*Galore International Journal of Health Sciences and Research*
*Vol.4; Issue: 2; April-June 2019*
*Website: www.gijhsr.com*
*Original Research Article* *P-ISSN: 2456-9321*

# Biosafety Measures Adopted by Manicures and Pedicures in Araxá (MG - Brazil)

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## ABSTRACT

**Introduction:** Most manicures and pedicures are not aware of microbial hazards, and thus do not adhere to biosafety measures, thus not making use of Personal Protective Equipment (PPE) properly. The present study proposed to evaluate the biosafety measures adopted by manicures and pedicures operating in beauty parlors in Araxá (MG- Brazil). It should be emphasized that it is extremely important to know if professionals in the area are doing what is recommended, as well as to take guidelines on safety and security measures that can contribute to their improvement, in order to maintain quality in the services provided.
**Materials & Methods:** It was an exploratory, transverse and quantitative research performed through a questionnaire applied to ten manicures / pedicures acting in Araxá.
**Results:** The results indicated worrisome aspects, such as the low use of PPE, with the exception of gloves, which reported wide use. Sterilization is performed by the majority of the interviewees; however, the minority of the sample has an autoclave, a safer way to eliminate pathogens.
**Conclusion:** Therefore, it can be affirmed that educational actions and training should be implemented to reduce the risk of accidents in these establishments.
***Key Words***: Biosafety, cross-contamination, manicures, beauty salons

## INTRODUCTION

The market for Beauty and Esthetics has been growing in recent times in relation to the past decades, reaching different audiences in all social classes and ages. [1]
Currently beautification practices, such as the removal of eponychium (cuticle) are common in Brazil. The act of removing the eponychium causes the risks to become more expressive regarding the exposure of biological agents present in the blood.[2]
The main occupational hazards that Beauty and Esthetics professionals are subjected to include: infectious-contagious diseases, for example, with a significant risk of disease transmission through the contact of nail manicures, structures that may to house pathogenic microorganisms.[3]

The transmission can happen from professional to client, between clients and from client to professional. Hepatitis B virus (VB) is highly resistant and can be up to one week out of the human body, sufficient time for transmission in salons.[4]
Some manicures and pedicures are not aware of microbial risks, and thus do not adhere to biosafety measures, thus not making use of Personal Protective Equipment (EPI) adequately increasing risk of cross-contamination. [5]

During the esthetic procedures in salons, instruments are used that are highly contaminated, and, if not sterilized, can act as transmission medium of pathogenic microorganisms. [6]

Biosafety highlights its actions in the prevention, reduction or even elimination of the risks inherent to each activity.[7]

The interest in the research was aroused by the observance of the general

conditions of operation of many salons of the city, not being evident a concern with biosafety. It is important to know if professionals in the area are doing what is recommended, as well as to take guidelines on safety and security measures that may contribute to their improvement, in order to maintain quality in the services provided in the halls. The present study proposed to evaluate the biosafety measures adopted by manicures and pedicures operating in beauty parlors in Araxá (MG - Brazil).

## MATERIALS & METHODS

The research was carried out in 2018.It is an exploratory, quantitative and cross-sectional research. The selected sites for research are located in the city of Araxá (MG - Brazil), two beauty establishments in each region: north, south, east and west, and also in the center of the city.

The districts and beauty salons visited and chosen at random. A sample of convenience was collected, totaling ten salons of beauty. As criteria for inclusion of the sample, the volunteers were over 18 years of age or older and practiced in the profession for at least one year. Professionals working in the salon were excluded, but did not act exclusively in the establishment, such as manicures and / or pedicures.

The sample was then formed by ten women who volunteered to participate and met the defined criteria.

During the visits the questionnaires were applied and the professionals were oriented and made aware of the microbial risks and the necessary precautions to avoid cross contamination in the work environment. The questionnaires were analyzed by descriptive statistics.

