



# The Knowledge and Behavior of Hairdressers and Barbers on Blood-Borne Diseases

Kuaför ve Berberlerin Kan Yolu ile Bulaşan Hastalıklar Hakkında Bilgi ve Tutumları

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## ABSTRACT

**Objective:** Our purpose was to investigate the level of knowledge of hairdressers, barbers, manicurists and pedicurists who could easily get infected with certain blood-borne pathogens such as human immunodeficiency virus (HIV) hepatitis B virus (HBV) and hepatitis C virus (HCV).

**Materials and Methods:** This study was conducted on 147 barbers/hairdressers in the Adıyaman Province. Questionnaires were completed by the participants before the seminar in the training program co-prepared by Adıyaman Provincial Directorate of Health and the Chamber of Artisans. Those questionnaires completed by the participants were prepared after literature reviews.

**Results:** Thirty-six participants gave the correct answer to the question which was if HIV + HBV + HCV are the blood-borne pathogens. 72.9% of the respondents stated that HBV infection is, 21.9% of the participants stated that HIV infection is a blood-borne disease. Regarding the question on the correct use of razor blades and razors, only 10 participants (6.8%) said "I use a new one for each customer", which was the correct answer. 17.3% of the barbers-hairdressers got injured within the preceding month, and 49% of them within the past one year with sharp objects, such as blades and razors that they used on their customers. 60.1% of them were vaccinated against HBV, and 39.9% of them were not.

**Conclusion:** Barbers'/hairdressers' knowledge of the blood-borne pathogens is insufficient, and they do not pay adequate attention to protect their customers and themselves. (Viral Hepatitis Journal 2014; 20(2): 67-71)

**Key words:** Barbers, blood-borne diseases, knowledge

## ÖZET

**Amaç:** Human Immunodeficiency Virüs (HIV), Hepatitis B Virüs (HBV) ve Hepatitis C Virüs (HCV) gibi kan yolu ile bulaşan enfeksiyonlarla kolayca enfekte olabilen kuaförler, berberler, manikürçüler ve pedikürçülerin bu konudaki bilgi düzeylerini araştırmak.

**Gereç ve Yöntemler:** Çalışma Adıyaman ilinde 147 berber ve kuaför ile yapıldı. Adıyaman İl Sağlık Müdürlüğü ve Sanatkarlar Odası'nın beraber hazırladığı eğitim programı kapsamındaki seminer öncesi katılımcılar tarafından anketler dolduruldu. Anketler literatürler gözden geçirildikten sonra oluşturuldu.

**Bulgular:** Otuz altı katılımcı HIV + HBV + HCV'nin kan yolu ile bulaştığı doğru cevabını verdiler. Katılımcıların %72,9'u HBV'nin, %21,9'u HIV'in kan yolu ile bulaştığını belirtti. Tıraş bıçaklarının ve usturanın doğru kullanımı ile ilgili soruya sadece 10 katılımcı (%6,8) "Her bir müşteri için yenisini kullanırım" doğru cevabını verdi. Berber ve kuaförlerin %17,3'ü bir önceki ay %49'u son bir yıl içinde müşterilerine kullandıkları jilet ve ustura gibi keskin cisimlerle yaralandıklarını belirttiler. Katılımcıların %60,1'i HBV'ye karşı aşılanmış, %39,9'u aşısız idi.

**Sonuç:** Berber ve kuaförlerin kan yolu ile geçen patojenlere karşı bilgi düzeyleri yetersizdir ve kendilerini ve müşterilerini korumak için gerekli önemi göstermemektedirler. (Viral Hepatit Dergisi 2014; 20(2): 67-71)

**Anahtar Kelimeler:** Berber, kan yolu ile bulaşan hastalıklar, bilgi düzeyi

## Introduction

Hepatitis B virus (HBV) infection is a serious health problem. According to the World Health Organization (WHO) data, more than 2 billion people in the world have been infected with HBV, and

more than 350-400 million of them have chronic hepatitis B (CHB). Every year, 320.000 people die from chronic hepatitis, cirrhosis and hepatocellular cancer due to HBV (1-3).

