ORIGINAL ARTICLE

# KNOWLEDGE, ATTITUDES AND PRACTICES OF HEPATITIS B AND C AMONG BARBERS OF URBAN AND RURAL AREAS OF RAWALPINDI AND ISLAMABAD

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**Background:** Hepatitis B and Hepatitis C are serious global public health problems with a prevalence of 10–15% with majority of the cases seen in the developing countries including Pakistan. It is a blood borne infection transmitted by infected blood and blood products through transfusions, contaminated needles, vertical transmission, unsafe sex and reuse of razors by barbers. The literature search so far did not reveal any study comparing knowledge, attitude and practices of hepatitis B & C in barbers working in Urban and rural areas. **Methods:** A comparative cross sectional survey was carried out among barbers of urban and rural areas of Rawalpindi and Islamabad. A structured close ended questionnaire was filled from total of 202 barbers by non-probability convenience sampling technique. Comparative data analysis was done including variables like age, education, knowledge about hepatitis B & C, mode of transmission, role of the blades and media etc. **Results:** Knowledge about hepatitis B & C was good in urban areas (92%) as compared to those working in the rural areas (68%). Using new blade for every customer was seen in urban (100%) and rural (93%) area. However barbers knowledge about symptoms of the disease (urban 81% & rural 93%) and vaccination trend of Hepatitis B was low. **Conclusion:** This study showed a marked difference in the knowledge, attitude and practices of the barbers working in the urban and the rural areas. Main focus should be on launching Health education programs and behaviour change communication campaigns for the barbers. Strict regulatory monitoring must be done against unlicensed street barbers.

**Keywords:** Hepatitis B, Hepatitis C, barbers, knowledge, attitude, practices, behaviour change communication

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## INTRODUCTION

Developing world is facing a burden of epidemics of Blood borne diseases. These diseases increase the morbidity and mortality, ultimately resulting in heavy burden on national economics and individual level.[1,2] Hepatitis B and Hepatitis C are serious global public health problems. Globally, each year around 2 billion people are infected with the hepatitis B virus (HBV), of which more than 350 million have chronic HBV infections.[1,2] An estimated, more than 180 million people worldwide are infected with hepatitis C virus (HCV) and 3–4 million are newly infected each year.[3–5] The prevalence of Hepatitis B & C infection worldwide in general population is around 10–15%, and majority of the cases are seen in rural population.[6]

Pakistan is a developing country with a population of 180 million. It has low health and educational standards.[7] Unfortunately, Pakistan has a high prevalence rate of Hepatitis B and C with a constant rise in the number of cases.[7,8] Studies showed that there are around 9 million people infected with HBV and around 10 million infected with HCV.[8] Some of the major reasons for the constant rise in number of infected cases may be because of lack of health care facilities, low socio economic class, poor political commitment and most important among them is the lack of education and awareness about the transmission of these infectious diseases.[9]

There is a long list of the factors contributing to HBV and HCV spread including blood transfusion, mother to child transmission, contaminated syringes, unsafe sex, and reuse of razors by barbers.[7–10] Shave from barbers whether face or the armpits has also been identified as the major risk factor for Hepatitis, as most of the times, the barbers are in the habit of reusing blades for shaving purposes.[11,12]

Barber is a person whose occupation is to cut hair, give shaves, and trim beard. Barbering is an old profession. They were considered as medicine men that used to perform different procedures like circumcision, incision and drainage, tooth drawing etc.[13] With the latest advancement in surgery and dentistry the role of barbers got restricted to hair cutting and shaving beards.[13,14] Majority of the barbers do not have any perception of unhealthy and harmful working practices in barbering.[15]

Negligence during the use of sharp instruments is a risk factor for several health hazards including communicable diseases and skin conditions, both for the barber and the clients.[16] Some of the main diseases linked to this profession are: infestation of head louse, staphylococcal, Scabies (through contaminated towels, combs, and aprons) and Hepatitis B, hepatitis C, and AIDS (contaminated blades and clips). Without realizing these issues a large proportion of population is enjoying the services of barbers in our community.[17] Considering the grave consequences of infections like Hepatitis B, C and AIDS, associated with this profession; National and Provincial Health departments, public health authorities and professionals are creating awareness through nationwide campaigns and programs involving both print and electronic media.[18] In spite of all these efforts a lot needs to be done in increasing awareness regarding different risk factors involved in the transmission of these diseases.

