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Original Research Article

Knowledge, attitude, and practices of barbers regarding blood borne viral infections in south-west district of Delhi

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ABSTRACT

Background: Barber shops are potential medium for transmission of BBVI and several communicable diseases as barber shops are visited by general population. Poor knowledge and improper hygiene practices can lead to transmission of infections. Limited number of studies is done in India about knowledge, attitude, and practice of barbers regarding transmission and prevention of BBVI.

Objectives: To assess knowledge, attitude, and practices of barbers regarding Blood Borne Viral Infections and their association with sociodemographic factors.

Methodology: A workplace-based cross-sectional study was conducted to find out the knowledge, attitude, and practices of barbers regarding Blood Borne Viral Infections in South-West district of Delhi. A total of 150 barbers were included in the study.

Results: Majority of barbers had poor knowledge (75.3%), almost one fourth of the study participants had moderate knowledge (22.7%) and only (2.0%) of barber had good knowledge about BBVI. Majority of barbers had poor attitude and practices (74.0%), one fourth of the study participants had moderate attitude and practices (22.7%) and only 1(0.7%) barber had good attitude and practices towards BBVI.

Conclusion: Most of the barbers had poor knowledge, attitude and practice regarding BBVI. Knowledge, attitude, and practices was found to be significant with education and registration of shop.

1. Introduction

Considering Public Health Emergencies of International Concerns, COVID19 and other pandemics such as Severe Acute Respiratory Syndrome, H1N1 and Ebola, barbers' shops where general public visit regularly is potential source or medium for transmission of high-risk communicable diseases. Absence or gaps in knowledge, attitude, and practices (KAP) regarding these diseases are associated with occupation of barbers by improper decontamination and prevention methods might provide a medium for spread of these communicable diseases.[1]

Blood borne viral infections (BBVI) is a serious public health issue.[2] Common causative agents of BBVI are Hepatitis B virus (HBV), Hepatitis C virus (HCV), and Human Immunodeficiency Virus (HIV). According to WHO (2019), globally total 296 million people currently living with Hepatitis B virus (HBV) and total 58 million people are currently living with Hepatitis C virus (HCV), around 1.1 million people died due to HBV and HCV.[2]

HIV, HBV, and HCV are spread by contact with blood or body fluids of infected person. HBV is more infectious than HIV by 50 to 100 times. The most common source of BBVI is from mother to baby at birth (perinatal), unprotected sexual contact, infected injection, use of non-sterile needles, syringes, and other sharp instruments (skin piercing equipment's) like scissor and blades.[3]

According to National AIDS Prevention and Control Policy, salon, beauty parlour and dental clinics uses many

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sharp cutting instruments with improper hygiene practices which can lead to transmission of viruses. These places are visited by general population regularly, due to improper hygiene practices these establishment can cause the health risk to general population.[4]

To prevent BBVI transmission, it is important to sterilize all sharp instruments properly. There has been significant amount of research done related to BBVI transmission in other study population. It is very crucial to identify and highlight the diseases emitting from the use of sharp objects in profession of barbers. Barbers offer services like haircutting, bearding and nails cutting to different people groups of the general public.[5]

Barbers handle various sharps instruments like scissors, blade, trimmer, razors, clips which can penetrate the skin and cause BBVI transmission. Straightforward cut which is due to trimmer or by razor blade is enough for contamination to happen. Unhygienic work environments, ill-advised sterilization and deficient injury care can cause BBVI, so barbers are occupationally inclined toward BBVI. Salon's is where there is regular utilization of sharp instrument frequently without proper sanitization or sterilization. The utilization of these sharp instruments might address a HIV risk to anyone because of skin penetrating wounds.[6]

Shaving from razors by hairdressers has been recognized as a key danger variable of transmission of BBVI (A. Mele et al). In Turkey around 39.8% of hairdressers were viewed as HBV positive because of which numerous clients were contaminated during their work.[7]

In India there is lack of evidence for any association or framework which check hazardous act of barbers at their work environment connected with BBVI.[8]

Barbers have very low knowledge/awareness regarding transmission risk of BBVI by reuse of razors, trimmers, and blade on different customers.[8] Two types of barber's shops are accessible in India one is the roadside barbers where hairdresser does not have any framework or building and other is shop barbers who have proper infrastructure and enclosed shop.[9]

A very limited number of studies is done in India and according to best of my knowledge none in Delhi related to knowledge, attitude, and practice of barbers regarding transmission and prevention of BBVI. Hence the present study is conducted to assess the knowledge, attitude, and practice of barbers regarding transmission and prevention of BBVI in South- West Delhi.

