

Environmental Perception of Beauty Center Professionals on Solid Waste Management with Biological and Chemical Risks

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Abstract— The management of solid waste is part of the study of biosafety aimed at professionals in the beauty area, as they need to identify the possible limitations of an establishment in terms of safety, so as to minimize the risks that exist in that work environment during the handling of a certain composition. The risks that can be pointed out are classified by biological, chemical, physical, accidental and ergonomic, however in this work attention will be paid to solid waste with biological and chemical risks. Thus, the general objective of the present work is to sensitize the professionals of beauty establishments about the environmental impacts caused due to the poor management of solid waste disposal with chemical and biological risks. For that, it was used as methodology the descriptive and exploratory research, as well as the research in fields, where it was made collection with the employees of beauty salons of different zones of the city of Manaus. The results show that although the professionals have a knowledge of biosafety, it is still superficial and the necessary behaviors are not always adopted to safeguard their and customers' safety. As evidenced in a report by the professionals interviewed, the need for education and training in environmental issues, such as solid waste management and others, is considered. One of the biggest challenges is to obtain the permanent involvement of employees and responsible managers. The study alludes that the employees involved, working in groups and internal facilitators, supported by external experts, can develop their actions with more confidence and efficiency. The involvement of the external specialist with the participative management of the projects, involving other employees, is inherent to the development of environmental management programs in this market segment.

Keywords— Biosafety; Solid Waste; Awareness; Beauty professionals.

I. INTRODUCTION

Professionals specialized in beautification can work in the most diverse areas of aesthetics, and can be facial, body and capillary. Making use of the most diverse cosmetics and procedures such as hair removal, massages, haircuts, dyeing, relaxation, hydration, skin cleaning, makeup, manicure, pedicure and several others, . They also work on skin rehabilitation and its attachments with the objective of stimulating the client's well-being, in aesthetic clinics, beauty salons, SPAs and sometimes even at home (GERSON, et al., 2011; GOMES & DAMAZIO, 2009 ; HALAL, 2010; REBELO, 2004).

Beauty establishments / centers are built with the objective of serving the population that seeks to highlight the most beautiful in itself, due to the concern with beauty and youth. This population is made up of different age groups and economic classes, reaching from the lower classes to the upper classes, in which they are increasingly demanding in beautification services. As a result, it is necessary to train professionals increasingly trained in knowledge and techniques, so that they can carry out their work in an ethical and efficient manner. In this context, it is important that these workers understand about chemical materials and compounds that are normally used and the

risks and benefits they cause to human and environmental health.

The Regulatory Norm of ABNT NBR 10004/2004, in its item 3.1, defines solid waste as: solid and semi-solid waste are the result of activities of industrial, domestic, hospital, commercial, agricultural, and other services, included those from water treatment systems, as well as liquids discharged into the public sewer network.

In this sense, beauty salons, due to their characteristics, use chemical products that strongly impact water, being therefore considered spaces that generate a large amount of solid waste.

The management of solid waste is part of the study of biosafety aimed at professionals in the beauty area, as they need to identify the possible limitations of an establishment in terms of safety, so as to minimize the risks that exist in that work environment during the handling of a certain composition. The risks that can be pointed out are classified by biological, chemical, physical, accidental and ergonomic, however in this work attention will be paid to solid waste with biological and chemical risks. The residues with chemical hazards produced in beauty establishments are mainly composed of packaging of chemical products previously used for the production of beautification in clients or patients, whereas the solid residues with biological hazards are generated through sharps potentially contaminated by viruses, bacteria or fungi. Many of the workers, due to the lack of knowledge, do not have sufficient training to correctly dispose of this material, thus resulting in the disposal in common dumps, which have consequences for population and environmental health, causing pollution of soil, air and even pollution. water, items of extreme importance for human survival.

Anvisa (2014) determines as biosafety standards for any beauty salon, hairdresser, barber and similar services: being independent of residence, having its own place for washing materials, always being clean and airy, cleaning combs for each client, brushes, bobbies, etc., use clean towels for each customer, use only products registered with Anvisa, keep chairs and stretcher mattresses covered with impermeable material, have a sanitary license, do not use products containing formaldehyde and maintain routine sterilization of materials in invasive procedures.

It is noteworthy that, to date, there is no specific national waste plan for health establishments and the lack of knowledge of environmental standards generates great damage to the environment.

