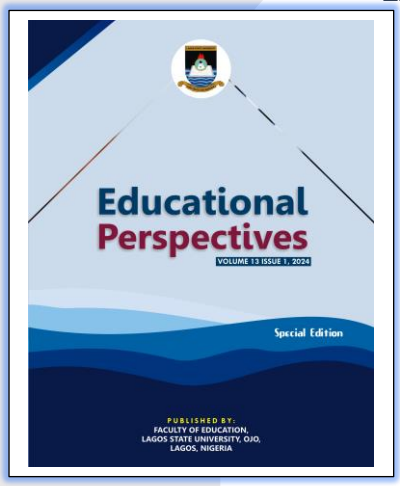

Preventive Practices and Determinants of Exposure to Occupational Health Hazards Among Female Hairstylists in Ikeja Division of Lagos State

Waliu Babatunde Ogunbamowo, Bidemi Bilkis Lafiaji-Okuneye, Ashon Daniel Oluwatobi & Nwonwu Ebube Gloria

Department of Human Kinetics, Sports and health Education, Lagos state University

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CORRESPONDING EMAIL ADDRESS:
ogunbamowo@lasu.edu.ng

ORCID NUMBER:

0000-0003-2101-0198

ABSTRACT

The study assessed the preventive practices and determinants of exposure to occupational health hazards among female hairstylists in Ikeja Division of Lagos State. Two research questions and hypothesis were postulated for this study. Descriptive survey design was adopted, the study sample was drawn from Agege, Mushin, Alimosho, Ikeja and Oshodi-Isolo Local Government Area of Lagos State. The local government were purposively selected because the researcher observed a significant number of hairdressers and the activities of the hairdressers' association in these communities. A total of four hundred (500) female hair stylists were randomly selected for the study. A review of related literature was carried out for a good background for this study. Data were collected with the use of a self-developed questionnaire titled: Female Hairdresser Occupational Hazards Questionnaire (FHOHQ). The questionnaire was drawn based on a four point Modified Likert Scale. The instrument was validated by experts in the Department of Human Kinetics, Sports, and Health Education and Department of Community Health College of Medicine Lagos State University for the face and content validity of the instruments. The reliability of the instrument was ensured using test-retest method and reliability coefficient of 0.76 was recorded and considered appropriate. Descriptive statistics of frequency count and percentage were used to analyse the demographic characteristics of the respondents, while the inferential statistics of regression analysis was used to analyse the stated hypotheses at 0.05 level of significance.

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Introduction

The occupation of a hairstylist can be an exciting and rewarding career choice for many individuals, particularly for women who have a passion for hairstyling and creativity. However, like any profession, hairstyling comes with its own set of occupational health hazards that need to be identified and set up procedures for prevention of such hazards. In recent years, there has been a growing concern by health educators and other health professionals about the health risks associated with hairstyling (Adeleye etal., 2018). Hairdressers are exposed to various kinds of harmful agents in the workplace, these include chemical agents, such as hair dyes, and physical agents, such as noise and temperature. In addition, ergonomic hazards are an issue due to inappropriate posture during work and long working hours (Ajala etal., 2019). Furthermore, hairdressers make use of mechanical tools, such as needles and blades, which predisposes both clients and hairdressers to biological hazards, such as fungi, bacteria, and viruses. (Chaiear, et al., 2017). Exposure to blood-borne diseases, such as hepatitis B, hepatitis C, and HIV/AIDS, is more likely through tattooing, manicures, pedicures, and skin care procedures (European Agency for Safety and Health at Work. (2019). The nature of hairstylist work, they are exposed to chemicals found in hair dyes, bleaching agents, perming solutions, and other hair care products. These haircare products may contain potentially harmful ingredients such as ammonia, formaldehyde, and various allergens. Continuous inhalation and skin contact with these chemicals can lead to respiratory problems, allergic reactions, dermatitis, and other skin conditions. Frequent exposure to chemicals can cause skin irritation and, in some cases, contact dermatitis (Hossain, et al., (2018).