Hepatitis B is one of the most important diseases most likely to be transmitted via blood. Sexual, perinatal and horizontal routes are

also possible ways of transmission. Infections that are not caused by parenteral, sexual or perinatal contact are defined as horizontal infections. Horizontal transmission is important in endemic regions like in our country. Sharing personal equipments and close contact with an infected person are thought to be responsible for horizontal transmission of HBV. Horizontal infection occurs when objects, such as toothbrushes, razors, scissors, and manicure-pedicure sets are shared by everyone at home, at barber shops and hairdressers (4-6).

Hepatitis B and C and HIV are transmitted through exposure to blood and blood components (7). Bleeding due to the habit of removing the cuticles of the finger and toes nails, without appropriate sterilization of instruments can be an important factor of contamination by hepatitis B virus (HBV) and hepatitis C virus (HCV) (8). It is known that after manicure and pedicure procedures, the risk of HBV infection increases (9). There is also increased risk for HCV infection shown in two different case-control studies held on blood donors and hepatitis C cases (9-11).

Despite rigorous attempts, underlying risk factor for HBV and HCV infections cannot be explained in 5%-50% of cases and remains to be elucidated. Furthermore, ignorant daily practices may predispose to transmission. It has been suggested that the most significant factor in infection occurrence was usually sharing of infected sharp objects (12).

Considering the HBV infection complications and its impact on quality of life, prevention of the disease is of great importance. In addition to vaccination, additional protective measures should be applied and paths of transmission of the virus must be eliminated. Occupational risks are the most significant factor that increasing risk of adult transmission of HBV. One of the occupational groups with high risk of spreading the disease is barbers. Especially, transmission can occur if razors, manicure and pedicure tools contaminated with blood and body fluids are used on other people without sterilizing them (13,14).

There has been limited research on the knowledge of blood-borne diseases of barbers and hairdressers who could easily get infected by HBV, HCV and HIV. Our purpose was to determine their level of knowledge on these certain infections.

## Material and Methods

This descriptive study was conducted on 147 barbers/hairdressers in the Adiyaman Province in April 2010. Questionnaires that were prepared after literature reviews were completed by the participants before the training in the training program co-prepared by the Adiyaman Provincial Directorate of Health and the Chamber of Artisans. Barbers and hairdressers were officially invited to the meeting by the Chamber of Artisans. All invited colleagues attended the training program and responded to the questionnaire. The data was entered to the SPSS 16.0 package program. For data analyses, descriptive statistics were used. After the questionnaires were completed, an informative seminar was conducted on blood-borne pathogens and general hygienic measures.

## Results

The demographic features of the participants are given in (Table 1).

Eighty-seven percent of the subjects stated that their job was risky in terms of blood-borne diseases, and 12.9% of them said that it was not risky. In response to the questions for evaluating the level of knowledge on blood-borne diseases related with their job, 31 participants reported having no idea. Thirty-six of them gave the correct answer to the question which was if HIV, HBV, and HCV are the blood-borne pathogens. 72.9% of the participants knew that HBV infection was a blood-borne disease, 24.4% of them knew that HCV infection was a blood-borne disease and 21.9% of them knew that HIV infection was a blood-borne disease.

Eighty-one participants reported using styptic pencils (to stop the bleeding), and 98.7% of them stated that they used single-use styptic pencils.

Twenty-six barbers-hairdressers got injured within preceding month, and 49% of them within the past year with sharp objects such as blades and razors that they used on their customers. Only 33.6% of the subjects had first aid cabinets in their workplace to treat injuries immediately. 60.1% of the participants were vaccinated against HBV, and 39.9% of them were not.