The aim of this study was to compare the knowledge, attitude and practices of barbers working in the urban and the rural areas regarding hepatitis B & C spread in Rawalpindi/ Islamabad. This would help to assess the barber's perception about the disease and thus guide the design and implementation of health promotion and public awareness programs.

## MATERIAL AND METHODS

This comparative cross sectional study was conducted in different barbershops located in urban and rural areas of Rawalpindi and Islamabad after seeking approval from the Institution's Ethics Committee from January to August 2015. The target population included barbers working in the barbershops of Rawalpindi and Islamabad. Two hunder barber shops, 100 each from urban and the rural area were selected. These shops were selected through non-probability convenience sampling technique. The shops were selected from both the low and high socioeconomic areas of Rawalpindi and Islamabad. One barber from each shop was asked for interview. Eleven barbers mostly from urban areas did not give consent to be interviewed.

A pre designed structured questionnaire was used which was adopted from studies done by Shalaby *et al*[5], Janjua *et al*[13], Salim *et al*[16], Jhokio *et al*[18],. The questionnaire was translated into Urdu. The purpose of the study was described to the barbers and after taking the informed consent, the barbers were interviewed. One of the group members was assigned just to observe the barbers and assess the instrument use and practices on the clients.

This structured questionnaire includes participants' social and demographic characteristics, other variables like knowledge, awareness about hepatitis B & C, unsafe behaviour that might lead to/contribute to Hepatitis B & C, changing of blades, its mode of transmission, hazards related to reuse of blades, and vaccination of Hepatitis B & C. The attitude towards these infections, vaccination status of the barbers, should barbers undergo their periodic screening for these diseases, and whether they would like to be tested for these infections. To see the practices of the barbers with the clients, a check list filled by the observer was assessed. This includes points like hand washing before attending every client, sterilization of the instruments, use and disposal of the blades and disposable razors.

The data had been analysed in SPSS 22; Standard descriptive and analytical statistics were used to analyse the data. Chi-square test was used to ascertain the association between qualitative variables and $p$ value less than 0.05 was considered significant.

## RESULTS

All the barbers were male and mean age was 35±11 years. Educational status showed that 59% had education up to middle standard and rest had education either till matric or more (41%). Maximum qualification in urban area was bachelors while in rural area it was intermediate.

Of the barbers of urban area 91 (92%) barbers had the knowledge of hepatitis B & C and HIV/AIDS (Figure-1) as compared to 70 (68%) of the rural areas ($p$=0.000). Only 46 (23%) of total barbers interviewed, did not know about the health hazards related to their profession. About 91% (n=90) of the barbers working in the Urban areas knew it is a disease of liver/effects liver and had knowledge about jaundice ($p$=0.000) while in rural areas this knowledge was low 49% (n=50).

Knowledge about symptoms of hepatitis B & C was not enough in urban and rural areas both (Table-1). Barber's knowledge about vaccination of Hepatitis B & C was not sufficient (Table-1) and vaccination trend of Hepatitis B was even worse (Table-2). Barbers had good knowledge about the mode of transmission in urban areas (Table-1) and about 34% (n=35) barbers working in rural areas had no information how these diseases can spread. Knowledge about the prevention of these diseases was seen more in the urban areas (Figure-2).

Television and internet in the urban areas 51% (n=50) and radio and television in the rural areas 59% (n=61) were the most effective mode of knowledge/awareness about Hepatitis B & C ($p$=0.000).

In case of cut or wound majority of the barbers 74% (n=76) working in the rural areas are using traditional method of using Potash alum as compared to barbers of urban areas who prefer antiseptics 55% (n=54). No one in the rural areas is aware that hepatitis can spread from potash alum.

