wash hands before each client. Only (4.4%) barbers washes razor with tap water before use on new client and (2.5%) washes razor with antiseptic solution after use. Almost all barbers (99.4%) used new blade on new client. Only (5.0%) barbers observed razor cuts on clients and disinfects skin cuts. All (100.0%) barbers used disinfectants after shaving on client and (97.5%) disposed of used blades in the garbage.

Discussion:

Hepatitis B and C virus infections are the most prevalent public health problems worldwide including in Bangladesh. The current study has described barbers' knowledge, attitude and practice about the transmission of HBV & HCV in Bangladesh with specific emphasis in Rangpur city in the Northern Region.

Out of 160 barbers majority 42.5% were in age group 21 – 30 years followed by 21.9% were in age groups 31-40 years. Almost similar results were seen in the study in Pakistan[26] and India,[27] where most of the barbers were in age group 15-35 years. 46.9% had completed primary education and 40.6% were illiterate. Almost similar results were observed in the study of Jokhio et al.[26] and Janjua & Nizamy[29].

In this study, only 8.1% knew that liver diseases were caused by hepatitis B and C viru., This is similar to another study in which 12.5% of barbers in Rawalpindi and Islamabad urban cities in Pakistan reported having knowledge of liver disease caused by HBV and HCV[29], which greatly differs from 42.0% at Udaipur city in Rajasthan in India[27] and 80% in Gharbia governorate in Egypt[28]. This discrepancy is attributed to lack of awareness and poor knowledge.

Regarding mode of transmission, only 8.1% barbers said these viruses transmitted during blood transfusion but Patel et al.[27] Jokhio et al.[26] and Shalaby et al.[28] found 25.3%, 29.0% and 92.5% respectively in their studies. In this study 6.3% barbers answered that sexual contact transmitted these viruses which differed from 26% in India[27], 36.0% in Pakistan[26] and 65.9% in Egypt[28]. Only 6.9% barbers said these viruses transmitted by intravenous drug use which was inconsistent with the study result of 22% in Pakistan[26] and 88% in Egypt[28]. In this study 5.6% barbers said these viruses transmitted via barbers shaving instruments, on the other hand Shalaby et al.[28] found 77.6%. Only 7.5% barbers answered HBV and HCV transmitted due to reuse of needles but other two showed 26.7% and 92.5%[28] in their study[27,28]. Only 4.4% barbers said these viruses transmitted during ear/body piercing that was incompatible with the study of Jokhio et al.[26] and Shalaby et al.[28] who showed 21.0% and 66.6% in their respective study. 5.6% barbers said these viruses transmitted during dental procedure but previous studies showed 20.4%[26] and 84.7%[28]. It was found that 6.9% barbers said these viruses transmitted via scissors/surgical instruments, utensils and during tattooing that was differ from studies in India[27], Pakistan[26] and Egypt[28]. Regarding protective knowledge, only 4.4% knew that vaccine can protect the individual against hepatitis B infection. Almost similar result was found in the study of Jokhio et al.[26] but 31.3% was found in the study of Patel et al.[27]. So It is said that more than 90% of study participants have no knowledge about transmission and protection of HBV and HCV. This poor knowledge may be due to illiteracy and lack of awareness programs regarding HBV and HCV. There are awareness programs on HIV and TB but no such programs are visible and existent on HBV and HCV.

In the Bangladesh, the national media"s awareness campaigns have a strong impact on the knowledge about AIDS. However, there have been no such campaigns about HBV and HCV. Improvement in the knowledge about a problem is the first step to reduce risk. We believe that national campaigns for HBV and HCV can successfully increase the awareness regarding these viruses among the general population as well as target population (barbers).