The study is based on the objectives to assess knowledge, attitude, and practices of barbers regarding Blood Borne Viral Infections and association of KAP with sociodemographic factors.

2. Materials and Methods

2.1. Study Design, area, and study population

A workplace- based cross-sectional study to find out the knowledge attitude and practice of barbers regarding BBVI and its association with sociodemographic factors in South-West Delhi. All barbers who were above 18 years age and agreed to give consent were selected and those who refused to give consent were excluded.

2.2. Sample size and sampling technique

A study which was done on West Bengal showed that majority of barbers had knowledge regarding BBVI transmission through sharing of needle, which was 73.9% (5), taking relative error of 10%, 95% confidence level, assuming normality, calculated sample size using the Schwartz formula came out to 136.4 which was round off to 150.

Delhi is divided into 11 districts, among 11 districts Southwest district was selected randomly by lottery method, Southwest district has 3 subdivision Dwarka, Najafgarh, Kapashera.

In South-West district there are 47 total wards, 6 wards were selected randomly by online simple random number generator software, it gave 6 random numbers and the name of the 6 wards which corresponded to the six numbers given was selected. Total shop barbers were – 20*6=120. Total roadside barbers were- 5*6= 30 (6 wards, 25 barbers from each ward. total= 6*25=150) 6 wards which was selected by random number generator software were Dabri, Najafgarh, Kapashera, Palam, R.K Puram and Mahavir Enclave.

2.3. Study tools

A predesigned pretested questionnaire was used which was used to collect information regarding general background and KAP regarding BBVI. The questionnaire was divided into 2 sections. (Sociodemographic profile and KAP).

For scoring of knowledge attitude and practices, knowledge section contains 7 main questions (heard about BBVI, Source of transmission, treatment, vaccination, prevention) which further divided into 15 questions for each correct answer 1 score is given and for every wrong answer, no, don't know - 0 score is given. Then total score was calculated by adding all the correct answers and dividing it with 15. Attitude and practice section contains 14 questions for each correct answer 1 score is given and for every wrong answer, no, don't know -0 score is given. Then total score was calculated by adding all the correct answers and dividing it with 14. The overall knowledge, attitude and practices was categorized, using Bloom's cut-off point, as good if the score was between 80% to 100%, moderate if score was between 60% to 79% and poor if the score was less than 60%.[10] A Pre-test was done prior to the start of

study, on 15 subjects to test the validity of questionnaire. Participants involved in a pre- test were included in study. Its Cronbach's Alpha Value came out to be 0.719, which is acceptable.[9]

2.4. Ethical considerations

The study was approved by Institution's ethics committee, HIMSR, New Delhi. Appropriate permission and written consent were taken from each participant.

2.5. Statistical analysis

The data was entered and cleaned using Microsoft Excel. After entering all data, it was imported and analysed in SPSS version 26 software. Descriptive statistics (frequency, percentage, and mean) was calculated. For inferential statistics, Chi-square test was used and Fisher exact test was performed, wherever applicable. Association between KAP of barbers regarding BBVI with sociodemographic factors was calculated using these tests at a significance level of 0.05 and at confidence interval of 95%.

3. Results

3.1. Socio-demographic characteristics of study participants

Total 150 barbers were selected from South-West district of Delhi for the study; all of them were male. The mean age of the participants was found to be 33.0 years ± 9.3 years, 46.7% of participants belonged to 18- 30 years age group (being the majority), 32% belonged to 31-40 years age group, 15.3% belonged to 41-50 years, 6% belonged to above 50 years age group. Minimum age of participants was 19 years and maximum age was 56 years. Majority of the study participants were unmarried (47.3%), 46.0% of the study population were married while 4.0% were separated, and 2.7% were widowed. Most of the study participants were Muslim by religion (58.7%) and 41.3% were Hindu. More than half (55.3%) of study participants had primary education, 27.3% of study participant were illiterate and only 17.3% had completed high school. Total of 80.0% of study participants are permanent shop barbers and 20.0% of study populations were road side barbers. Only 28.7% of barber shops were registered, majority of participants (53.3%) shops were not registered and 18.0% of barbers do not know about registration of shop.