It was encouraging to see that almost all the barbers were using new blade for every customer, in urban areas 100% (n=99) and rural 93% (n=96). One of the reasons being that most of the clients whether of urban area or the rural area nowadays demand barbers to use new blades/razors and are concerned about the sterilization of the instruments. The percentage of the barbers who do not wash their hands before working on every client was more in the rural areas 30% (n=31) (Table 3).

Most common method of disinfection of the instruments in the rural areas was by Chloroxylenol solution 86% (n=89). In the urban areas disinfection was better as compared to rural areas ($p$=0.002) done mostly by Chloroxylenol solution and some other antiseptics, even a few barbershops had their own autoclave (n=7) for the sterilization of instruments as compared to none in the rural areas.

Out of 202 barbers, no one either in the urban area or the rural area was doing minor surgeries like circumcision, in growing toe nail (IGTN) or abscess drainage. Barbers think they were disposing off the blades properly but it was observed that 91% (n=90) in urban areas and 74% (n=76) in the rural areas were throwing used blades in the municipal waste.

There was no history of vaccination and screening test for Hepatitis B & C of the barbers (Table-2). History of blood transfusion, operation/dental procedure was given by few barbers (urban 4, rural 3). There were no registered barber shops in the rural areas while only few (n=8) shops of the urban areas are registered.