Overall, attitude of the barbers towards having vaccination and screening test for hepatitis was not favorable. None of the barber was vaccinated, but in the study of Jokhio et al.[26] found 3.2% was vaccinated against HBV. Only 7.5% barbers agreed with periodic screening for HBV and HCV. 8.1% barbers agreed to perform test for these infections. Similar result was found in the study of Jokhio et al.[26] but better attitude was seen among the barbers in the study of Patel et al.,[27]. The possible cause of poor response was due to the lack of knowledge about the preventive role of vaccine and financial constraint. In this study, only 6.3% of the study subjects

watched television or listened radio for getting information regarding HBV and HCV. In contrast to observations in the studies in Pakistan[29], Egypt[28] and India[30] where the values were 75%, 59.9% and 52.9% respectively. This discrepancy is due to scant awareness programs in our national media.

In this study it was found that hand washing practices were very poor, only 1.3% barbers washed their hand before or after shaving a client. Others studies also demonstrated overall poor practices though their practices were better than ours, e.g. 10% in Pakistan[31] and 30.0% in Yemen[32]. Lack of hand washing practice is due to lack of awareness and also to save time to serve more clients. Almost all (99.4%) barbers reused towel. But in a study in Pakistan, 66% reused towel[31]. This may be due to cost of the towel that could be ill afforded by the poor barbers. Only 4.4% barbers washed their razors with water before use on new client. Almost similar result was found in the study of Janjua and Nizamy[29] but greater values 64.0% in Egypt[28] and 72.0% in Pakistan[26] were found in other studies. They may think it was just time wasting and also lack of awareness. In this study only 2.5% barbers washed razor with antiseptic solution after use but Shalaby et al.[28] and Jokhio et al.[26] found 72.9% and 96.2% in their respective studies. This was due to lack of awareness and knowledge. In this study, 159 (99.4%) used new blade on new client. Similar results were found in the studies of Waheed et al.[33] and Wazir et al.[31]. But other studies conducted in Pakistan[29] as well as in India[34] revealed that a large number of barbers were reusing the same blade on multiple clients. In fact, most of the barbers did not know that HBV and HCV infection can be transmitted through blade sharing, these improved practices may be due to improved life style and overall increased awareness about hygiene, health behavior and client's compelling attitude to use new blade. All barbers (100%) used disinfectants after shaving. But poor practices were seen 39.2% and 76.4% in the study of Jokhio et al.[26] and Shalaby et al.[28] respectively. Barber used after shave antiseptic lotion for disinfection. This practice of using antiseptic lotion is probably intended to allure the client with the fragrance of antiseptic lotion. In this study 97.5% barbers disposed of used blades in the garbage but Jokhio et al.[29] found 34.9%. However, this desirable practice could be due to public demand or it could be due to their alertness during data collection.

Limitation of the study:

The limitations of this present study are:

1) This study was done in a single city, only in urban area with a small sample size which is not representative of all barbers of whole country.

2) Data collection was not done by barbers posing a window of lack of trust between the participants and the interviewers.

3) Those barbers or their family members were suffered from jaundice or known HBV / HCV infection were not excluded.

Conclusions:

It was observed that most of the study subjects had either primary education or no formal education at all. Their knowledge about disease transmission, attitude and good healthy practice was very poor. Majority of them do not have any idea that HBV and HCV were preventable. None of the barber was vaccinated. But their practices regarding the use of new blades, disposal of used blade and use of antiseptic lotion were fairly appreciable.

Recommendations:

Based on the findings of the present study and analysis following recommendations can be put forward–

(1) Health education campaigns about the disease and its complications to be arranged for barbers to increase the awareness and to help in modification of their different risk behaviors.

(2) Barbers should be trained in universal protection methods, related to correct shaving procedures and instrument decontamination by the trained personal. These should be regularly monitored and supervised by the technical personal of municipal and local government authorities.

(3) Give sufficient coverage about hepatitis B & C prevention and control issues through different

Medias like television, radio, newspaper and magazines.

(4) The health authorities should carry out a program of compulsory vaccination of barbers who were not vaccinated against HBV.

(5) More studies are needed that cover large numbers barbers of rural and urban area and if possible investigate the prevalence of the disease among the barbers in Bangladesh.

(6) Further studies are required to measure other factors that may contribute to the low level of barber's knowledge, attitude and practices about HBV and HCV transmission.

Conflict of Interest: None declared.

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