Moreso, hair dyes and bleaches commonly used by hairstylists contain numerous chemicals, including aromatic amines and phenylenediamines, which have been associated with adverse health effects. Prolonged exposure to these substances has been linked to an increased risk of bladder cancer, non-Hodgkin's lymphoma, and respiratory disorders (Lash, Parker & Scott, 2021). Frequent handling of shampoos, hair conditioners, and hair sprays containing potentially harmful chemicals, such as parabens, formaldehyde, and phthalates may put hairstylists at risk of these infections. The formaldehyde that is commonly found in hair straightening and smoothing products, such as keratin treatments, is a volatile compound that has been classified as a carcinogen by the International Agency for Research on Cancer (IARC) and can cause respiratory irritation, eye irritation, and skin sensitization (Occupational Safety and Health Administration - OSHA, 2019). These chemicals have been linked to skin and respiratory allergies, asthma, and hormonal disruptions (Nazari, 2019). Recurrent exposures of hairdressers to cosmetic chemical products and indoor air pollution in beauty centers are considered risk factors for numerous health problems, such as respiratory, dermal, ocular, and reproductive concerns (Fu, et al. (2019). Hydrogen Peroxide is another chemical that is often used in hair bleaching processes, hydrogen peroxide can cause skin and eye irritation, and inhalation may lead to respiratory irritation. (European Agency for Safety and Health at Work., 2019).).

Another occupational health hazard that hairstylists are exposed to is musculoskeletal disorder. The physical demands of the profession contribute to the risk of musculoskeletal disorders. Hairstylists often spend long hours standing, leaning, and twisting their bodies in uncomfortable positions to reach their clients' hair. This prolonged strain on their muscles, joints, and bones can result in chronic pain, back injuries, carpal tunnel syndrome, and other repetitive strain injuries. Prolonged standing has been associated with an increased risk of lower limb pain, varicose veins,

and foot disorders (Parkkari, 2013). Standing for extended periods without proper breaks or supportive footwear can exacerbate these issues and contribute to long-term musculoskeletal disorders. Also, Hairstylists often adopt awkward postures to perform their tasks, such as reaching, bending, and twisting the body. These positions can lead to the development of musculoskeletal disorders in the neck, shoulders, back, and upper extremities (Hossain, et al., 2018). Awkward postures can cause muscle imbalances, strain on joints, and compression of nerves, contributing to chronic pain and functional impairments. Various musculoskeletal complaints, such as neck pain, wrist/hand pain, and low back pain, have been reported among hairdressers, who are subjected to poor ergonomic conditions in their workplaces (Bernard, (2017).).

Female hairstylists are at risk of exposure to infectious diseases from handling of sharp objects used for hair styling, pedicure, and manicure. Biological health hazardis one of the many workplace hazards, and it is particularly significant because of the variety of exposures and contact with extremely dangerous substances (Ogunbamowo, Oladipupo, Ashon &Ligali, 2022); (Vermeulen, Schymanski, Barabási, & Miller 2020). Female hairstylists may also meet clients' blood or body fluids, potentially exposing themselves to bloodborne pathogens such as hepatitis B virus, hepatitis C virus, and human immunodeficiency virus. These pathogens can be transmitted through accidental needlestick injuries or cuts from sharp tools contaminated with infected blood (Onakoya, etal., 2020). The close physical contact between hairstylists and clients may lead to the transmission of skin infections. Fungal infections, such as tinea capitis (scalp ringworm), and bacterial infections, including impetigo and folliculitis, can be transmitted through shared combs, brushes, or contaminated surfaces (Nnoruka et al., 2014). Exposure to respiratory infections such as tuberculosis, influenza, and common cold viruses is also common among female hairstylists due to proximity to clients and potential exposure to respiratory droplets (Ogunbosi et al., 2014).

Hairstylists, due to the nature of their profession, are in close contact with clients and handle various tools and equipment. This proximity and exposure to different individuals may potentially increase the risk of contracting and spreading infectious diseases. The most common infectious diseases of concern include bacterial, fungal, and viral infections. Oladele, etal., (2018) conducted a survey among hairstylists in Nigeria to assess their knowledge of infectious diseases and their preventive practices. The study found that while many hairstylists were aware of the risks, there were gaps in their knowledge regarding proper hygiene practices, disinfection of tools, and the use of personal protective equipment (PPE).

Another occupational health hazard of female hairstylists in Nigeria is exposed to reproductive health issue. Frequent exposure to various chemicals that contain endocrine-disrupting compounds, such as phthalates, parabens, and formaldehyde can interfere with hormonal balance and reproductive function (Onakoya, et al., 2020). Prolonged and repeated exposure to these substances without adequate protective measures can increase the risk of reproductive health problems. Hairstylists are frequently exposed to various chemicals found in hair care products, such as hair dyes, permanent wave solutions, and hair straightening treatments. Some of these chemicals, like certain aromatic amines and phthalates, have been associated with adverse reproductive effects. Studies have indicated that prolonged exposure to these chemicals may potentially contribute to fertility issues, miscarriages, and birth defects (Ajayi, et al., 2021).