Ramos (2009) points out that biosafety constitutes a whole set of functional and operational processes aimed at

promoting the health culture within the health community and others interconnected to it. Its objective is to preserve the environment by controlling waste handling and disposal, preventing health risks and occupational accidents, as well as developing actions to control infections, which makes it vitally important for services health and, by extension, beauty. As a result, it is intended to include beauty establishments in the knowledge and practice of technical and scientific information on biosafety, teaching and transmitting a whole series of standardized conducts and routines.

Thus, it is considered that the correct disposal of waste produced from these establishments will be contributing to the environment, through a socio-environmental vision of waste management, being an innovative and intelligent attitude.

This study will be of great relevance, as it aims to raise the awareness of aesthetic professionals about environmental problems caused by the lack of concern regarding the management of these residues.

Thus, the objective of this article is to raise awareness among beauty establishment professionals about the environmental impacts caused due to poor management of solid waste disposal with chemical and biological risks.

II. MATERIALS AND METHODS

In the first stage, a bibliographic survey of studies that discuss the issue of biosafety was carried out, in particular, in beauty establishments.

Then a questionnaire was applied to professionals working in the specific area of beautification, being they from all and / or any area (east, west, north and south) of the Municipality of Manaus, capital of the State of Amazonas, in which it was identified how these professionals perform their tasks and dispose of their waste. The questionnaire was applied in order to understand the risks and safety in carrying out their tasks, from their own perspective.

The questionnaire was directed and collected to all study subjects through personal contact, always emphasizing that participation was voluntary.

In parallel, two beauty establishments were visited, located in the same Municipality mentioned above, in which observation work was carried out, in order to verify the common activities of solid waste management. This observation was carried out in order to contribute to the results obtained throughout this research.

For those who agreed to participate, it was requested, in compliance with Resolution No. 466/2012, to sign the Free and Informed Consent Term, since it is a questionnaire applied to adults. The same was applied in October this year.

Bearing in mind that the intended research involved, in the quantitative phase, a questionnaire with professionals in the area of selected establishments, all ethical aspects of research involving human beings contained in Resolution no. 466/12, of the National Health Council, such as:

a) The request for authorization from the establishments to conduct the research - Letter of Consent;

b) The free and informed consent of professionals, research subjects and the protection of vulnerable groups and those legally incapable (autonomy), who will always be treated in their dignity, respected in their autonomy and defended in their vulnerability, being developed preferably in individuals with full autonomy;

c) Obeyed the appropriate methodology, relying on human and material resources necessary to guarantee the well-being of the research subject, with an adjustment between the competence of the researcher and the proposed project;

d) Confidentiality and privacy have been ensured;

The knowledge that was intended to be obtained through the quantitative analysis was only possible through the questionnaire, therefore, it is justified because it is not possible to obtain it by another means.

In view of the results and with all the available data, a booklet with biosafety rules was prepared for professionals and beauty salons who agreed to participate in the research. same (professionals) were invited, those who answer the questionnaire. Finally, the establishments selected for the observation work contributed to the qualitative analysis.

III. RESULTS

This chapter corresponds to the analysis and interpretation of the data collected with the professionals and in the researched enterprises. The data collected were based on questionnaires and direct observations.

With the intention of capturing information inherent to the research, the work started with the presentation of the project and the research proposal to the beauty salons that served as a basis for direct observation as well as the professionals. These first contacts had the intention of exposing the research objectives, collecting information for directing and planning the tabulation of the data to be collected, looking for guidelines and legal indicators in the

area of personal image. It was noticed in the first meetings that the environmental issues were of interest to the owners, but the main concern was with health surveillance rules and laws and their inspection, which caused distrust on the part of some professionals at the beginning of the interviews.

This limitation was soon solved with the preliminary presentation of the academic study declaration, the research proposal with the description of the action and a term of consent for the free and informed consent with the managers of the undertakings to carry out the data collection. The questions and direct observations sought to follow the practices, seek bibliographic references and documented evidence of the actions.

The research was subdivided into the questionnaire phases, analysis of the characteristics of the ventures aimed at the aesthetic market, their aspects and environmental impacts, following a proposal for waste management. For the development of the research, two establishments in the urban area of Manaus were selected for direct observations, inserted in the beauty salon sector. The number of professionals was a total of 120 employees, including contractors and freelancers. According to information from the Union of Salons of Barbers, Hairdressers, Beauty Institutes and Similars of Manaus - SISBISIM (2017), there are 780 formalized enterprises in the city of Manaus, with a total of approximately 9,000 establishments considered formalized and informal.

