

## BIOSSEGURANÇA EM SALÕES DE BELEZA: AVALIAÇÃO DA ESTRUTURA E DISPOSITIVOS

### BIOSAFETY IN BEAUTY SALONS: STRUCTURE AND DEVICES EVALUATION

### BIOSEGURIDAD LOS SALONES: ESTRUCTURA DE LA EVALUACIÓN Y DISPOSITIVOS

Juliana Ladeira Garbaccio<sup>1</sup>, Adriana Cristina de Oliveira<sup>2</sup>

#### RESUMO

**Objetivo:** avaliar a estrutura física, os dispositivos presentes em salões beleza e a dinâmica da limpeza/desinfecção de superfícies e mobiliários nesses estabelecimentos. **Método:** Trata-se de um estudo transversal, envolvendo 235 salões de beleza. Foram entrevistadas manicures/pedicures e observados a estrutura física dos salões e métodos de esterilização. **Resultados:** O tamanho médio dos salões foi de 67 m<sup>2</sup>, sendo que 49% dispunham de sala exclusiva para manicures/pedicures; 2% não possuíam banheiro; 30% dispunham de uma única pia e, em 43% deles, havia um local próprio destinado à limpeza de artigos. O método de esterilização utilizado, predominantemente, foi o calor seco (61,7%), sendo que, em 35,3% dos casos havia autoclave e, em 33,2%, foi realizada a validação da esterilização pelo uso do indicador biológico. A limpeza de superfícies entre clientes foi referida por 2% dos estabelecimentos. **Conclusão:** A estrutura dos salões precisa ser revista, os espaços parecem não atender a demandas mínimas para as atividades desenvolvidas, com condições adequadas de funcionamento, o que aumenta o risco biológico, como a ausência de sanitários ou o compartilhamento de uma única pia para atividades distintas. Ações educativas e orientações seguras de funcionamento visando à segurança da saúde de profissionais e clientes são necessárias e emergenciais.

**Descritores:** Centros de embelezamento e estética; Podiatria; Exposição a agentes biológicos; Precauções universais.

#### ABSTRACT

**Objectives:** to evaluate the physical structure, devices present in beauty salons and the dynamics of surfaces and furniture cleaning/disinfection in these establishments. **Method:** This was a cross-sectional study, involving 235 beauty salons. We interviewed manicurists/pedicurists, observing the physical structure of the salons and sterilization methods. **Results:** The average size of the salons was 67 m<sup>2</sup>, 49% had an exclusive room for manicurists/pedicurists; 2% did not have a bathroom; 30% had a single sink for all types of use, and in 43% of them, there was a separate space for cleaning items. Dry heat was the predominant method of sterilization (61.7%), in 35.3% of the cases, there was an autoclave, and in 33.2%, the sterilization was validated using the biological indicator. Cleaning of surfaces between customers was reported by 2% of the establishments. **Conclusion:** The structure of the salons needs to be reviewed, the spaces do not seem to meet the minimum demands for the developed activities, with adequate operating conditions, which increases the biological risk, such as the absence of toilets or sharing a single sink for different activities. Educational actions and safe guidance for operation aiming at the health safety of professionals and clients are necessary and emergency.

**Descriptors:** Beauty and aesthetics centers; Podiatry; Exposure to biological agents; Universal precautions.

#### RESUMEN

**Objetivo:** Evaluar la estructura física, los equipamientos utilizados en los salones de belleza y la dinámica de la limpieza/desinfección de superficies y mobiliario en estos establecimientos. **Método:** Se realizó un estudio transversal con 235 salones. Manicuristas y pedicuristas fueron entrevistados, observando la estructura física de las salas y métodos de esterilización. **Resultados:** Las áreas de trabajo promedio fueron de 67 m<sup>2</sup>, de los cuales el 49% tenían áreas exclusivas para manicuristas/pedicuristas; 2% no tenían baño; 30% tenían solamente un fregadero, y en el 43% de ellos, había un sitio propio para la limpieza de los elementos. El método más utilizado de esterilización es por calor seco (61,7%), y había el método autoclave (35,3%), y en el 33,2%, la validación de la esterilización fue utilizada por medio del indicador biológico. La limpieza de superficies entre los clientes fue informada en el 2% de los establecimientos. **Conclusión:** La estructura de los salones necesita ser revisada, los espacios parecen no cumplir los requisitos mínimos para desarrollar las actividades en óptimas condiciones, aumentando el riesgo biológico, como la falta de baños o la utilización del único fregadero para diferentes actividades. Acciones educativas y orientaciones seguras de funcionamiento visando a la salud de los profesionales y clientes son necesarias y de urgencia.

**Descritores:** Centros de embellecimiento y estética; Podiatria; Exposición a agentes biológicos; Precauciones universales

<sup>1</sup>Graduada em Enfermagem e Odontologia. Doutora em Enfermagem pela Universidade Federal de Minas Gerais. Docente na Pontifícia Universidade Católica de Minas Gerais – PUC/MG. <sup>2</sup>Graduada em Enfermagem. Doutorado em Enfermagem pela Universidade de São Paulo. Docente na Universidade Federal de Minas Gerais.

