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EVALUATION OF INFECTIOUS RISKS IN HAIRDRESSING SALONS IN N'DJAMENA, CHAD

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ABSTRACT

Hairdressers in their profession continue to expose themselves and their clients to multiple communicable diseases. The objective of this work was to assess the infectious risk associated with the hairdressing profession in the city of N'Djamena. This was a prospective cross-sectional study, carried out in N'Djamena. A standardized sheet made it possible to collect socio-demographic data and those related to the practice of hairdressers during a direct interview. These data were analyzed by the SPSS software with usual statistical tests. Three hundred (300) male hairdressers were included. The mean age was 26.4 ± 5.6 years. Hygiene measures were not followed in 74% (n = 222) of cases. More than 70% (n = 212) regularly used cutting tools. One hundred and seventy-one hairdressers (57%) were frequently exposed to injuries during the procedure. Clients had skin lesions in 84% of cases (n = 252). A large majority (74%, n = 222) reported disinfecting after injuring themselves. Likewise, a large proportion (85%, n = 256) reported performing disinfection after a skin lesion that occurred to clients during hairdressing. Regarding the hygiene measures adopted, only 26% (n = 78) stated to wash their hands always before hairdressing against 55% (n = 165) after hairdressing. Hairdressers who received training were better equipped with regard to wearing gloves (p = 0.001) and disinfecting equipment before use (p = 0.015). Hairdressing salons are a significant route for the transmission of infectious diseases. Specific training actions should be taken by hairdressers to minimize the infectious risks associated with their profession.

KEYWORDS: Infectious risk, Hairdressers, Communicable diseases, Chad.

INTRODUCTION

Hairdressers in the practice of their profession continue to expose themselves and their clients to multiple infectious diseases. These are mainly viral hepatitis (B and C), infection with the acquired immunodeficiency virus (HIV), syphilis, mycosis, scabies's, etc.[1] The infection can come from a previous client, the hands of the hairdresser, or contaminated equipment. Shaving has been shown to generate micro-cuts in the skin[2], detachment of scales and destruction of the stratum corneum.[3] These lesions are the gateways to infections.

In Morocco, according to a study carried out on the risk of infection linked to blood among traditional hairdressers and barbers and their clients in Casablanca, hygienic conditions were defective. The notion of the risk of infection linked to blood was in the majority of cases unrecognized, in particular for viral hepatitis B and C. Lack of vaccination was the rule.[1]

In Togo, HIV / AIDS infection was known to all hairdressers. Decontamination of sharps was done before use in 88.2% of hair salons. However, alcohol was the most used disinfectant by the majority (89.3%) of hairdressers. In the event of a blood exposure accident, 69.6% of hairdressers cleaned the exposed site with alcohol.[5]

In Chad, the prevalence of viral hepatitis B and C, according to a study by Bessimbaye et al. was 13.5% and 2% respectively and that of HIV was 1.6% in the general population.[6,7] However, the knowledge, perception and practices of hairdressers in the face of infections are not known. Thus, we deemed it useful to carry out this study on the risk of infection linked to the practice of

hairdressers in Ndjamena, in order to guide control strategies.

METHODOLOGY

This was a prospective cross-sectional study. The study included 300 male hairdressers from different districts of the city of N'Djamena. Included were hairdressers present who agreed to participate in the survey and answered all questions during the survey period. A standard questionnaire had been designed comprising several sections, in particular socio-demographic characteristics, basic knowledge of communicable diseases, prevention, the concept of vaccines, sources of information, the attitude and behavior of hairdressers in the face of risk. infectious related to their profession. The questionnaire was completed by the respondents. For those who could not read and write French, the questionnaire was completed by the interviewer during a face-to-face interview.

The data collected was analyzed by SPSS (Statistics Package Social Sciences version 17) software for the study of frequency and correlations. The Chi-square test was used with a significance level $p < 0.05$.

RESULTS

Sociodemographic characteristics

Our investigation enabled us to interview three hundred (300) hairdressers. The mean age was 26.4 ± 5.6 [16-50] years. The most represented age group was 25-34 years old. Singles represented 54% (n = 162). The majority of hairdressers had a secondary level: 60.3% (n = 181). The average length of service in the profession was 3 years ± 1.4. Almost half had a low income (below the minimum wage, 60,000 FCFA).

In addition, within the framework of their profession, 23% declared having been trained in various fields of STI and hygiene**.**

Table 1: Distribution of respondents according to socio-demographic characteristics.

Characteristic	n	%
Age range		
16-24	126	42.0
25-34	143	47.6
35-44	28	9.3
≥45	3	1.0
Marital status		
Married	133	44.3
Célibataire	162	54.0
Others	5	1.6
Level of study		
Primary	31	10.3
Secondary	181	60.3
Koranic	44	14.7
University	34	11.3
Not in school	10	3.3
Seniority in Profession (year)		
< 1	47	15.7
1 – 3	76	25.3
4 – 5	61	20.3
6 -10	51	17.0
> 10	65	21.7
Monthly income (F CFA)		
< 60 000	148	49.3
60 000-200 000	152	50.7

% = percentage, n = effective

Infectious risk

Hazardous objects used likely to transmit diseases

Razor blades, pairs of scissors and mechanical or electric clippers were regularly cited by our respondents.