The inclusion criterion of each establishment for the research was: to be formalized, to consent to the study and to sign the informed consent form after presenting the proposal with the research objectives. The exclusion criterion for the investigation was: not being formalized, not consenting to the study and not wanting to sign the informed consent form. A project was excluded because it did not consent to the study, claiming that they did not have the time and people to collaborate. Such occurrence did not harm the study, because by similarity, another undertaking was chosen for the investigation, keeping the two proposed.

3.1 DESCRIPTIONS AND ANALYSIS

3.1.1 Description of the projects observed

In view of the characteristics mentioned above, the observation establishments were visited in the urban area of Manaus, this area is inserted in the south-central area of the city with different structures and clientele, but with similar productive activities. The enterprises identified themselves as beauty salons located on public roads. The names of the undertakings were kept confidential, as a condition for research consent.

The establishments visited offer hair services (cutting, dyeing, brushing, straightening), manicure / pedicure, waxing, facial / body aesthetics, makeup and some include professional podiatrists. The number of assistants ranged from 5 to 10 employees and 10 to 15 outsourced workers. The outsourced are independent professionals who occupy a place in the enterprise and are paid on commission for the service provided.

Regarding the approaches and the productive process of the beauty salons visited, according to what is described in Chapter 3, the following activities and their production processes were observed:

Cut, brush and dye hair

a) Cut

The service begins with the study and definition of the cut. The next step is to wash the hair in the washbasin using water, shampoo and conditioner (Figure 1).



Fig.1: Washbasin.

Source: Direct observation, 2019.

Then, the hair cut will be taken to the trash (Figure 2) shortly thereafter.



Fig.2: Trash.

Source: Direct observation, 2019.

In the case of male cuts, most go to the washbasin after cutting to remove the tiny pieces of hair, which will then go directly to the sewer. And, even in the short male and female cuts, it is observed that after cutting, there is an end with an electric cutting machine for finishing and / or using a razor with a disposable blade. It is noted that the cutting blade scrapes the hair along with the surface of the skin and is then disposable in the common garbage. It was not possible to analyze any process of hair removal with a razor in a beard, but it was reported that the blade disposal process is the same, except for establishments with podiatrists who, because they have a container for sharps, this material goes to the product box, waste from health services on public roads, to be collected by the company associated with the public service.

b) Brush

In the brush process, the process starts in the hair wash with shampoo and conditioner washing (Figure 3). Many cases of female hair are observed to be hydrated with creams or oil baths that should remain in the hair for a few minutes before removal and is occluded with aluminum foil.



Fig.3: Hair washing

Source: Direct observation, 2019.

After rinsing very well several times with water, to exclude the entire product, the client returns to the chair for

the brush with dryer and the flat iron (flat iron). Each professional has their hair dryer connected to their workbench. Often the hairdryer is used first and then the straightener in the hair. While the hair is drying the board is connected to a feeding source for heating the plates. At the end of the process, a product in the form of a spray, cream, lotion, oil or gel is applied as a hair fixative.

Project A, right after the first visit, as noted and the report of the administrator of the same, quickly created on its own initiative, a dump of biological products (Figure 4) for hairdressers and manicurists and dumps of common waste (Figure 5) in a location easily accessible and visible to customers and employees. In this same project, it was reported that there was a drain of fabric in the washbasin to support the hair remnants, protecting the environment and reducing the risk of plumbing clogging. It was also advised to periodically maintain and clean the air conditioning to ensure good quality of the air conditioning. air conditioning. The people in charge of the other project, as they are not the majority owners, have committed to take the improvement proposals forward, as they understood and became aware of the benefits not only in reducing costs, but also in improving the quality of customer service. In this way, it would be possible for the population to be more secure, contributing to the environment. This initiative could be a differential in the competitive market.



Fig.4: Recycle bin for organic products.

Source: Direct observation, 2019.



Fig.5: Dump of common waste.

Source: Direct observation, 2019.

c) Dyeing / straightening

For coloring or straightening, the professional observes the length of the hair and if it is natural or if it has already suffered some type of chemical. An analysis is also made as to the type of hair. Once the diagnosis has been made in view of the customer's evaluations and information, we proceed to the preparation of the chemical, which can be dyed with 20 or 30 volumes hydrogen peroxide, bleach or reagent, smoothing pastes, among others. In the case of locks in the hair, aluminum foil is used, which will be discarded with the chemical. After applying the product to the customer's hair, a specific time is required for the product's action, depending on the service to be performed. It was observed that when the coloring is not enough, the professional prepares a little more of the mixture and the leftovers are thrown into the washbasin. This procedure shows the loss and disposal of the toxic product to the environment. After the desired time, the hair it is washed with shampoo, conditioner and goes for drying with a hairdryer and board in most cases. In this process it is observed that there are odors characteristic of the mixture of the products in the customers' hair in the salon, but there was a report that there is no complaint from the customers. It is noteworthy that the halls observed are well lit and have an air conditioning system. In this context, an environment with atmospheric emission pollution and a high consumption of electrical energy is suggested.