#### Como citar este artigo:

Garbaccio JL, Oliveira AC. Biosafety in beauty salons: structure and devices evaluation. Revista de Enfermagem do Centro-Oeste Mineiro. 2018;8:e1833. [Access \_\_\_\_\_]; Available in: \_\_\_\_\_. <https://doi.org/10.19175/recom.v7i0.1833>

## INTRODUCTION

The establishments that provide services in the area of beauty and aesthetics are part of the current world scenario and increasingly attended by a larger contingent of people. In Brazilian population appreciates body aesthetics: some need to be in perfect harmony with the established standards to achieve a socioeconomic level and others, in order to improve the self-esteem<sup>(1)</sup>. Studies conducted in the United States and Canada show that the appearance has positive impacts such as workers' incomes and employability<sup>(1)</sup>.

Recently, the functions of hairdresser, barber, beautician, manicurist, pedicurist, shaver and makeup artist were recognized throughout the national territory by means of Brazilian Law 12,592/2012, and a large part of these professionals exert their activities in beauty salons<sup>(2)</sup>.

The professionals of the body aesthetics manipulate areas of the human body inhabited by microorganisms, both the normal as transitory microbiota, that may be potentially infectious agents and transmitted by direct contact, by articles and substances contaminated or by accidents with needle-sharp material<sup>(3,4)</sup>. Therefore, the accession to biosafety measures is essential in order to preserve the health of employees and customers and, for this reason, some points as the physical structure of the salon, the presence of devices and equipment in good conditions of use, which allow cleaning/disinfection procedures, are necessary. In accordance with Law 3,632, of 30 July 1999, the salon must meet the minimum requirements of health and safety, which include: proper relationship between the size of the establishment versus the number of employees and customers; adequate lighting for performing the services; washroom; areas for processing (cleaning, disinfection and sterilization) articles; number of sinks and suitable location to allow the hand hygiene<sup>(3,4)</sup>.

In the public health context, specifically in terms of aspects of health surveillance, the proper cleaning and disinfection of surfaces and objects in beauty salons, with techniques recommended by health agencies, are essential and mandatory to prevent the spread of pathogens. With this, some precautions are necessary to reduce the risk of contamination, such as washing of hands, use of individual

protection equipment, vaccination of professionals, sterilization of articles, cleaning/disinfecting the environment and adequate physical structure of establishments<sup>(5)</sup>.

For the segment of beauty and aesthetics, different from the vast literature found within the hospital, there is a lack of well-delineated researches directed to the assessment of the physical structure of the beauty salons and a lack of studies on the knowledge and adherence of professionals to biosafety measures. Even so, the few studies that address this issue demonstrates a reality similar to the health area regarding the low adherence to some biosafety measures<sup>(3,5)</sup>. However, they differ in the aspect of technical training, revealing beauty professionals with scarce knowledge and, therefore, uninformed about biosafety protocols drawn up by national and international organizations responsible for recommendation for prevention of injuries to the health of the population<sup>(6,7)</sup>.

Therefore, the guiding question of this research is: How are the physical structure, cleaning, environment and materials disinfection and devices related to biosafety in beauty salons?

The problems related to the functioning structure of beauty salons that affect the safety of the working class and the customers pass by precarious training, as well as lack of knowledge about health requirements and the risk of infections caused by the susceptibility to imbalances in epidemiological triad: agent, host and environment<sup>(3)</sup>.

Thus, the objective of this research was to evaluate the physical structure, the devices present in beauty salons and the dynamics of the cleaning/disinfection of surfaces and furniture in these establishments. This assessment may allow constructing reflections, stimulating other studies about this theme, and the results may subsidize new discussions and knowledge advancement for the beauty segment, for the bodies and professionals of health surveillance.

## METHOD

This is a cross-sectional study, conducted in the period from June 2012 to March 2013, at beauty salons in Belo Horizonte, Minas Gerais, Brazil, after approval by the Research Ethics Committee at the Federal University of Minas Gerais (CAAE - Opinion # 0195.0.203.000/2011).

A single professional (manicurist/pedicurist) was interviewed per

beauty salon in a sample of 235 establishments, calculated with a confidence interval of 95%, standard deviation of 0.5 and a maximum error of estimate of 0.05 from a population of 600 salons, with registration and authorization of operation provided by the Municipal Secretary of Urban Setting of the City Hall of Belo Horizonte (PBH), in 2010.

Each salon was chosen from a simple random selection, among the 600 registered. The beauty and aesthetics centers were mapped by districts, so as to obtain a sample geographically distributed in all regions of the city, which, in the census of 2010, recorded 2.475 million inhabitants<sup>(8)</sup>. For concomitant confirmation of the existence and address of the establishments, the researchers called to all the salons.

Five interviewers received adequate training and the plan of visits with the addresses of the selected establishments. In case of refusal or when some salon was closed or not located, the criterion of replacement by the next

establishment located on the left was used, with operation registration of PBH.

The criterion for data collection was the interview of manicurists/pedicurists because they are the most common professional in beauty salons, with at least one year of experience in these professions, aged above 18 years, male or female, owner or employee of the salon. The interviews occurred after the verbal invitation to the owners of establishments and professional informants, explaining the objectives and relevance of the research. After their acceptance, the professionals received the informed consent form.

The interview (in person) consisted of a structured questionnaire containing open and multiple-choice questions concerning the general characteristics of the establishment and the interviewee and questions about the structure and devices present in establishments, with responses validated by observation, presented in Figure 1.

Figure 1 - Description of the topics for evaluation of the structure of the salon by manicurists/pedicurists, with answers validated, or not, by direct observation. Belo Horizonte - MG, 2013.