It should be noted that those who were injured by sharp objects while practicing their art were in the majority (57%, n = 171). Two hundred and fifty-two or 84% admitted to accidentally injuring their clients during hairdressing.

Practical attitude adopted by hairdressers in the face of an accident of exposure to blood

The vast majority (74%, n = 222) reported disinfecting after injuring themselves. Likewise, most (85%, n = 256) reported performing disinfection after a skin lesion that occurred to clients during hairdressing.

Table 2: Distribution of respondents according to the means of disinfection used.

	Means of disinfection	n	%
	Alcohol	**137**	**45.7**
	Buckling and alcohol	30	10.0
	Buckling	25	8.3
	Water, alcohol buckling	21	7.0
	Bleach	20	6.7
	Alcohol and bleach	15	5.0
	Not answered	**15**	**5.0**
	Water	13	4.3
	Alcohol, bleach, buckling	10	3.3
	Water, alcohol, bleach	9	3.0
	Water and alcohol	3	1.0
	Detergent	1	0.3
	Oil	1	0,3
Total		300	100.0

Regarding the hygiene measures adopted, only 26% (n = 78) stated to wash their hands always before hairdressing against 55% (n = 165) after hairdressing. The vast majority did not wear gloves, aprons and mufflers to protect themselves with proportions of: 81.6% (n = 245), 75.3% (n = 226) and 57% (n = 171) respectively.

Table 3: Distribution according to the hygiene measures adopted.

Hygiene measures	Always	Occasionally	Never	Total
Hand wash before styling	**78 (26.0)**	103 (34.3)	119 (39.7)	300 (100.0)
Hand wash after styling	**165 (55.0)**	110 (36.7)	25 (8.3)	300 (100.0)
Wearing gloves	11 (3.7)	44 (14.7)	**245 (81.6)**	300 (100.0)
Wearing a muffler	53 (17.7)	76 (25.3)	**171 (57.0)**	300 (100.0)
Wearing aprons	28 (9.3)	46 (15.3)	**226 (75.3)**	300 (100.0)

Analysis of the attitude of hairdressers based on the training received

The attitude of the hairdressers surveyed with regard to the wearing of gloves during the procedure and the disinfection of equipment after use are reported in Table 4.

Table 4.

Attitude	Hygiene / HIV / hepatitis / STI training			
		Yes	No	*p*
Wearing gloves during hairdressing	Always	4	7	0.001
	Occasionally	19	25	
	Never	46	199	
Disinfection before use	Always	53	135	0.015
	Occasionally	15	81	
	Never	1	15	

P = probability

The difference was statistically significant between the training received compared to wearing gloves (Khi^2 = 13.697 and p = 0.001). The statistical difference was also significant between the attitude that hairdressers have to disinfect equipment before use compared to the training received on hygiene, sexually transmitted infections (STIs) and others (Khi^2 = 8.344 and p = 0.015).

The study found that many hairdressers who had received training were tested for HIV, unlike those who were not trained. The difference was also statistically significant between having been trained or not compared to HIV screening (Chi-square = 7.390 and p = 0.007). Moreover, with regard to the level of knowledge about the mode of transmission of HBV, it appears that more than half of hairdressers declared having no idea about the mode of transmission of HBV with 54.3% (n = 163).

DISCUSSION

The profession of hairdresser for men in Chad is still reserved today for men for socio-cultural reasons, while in some countries in Asia and Europe, women also practice it (China, Great Britain, etc.). The average age

of the hairdressers was 26.4 ± 5.6 [16-50] years old. The 25-34 age group was in the majority. The same observation was made by Teclessou et al. in Togo (25 ± 7.38 years).[5] This predominance of young people has also been reported by Zahraoui et al. in Morocco.[1] In our context, this could be explained by the increasing number of unemployed young people, who are taking up this profession while waiting to find a job. On the other hand, in Nigeria, the trade is practiced by adults (average age 36 ± 10.2 years).[8]

According to the level of education, the hairdressers surveyed had a secondary level in most cases (60.3%), followed by far by those who had received lessons at Koranic school (14.7%). Hairdressers with higher education were poorly represented with only 11.3%, as well as the primary level (10.3%). Out-of-school people are in the minority in the series (3.3%). This result is different from that observed by Zahraoui et al., In Morocco, where 12% were out of school and 56.5% had a level of education that did not exceed primary.[1] This result could be explained on the one hand by the fact that our study population consists of many young people who have dropped out of school, on the other hand by the low literacy rate in Chad.[9]