3.2. Knowledge regarding BBVI

As shown in Figure 1, Majority of barbers had poor knowledge (113,75.3%), almost one fourth of the study participants had moderate knowledge (34,22.7%) and only (3,2.0%) of barber had good knowledge about BBVI.

Table 1: Knowledge regarding BBVI

Variable	Frequency	Percentage %
Heard about BBVI		
Any BBVI	141	94.0
HIV	139	92.7
HBV	52	34.7
HCV	13	8.7
Knowledge about spread of disease		
Sexual Contact	130	86.7
Reusing Needle	85	56.7
Barbers shaving instruments	59	39.3
Blood Transfusion	52	34.7
Tattooing	31	20.7
Don't know	16	10.7
Misconception about spread of disease		
Body Contact	55	36.7
By food	53	35.3
Water Sharing	51	34.0
Saliva Droplets	37	24.7
Mosquito bite	6	4.0
Source of Information		
Friends and relative	122	81.3
Internet	61	40.7
Television	20	13.3
Healthcare workers	19	12.7
Don't know	12	8.0
Radio	1	.7
Knowledge about Vaccine	51	34.0

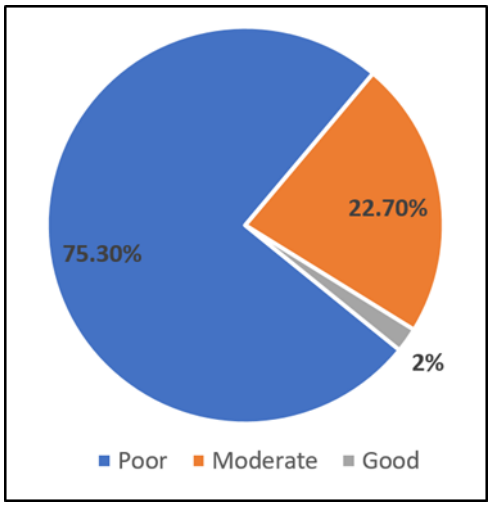

Fig. 1: Knowledge score of study participant related to BBVI

3.3. Attitude and practices regarding BBVI

Majority of study participant was not vaccinated (46.7%), 31.7% of study participants did not know about vaccination status only 21.7% study participants are vaccinated against HBV. Total 36.7% of study participants were substance user. Most (86.7%) of barbers clean instruments with savlon/Dettol and only 16.7% of them were cleaning with tap water. Total of 74.7% of barbers clean or disinfect instruments after every client and 25.3% of barbers clean once a day. Only 23.3% of barbers wash their hand before attending client, 36.0% of barbers wash their hand sometimes and 40.7% of barbers does not wash their hands. Some (12%) of barbers use hand gloves. Almost every barbers changes blade after every client (96.7%). For wound care, 77.3% of barbers uses alum followed by powder (60%), followed by after shave gel (56.7%), 50% of barbers use Dettol/savlon and only 3.3% use cream.

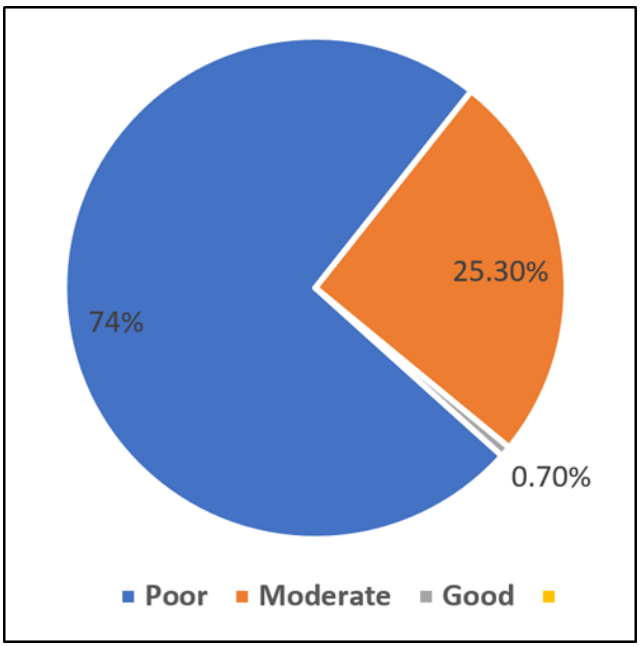

Fig. 2: Attitude and practices score of study participant related to BBVI

As shown in Figure 2, Majority of barbers had poor attitude and practices (74.0%), one fourth of the study participants had moderate attitude and practices (22.7%) and only 1(0.7%) barber had good attitude and practices towards BBVI.