Questions	Answers
<b>General Characteristics</b>	
Number of professionals in the establishment in days of increased demand	_____
Working time of the interviewed professional in the participating salon	_____
Services offered in the salon	Manicure/pedicure, podiatry, hairdressing, depilation, aesthetics, barbershop, others.
Sex of the interviewed manicurist	_____
Age of the interviewed manicurist	_____
Manicurist's participation in the establishment	Owner, partner, formal employee, informal employee
<b>Salon's structure - with answers validated by observation</b>	
What is the approximate size of the establishment in m <sup>2</sup> ?	_____
Is there a reception in the establishment?	(0)No (1) Yes
Individualized care rooms for manicurists, hairdresser, beautician?	(0)No (1) Yes
Is there enough space for more than one manicurist to work simultaneously?	(0)No (1) Yes
How many bathrooms are there in the establishment?	_____
The bathrooms are tiled/covered with easy to clean?	(0)No (1) Yes
Coated walls/ceilings: resistant, smooth, waterproof, washable, light colors, preserved.	(0)No (1) Yes
Are the furniture waterproof and easy to clean?	(0)No (1) Yes

Is there an exclusive location to store cleaning supplies?	(0)No (1) Yes
Is there a room with sink and waterproof countertop to wash contaminated materials/instruments?	(0)No (1) Yes
Are the material, instruments and floor cloths washed in the single sink of the establishment?	(0)No (1) Yes
Where is this sink located?	_____
Is there are separate location (room) to store a sterilization equipment (e.g. autoclave, oven, stove)?	(0) No Where: _____ (1) Yes
What is the equipment used for sterilization?	_____
Is there appropriate box for needle-sharp material disposal?	(0)No (1) Yes
Do the bins have pedal-driven lids and easy access?	(0)No (1) Yes
<b>Cleaning of the salon - reporting questions without validation by observation</b>	
For cleaning of surfaces like desks, shelves and countertops, you generally use:	(1) water and soap; (2) water, soap and a disinfectant; (3) absolute alcohol; (4) 70% alcohol; (5) duster or some fabric; (6) There is not a single specific product, it depends on what was purchased as a cleaning product; (888) Unknown; (999) Unanswered responding
What is the cleaning frequency of the surfaces listed in the previous question?	_____
How is the floor cleaned? II. 51a) Is it swept with a broom? II. 51b) Is a chemical product used?	(0) No (1) Yes (0) No (1) Yes (1.1) water and soap; (2) water, soap and a disinfectant; (888) Unknown; (999) Unanswered
What is the cleaning frequency of the surfaces listed in the previous question?	_____
Other observations you consider important.	_____

Source: Research data.

The responses of open and closed questions were quantified and analyzed descriptively in the program statistical package for social sciences (Spss/pc) version 13.0. Continuous variables were treated by descriptive statistics and measures of central tendency.

This study provided the owner of the beauty salon with autoclave the opportunity to validate a process of sterilization of the equipment, by means of biological test.

A package test was produced using a compress, the reading-test indicator for three hours, and a package of crepe paper. The package was placed in the equipment along with the items to be sterilized, requiring the equipment activation and the implementation of the sterilization technique, as routinely carried out in the establishment. The incubation period and the reading of the indicator were performed according to the manufacturer's instructions of the used biological test.

## RESULTS AND DISCUSSION

The study visited 322 beauty salons with permission to operate in Belo Horizonte, and 235 participated in the study, according to sample size calculation.

Of the visited salons, 177 were part of the spreadsheet provided by the city hall (102 participated, 31 refused and 44 were not located). To replace the denials and the salons not located, other 145 salons were visited, also with permission not listed in the PBH spreadsheet, but inserted in the control spreadsheet, and following the replacement criteria defined in the research method. Of these, 133 completed the questionnaire and 12 were not willing to participate.

The questionnaire was answered by 235 manicurists/pedicurists, all female, aged between 18 and 69 years old (median - 31 years; average - 32.6 years), 58.7% had been working in visited beauty salon for two years or less, 75.7% had informal job represented by the provision of service without employment. Table 1 shows other data.

Table 1- Demographic, employment and training profile of manicurists/pedicurists participating in the study. Belo Horizonte - MG, 2013. Total = 235.

Sociodemographic variables			Employment and training variables		
	n	%		n	%
<b>Gender</b>			<b>Time working in the area (median)</b>		
Female	235	100	≤ 10 years	139	59.1
			>10 years	96	40.9
<b>Age group (median)</b>			<b>Time working in the salon (median)</b>		
≤ 31 years	119	50.6	≤ 2 years	138	58.7
> 31 years	116	49.4	>2 years	97	41.3
<b>Marital status</b>			<b>Work at other salon</b>		
Single	108	46.0	Yes	4	1.7
Married/living with partner	107	45.5	No	231	98.3
Widow/divorced	20	20.0			
<b>Number of children</b>			<b>Workload/day</b>		
None	84	35.7	≤ 6 hours	21	8.9
One	60	25.5	8 hours	122	51.9
Two	55	23.4	> 8 hours	92	39.1
≥ Three	36	15.3			
<b>Education</b>			<b>Participation in the establishment</b>		
Incomplete elementary school	22	9.4	Informal job	178	75.7
Complete elementary school	44	18.7	Formal job	27	11.5
Incomplete high school	36	15.3	Partner	18	7.7
Complete high school	125	53.2	Owner	12	5.1
College	8	3.4			
<b>Professional training</b>					
Professional training course	80	34.0			
Not regular/informal	155	66.0			

Source: Research data.