d) Manicure / Pedicure

The workstation is prepared to receive the customer with the materials sterilized in the autoclave (pliers and stainless steel spatulas), as shown in Figures 6 and 7, disposable materials (foot and hand sandpaper, wooden toothpicks, gloves and boots). plastic with cream inside) and other materials for the preparation of the service (acetone, cotton, enamel, exfoliating, moisturizer).



Fig.6: Autoclave.

Source: Direct observation, 2019.



Fig.7: Sterile materials.

Source: Direct observation, 2019.

As directed by the Health Surveillance Division (DVSA) and the Hairdressers Union, the packaging of sterilized materials in the autoclave, as well as the packaging of disposables must be opened in front of the customer and the disposable materials must be discarded immediately after the use of each customer. Foot files must have a washable plastic base with a rough, sticky part that can be disposed of in the trash. It was observed the use of disposable plastic wraps to pack basins with water for feet and hands only in Enterprise A.

The beginning of the procedure performed by the professional is the removal of nail polish with cotton and acetone or nail polish remover. Then rinse with water and gloves or boots are put on with moisturizer to help remove cuticles (protective film of the nailfold that often advances the nail blade and makes it difficult to install the enamel). After a few minutes, the cuticles are pushed with a metal spatula and removed with pliers of appropriate cut. The nails can be cut with metal scissors and sanded after removing the old enamel. Then, the application of enamel and the removal of excesses with acetone soaked in cotton with wooden toothpick on the sides of the nails are observed. Cottons with enamel and acetone residue are discarded in the common garbage of establishments, as well as the cuticle skins that fall on the floor and are swept along with the hair residues and thrown in the common garbage container as well. The salons observed use the basins with water, and this material containing water, skin residues and cosmetics is discarded in the hall's sewage system.

3.2 QUESTIONNAIRE ANALYSIS

Firstly, we sought to outline a socioeconomic profile of the interviewed subjects, from the North, East, West and South Zones, 30 from each zone, as shown in the graphs below.

The largest number of respondents is in the age group of 31 to 45 years, with a total of 62 professionals, with the West Zone having the highest rate (17). The age group from 60 to 65 years is the least professional. In a survey conducted by SEBRAE in São Paulo, it is revealed that there is no age limit for working, a long-lived career, corroborating with the data of the present study. There are more married professionals (65) than single (50) and a small number of widowers (2).

It appears that the prevalence is of professionals with secondary education (69) and lower education in elementary education (15). Attention is drawn to the number of professionals with higher education (36), corroborating the findings of the study by Garcia, Bento and Gonçalves (2012), which points out that professionals

today seek greater and better qualification, especially with the variety of Technological courses offered by higher education institutions.

Most professionals (72) receive from 1 to 5 minimum wages; 29 receive up to a minimum wage; 18 from 5 to 10 minimum wages and only one above 10 wages.

Professionals who work with hair admit that the industry is promising and that they get a good salary. According to data from Senac de Patos de Minas (2015), those who are starting can receive, on average, two and a half salaries. Those who work in the area, from R \$ 3 to R \$ 7 thousand per month.

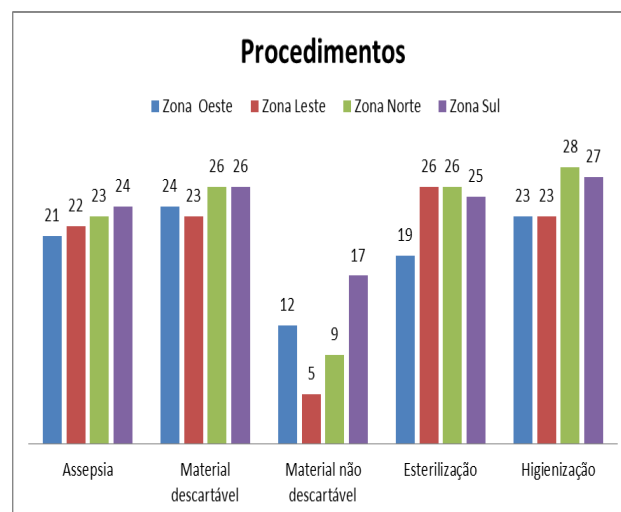
There is a prevalence of hairdressers (79); manicures (29) and beauticians (12). There is no concrete data on the number of these professionals in the city, according to the Union of Barbers', Hairdressers, Beauty and Similar Institutions in Manaus (SISBISIM).