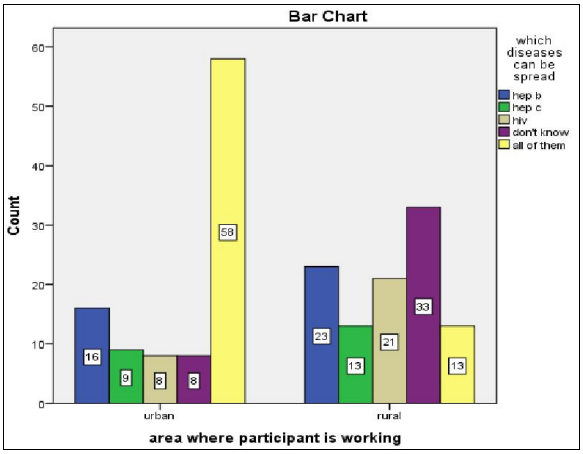


**Figure-1: Knowledge about the diseases related to barber's profession**

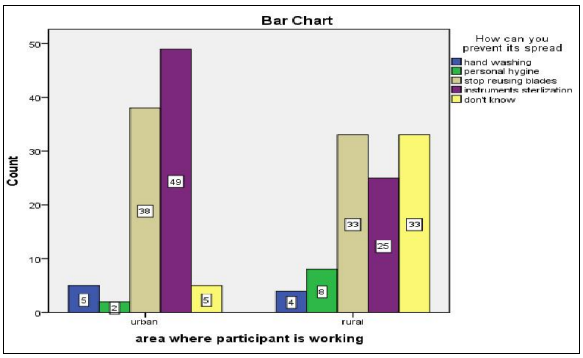


**Figure-2: Knowledge of barbers about prevention of Hepatitis B & C**

**Table-1: Knowledge of the barbers working in the urban and rural areas**

| Knowledge items | Urban (n=99) | | Rural (n=103) | | $p$ |
|---|---|---|---|---|---|
| | Yes (%) | No (%) | Yes (%) | No (%) | |
| Health hazard related to your profession | 84 (85) | 15 (15) | 72 (70) | 31 (30) | 0.035 |
| Are these diseases common in Pakistan | 79 (80) | 20 (20) | 58 (56) | 45 (44) | 0.002 |
| Knowledge about symptoms of Hep B&C | 33 (33) | 66 (67) | 18 (17) | 85 (83) | 0.010 |
| Hepatitis B & C spread through blood | 74 (75) | 25 (25) | 60 (58) | 43 (42) | 0.000 |
| **Knowledge about other modes of transmission** | | | | | |
| •Reuse of contaminated needles/blades | 62 (63) | 37 (37) | 38 (37) | 65 (63) | 0.000 |
| •Shaving instruments | 24 (24) | 75 (76) | 21 (20) | 82 (80) | 0.014 |
| •Sharing towels /utensils/ food/ water/insect bite | 8 (8) | 91 (92) | 9 (9) | 94 (91) | 0.000 |
| Liver affected by Hepatitis B & C | 90 (91) | 9 (9) | 50 (49) | 53 (51) | 0.000 |
| Hepatitis B & C can cause death | 80 (81) | 19 (19) | 71 (69) | 32 (31) | 0.052 |
| Knowledge about vaccination | 43 (43) | 56 (57) | 24 (23) | 79 (77) | 0.013 |
| Cleaning instruments before every use is necessary | 99 (100) | 0 (0) | 90 (87) | 13 (13) | 0.000 |
| Relation of blackening of potash alum and Hepatitis | 3 (3) | 96 (97) | 0 (0) | 103 (100) | 0.008 |

**Table-2: Attitudes of the barbers working in the urban and rural areas**

| Attitude items | Urban (n=99) | | Rural (n=103) | | $p$ value |
|---|---|---|---|---|---|
| | Yes (%) | No (%) | Yes (%) | No (%) | |
| Routine periodic screening of barbers for Hepatitis B & C | 31 (31) | 68 (69) | 18 (17) | 85 (83) | 0.012 |
| Investigated for Hepatitis B & C | 25 (25) | 74 (75) | 16 (16) | 87 (84) | 0.086 |
| Vaccination status of barbers | 19 (19) | 80 (81) | 7 (7) | 96 (93) | 0.009 |
| New blades to be used for every customer | 98 (99) | 1 (1) | 94 (91) | 9 (9) | 0.011 |
| Barber shop should be Registered | 47 (47) | 52 (53) | 9 (9) | 94 (91) | 0.001 |

**Table-3: Practices of the barbers working in the urban and rural areas**

| Practice items | Urban | | Rural | | *p* |
|---|---|---|---|---|---|
| | Yes (%) | No (%) | Yes (%) | No (%) | |
| Wash hands before every customer | 83 (84) | 16 (16) | 72 (70) | 31 (30) | 0.032 |
| Clean instruments before every use | 98 (99) | 1 (1) | 91 (88) | 12 (12) | 0.002 |
| Use new blade for every customer | 99 (100) | 0 (0) | 96 (93) | 7 (7) | 0.004 |
| Use new disposable razor | 32 (32) | 67 (68) | 2 (2) | 101 (98) | 0.001 |
| Proper disposal of blades (burial/Burn) | 97 (98) | 2 (2) | 81 (77) | 22 (21) | 0.000 |
| Manage cut by only potash alum | 45 (45) | 54 (55) | 76 (74) | 27 (26) | 0.000 |
| Manage cut by antiseptic | 54 (55) | 45 (45) | 27 (26) | 76 (74) | 0.000 |

# DISCUSSION

This current study was conducted in Islamabad/Rawalpindi district to compare the knowledge, attitude and practices of the barbers working in the urban and the rural areas. Barbershop is a place where the general public is prone to different infectious diseases including Hepatitis B, C, HIV/AIDS and skin infections. The disease spread can be due to contaminated instruments or towels. 0ur study confirmed that information lag regarding hepatitis B and C is found among both urban and rural area however comparative analysis shows that it is more prevalent in rural areas.

The barbers were questioned regarding the knowledge about spread of hepatitis B, C and HIV, the participants in urban areas have more knowledge regarding this as compared to participants in rural areas. In the developed world knowledge about these diseases are more[19,20] but most of the studies[13,18] done in Pakistan highlights the misconceptions regarding the disease spread. A study done in Islamabad[21] shows that only 7% barbers knew that HBV could be prevented by vaccination however in our study barbers of rural area had almost similar findings but that of urban areas, 43% were aware of this.