*We used Bloom criteria to assess knowledge attitude and practices. As discussed in methodology section participant scoring as good if the score was between 80% to 100%, moderate if score was between 60% to 79% and poor if the score was less than 60%. Further, for association we subcategorised knowledge, attitude and practices as adequate (for moderate and good score) and inadequate (for poor score).

3.4. Association of KAP regarding BBVI

As seen in Table 2, Adequate knowledge was seen more in barbers who had completed high schooling (69.2%), and least in barbers who are illiterate (2.4%). Inadequate knowledge was seen maximum in barbers who were illiterate (97.6%). Knowledge with education was found to be significantly associated with a p-value less than 0.05 (< 0.001). Adequate knowledge was seen maximum in permanent shop barbers (30.8%), and Inadequate knowledge was seen maximum in road side barbers (100.0%). Knowledge of barbers regarding BBVI with type of shop was found to be significantly associated with a p-value less than 0.005 (< 0.001). Knowledge of barbers regarding BBVI with registration of shop, Adequate knowledge was seen maximum in barbers whose shops were registered (51.2%), and Inadequate knowledge was seen maximum in barbers whose shop were not-registered (92.5%). Knowledge of barbers regarding BBVI with registration of shop was found to be significantly associated with a p-value less than 0.005 (< 0.001)

As shown in Table 3, Attitude and practices of barbers regarding BBVI with education, adequate attitude and practices was seen maximum in barbers who had completed high schooling (92.3%). Inadequate attitude and practices were seen maximum in barbers who were illiterate (92.7%). Attitude and practices with education was found to be significantly associated with a p-value less than 0.05 (< 0.001). Association of attitude and practices among barbers regarding BBVI with monthly status, adequate knowledge was seen maximum (33.3%) in barbers who had a monthly income more than 10000. Inadequate knowledge was seen maximum (85.0%) in barbers who had a monthly income less than 10000. e with monthly income was not found to be significantly associated with a p-value less than 0.05 (< 0.001). Attitude and practices of barbers regarding BBVI with shop type, adequate attitude and practices was seen maximum in permanent shop barbers (32.5%), and maximum Inadequate attitude and practices was seen in road side barbers (100.0%). Attitude and practices with type of shop was found to be significantly associated with a p-value less than 0.005 (< 0.001). Attitude and practices of barbers regarding BBVI with registration of shop, Adequate attitude and practices was seen maximum in barbers whose shops were registered (44.6%), and Inadequate attitude and practices of barbers regarding BBVI was seen maximum in barbers whose shop were not-registered (90.0%). Knowledge of barbers regarding BBVI with registration of shop was found to be significantly associated with a p-value less than 0.005(< 0.001).

4. Discussion

The present study is to assess the knowledge, attitude and practices of barbers regarding BBVI. This study

Table 2: Association between knowledge of barbers regarding BBVI with sociodemographic factors. (N=150)

Variables		Knowledge level			Test Stat	p-value
		Adequate	Inadequate	Total		
Education	Illiterate	1(2.4%)	40(97.6%)	41	$\chi^{2=}$39.085 df=2	< 0.001
	Primary school and middle school	18(21.7%)	65(78.3%)	83		
	High school	18(69.2%)	8(30.8%)	26		
Shop Type	Permanent shop	37(30.8%)	83(69.2%)	120	$\chi^{2=}$12.279 df=1	< 0.001
	Road side shop	0(0.00%)	30(100.0%)	30		
Shop Registration	Registered	22(51.2%)	21(48.7%)	43	$\chi^{2=}$30.024 df=2	< 0.001
	Not-registered	6(7.5%)	74(92.5%)	80		
	Don't know	9(33.3%)	18(66.7%)	27		

χ^2= Chi sqauare test; df= degree of freedom

Table 3: Association of attitude and practices of barbers regarding BBVI with sociodemographic factors. (N=150)