		<b>Men's barbers n=79</b>	<b>Ladies hairdressers n=68</b>
<b>Gender</b>	Male	79 (%100)	12 (%17.6)
	Female	-	56 (82.4)
<b>Educational status</b>	Elementary school graduates	19 (%24.1)	9 (%13.2)
	Secondary school graduates	35 (%44.3)	22 (%32.4)
	High school graduates	23 (%29.1)	34 (%50.0)
	Universty graduates	2 (%2.5)	3 (%4.4)
<b>Social security</b>	Yes	37 (%46.8)	36 (%52.9)
	No	42 (%53.2)	32 (%47.1)
<b>Professional position</b>	Master barbers	64 (%81.0)	57 (%83.8)
	Qualified barbers	15 (%19.0)	9 (%13.2)
	Apprentice barbers	-	2 (%2.9)
<b>Age (year)</b>	Average (Standard deviation)	32.3±10.2	30.9±7.0
<b>Work duration (year)</b>	Average (Standard deviation)	18.1±10.1	12.4±6.0
<b>Average income</b>	Average (Standard deviation)	1129.1±1290.1	1389.3±817.3

Assessment of participants knowledge on risky tools such as razor blades, manicure-pedicure sets, scissors, depilatory needles, combs and brushes and hairclips are given in (Table 2).

Seventy-nine point nine percent of the participants had a schedule to keep their workplace clean. Regarding the questions on how they cleaned their counters and floors, 40.8% stated that they did not do daily cleaning, and 59.1% of them stated that they did daily cleaning with detergent solution. 23.8% of the participants stated that they did daily cleaning, and also overall cleaning once a week using household bleach, and 8% of them stated that they did daily cleaning, and also overall cleaning once a month using household bleach.

Seventy-nine point six percent of the participants disposed of tools like razor blades and razors that were in contact with blood in the regular garbage, and 10.9% of them disposed of them in a separate waste container, and 8.8% of them disposed of them in medical waste containers.

Regarding the questions on what they did to protect themselves and their customers, 12.2% reported doing nothing, - 38.7% using protective gloves, - 65.3% - washing their hands, - 51.1% using working clothes, - and 59.5% reported using protective masks.

The answers regarding on which procedures the participants used protective gloves, how frequent they washed their hands and which sterilization technique they used to avoid contamination in work places are given in (Table 3).

Regarding the question on the correct use of razor blades and razors, only 10 participants said "I use a new one for every customer", which was the correct answer. Fourty participants replied "I wipe them with cologne", and 8 participants replied "I wash them with detergent", and 17 participants replied "I boil them".

	Yes (%)	No (%)
Razor blades were risky	75.5	24.5
Manicure-pedicure sets were risky	44.2	55.8
Scissors were risky	39.4	60.6
Depilatory needles were risky	37.4	62.6
Combs and brushes were risky	49.6	50.4
Hairclips were risky	35.3	64.7

Application	n=147	%
<b>Sterilization technique</b>		
Ultraviyole	72	48.9
Boiling method	38	25.8
Dry heat	20	13.8
Autoclave	17	11.5
<b>Personel protector</b>		
Never used gloves	70	47.8
Wore gloves during waxing	35	23.8
Wore gloves during depilation	18	12.2
Wore gloves every procedure	29	19.4
<b>Frequency of washing their hands</b>		
After every customer	82	56
When their hands got dirty	35	24
At the end of their working hours	30	20

Regarding the questions for assessing their knowledge on the use and cleaning of towels and working clothes, none of the participants stated that they used single-use towels and working clothes, and 23.8% reported using different materials for each customer and washing the materials with detergent solution after use. It was noteworthy that 23.1% of the participants reported using the same materials on all customers until the materials get dirty.

## Discussion

Hairdressing is a profession based on skills training. This training is provided in our country by the Chamber of Hairdressers, Ministry of National Education, Public Training Centers, the Chambers of Merchant Craftsmen, and private institutions. In addition to these, apprenticeship is another way to learn the profession (13-15). Percentage of getting vocational training was determined to be 53.7% in a study by Şahin et al. and 21.8% in a study by Hidroğlu et al. and 52% in a study by Boztaş et al. (1,16,17). In our study, the percentage of getting vocational training was determined to be 43.6%. Furthermore, 40.3% of the participants stated that they were trained on blood-borne diseases.

Educational level of hairdressers and barbers is very important for understanding and considering blood-borne diseases. 45.5% of the participants of the study by Hidroğlu et al. and 54.3% of the participants of the study by Kişioğlu et al. were elementary school graduates (16,18). In this study, 19% of the participants were elementary school graduates, - 38.8% secondary school, - 38.8% high school, - and 3.4% of them were university graduates.