Hair styling is a popular career choice for many women; the nature of their work exposes them to various health hazards that can have adverse effects

on their health and well-being. The potential risks associated with this occupation have not received adequate attention. It is observed that female hairstylists are regularly exposed to a wide range of chemicals found in hair dyes, bleaches, and other hair products. These chemicals may contain potentially harmful substances such as ammonia, formaldehyde, and aromatic amines, which can pose a risk of respiratory problems, skin disorders, and other health issues. Also, the nature of hair-styling work requires prolonged standing, repetitive motions, and awkward postures, leading to musculoskeletal problems such as back pain, neck pain, and joint disorders. Also, the researcher observed there are no comprehensive studies specifically focused on assessing the occupational health hazards faced by female hairstylists in the Alimosho Area. The lack of comprehensive studies, the presence of chemical exposures, physical strain and musculoskeletal disorder, infectious disease risks (like HIV/AIDS, Hepatitis among others through instrument used for hairstyling), and reproductive health concerns highlight the urgent need for research and interventions to safeguard the well-being of female hairstylists. Therefore, this study assessing the preventive practices and determinants of exposure to occupational health hazards among female hairstylists in the Ikeja division of Lagos, Nigeria.

The specific purpose of this study includes:

i. Assess the preventive practices of occupational health hazards among female hairstylists in Ikeja Division of Lagos State.
ii. Assess the relationship between chemical product use and exposure to occupational health hazard among female hairstylists Ikeja Division of Lagos State.

Research Questions

The following research questions were answered for the study:

i. What are the preventive practices of occupational health hazards among female hairstylists in Ikeja Division of Lagos State?
ii. What is the relationship between chemical product use and exposure to occupational health hazard among female hairstylists in Ikeja Division of Lagos State?

The following research hypotheses were postulated for the study.

i. There is no significant preventive practice of occupational health hazards among female hairstylists in Ikeja Division of Lagos State.
ii. There is no significant relationship between chemical product use and exposure to occupational health hazard among female hairstylists in Ikeja Division of Lagos State.

Methodology

The descriptive survey research design was adopted for this study because descriptive research design is a type of research design that aims to obtain information to systematically describe a phenomenon, situation, or population. The population for this study consists of all female hairdressers in Ikeja Division of Lagos state. A multi-stage sampling technique of simple random sampling technique was adopted for the selection of the respondents. In the first stage, a purposive sampling technique was used to select area in Ikeja Division of Lagos state with an active hairdresser Association. Based on interaction with some female hairdressers, the local governments are: Agege, Mushin, Alimosho, Ikeja and Oshodi-Isolo. The local government was purposively selected because the researcher observed a significant number of hairdressers and the activities of the hairdressers' association in these communities. The second stage involves using simple random sampling technique to select 100 female hairdressers from each of the selected

communities. In total 500 female hairdressers were randomly selected in all the 5 local government selected in Ikeja division of Lagos state. The research instrument for this study was a self-developed questionnaire titled: Female Hairdresser Occupational Hazards Questionnaire (FHOHQ). The questionnaire was divided into two section A and B. while section A, focuses on the demographic data of respondents and Section B consisted of 30 items, rated in 4-points Likert scale response options of Strongly Agree (SA), Agree (A), Strongly Disagree (SD), and Disagree (D) The scoring pattern of 4-1. The face and content validity of the instrument were ascertained by the panel of experts in the Department of Human Kinetics, Sports, and Health Education and Department of Community Health College of Medicine Lagos State University, Ojo, Lagos.

The reliability of the instrument was tested using the Cronbach alpha technique. An r-value 0.83 was obtained and used as basis for the adoption of the instrument for data collection. The copies of the instrument were administered personally by the researcher with the help of two trained research assistants. Five hundred (500) questionnaires were distributed to female hairdressers in Ikeja Division of Lagos state. Copies of the administered questionnaires were checked to ensure that they were well completed before leaving the study area. The researcher monitored the process of data collection throughout. Daily review meeting was held at the beginning and end of each day with the research assistants. Data collected was analyzed using descriptive statistical of frequency counts and percentage for demographic data while inferential statistics of Chi-square and Linear regression was used to analyze all stated hypotheses at 0.05 alpha level significance. The Statistical Package for Social Sciences (SPSS version 23) was used for analyzing the data collected.