Sociodemographic, labor and training data corroborate those of other studies, confirming the female character, the little qualification in professional training, long time in the profession<sup>(5,7)</sup>. The informality of work reinforces a characteristic of the profession that, although old, has not ensured the disciplined exercise by own legislation, with rights, duties and guarantees. It was recognized, but not yet regulated to meet the specificities of work<sup>(2)</sup>.

The participating establishments offered, in addition to manicurists/pedicurists, services of hairdressers (98.3%), depilation (82.6%), aesthetics (50.6%), barbershop (21%) and podiatry (10.6%). The salons had an average of 6.5 employees and, in the days of increased demand from customers (Thursday to Sunday), the number of professionals increased to 7.2.

Thus, most establishments offered more than one type of service, in addition to the care with nails (manicure/pedicure), thus with a greater movement of people in these places. This implies additional care as: greater physical space, which should bear professionals and clients, and meet the ergonomic and hygienic requirements<sup>(9,10)</sup>.

The beauty salons had various physical structures, organizations and service of embellishment, and the environments were possibly adapted from household structures or buildings not designed and constructed to house a service that requires a minimum of care facing the risk of transmission of pathogens. The average size of the establishments was 67 m<sup>2</sup> (12 to 200 m<sup>2</sup>), and 68% of them had reception, 49% had individualized care for customers of manicurists/pedicurists and, in 89%, the physical space allowed the service provision of more than

one professional simultaneously. Most (61%) salons had a single bathroom, 35% of them had two or more, and in 2%, there was no bathroom.

A study with hairdressers identified a pattern of smaller establishments in Europe, and most (45.7%) of them presented one or two working professionals (24.8%)<sup>(11)</sup>. In places with small dimensions, with many furniture, accidents with needle-sharp materials are more likely to occur.

A national standard determines the physical structure of establishments of the beauty and aesthetics segment. In Goiás (1995), the Ordinance 456 establishes a minimum area of 8 m<sup>2</sup>, with the addition of 4 m<sup>2</sup> per each installed chair<sup>(12)</sup>. Some laws in other states and municipalities determine the existence of at least one exclusive bathroom, and, when in shopping centers, collective bathrooms can be used<sup>(4,10,12-14)</sup>. Another study identified sanitary adequacy for only 31% of the visited salons, emphasizing the possibility of contamination by microorganisms, including intestinal microbiota<sup>(15)</sup>.

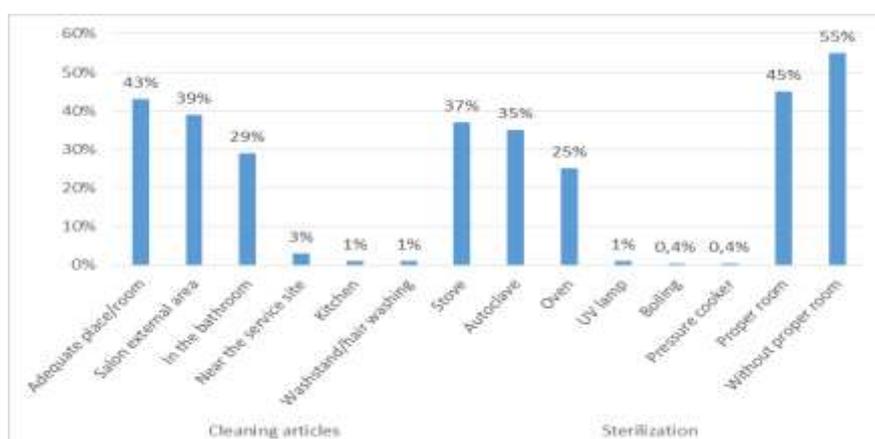
Regarding the type of wall finishing, in all salons, including bathrooms and furniture, 92% of them were made of washable materials and 91% had an exclusive place for storing materials and cleaning products for floors/walls. In accordance with the Decree 23,915, of 13 January 2004, the hairdressers, beauty, aesthetics and podiatry institutes must possess, in their premises, floors and walls which have smooth surfaces, composed by compact material, resistant to washing and use of disinfectants and easy cleaning and sanitizing, maintaining their physical installations duly preserved and clean<sup>(13)</sup>.

In 43% of establishments, there was a proper site for the cleaning of articles (manicurist instruments, brushes, containers), while the others performed the cleaning in sinks outside the service area of the salon (39%) and in the bathroom (29.4%). Figure 1 shows other data. For 30% of the beauty salons, there was a single sink, intended to any type of wash (fabrics, articles, washing hands) and the disposal of chemicals, which drained directly into the sewage system. Low availability of proper site for cleaning articles was identified in the state of São Paulo, with exclusive sink for washing articles in only 2.5% and 7% of the salons and area for preparing articles in 4% and 10%<sup>(7,16)</sup>.

In 45% of the salons, there was an exclusive room, separate from the others, to store the sterilization equipment. The other stored the equipment in the reception, near the service site, under the stairs, basements and open external areas. Legal guidelines recommend placing the equipment for this purpose in exclusive locations for the processing and storing the processed articles preferably in closed cabinet protected from moisture, dust and continuous manipulation of people<sup>(4,13,17)</sup>. However, beauty salons not always are able to meet the aforementioned specifications, because they are usually located in small spaces, different from the hospital environment.