Variables		Attitude and practice level			Stat Test	p-value
		Adequate	Inadequate	Total		
Education	Illiterate	3(7.3%)	38(92.7%)	41	$\chi^{2=}$72.60 df=2	< 0.001
	Primary school	12(14.5%)	71(85.5%)	83		
	High school	24(92.3%)	2(7.7%)	26		
Monthly Income	≤10000	9(15.0%)	51(85.0%)	60	$\chi^{2=}$6.289 df=1	0.009
	>10000	30(33.3%)	60(66.7%)	90		
Shop Type	Permanent shop	39 (32.5%)	81(67.5%)	120	$\chi^{2=}$13.176 df=1	< 0.001
	Road side shop	0(100.0%)	30(100.0%)	30		
Shop Registration	Registered	19(44.6%)	24(55.4%)	43	$\chi^{2=}$22.810 df=2	< 0.001
	Not-registered	8(10.0%)	72(90.0%)	80		
	Don't know	12(44.0%)	15(56.0%)	27		

χ^2= Chi sqauare test; df= degree of freedom

showed that, only one-fourth of the study participants had adequate knowledge, attitude, and practices. Most of the study participants had inadequate knowledge, attitude, and practices. Several literatures had similar findings, (3,5,11**,**12) except Dip Chand et al., Arulogun et al. and Biadgelegn et al. studies differences might be due to education level of study participants, majority of study participants in present study had completed primary level of schooling but in Dip Chand et al., Arulogun et al. and Biadgelegn et al. studies majority of study participants had completed secondary or senior secondary schooling. (6,13,14) Studies in India also found the similar results Soumit Roy et al. and Bhola Nathet al.(5,11) This might be due to less information, lower education level, young age.

4.1. Sociodemographic profile

In this study all the barbers were male. Most of the studies from India also had similar results while some international studies have some proportion of females Dip Chand et al. and Arulogun et al.[6] The reason might be in India males are commonly involve in this occupation and females are usually involve in beauty parlour. In this study, mean age was observed 33.0 ± 9.3 years. Bhola Nath et al., Soumit Roy et al. and Md Abdul Mumit Sarkar et al. found similar age group in their study.[3,5,11]

In present study half of study participants had completed primary education. The study done by Soumit Roy et al. in 2020 at Delhi, also found the similar result.[5] Bhola Nath et al. found higher education level of study participants it might be due to urban-rural differences, in present study participants were also enrolled form Najafgarh area, in Najafgarh there are many villages and Bhola Nath et al. study was conducted at urban area of Kanpur.[11] The study area was mostly rural area hence the education level of study participants was less in present study.

4.2. Knowledge of barbers regarding BBVI

In present study, most of the barbers had heard about at least one of the BBVI. Majority of barbers had heard about HIV. Many studies have similar results.[5,6,11] Present study found that only 34.7% of study participant heard about Hepatitis B and 8.7% heard about Hepatitis C. Soumit Roy et al. found relatively higher percentage.[5] In India, NACO majorly promotes awareness regarding HIV/AIDS, this could be the reason for less awareness regarding HBV and HCV among barbers.[4]

In this study, more than half of the study participants know the route of transmission, most of the study

participants know that BBVI can be transmitted through sexual contact. Similar findings are found in several studies.[5,6,11] In present study, more than half of study participants know that BBVI can be transmitted through needle sharing. Soumit Roy et al. found relatively higher percentage (73.6%).[5] Several studies found low percentages.[3,12,13] This might be due to education level of study participants, in several studies illiteracy rates are quite higher however in the present study only 27.3% of study participants were illiterate.[3,12,13]

In this study 39.3% believes that BBVI can be transmitted through barbers shaving instrument. Several studies found the similar result.[9]

Most common source of information is discussion with friends and family (81.3%), while very low number of study participant gain information from mass media (reason might be due to less resources) found in this study. Similar results were found in Soumit Roy et al. study.[5] In Bhola Nath et al. study common source of information was television, the difference might be due to study area Bhola Nath et al. study was conducted at urban setting and in present study participants were taken from Kapashera and Najafagarh which have many villages (urban- rural variations). And also Bhola Nath study was conducted in 2012, at that time use of television was more prevalent as compared to social media.[11]

More than one fourth (34.0%) of study participants had knowledge about vaccine for HBV. Several studies had found similar results.[3,12] A.H. Jokhio et al. found only 6.5% of study participants had knowledge about vaccine for HBV, the reason might be variation in education level.[13] In this study 46.7% of study participants had knowledge about contraceptives measures. Similar results were found in Bhola Nath et al. study.[11]

Majority of barbers had Inadequate knowledge (75.3%) and one fourth of the study participants had Adequate knowledge about BBVI in this study. Many studies found similar results.[3,5,11,12,14] Some studies found, barbers had Adequate knowledge regarding BBVI,[1,6,15] it might be due to difference in level of education.