Awareness and knowledge are important for protection from diseases. Hidroğlu et al. reported in their study that 96.4% of the hairdressers had heard of HBV (16). In a study by Janjua and Nizamy on barbers, 13% of the participants knew that HBV and HCV infections were disease of the liver and caused jaundice (19). This percentage was 50.4% in the study by Şahin et al.. A similar study conducted in Pakistan showed that 38% of the barbers heard of hepatitis (13,20). In the study by Boztaş et al., most of the participants stated that their tools had risk of infection (17). In a study by Murtagh et al., knowledge of hepatitis C and its transmission was poor, with 62% of respondents incorrectly identifying the prevalence of hepatitis C and respondents incorrectly identifying sneezing (28%), kissing (46%) and sharing coffee cups (42%) as a modes of transmission. 80% of the procedures carried out by beauty therapists in one weeeek were reported to have led to exposure to blood (21). Regarding the degree of knowledge and level of awareness about viral hepatitis routes of transmission and prevention, 72% of the participants in a study by Oliveira et al. did not know the transmission routes of hepatitis B and 93% did not know how to prevent it. As to hepatitis C, 85% knew how the transmission occurred and 95% did not know how to prevent it; the other 3% of the subjects had a sufficient knowledge (22). 87.1% of the barbers and hairdressers, who participated in our study, stated that their job was risky in terms blood-borne diseases, and 12.9% of them said that it was not risky. 72.9% of the participants knew that HBV was a blood-borne disease, but the percentage of those who knew that HCV and HIV were also a blood-borne disease was very low (24.4%, 21.9%, respectively).

The percentage of people working at barbershops and salons with objects that they use on their customers was reported to be

16.7% in the study by Boztaş et al., and 17.2% in a study by Önder et al. (17,23). In the study by Hidroğlu et al., the percentage of employee injuries with manicure and pedicure tools once or more than once was 60.9% (16). 30% of the participants in the study by Boztaş et al. stated that they were injured by sharp objects at least once within the preceding month (17). This shows that 3 out of 10 hairdressers experienced risky contacts during the preceding month in terms of acquiring HIV, HCV and HBV. In our study, 17.3% of the barbers-hairdressers got injured within the past one month, and 49% of them within the past one year with sharp objects like blades and razors that they used on their customers. It was noteworthy in our study that only 33.6% of the subjects had first aid cabinets in their work places to manage injuries immediately. Upon those findings, we conclude that barbers are not aware of the seriousness of the risky contacts. They ignore their cuts with sharp objects which may lead to transmission of blood-borne pathogens.

The study by Boztaş et al. showed that only 19% of the subjects working at hairdressers and salons got the hepatitis B vaccine (17). The study by Hidroğlu et al. showed that 72.7% of the participants did not get vaccinated against HBV (16). The percentage of not getting vaccinated is 60% in Canada (14). In the study by Kişioğlu et al., which was conducted on male barbers, the percentage of not having gotten vaccinated was 86.2% (18). Our study showed that 60.1% of the participants in our study were vaccinated against HBV and 39.9% of them were not. The reason for this high percentage of vaccination was associated with the fact that the Adiyaman Provincial Directorate of Health conducted a scanning and vaccination program for hairdressers and barbers 3 years ago.

There are only a few studies on barbers' practise in preventing blood-borne diseases. The risk associated with this infection way is usually ignored (14,16). According to the results of a study on the knowledge of HIV and approaches of manicure-pedicure and depilation staff working at hairdressers and salons in Ankara, it was determined that these people's knowledge was insufficient and they wanted to get educated on these issues; and also, their tools were inadequately sanitized and sterilized. It was also observed that hairdressers, who participated the training under the scope of a questionnaire on determination of needs, have insufficient knowledge of issues like sanitization, sterilization, washing hands and using protective gloves (16,23,24). Likewise, our study has shown that knowledge of hairdressers and barbers on blood-borne diseases, protection ways, sterilization and sanitization of their tools was inadequate.