The study complied with the Directives and Norms Regulating Research Involving Human Beings of the National Health Council (Resolution 466/2012) and incorporates in its context the four references of bioethics: autonomy, non-maleficence, beneficence and justice. It was approved by the Research Ethics Coordination (CEP) of the University Center of Planalto de Araxá under protocol No. 02284/04.

## RESULTS AND DISCUSSION

The research was attended by 10 professionals from all sectors of the city. The general characterization of the sample showed in terms of schooling, incomplete higher education prevailed, corresponding to 50% of the sample. The vast majority of volunteers (90%) earn from one to three minimum salaries, are young volunteers, with a predominant age group of 18 to 27 years (60% of the sample), generally have extensive professional experience, half of whom already work in the area of 5 to 10 years.

Still aiming to know the profile of the volunteers, they were questioned about having taken a course to start their professional activity and also if this work is their only source of income. According to Figure 1, 60% completed a course and the same percentage answered that this work activity is not their only source of income.

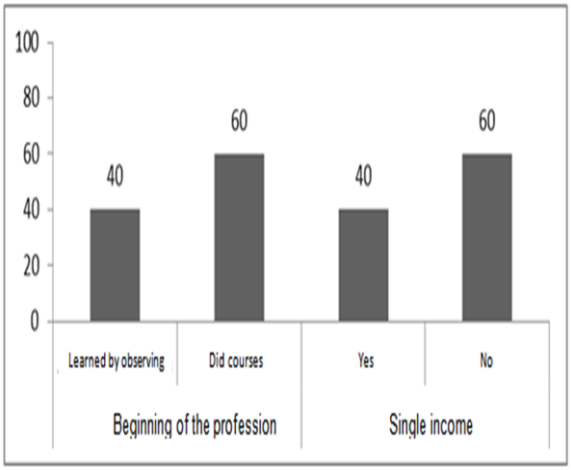


**Figure 1. Percentage distribution of the volunteers as to the way of starting the profession and whether or not it is their only source of income.**

Courses in the area of Esthetics are fundamental, not only for the best professional performance and, consequently, better conditions of maintenance of personal income from this activity exclusively. But it is also a way of working more safely, since in general the

courses now also provide information on biosafety care.

As Garbaccio and Oliveira (2018) [8] emphasizes, professionals should have training and basic knowledge about the whole process in which they are performing in their daily practice, especially on material reprocessing and correct handling of cutting materials (pliers, cutters, scissors) to perform a quality service that values the biosafety of professionals in their functional activities and their clients.

Regarding the cleaning of the environment, water and soap were the most reported means, it is worth mentioning the low adherence to the use of hypochlorite, and when mentioned was only about toilets. With respect to the use of 70% alcohol in work benches, very indicated for the place, only half of the sample makes use of the product.

Similarly, low adherence to 70% alcohol use was also reported in a study conducted in São Luís (MA - Brazil), with only 20.1% of the sample using alcohol as measured by risk reduction of cross-contamination.[9]

On the other hand, a positive aspect obtained in the present study was the fact that the interviewees reported, in their great majority, the daily cleaning of the work environments

All stated use of disposable items in their work practice, as the most mentioned items are sandpaper and toothpicks. Sterilization is performed by 90% of the research volunteers, especially pliers and spatulas.

According to figure 2 the most used medium is dry heat (60%), the autoclave is the form of sterilization adopted by 40% of the sample.

A similar study carried out by Garbaccio and Oliveira (2018) [10]presented data indicating that the majority used dry heat, with the oven (37%) and the "small oven" (24.7%), has external thermometer for temperature recording or exposure time control, as sterilization method. Only 35.3% of the establishments visited had an autoclave.