A significant majority of respondents have an effective contract with companies, with a total of 95 professionals; 25 are hired under the temporary regime. According to information from the Union of Barbers' Salons, Hairdressers, Beauty Institutes and Similar of Manaus - SISBISIM, there are 780 formalized enterprises in the city of Manaus, with a total of approximately 9,000 establishments covering formalized and informal.

It should be noted that Law 13,352, of October 27, 2016, amended Law 12,592 / 2012, to provide for the partnership contract between professionals who perform the activities of hairdresser, barber, beautician, manicure, pedicure, epilator and makeup artist and legal entities registered as a beauty salon.

It appears that most professionals have their own work tool, especially those in the South Zone, which has them in full.

Graph 1 shows the main procedures adopted for individual protection and Biosafety.



Graph 1: Regarding the interviewees' biosafety procedures.

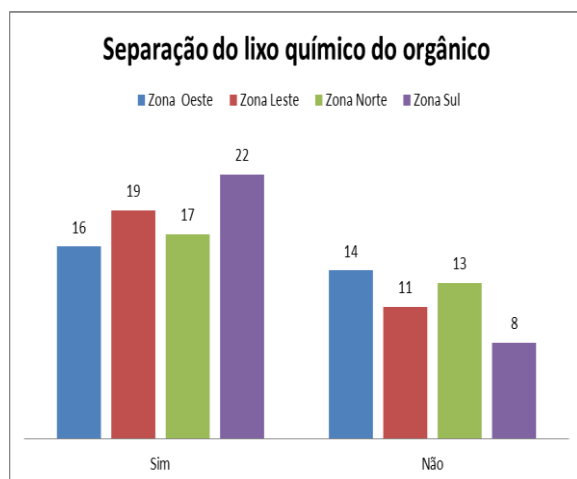
Source: Field research, 2019.

According to Graph 1, the procedure most adopted by the interviewed professionals for individual protection and Biosafety is disposable material, with 99 respondents pointing out this alternative, however, sanitation presented the highest number of statements (28) in the northern zone of Manaus.

Most respondents use gloves, revealing that in the East Zone, all professionals use this protective feature; the least used is the hat. Garbaccio and Oliveira (2013) reinforce that disposable gloves are considered a type of PPE. They alone provide essential security for the care of both professionals and clients. And despite its importance, even as an ANVISA regulation rule, this is not taken as seriously as it should.

The greatest knowledge of the interviewed professionals is about the flu, hepatitis and AIDS, with leprosy and scabies still being neglected by the subjects.

Regarding the management of solid waste, it was questioned whether there is a separation of chemical and organic waste (graph 2).

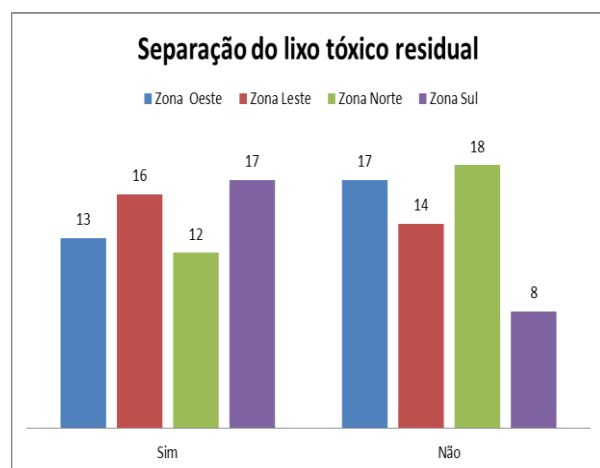


Graph 2: Regarding the separation of organic waste from chemical waste by respondents.

Source: Field research, 2019.

According to data in Graph 2, professionals from the South Zone mostly perform the separation of chemical and organic waste (22) and in the West Zone there is a smaller number (17).

It was also questioned whether the separation of residual toxic waste, empty paint tubes and containers containing other chemicals is performed (Graph 3).



Graph 3: Regarding the separation of residual toxic waste by respondents.

Source: Field research, 2019.

According to Graph 3, most toxic waste is separated (17) by professionals in the South Zone of Manaus and not in the North Zone (18).

Most (14) of the professionals dispose of sharp and cutting materials such as blades and needles in the descarpak; In the West Zone, the most usual way is to

dispose of it in the common garbage; and in the East Zone, other means of disposal are used.