The knowledge and awareness of barbers and hairdressers on the transmission of AIDS, and hepatitis B and C are of great importance. There are some unsafe practices that may lead to infections due to blood-borne viruses, for example, negligence in using beauty instruments such as needles for tattooing and razors for shaving can make these tools important factors in transmission of the infection from one client to another (25,26). The results of some studies consistent with our findings show that barbershop and salon staff and their customers are under serious risk (16,23,24). In our study, regarding the questions on what they did to protect themselves and their customers, 12.2% of the participants reported doing nothing, -38.7% - using protective gloves, - 65.3% washing their hands, - 51.1% using working clothes, and 59.5% of subjects reported using protective masks.

In the study by Boztaş et al., 71% of the participants stated that they washed their hands regularly after each customer, and this rate was 59.5% in a study conducted on 489 hairdresser and salon employees in 1999 in Ankara (17). In our study, 56% of participants stated that they washed their hands after each customer, and 24% reported washing hands when their hands get dirty, and 20% of the subjects stated that they washed their hands at the end of their working hours.

In the study by Boztaş et al., 58% of the participants used protective gloves, which are barriers against blood and body fluids, and are effective for protection against many diseases including acquired immunodeficiency syndrome (AIDS) and Hepatitis B (17). Percentage of using protective gloves is equal to the findings of other studies conducted in Ankara (16,17). In our study, 47.8% of participants stated that they have never used gloves, - 23.8% wore gloves during waxing, - 12.2% wore gloves during depilation,- and 19.4% of participants reported wearing gloves during each procedure.

Today, the use of single-use materials is becoming widespread in modern salons (15). In a study conducted in Canada, it was stated that despite the warnings of manufacturers of such materials, salon employees use the manicure-pedicure tools more than once, and they mostly use isopropyl alcohol for sanitization (14). In our study, it was determined that most of the materials, other than styptic pencils and wax spatulas, were used more than once after sterilization, and no single-use materials were used. The most noteworthy finding of our questionnaires was that only 10 of the 78 men's barbers stated that they used single-use razor blades or razors and disposed of them after use.

In the study by Hidroğlu et al., although almost all the manicurists-pedicurists who participated in the study stated that they used sanitization methods to prevent infections, it was found that their sanitization methods were actually not reliable, scientific or effective methods (16). In the study by Boztaş et al., it was determined that the cleansing methods used by manicurists-pedicurists for their tools were various, but only 10% used the right method (17). In the study by Hidroğlu et al., it was seen that most of the participants did not know correct sanitization methods like autoclave (16).

In our study, 2.6% of participants reported using different manicure-pedicure sets for each customer, - 54% using sanitizer devices, - 24% soaking their tools in household bleach solution, - and 8% of the participants stated that they boiled their tools. It was noteworthy that those, who used household bleach, used it improperly.

In the study by Boztaş et al., 33% of the participants were performing depilation, and 97% of them stated that their customers had their own depilation needles, and their customers brought their needles with them (17). In our study, 27% of the participants said that they performed depilation, and the ratio of needle-depilation was 4%, and every customer had their own needle. These percentages show that there is awareness of using different depilation needles for every customer. Different depilation needles used for each customer; same approach should be taken in manicure and pedicure: Different tools should be used for each customer. If separate tools cannot be purchased for every customer, then the customers should be asked to purchase their own tools for their health. In our study, 42% of participants stated that they performed manicure-pedicure, and the percentage of using a different set for each customer was 2.6%.

Tools, such as razor blades, razors and depilation needle tips which can be risky regarding blood-borne infections, should be disposed of in medical waste containers in order to prevent contamination. In our study, it was noteworthy that 79.6% of participants disposed of materials such as razors contaminated with blood in regular waste containers.

Consequently, when we consider our study and the literature, it is revealed that barbershop and salon employees behave inattentive during work, although they use risky tools that could be contaminated by blood-borne pathogens, and they are under risk of getting injured with their tools. This shows that their knowledge on the subject is insufficient or they do not pay adequate attention to protect their customers and themselves. We think that these professionals should be trained on vocational risks and they should be audited more frequently.

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