Most salons used dry heat - stove (37%) and oven (24.7%), equipment that submit articles to dry heat and has no external thermometer to record the temperature or control the time of exposure, as a method of sterilization, observing moist heat, by means of an autoclave, in 35.3% of establishments (Figure 2).

Figure 2: Characteristics relating to cleaning and sterilization of articles used in beauty salons. Belo Horizonte - MG, 2013. Total = 235.



Source: Research data.

The dry heat was the most common method identified in the salons (61.7% - Pasteur Furnace/stove, oven) which, although not yet prohibited in beauty salons, should not be the first choice, however, is the product of greater adherence of professionals due to its low cost<sup>(17)</sup>. There are other processing methods as gamma radiation, ethylene oxide gas and plasma hydrogen peroxide; however, they are complex and high-cost methods<sup>(17)</sup>. A safe, efficient, fast and accessible process for beauty and aesthetics professionals is the moist heat, represented by autoclave or saturated steam under pressure<sup>(17,18)</sup>.

The processing by autoclave (moist heat) was observed in only 35.3% of the establishments. In other studies, the use of this equipment ranged between 1% and 79%, but some reported data from statements, not from direct identification of the process and equipment by researchers<sup>(5,16,19)</sup>. The reduced results possibly from the higher cost (around R\$ 1.700,00/4 liters to R\$ 4.500,00/42 liters) in comparison to stoves (R\$150,00 to R\$900,00), or even by little knowledge and safety of the autoclave process<sup>(5,7,19-21)</sup>.

Other processing methods (ultraviolet, boiling, domestic pressure cooker) were identified and are also mentioned by other researches, but they are considered ineffective for sterilization, besides being banned for such purpose, by putting at risk the health of the population<sup>(4-7,17,22,23)</sup>.

Regarding the quality assurance of the processing of articles, the use of biological indicators in autoclaves is recommended by national and international health agencies<sup>(17, 24)</sup>. In the salons analyzed in this study, only 35.3% had an autoclave and 33.2% allowed performing the test, and there was no positivity determined by bacterial growth constituent of biological indicator. In only one salon, the interviewee reported control of the operation of the equipment by biological indicator, but without any record. The Board Resolution (BR), number 15, of Anvisa in 2012, determines that the monitoring of the processing of articles should be recorded and retained for consultation and evaluation of sanitary authorities<sup>(17)</sup>.

In relation to the biological control, most publications in this respect refers to dental clinics or hospital environment. So far, no publication

had performed the control of the operation of the sterilization equipment in salons. Among the

few publications in the segment of beauty and aesthetics, three showed, by means of reports, the absence or low practice (2% to 5%) for this control, without performing it and maintaining the record with date, type of indicator used and the result<sup>(5,7,16)</sup>.

Biological indicators are recognized by portraying the sterilization process, for they consider all parameters (time, temperature, penetration of steam), ensuring, therefore, safety. They are available in the form of spores of *Bacillus stearothermophilus* to evaluate equipment that uses moist heat (autoclave) and no longer for dry heat (greenhouses), because this processing method has been discouraged. This biological control is relatively simple, a quick result in three hours<sup>(17)</sup>.

The characteristic and the frequency of cleaning/disinfection of surfaces, furniture and floor in beauty salons were also evaluated in this study, although based on the replies to the questionnaire and not on direct observation. For the surfaces and furniture, 46% of the manicurists/pedicurists reported that the cleaning/disinfection is performed using water, soap and disinfectant; 20.4% of the manicurists/pedicurists reported the use of soap and water; 16.7%, household products and 8.9% did not define a method, because there is no routine cleaning or by the use of various products. Daily frequency of cleaning was reported by 74.5% of the interviewees and, for each client, only by 2.6% (Figure 3).

In the beauty and aesthetics segment, professionals do not seem to worry about cleaning and disinfecting surfaces, in beauty salons, such as furniture, chairs and floors. All of the interviewees reported the completion of the cleaning and disinfection of surfaces, however, with improper frequency and products. Some of them reported the use of household techniques with nonspecific or ineffective products, such as the alcohol with varying graduations (example: 54°GL) and, in addition, the use of tissues or dusters, which favors the spread of dust, which may carry microorganisms<sup>(12,18)</sup>.

The use of articles without proper cleaning/disinfection or discard propitiates the contamination and possible transmission of pathogens, such as viral hepatitis, which constitute a major public health problem

worldwide. The hepatitis B virus can survive on surfaces and objects for a period of up to seven days in ambient temperature, thus, cleaning and disinfection of the environment are important in preventing infections<sup>(25,26)</sup>.