In establishments where professionals work in the South Zone (16), there is an adequate place for segregation, packaging, identification and storage until external transportation. In the West Zone there is no such procedure (21).

Unfortunately, the survey data reveal that the enterprises, according to the interviewees, do not hire special collection services, especially in the East Zone of Manaus.

It was found that the establishments are not performing the proper separation of the waste generated. Through this diagnosis, it was found that the vast majority do not have knowledge of how to perform the separation of waste, as well as do not have a specialized company to do the collection and end up disposing of the waste together with the public collection of the municipality.

IV. CONCLUSION

A model aesthetic establishment is one that performs the activity in a socially responsible manner, with ethical performance in the economic, environmental and social spheres. Currently, there is a growth of the aesthetic branch in society, therefore, the topics of biosafety and waste management of health services in these places should receive greater importance. Aesthetic establishments are spaces of intense flow of people, therefore, conducive to the spread of diseases. Thus, both professionals and customers are susceptible to health risks.

In this sense, the present study sought to contribute to the theme of waste management and biosafety practices in aesthetic establishments, demonstrating the importance of the subject, in order to measure the real health risks of the population living in the city of Manaus.

As for the method used in this research, it was satisfactory, because through the interviews, deficiencies in the disposal of waste were found in all stages of the management of the RSSS in the establishments visited, which are associated with the lack of knowledge on the subject by service providers.

As relevant results of the research, the following stand out: the opportunity for the researcher to know and make known the visited establishments internally, reinforcing the subject and its importance; the interviewees' point of view; having the opportunity to gain knowledge on the topic and stimulate the exchange of information, as well as establishing new attitudes to follow.

The present study made it possible to identify the lack of knowledge of professionals in the aesthetic field about the management of waste from health services. The results draw the challenge of the establishments regarding permanent education, with an approach to the Health Services Waste Management Plan, safety at work and the environment. The inclusion of topics related to waste management and the impacts of the production of this waste on the health of populations and ecosystems in curricular disciplines, training campaigns, continuing and permanent education on the generation, segregation, storage and collection of waste could prepare professionals to meet society's current demands regarding the production and disposal of waste.

RDC nº 222/2018, does not differentiate the services that generate waste from health services in terms of the administrative sphere or the nature of the organization and emphasizes the inclusion of aesthetic and beautification services, as generators of health services. Thus, it is understood that there will be greater inspection in these establishments, as well as greater demands from health and environmental agencies.

As evidenced in a report by the professionals interviewed, the need for education and training in environmental issues, such as solid waste management and others, is considered. One of the biggest challenges is to obtain the permanent involvement of employees and responsible managers. The study alludes that the employees involved, working in groups and internal facilitators, supported by external experts, can develop their actions with more confidence and efficiency. The involvement of the external specialist with the participative management of the projects, involving other employees, is inherent to the development of environmental management programs in this market segment.

With the preparation of this research, it is also expected that future projects will be developed in the aesthetic field, serving as a bibliographic source and also as an incentive for the continuation of this study. It is the responsibility of the National Association of Beauticians and Cosmetologists (ANESCO) as well as the Union of Barbers', Hairdressers, Beauty and Similar Institutions in Manaus, universities, technical schools, public bodies and private companies connected to the area to present information to professionals, emphasizing the correct conduct of biosafety and waste management, bringing, as a consequence, the improvement of services provided and sustainable development.