Some studies [14,16] showed that barbers who are relatively young had better knowledge about the hazards of using old blade which was not the case in our study. Similarly in our study no relationship was seen between the working experience of the barbers and increased knowledge about hepatitis B & C especially in the rural areas.[14,16] The barbers who had formal education had better knowledge with a significant knowledge (*p* value 0.000) about the health hazards related to their field.

Barbers working in urban population had better knowledge about Hepatitis B & C. Studies[5,13,14,21] showed that different sources of knowledge are TV, Radio, internet, newspaper, family, friends and doctors. This study confirms that in urban areas participants gained knowledge mostly from internet, newspaper & televisions as compared to participants in rural areas where main sources to gain knowledge were radio & TV. Radio being a major source of information in rural areas, can be effectively used to raise awareness among barbers.

The knowledge about symptoms like nausea, yellow discoloration, and loss of appetite was better in barbers of urban areas (36%) as compared to those of rural areas (17%) but still needs improvement. It was also found that more study participants in urban areas (75%) knew that hepatitis B and C can spread through blood as compared to barbers working in rural areas (58%) which was also the finding in a study done in Egypt[5] and Islamabad[21]. Like many other studies[6,22], in this study too, barbers working in both urban (87%) and rural (43%) areas considered shaving instruments and sharps as a source of infection spread. This is a positive sign because when barbers have the knowledge about the source, they would be more careful in sterilization of their instruments and reuse of blades. It was also revealed from the findings that in urban areas a large number of participants (91%) knew that liver is mainly affected by this disease as compared to the barbers of rural areas (49%), this is much more than the study results done in Aga Khan University[18] where only 13% barbers knew this[5,14,16].

Almost all the participants in urban and rural areas believed that new blade should be used for every customer. This also confirms the finding of the study done by Cafer *et al.*[20] New blades were used by 99% of the barbers of urban and rural areas for every client as compared to 64% in a study done by Janjua *et al.*[13] Disinfection of instruments was also better in our study as compared to study done by Janjua *et al.*[13] No one was doing minor surgeries like circumcision or IGTN which were seen in 14% of study participants in a study done in Kharian.[16]

In addition, this study also showed that the barbers who washed their hands before cutting hair of every client were 84% in urban areas and 70% in rural areas respectively, a finding better than study done in Kharian and Islamabd[16, 21] but still needs attention. Reuse of potash alum is also a source of spread of the disease and it was found out that just a few participants in urban areas knew about this mode (vehicle) of transmission as compared to none in rural areas.[14,22]

Registration of the barber shops is usually done after checking the vaccination status of the barbers. Most of the barbers in our study showed interest in registration but could not do so because of their vaccination status.

A lot of studies have been conducted in order to determine the awareness of hepatitis B, C and HIV/AIDS among barbers in different countries. In the same way numbers of studies have also been conducted

in Pakistan for this purpose, however this study had been conducted with a different perspective because it incorporates comparative analysis of urban and rural areas regarding the awareness of hepatitis B and C in Pakistan.

The study had few limitations; firstly, we could not check Hepatitis B & C status of the participants due to cost issue. Secondly, we did not include female workers in parlours to assess their knowledge, attitude and practices. Thirdly, because of fear or work load few barber shop owners did not allow us to interview them or their workers.

## CONCLUSION

This study showed a marked difference in the knowledge, attitude and practices of the barbers working in the urban and the rural areas. Awareness about Hepatitis B and C, its mode of transmission especially associated with the barbers should be emphasized. The signs and symptoms of hepatitis B and C, importance of vaccination, precautions before handling their clients should be taught to the barbers. Main focus should be on launching Health education programs and behaviour change communication (BCC) campaigns for the barbers. Strict legislative actions should be taken against uncertified and unregistered barber shops. Vaccination status and screening of the barbers for hepatitis B and C should also be considered before issuance of license and registration. Health care professionals, mass media and other stake holders should play an important role in spreading awareness in general public especially the barbers.

## AUTHOR'S CONTRIBUTION

HBU, principle author, collected data, data analysis and manuscript writing, MKD collected data and helped in manuscript writing, AAJ collected data and literature review, IA proof reading, JA collected data, ASS data collected, AQU proof reading.

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