Results

Data Presentation

Table 1: Distribution of Respondents by Age, Years of Experience, Exposure to Occupational Hazards and Preventive Practices against Occupational Hazards

Age	Frequency	Percent
Less than 20 years	18	1.6
21 - 30 years	221	44.2
31 - 40 years	183	36.6
41-50 years	78	17.6
Total	**500**	**100**
Experience	**Frequency**	**Percent**
Less than 5 years	41	8.2
6 -15 years	206	41.2
16 - 30 years	159	31.8
Above 30 years	94	18.8
Total	**500**	**100**
Years of Experience	**Frequency**	**Percent**
Less than 5 years	41	8.2
Rarely	73	14.6
Occasionally	201	40.2
Frequently	226	45.2
Total	**500**	**100**
Preventive Practices	**Frequency**	**Percent**
Rarely	36	7.2
Occasionally	362	72.4
Frequently	102	20.4
Total	**500**	**100**

Table 1 showed that 18 representing 1.6% of the respondents were less than 20 years, 221 representing 44.2% of the respondents were between the ages of 21 - 30 years, 183 representing 36.6% of the respondents were between 31– 40years and 78 representing 17.6 were between 41– 50years of age. Consecutively, 41 representing 8.2% of the respondents have Sless than 5 years of experience, 206 representing 41.2% of the respondents have between 6-15 years, 159 representing 31.8% of the respondents have between 16– 30years of experience and 94

representing 18.8 have more than between 30years of experience. Further, 73 representing 14.6% of the respondents were rarely exposed to occupational hazards, 201 representing 40.2 were occasionally exposed to occupational hazards and 226 representing 45.2 were frequently exposed to occupational hazards while working as hairstylist. Finally, 36 representing 7.2% of the respondents rarely practice preventive measures against occupational hazards, 362 representing 72.4 occasionally practice preventive measures against occupational hazards and 102 representing 20.4 frequently practice preventive measures against occupational hazards while working as hairstylist.

Hypothesis One

There is no significant preventive practice of occupational health hazards among female hairstylists in Ikeja Division of Lagos State.

Table 2: Chi-square result on the preventive practice of occupational health hazards among female hairstylists.

Responses	Frequency	DF	LS	X^2	P value	Remark
SA	65					
A	114					
D	198	30	0.05	13.54	0.16	Not Sig
SD	172					
Total	500					

Table 2 presents the chi-square analysis of preventive practice of occupation health hazards among female hairstylists. A non-significant chi-square value of X^2= 13.54, p>0.05 was recorded. Therefore, hypothesis one which states that there is no significant preventive practice of occupational health hazards among female hairstylists in Ikeja Division of Lagos State is hereby accepted. This implies that female hairstylist does not practice preventive measures against exposure to occupational health hazards in Ikeja Division of Lagos State.

Hypotheses Two

There is no significant relationship between chemical product use and exposure to occupational health hazard among female hairstylists in Ikeja Division of Lagos State.

Table 3: analysis result of the relationship between chemical product use and exposure to occupational health hazard among female hairstylists

Model Summary	R = 0.368	R^2 = 0.136	F=15.366*	Sig.=0.000	
	Unstandardized Coefficients		Standardized Coefficients	t-value	Sig.
Model	B	SE	Beta		
Constant	20.327	1.555		13.073	0.000
chemical product use	1.397	0.356	0.368	3.920	0.000

Dependent Variable: exposure to occupational health hazard

The result in Table 3 shows that a significant regression F=15.366; P<0.05 was obtained at 0.05 confidence level, therefore, hypothesis two as stated above is hereby rejected. This implies that use of harmful chemicals has a significant association with exposure to occupational health hazard among female hairstylists in Ikeja Division of Lagos State. Furthermore, the result revealed

that the relationship between use of harmful chemicals and exposure to occupational health hazard among female hairstylists can be predicted at 13.6% (R^2-square=0.136).