REFERENCES

- [1] AGUADO, O. V.; GÓMEZ, J. A. D.; PÉREZ, A. G. Serviço social e meio ambiente. 10. ed. São Paulo: Cortez, 2017.
- [2] AKINCI, Z.; YURCU, G.; KASALAK, M.A. Role of Perception in the Relationship between Expectation and Satisfaction in Terms of Sustainability in Tourism Education. Sustainability 2018, 10, 2253.
- [3] ANVISA. Biossegurança. (2014) Disponível em: <http://portal.anvisa.gov.br/wps/content/Anvisa+Portal/Anvisa/Inicio/Sangue+Tecidos+e+Orgaos/Assunto+de+Interesse/Conceitos,+glossarios,+siglas/Biosseguranca>. Acesso em: 30 abr. 2018.
- [4] ASSOCIAÇÃO BRASILEIRA DE NORMAS TÉCNICAS. NBR 10004:2004: Resíduos Sólidos. 2. ed.. Rio de Janeiro: ABNT, 2004.
- [5] BRASIL, Ministério do Meio Ambiente. Consumo Sustentável: Manual de Educação. Brasília: Consumers International/MMA/IDEC, 2002.
- [6] BOFF, L. Saber Cuidar: Ética do Humano - Compaixão pela Terra. Petrópolis, RJ: Vozes, 2009.
- [7] CROHN, K.; BIRBAUM, M. Environmental education evaluation: Time to reflect, time for change. Eval. Program Plan. 2010, 33, 155–158.
- [8] DUTRA, Roseli de Fátima. Qualidade de vida no Trabalho: O caso de uma cooperativa médica de um hospital universitário mineiro. Belo Horizonte/2014: Faculdade Novos Horizontes, (Dissertação de mestrado).
- [9] ELIAS, Marisa Aparecida; NAVARRO, Vera Lúcia. A relação entre o trabalho, a saúde e as condições de vida: negatividade e positividade no trabalho das profissionais de enfermagem de um hospital escola. Revista latino Americana de Enfermagem, v.14, n.4, p.517-525, jul/ago 2014.
- [10] FARIAS, M; MAGALHÃES, M; GOMES, M. Estudo de Caso: Plano de Gerenciamento de Resíduos Sólidos (PGRS) do Porto do Recife S/A. X JORNADA DE ENSINO, PESQUISA E EXTENSÃO – JEPEX 2010 – UFRPE: Recife, 18 a 22 de outubro, Recife – PE, 2010.
- [11] FERREIRA, J. A.; ANJOS, L.A. Aspectos de saúde coletiva e ocupacional associados à gestão dos resíduos sólidos municipais, Caderno de Saúde Pública, Rio de Janeiro, 17(3):689-696, mai-jun, 2001.
- [12] FORTUNATO, E.; RUSCHEINSKY, A. O ordenamento do Espaço Urbano e Políticas Sócio-ambientais, 2008. Revista Eletrônica do Mestrado em Educação Ambiental. v 11. Disponível em < <http://www.fisica.furg.br/mea/remea/vol11/artv11n4.pdf> > Acesso em: 21 out. 2018
- [13] GARCIA, L. P. et al. Gerenciamento dos Resíduos de Serviços de Saúde: uma questão de biossegurança, Caderno Saúde Publica, Rio de Janeiro, 20 (3): 744-752, mai-jun, 2006.
- [14] GARCIA, K.; BENTO, C.; COSTA, K. Riscos ocupacionais de uma amostra dos profissionais da beleza do município de Goiânia. Revista Visão Acadêmica; Universidade Estadual de Goiás; Novembro de 2012;