Hairdressing salons are a place of transmission of infectious diseases. It has been shown that shaving during hairstyles generates micro-cuts in the epidermis[2], detachment of scales and destruction of the stratum corneum.[3] These lesions are the gateways to infections. Hairdressers, as well as their clients, are not immune to communicable infectious diseases because of their unenviable behavior and attitude when faced with certain risky situations. Regarding the work equipment used, the vast majority of respondents (70.7%) regularly handle razor blades, pairs of scissors, clippers (electric and / or mechanical), combs and brushes for hairstyles and shaves. Cutting hair with scissors or clippers often ends with shaving the periphery of the scalp and shaving the beards with razor blades or scalpels. The same hairdressing instruments have also been found in several studies, notably in Morocco, Togo and Nigeria.[1,5,8] It must be said that these sharp objects are generally the source of injuries or micro injuries (gone unnoticed) to which hairdressers and their clients are victims, which can constitute entry points for many infectious diseases (especially HIV and HBV, VHC), if no hygienic rule is observed. Worse yet, nearly a quarter (24.3%) of the study population relies on clean water, alcohol, cotton wool, and linen to cover customers only.

Also, very few of them regularly cite gloves (3.7%), apron (9.3%) and muffler (17.7%) among the protective materials used during hairdressing. It must be said that only 26% wash their hands before the act and 55% after finishing the work. While in Morocco, 45% felt that they were protected against the risks of infection by using their work apron (32%) and washing their hands with soap or alcohol (40%).[1]

As for their disinfection methods, 62.7% say they always disinfect work equipment before use. Unfortunately, these methods used are not enough to reduce the risk, but rather could constitute one more link in the chain of spread of communicable diseases. Among the means of disinfection, 45.7% of the respondents cite alcohol and 8.3% the simple passage of the flame as a method of sterilization. The same observation was also made among hairdressing professionals in Morocco, where the means used for disinfecting the equipment were passage under the flame (38%), cleaning with alcohol (52%) and washing with bleach (72%).[1]

If the means of disinfection in our respective studies do not seem to be sufficiently effective, this is undoubtedly due on the one hand to the lack of information on STIs and the absence of a training program in this sector, on the other hand to the non-regulation of this profession how often at risk by the authorities.

Faced with the frequent handling of sharp and sharp objects, hairdressers and their clients, it should be remembered, are not immune to the trauma that could be caused by these instruments. Indeed, 36.8% admit to having injured themselves several times during the performance of their duties. We have observed that seniority in the profession has no influence on the risk of accidents exposing to risky products (blood, sweat, soiled laundry). The difference is not statistically significant between the fact of injuring oneself or not during the hairstyle compared to the professional length ($p = 0.780$). This state of affairs seems more worrying as 84% of our respondents admit to frequently injuring their clients during hairdressing, especially when shaving beards and the peripheral part of the scalp. This situation is much more alarming if adequate hygiene measures are not applied, and whether the equipment is not at all or not disinfected between two customers. We also found that seniority in the profession in no way reduces the risk of skin lesions caused in clients ($p = 0.057$).

The vast majority (74%, n = 222) reported disinfecting after injuring themselves. Likewise, most (85%, n = 256) reported performing disinfection after a skin lesion that occurred to clients during hairdressing. Regarding the hygiene measures adopted, only 26% (n = 78) stated to wash their hands always before hairdressing against 55% (n = 165) after hairdressing. The vast majority did not wear gloves, aprons and mufflers to protect themselves with proportions of: 81.6% (n = 245), 75.3% (n = 226) and 57% (n = 171) respectively. The difference was statistically significant between the training received versus wearing gloves (p = 0.001). The statistical difference was also significant between the attitude of hairdressers to disinfect equipment before use compared to the training received on hygiene, STIs and others (p = 0.015).

It appears from this study that many hairdressers who had received training, were tested for HIV unlike those

who were not trained. The difference was also statistically significant between having been trained or not compared to HIV testing (p = 0.007).

Our study shows that having received training on STIs and others has a positive influence on HIV testing at our hairdressers. The difference is statistically significant between the level of education compared to screening (*p* = 0.001).

With regard to HBV, the majority of the study population (54.3%) ignore the modes of transmission of viral hepatitis B. They are: 22.7% and 10% respectively, to cite the route blood and sexual as a mode of transmission. Among those surveyed, 10% believe that HBV is transmissible through saliva. The latter confuse the mode of transmission of HBV to HAV and HEV, which are diseases with faecal-oral transmission.[10] The same observation was made in Libya by Ehmadi et al., Who reported a lack of knowledge of the population with regard to transmission. Only 17.6% of the participants were aware of the modes of transmission of HBV.[11] On the other hand, concerning vaccination, the Libyan respondents had better knowledge.

CONCLUSION

At the end of this study conducted among hairdressers in Chad, we can conclude that the risk of infection is a real health problem in our context of a country with limited resources. This is in part due to the ignorance of hairdressers who have very limited knowledge about communicable diseases apart from HIV infection.

However, educated and trained hairdressers were better equipped.

This situation must be of concern to health professionals, public authorities, as well as all hairdressers and their clients. And this for a collective awareness, so that basic preventive measures are applied to limit the risk of contamination in hairdressing salons in Chad.

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CONFLICTS OF INTEREST

There are no conflicts of interest.

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