Discussion

Hypothesis one states that there is no significant preventive practice of occupational health hazards among female hairstylists in Ikeja Division of Lagos State is hereby accepted. This implies that female hairstylist does not practice preventive measures against exposure to occupational health hazards in Ikeja Division of Lagos State. The result of the research finding agrees with Nazari, et al., (2019) stated that to mitigate these risks, preventive measures such as the use of gloves, proper ventilation systems in salons, and substitution of hazardous chemicals with safer alternatives have been recommended. Omonijo, (2015) found that hairstylists are also at risk of exposure to infectious agents, including bacteria, viruses, and fungi, due to close contact with clients and shared equipment. Poor hygiene practices and inadequate disinfection of tools can facilitate the transmission of infections such as scalp dermatitis, folliculitis, and even bloodborne diseases like hepatitis B and HIV. Aluko & Adebayo, (2017) agrees that adherence to strict infection control protocols, including regular sanitation of tools, use of disposable items when possible, and proper hand hygiene, is essential in preventing the spread of infections in salon settings. The result of the study also reveals that there is no significant preventive practice of occupational health hazards among female hairstylists in Ikeja Division of Lagos State. practice preventive measures against occupational health hazards among the female hairstylist in Ikeja Division of Lagos State. Female hairstylist does not use appropriate preventive measures such as the use of gloves, proper ventilation systems in salons, and substitution of hazardous chemicals with safer alternatives. Hairdressers and their customers are exposed to various health hazards in the hairdressing salons. The situation requires attention in Nigeria especially in Lagos State where large proportion of female hairstylists are concentrated, and hairdressing professions are still not formally regulated, and several hairstylists operate at will. Most of the female hairstylists have inadequate knowledge on the potential toxic effects of the chemicals they use on daily basis. This study was aimed at assessing the preventive practices and determinants of exposure to occupational health hazards among female hairstylists in Ikeja Division of Lagos State. This result of this study provides preliminary information as a motivation or driving force for a large-scale study and justifies an evaluation of the state of the problem nationwide. Regarding the personal characteristics of the participating hairstylists, the largest proportion of the studied hairstylists were less than 30 years of age. Regarding the level of years of experience, majority of the respondents have more than 15 years of experience in hairstyling.

Hypotheses two state that there is significant relationship between chemical product use and exposure to occupational health hazard among female hairstylists in Ikeja Division of Lagos State. Furthermore, the result revealed that the relationship between use of harmful chemicals and exposure to occupational health hazard among female hairstylists can be predicted at 13.6% (R^2-square=0.136). The result of the research finding agrees with Ajayi, et al., (2021 found that hairstylists had a significantly higher prevalence of respiratory symptoms compared to the general population due to exposure to chemical agents. Adeleye, etal., (2018)., Investigated the respiratory health of hairdressers exposed to chemical substances in Thailand, highlighting the prevalence of respiratory symptoms and impaired lung function among this occupational group. This finding agrees with the works of American Journal of Industrial Medicine, (2019) explored the prevalence of skin disorders among Korean hairdressers, emphasizing the high incidence of dermatological problems such as irritant contact

dermatitis and hand eczema. Ronda E, et al. (2019) examined the association between formaldehyde exposure and respiratory symptoms among hair salon workers in Lima, Peru, concluding that formaldehyde exposure was significantly associated with increased respiratory symptoms. The female stylists are exposed to varieties of health hazards when handling hair care products like shampoos, conditioners, and hair sprays which contain potentially harmful chemicals that can lead to skin and respiratory allergies, asthma, and hormonal disruptions among others. Exposure to hair care products such as hair dyes and bleaches that contain harmful chemicals can also lead to adverse health effects such as increased risk of bladder cancer, non-Hodgkin's lymphoma, and respiratory disorders (Lash, Parker & Scott, 2011). The result of this study agrees with Winker et al. (2015), which investigated the prevalence of occupational dermatitis among hairdressers and found that 55% of the participants experienced work-related skin problems, primarily due to exposure to hair dyes and hair care products. Similarly, Zinze et al., (2017), stated that hairstylists often adopt awkward postures to perform their tasks, such as reaching, bending, and twisting the body. These positions can lead to the development of musculoskeletal disorders in the neck, shoulders, back, and upper extremities.

Conclusion and Recommendations

i. There is no significant practice of preventive measures against occupational health hazards among female hairstylist in Ikeja Division of Lagos State.
ii. There is significant relationship between use of harmful chemicals and exposure to occupational health hazard among female hairstylists in Ikeja Division of Lagos State.

Based on the conclusion of this study, it was recommended that:

i. There should be enforcement on preventive practices against occupational health hazards among female hairstylists.
ii. Government should ensure that female hairstylist comply to regulatory guidelines to prevent exposure to occupational health hazards.
iii. Personal Protective equipment such as hand gloves, nose mask, overall should be worn when handling harmful chemicals such as hair dye, relaxer, shampoo, and hair conditional.
iv. Health educators should organise constant seminars to sensitise female hairstylists on the danger of exposure to chemical hazards and measures to prevent exposure to these hazards.

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