- [15] GERSON, J. Fundamentos de Estética – Estética. 10ª ed., São Paulo: Cengage Learning, 2011.
- [16] GOMES, R. & DAMAZIO, M. Cosmetologia – Descomplicando os principais ativos. 3ª ed., São Paulo: LMP Editora, 2009.
- [17] GIL, A. C. Como elaborar projetos de pesquisa. 4. ed. São Paulo: Atlas, 2002.
- [18] HALAL, J. Tricologia e a Química Cosmética Capilar. 5ª ed., São Paulo: Cengage Learning, 2011.
- [19] LAKATOS, E. M.; MARCONI, M. A. Técnicas de pesquisa. 10. ed. São Paulo: Atlas. 2011.
- [20] LIMA, G.F.C. Critical environmental education: from socioenvironmentalism to sustainable societies. Educação e Pesquisa, São Paulo, v.35, n.1, p. 145-163, jan./abr. 2009.
- [21] LIU, S.; GUO, L. Based on Environmental Education to Study the Correlation between Environmental Knowledge and Environmental Value. Eurasia J. Math. Sci. Technol. Educ. 2018, 14, 3311–3319.
- [22] LOPES, L., Gestão e Gerenciamento Integrados dos Resíduos Sólidos Urbanos: Alternativas para pequenos municípios. Dissertação, São Paulo, 2012
- [23] LOUREIRO, C. F. B. Educar, participar e transformar em Educação Ambiental. Revista Brasileira de Educação Ambiental. Brasília, n.o, p.13-20, novembro, 2014.
- [24] MAGNANO TSBS, LISBOA MTL, GRIEP RH. Trabalho da enfermagem e distúrbio musculoesquelético: revisão das pesquisas sobre o tema. Esc Anna Nery Rev Enferm. 2012;12(3):560-5.
- [25] MARSHALL, R.E.; FARAHBAKHS, K. Systems approaches to integrated solid waste management in developing countries. Waste Manag. 2013;33:988–1003.
- [26] MORETTI, Silvinha; TREICHEL, Adriana. Qualidade de vida no Trabalho x Autorealização humana. Revista Leonardo Pós. v.1. n. 3. ago/dez. Santa Catarina: ICPG, 2016. Disponível em: <<http://www.icpg.com.br/artigos/rev03-12.pdf>>. Acesso em: 20 jun. 2018.
- [27] MOYO, N.; MASUKU, I. Based on Environmental Education: The Effects of Environmental Knowledge and Awareness on the Purchase Intention of New Energy vehicles in the Southern part of China. Adv. Soc. Sci. Res. 2018.
- [28] NASCIMENTO, D. M. Metodologia do trabalho científico: teoria e prática. 2. ed. São Paulo: Fórum, 2008.
- [29] RAMALHO, A. H. P. Diagnóstico do Sistema de Gestão dos Resíduos Sólidos do Hospital das Clínicas de Porto Alegre, Dissertação de Mestrado, FEEVALE, Novo Hamburgo, 2006.
- [30] REA, L.; PARKER R. Metodologia de pesquisa: do planejamento à execução. São Paulo: Pioneira Thomson, 2002.
- [31] REBELO, T. Guias de produtos cosméticos. São Paulo: SENAC, 2004.
- [32] RIORDAN, M.; KLEIN, E.J. Environmental Education in Action: How Expeditionary Learning Schools Support Classroom Teachers in Tackling Issues of Sustainability. Teach. Educ. Q. 2010, 37, 119–134.
- [33] SAAB, W.G.L., GIMENEZ, L. C.P. Panorama do Segmento de Salões de Beleza e Barbearias, Área de Operações Industriais 2 – AO2, Gerência Setorial de Comércio de Serviços, BNDES, 2001, p.27. Disponível em http://www.bndes.gov.br/SiteBNDES/bndes/bndes_pt/Institucional/Publicacoes/Consulta_Expressa/Setor/Comercio_e_Servicos/200104_2.html. Acesso em: 10 jun. 2018.
- [34] SANTOS, G. G. D. dos; Análise e Perspectivas de Alternativas de Destinação dos Resíduos Sólidos Urbanos: O Caso da Incineração e da Disposição em Aterros. Dissertação (mestrado) – UFRJ/ COPPE/ Programa de Planejamento Energético, Rio de Janeiro, 2011.
- [35] SANZ-GALLÉN, P. et al. Introducción a la salud laboral. In: SANZ-GALLÉN, P.; IZQUIERDO, J.; PRAT MARÍN, A. Manual de salud laboral. Barcelona: Springer-Verlag Ibérica, 2015. p. 1- 7.
- [36] SEBRAE. Serviço Brasileiro de Apoio às Micro e Pequenas Empresas. São Paulo. Pesquisa Setor/Segmento Beleza & Estética Relatório Qualitativo + Quantitativo. Disponível em: https://m.sebrae.com.br/Sebrae/Portal%20Sebrae/UFs/SP/Anexos/Pesquisa%20setor%20beleza%20est%C3%A9tica_SP.pdf. Acesso em: 20 nov. 2019.
- [37] SELIN E. Sustainable Municipal Solid Waste Management—A Qualitative Study on Possibilities and Solutions in Mutomo, Kenya. Department of Ecology and Environmental Science (EMG), Umeå University; Umeå, Sweden: 2013.
- [38] SOUZA, N. & SOARES NETO, Caracterização do Potencial Poluidor por Salões de Beleza em Palmas – TO. Tocantins: FACTO, 2009.
- [39] TAIWO, A.M. Composting as a Sustainable Waste Management Technique in Developing Countries. Sci. Technol. 2011;4:93–102.
- [40] TENÓRIO, J. A. S.; ESPINOSA, D. C. R. Controle Ambiental de Resíduos. In: PHILIPPI Jr, A.; ROMÉRO, M. de A.; BRUNA, G. C. Curso de Gestão Ambiental, Barueri, SP: Manole, 2004. (Coleção ambiental; 1).
- [41] VANDANA BHARTI, JASPAL SINGH, A.P. SINGH. A Review on Solid Waste Management Methods and Practices in India. Trends in Biosciences 10(21). 4065 – 4067, 2017.
- [42] WATSON, A. et al. A Inteligência no trabalho. São Paulo: FUNDACENTRO, 2013.
- [43] YUKALANG, N., CLARKE B., ROSS K. Barriers to Effective Municipal Solid Waste Management in a Rapidly Urbanizing Area in Thailand. Int. J. Environ. Res. Public Health. 2017;14:1013.