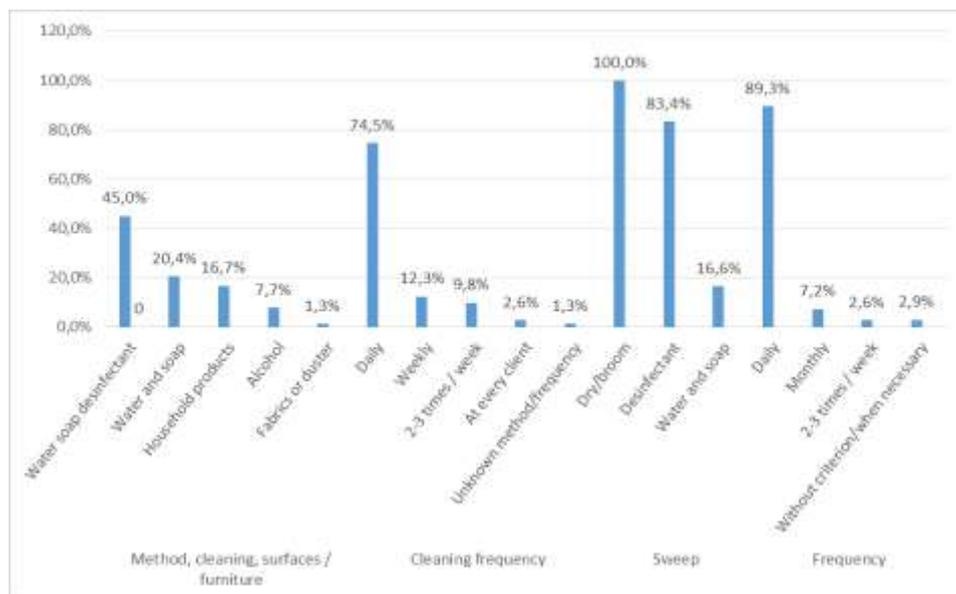
Researches in Brazil and in Morocco with professionals of the beauty segment showed the same reality, with little adherence to cleaning or disinfection of furniture and other surfaces in the lounges<sup>(7,20,27)</sup>. Professionals do not consider these measures necessary and, therefore, do not perform them routinely for each client and not even in the of the service<sup>(18,20,27)</sup>.

In relation to cleaning and disinfection of the floor, all interviewees revealed sweeping the floor with brooms (dry sweep). Subsequent to sweeping, the majority mentioned the application

of water, soap and disinfectant (83.4%) (Figure 3). Most interviewees reported daily cleaning (89.3%) and 0.9% said that it occurs without discretion and when necessary.

In the work environment, in beauty salons, cleaning or disinfection of floors, walls, ceiling, doors, windows and furniture including chairs, tables, counters, countertops and sinks, as well as the electronic equipment should be considered. Such surfaces must be cleaned or disinfected at each customer, using soap and water and/or friction with 70% alcohol. Floor and walls should be easy to clean, without indication of dry sweep, but with moist sweep, daily, and, at the end of the day, a more rigorous cleaning of the floor with hypochlorite of sodium or ammonium quaternary<sup>(13,24,28)</sup>.

Figure 3: Method and frequency of cleaning of surfaces, furniture and floors mentioned by manicurists/pedicurists participating in the study. Belo Horizonte, 2013. Total= 235.



Source: Research data.

Only 23% of the establishments had rigid wall for the discard of needle-sharp materials and 70% of them had all bins with cover, located in areas of easy access. Both sanitary laws for beauty salons in the state of Minas Gerais do not detail indications regarding the structure of a salon with respect to the minimum size or proportion between size and number of employees, quantity and sanitary conditions, local and suitable devices to allow the washing of hands, disposal of articles for single use and sharp objects. Nevertheless, ANVISA has carried out health inspections with inspection guides that identify and recommend infrastructure,

equipment and articles minima for beauty salons, in addition to the formulation of booklets with guidelines<sup>(18)</sup>. In other states and municipalities, there are more current laws that detail the recommendations relating to physical space, disposal of materials intended for single use, vaccine update of professionals, use of individual protection equipment, washing of hands and processing of articles<sup>(10,13,14,28)</sup>.

**CONCLUSION**

The general results of the research are worrisome as they reflect a presumed risk of transmission of microbial agents that cause

diseases with relevant socioeconomic impacts, since the beauty salons, in general, do not meet the minimum requirements relating to biosafety measures, which would lessen biological and occupational risks to customers.

Some perceived inadequacies increase the biological risk: the supply of more than one type of service with increased demand from customers, informality of professionals, problems in the physical structure of establishments (absence of toilets, insufficient number of sinks) and low adherence to processing methods of material recommended by health departments.

The research limitations involve the impossibility of observation of all processes, since some were listed without proof of assertions, such as the methods and the frequency of cleaning and disinfection of surfaces.

Given the presented situation, there is need for attention to the actions of the professionals in beauty salons by health surveillance, promoting educational actions, training for professionals in order to reduce individual and collective biological risks, by means of a safe and efficient professional practice. The requirement for technical training of professionals and owners of salons would be of particular value in order to reduce inadequacies found in the beauty and aesthetics segment.