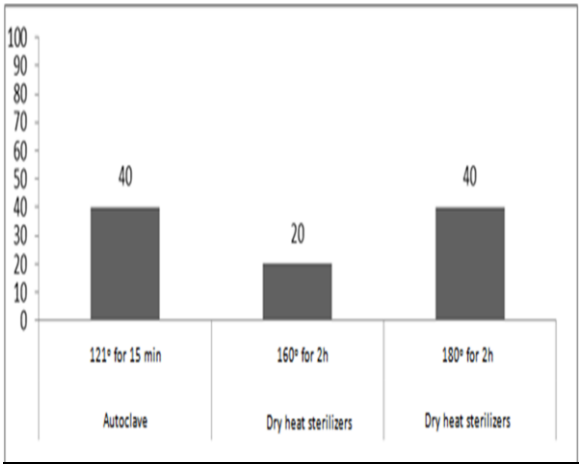


**Figure 2. Percentage distribution of volunteers who sterilize their materials regarding the form of sterilization they apply in establishments.**

Still corroborating the data of this study, the data of Felipe et al. (2017) [9] indicated the predominant use of the dry heat, being 79.8% of the volunteers of that study.

The use of materials such as pliers, spatulas and other items from the customer is an important way to reduce the risk of contamination. So each volunteer was asked about this. For the vast majority of respondents (70%) that use is just casual. This fact may be related to the customer's lack of interest in owning a kit, as well as maintaining it, constituting additional expenses. It also adds that he could not forget to take it at all his scheduled times, which can be discouraging for such an attitude.

The use of PPE is of fundamental importance, however, in the Beauty and Esthetics service environments it still has limited membership. In this study only the use of gloves had high adhesion in the sample (80%), it emphasizes that 20% did not use any PPE.

Even more worrisome data have already been reported scientifically, it also points out that in the study by Felipe et al (2017) [9]32.8% of the interviewees reported not using any type of PPE during their work activities. The authors also point out that 5% did not even know what types of PPE would be important for their professional practice. Garbaccio and Oliveira (2018) [10] also stated that in their study in Arcos (MG - Brazil) there was a very low adherence to

individual protection equipment, with a percentage of 45%. Other study similar the adhesion was inadequate for 74.6% of manicures.[11]

The physical conditions of the establishments are aspects of relevance to the good professional practice and the safety of the professionals and regulars of the place. In the present research some aspects were listed and are in table 1, the volunteers stated that the workplace is well ventilated, 90% said that it also has good lighting.

The presence of washable floors and walls, which is essential for good cleaning and disinfection was reported by 60% of the sample, half of the sample said there are separate toilets for customers and 70% that the establishment has an exclusive place for employees to store their belongings (Table 1).

**Table 1. Percentage distribution of the participants regarding the information given of physical characteristics of the establishment.**

| Variable | % | |
|---|---|---|
| Well ventilated place? | Yes | 100 |
| | No | 0 |
| Well lit place? | Yes | 90 |
| | No | 10 |
| Floors walls are dishwasher safe? | Yes | 60 |
| | No | 40 |
| Are toilets separate for use by customers? | Yes | 50 |
| | No | 50 |
| Is there a place for employees to store their belongings? | Yes | 70 |
| | No | 30 |

## CONCLUSION

According to the results obtained it is possible to conclude that the manicures and pedicures of the research partially employ biosafety procedures. As a positive point, the concern is to sterilize the work materials and use gloves.

On the other hand, the results are generally worrying, as many aspects described in the results are indicative of risks for accidents, especially regarding physical characteristics of establishments and little information and / or practice of correct forms of cleaning and disposal of materials in the establishment. In addition, there is little use of other types of PPE and limited autoclave sterilization, a safer way to eliminate pathogens.

Thus, educational actions and training to raise awareness of beauty and esthetics professionals are necessary and urgent, considering that the risks are significant.

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How to cite this article: Hordones JF, França-Botelho AC. Biosafety measures adopted by manicures and pedicures in Araxá (MG - Brazil). Galore International Journal of Health Sciences & Research. 2019; 4(2): 18-22.

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