The findings of the present study showed that there is a statistically significant relationship between knowledge regarding BBVI and level of education; knowledge regarding BBVI is increasing with increase in level of education and vice versa. Similar association between level of education and knowledge regarding BBVI were found in Usman NO et al. study.[14]

4.3. Attitude and practices of barbers regarding BBVI

In this study, only 28.7% of study participants were vaccinated against HBV. Md Abdul Mumit Sarkar et al. found similar results.[3] A.H. Jokhio et al. study found very less number (3.2%) of study participants were vaccinated, this might be due to majority of the study participants were illiterate.[13]

Most of barbers (74.7%) clean their instrument between customer. Similar results were found in several studies.[3,5,13]

Almost one- fourth of study participants wash their hands in between customer. Soumit Roy et al. found similar findings. Several international studies reveal that majority of study participants wash their hands in between every customer.[3,13] The reason might be better awareness or IEC materials available there.

Very few barbers use hand gloves during procedure in this study. Soumit Roy et al. found none of the study participants uses hand gloves during procedure, the reason might be the study area was rural area.[5]

Almost everyone changes new blade for every customer. Most of the studies had found the similar findings.[3,5,11,12,14] Reason could be the awareness regarding BBVI among general public is increased (Mass media and social media had played a major role).

Majority of barbers were applying alum to the wound in present study which is unhygienic practice and increases the risk of transmission of BBVI because same piece of alum is rubbed on wound of different customers. Similar findings were found in Bhola Nath et al. study. Soumit Roy et al. found majority of the barbers were practicing inadequate wound care. The reason might be low awareness and no training related to cut or wound care.[5,11]

Most of the barbers throw blades and sharp instruments in general bins. Bhola Nath et al. and Soumit Roy et al. study showed similar results. Reason might be low awareness regarding better disposal of sharp instruments among barbers.[5,11]

In the present study, three fourth of barbers had Inadequate attitude and practices and only one fourth of barbers had Adequate attitude and practices towards BBVI. Mercy Demaris Quarm et al. found Adequate attitude of barbers, the difference in result might be due to education level of study participants.[16]

The findings of the present study showed that there is a statistically significant relationship between attitude and practices of barbers regarding BBVI and level of education, attitude and practices regarding BBVI is increasing with increase in level of education and vice of versa. Similar findings were found in Soumit Roy et al. studies.[5]

However, there are some limitations of this study. List of the barber shops was not available, so the selection of barbers in study area was select conveniently. As practices of study participants were self-reported and not objectively monitored, social desirability bias cannot be overruled. Most of the study participants were from informal sector and hence the study results may not be generalisable to all barbers.

5. Conclusion

In the present study which was conducted in South-West district of Delhi showed that majority of barbers had inadequate knowledge about Blood borne viral infections, and most of them have inadequate attitude and practices regarding BBVI. Majority of them were not providing proper wound care. None of barbers were disinfecting blades before disposing it in public bin. Majority of barber shops were not registered.

This study showed that level of education of barbers is significantly associated with knowledge, attitude, and practices of barbers regarding BBVI. Knowledge, attitude, and practices of barbers regarding BBVI with registration of shop was found to be significantly associated.

Knowledge, attitude, and practice of barbers regarding BBVI can be improved by awareness regarding BBVI, IEC materials can be provided to barbers and social and behavior change communication (SBCC) can be conducted regularly. Periodic random monitoring or inspection can be done. Further research on the larger sample can be done. Qualitative research can be conducted for better understanding of barriers and enablers. Licensing and registration of barbers by local government authorities can help in providing training, vaccination, and monitoring quality of services. Guidelines need to be developed for running safe barber practices.

6. Source of Funding

None.

7. Conflict of Interest

None.

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