## REFERENCES

1. Dweck RH, Di Sabbato A. A beleza e o mercado de trabalho: uma perspectiva de gênero. *Gênero*. 2006 [citado em 5 jan 2017];6-7(1):95-128. Available in: <http://www.revistagenero.uff.br/index.php/revistagenero/article/viewFile/348/260>
2. Brasil. Lei Nº 12.592, de 18 de janeiro de 2012. Dispõe sobre o exercício das atividades profissionais de cabeleireiro, barbeiro, esteticista, manicure, pedicure, depilador e maquiador. Brasília, DF: Diário Oficial da União; 2012 [citado em 5 jan 2017]. Available in: [http://www.planalto.gov.br/ccivil\\_03/ato2011-2014/2012/lei/l12592.htm](http://www.planalto.gov.br/ccivil_03/ato2011-2014/2012/lei/l12592.htm)
3. Moore JE, Miller BC. Skin, hair, and other infections associated with visits to barber's shops and hairdressing salons. *Am J Infect Control*. 2007 Apr;35(3):203-4. <https://doi.org/10.1016/j.ajic.2006.10.010>
4. Campo Grande (MS). Lei Nº 3.632, de 30 de junho de 1999. Disciplina os serviços de cabeleireiros, barbeiros, manicuras, pedicures, limpeza de pele e serviço afins e dá outras providências. Campo Grande: Diário Oficial do Município de Campo Grande; 1999 [citado em 05 jan 2017]. Available in: <https://cm-campo-grande.jusbrasil.com.br/legislacao/247932/lei-3632-99>
5. Moraes JT, Barbosa FI, Costa TRS, Ferreira AF. Hepatite B: conhecimentos dos riscos e adoção de medidas de biossegurança por manicures e pedicures de Itaúna/ MG. *Rev Enferm Cent Oeste Mineiro*. 2012;2(3):347-57. <https://dx.doi.org/10.19175/recom.v0i0.225>
6. Wazir MS, Mehmood S, Ahmed A, Jaddon HR. Awareness among barbers about health hazards associated with their profession. *J Ayub Med Coll Abbottabad*. 2008 Apr-Jun;20(2):35-8.
7. Oliveira ACDS. Estudo da estimativa de prevalência das hepatites B e C e da adesão às normas de biossegurança em manicures e/ou pedicures do município de São Paulo [tese]. São Paulo: Programa de Pós-graduação em Ciências, Coordenadoria de Controle de Doenças da Secretaria de Estado da Saúde de São Paulo; 2009.
8. Instituto Brasileiro de Geografia Estatística (IBGE). Censo Demográfico. 2010 [citado em 5 jan 2017]. Available in: <http://www.ibge.gov.br/home/estatistica/populacao/censo2010>
9. Paraná (Estado). Resolução Nº 204, de 17 de março de 2009. Dispõe sobre as condições para instalação e funcionamento dos Estabelecimentos de Podologia. Paraná: Secretaria de Estado da Saúde; 2009 [citado em 5 jan 2017]. Available in: [http://www.saude.pr.gov.br/arquivos/File/Legislacao/estudual/resolucao/RES\\_SESA204\\_09Podologia.pdf](http://www.saude.pr.gov.br/arquivos/File/Legislacao/estudual/resolucao/RES_SESA204_09Podologia.pdf)
10. Amodio E, Di Benedetto MA, Gennaro L, Maida CM, Romano N. Knowledge, attitudes and risk of HIV, HBV and HCV infections in hairdressers of Palermo city (South Italy). *Eur J Public Health*. 2010 Aug;20(4):433-7. <https://doi.org/10.1093/eurpub/ckp178>
11. Goiás (Estado). Portaria Nº 456, de 10 de junho de 1995. Estabelece Normas Técnicas Relativa ao Saneamento e ao Meio Ambiente. [Goiânia]: Secretaria Estadual de Saúde; 10 jun 1995 [citado em 5 jan 2017]. Available in: <http://docplayer.com.br/1962080-Portaria-n-456-95-ses-go-de-10-de-junho-de-1995-norma-tecnica-relativa-ao-saneamento-e-ao->

- [meio-ambiente-introducao.html](#)
12. Rio de Janeiro (RJ). Decreto Nº 23.915, de 13 de janeiro de 2004. Dispõe sobre o licenciamento sanitário a que estão sujeitos os salões de cabeleireiros, institutos de beleza, estética, podologia e congêneres. Rio de Janeiro, RJ: Diário Oficial do Município, 14 jan 2004 [citado em 5 jan 2017]. Available in: <http://www.rio.rj.gov.br/dlstatic/10112/5125745/4132393/DecretoMunicipalN23915.pdf>
  13. Jaraguá do Sul (SC). Lei Nº 3.865, de 29 de junho de 2005. Autoriza o município de Jaraguá do Sul a estabelecer normas para quem explora as atividades de cabeleireiro, barbeiro, manicure, pedicure e estética. [Florianópolis]: Diário Oficial dos Municípios de Santa Catarina: jun 2005. [citado em 5 jan 2017]. Available in: <https://camara-municipal-de-jaragua-do-sul.jusbrasil.com.br/legislacao/758244/lei-3865-05>
  14. Corrales Ramírez CL, Sánchez LC, Olaya Tunjano JC, López Gómez CP. Evaluación de la efectividad de los procesos de desinfección de los utensilios em salones de belleza en un municipio de Cundinamarca. NOVA. 2007[citado em 5 jan 2017];5(7):65-9. Available in: [http://www.unicolmayor.edu.co/invest\\_nova/NOVA/NOVA7\\_65\\_69.PDF](http://www.unicolmayor.edu.co/invest_nova/NOVA/NOVA7_65_69.PDF)
  15. Diniz AF, Matté GR. Procedimentos de biossegurança adotados por profissionais de serviços de embelezamento. Saude Soc. 2013;22(3):751-9. <https://doi.org/10.1590/S0104-12902013000300009>
  16. Ministério da Saúde (BR). Agência Nacional de Vigilância Sanitária. Resolução – RDC Nº 15, de 15 de março de 2012. Dispõe sobre requisitos de boas práticas para o processamento de produtos para saúde e dá outras providências. Brasília, DF: Diário Oficial da União, 2012 [citado em 5 jan 2017]. Available in: [http://bvsms.saude.gov.br/bvs/saudelegis/anvisa/2012/rdc0015\\_15\\_03\\_2012.html](http://bvsms.saude.gov.br/bvs/saudelegis/anvisa/2012/rdc0015_15_03_2012.html)
  17. Starling CCD, Pulier VL. Boas práticas de funcionamento para institutos e salões de beleza, estética, cabeleireiro e similares. Belo Horizonte: Secretaria Municipal de Saúde; 2015.
  18. Araújo DCSA; Guerreiro JV. Conhecimentos e medidas de biossegurança adotadas por manicures autônomas do município de Mamanguape – PB. Vigil Sanit Debate. 2016;4(3):103-9. <https://doi.org/10.22239/2317-269x.00751>
  19. Oliveira ACDS, Focaccia R. Survey of hepatitis B and C infection control: procedures at manicure and pedicure facilities in São Paulo, Brazil. Braz J Infect Dis. 2010 Sep-Oct;14(5):502-7. [https://doi.org/10.1016/S1413-8670\(10\)70100-8](https://doi.org/10.1016/S1413-8670(10)70100-8)
  20. Johnson IL, Dwyer JJM, Rusen ID, Shahin R, Yaffe B. Survey of Infection Control Procedures at manicure and Pedicure Establishments in North York. Can J Public Health. 2001 Mar-Apr [citado em 5 jan 2017];92(2):134-7. Available in: <http://journal.cpha.ca/index.php/cjph/article/view/70/70>
  21. Arulogun OS, Adesoro MO. Potential risk of HIV transmission in barbering practice among professional barbers in Ibadan, Nigeria. Afr Health Sci. 2009 Mar [citado em 5 jan 2017];9(1):19-25. Available in: <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC2932524>
  22. Belo Horizonte (MG). Secretaria Municipal de Saúde. Portaria Nº 11, de 02 de junho de 1997. Aprova Norma Técnica referente às exigências sanitárias para salões de beleza, barbearias, manicures, pedicures e similares, na forma do anexo à presente Portaria. Belo Horizonte: Diário Oficial do Município, ano 3, Nº 421, 20 jun 1997 [citado em 5 jan 2017]. Available in: <http://portal6.pbh.gov.br/dom/iniciaEdicao.do?method=DetalheArtigo&pk=1025641>
  23. Ministério da Saúde (BR). Portaria Nº 2.616, de 12 de maio de 1998. [D]ispõe sobre a obrigatoriedade da manutenção pelos hospitais do país, de Programa de Controle de Infecções Hospitalares. Brasília, DF: Diário Oficial da União; 1998 [citado em 5 jan 2017]. Available in: [http://bvsms.saude.gov.br/bvs/saudelegis/gm/1998/prt2616\\_12\\_05\\_1998.html](http://bvsms.saude.gov.br/bvs/saudelegis/gm/1998/prt2616_12_05_1998.html)
  24. World Health Organization. Department of Communicable Diseases Surveillance and Response. Hepatitis B. Geneva: WHO; 2002 [citado em 5 jan 2017]. Available in: [http://apps.who.int/iris/bitstream/10665/67746/1/WHO\\_CDS\\_CSR\\_LYO\\_2002.2\\_HEPATITI\\_S\\_B.pdf](http://apps.who.int/iris/bitstream/10665/67746/1/WHO_CDS_CSR_LYO_2002.2_HEPATITI_S_B.pdf)
  25. Ministério da Saúde (BR). Manual de aconselhamento em hepatites virais. Brasília, DF: Ministério da Saúde; 2005.

26. Zahraoui-Mehadji M, Zahraoui Baakrim M, Laraqui S, Laraqui O, El Kabouss Y, Verger C, et al. Risque infectieux lié au sang chez les coiffeurs-barbiers traditionnels et leurs clients au Maroc. Sante. 2004 Oct-Dec;14(4):211-6. 2004 Out-Dec[citado em 5 jan 2017]; 14(4): 211-6. Available in: [http://www.jle.com/fr/revues/san/e-docs/risque\\_infectieux\\_lie\\_au\\_sang\\_chez\\_les\\_coiffeurs\\_barbiers\\_traditionnels\\_et\\_leurs\\_clients\\_au\\_maroc\\_264851/article.phtml?tab=te](http://www.jle.com/fr/revues/san/e-docs/risque_infectieux_lie_au_sang_chez_les_coiffeurs_barbiers_traditionnels_et_leurs_clients_au_maroc_264851/article.phtml?tab=te)
27. Paraná (Estado). Secretaria de Estado da Saúde. Código de Saúde do Paraná. Curitiba: SESA; 2002 [citado em 5 jan 2017]. Available in: [http://www.saude.pr.gov.br/arquivos/File/Codigo\\_Saude.pdf](http://www.saude.pr.gov.br/arquivos/File/Codigo_Saude.pdf)

**Note:** Research financed by the Programa Pesquisador Mineiro (PPM) - 2011 Process: 00340-11 and by the Research Incentive Fund of PUC Minas process 2010/5790-S2. Results from the Thesis/Doctorate from UFMG.

**Received in:** 14/03/2017

**Approved in:** 08/03/2018

**Mailing address:**

Juliana Ladeira Garbaccio

Street Maria Fortunata Rothéia, 432

ZIP CODE: 31330-642 - Belo Horizonte/MG - Brazil

**E-mail:** [julianapuciec@gmail.com](mailto:julianapuciec@gmail.com)