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Awareness and Experience of Occupational Hazards among Hairdressers in Umuahia Metropolis, Abia State, Nigeria

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Abstract

This study sought to determine the level of awareness of beauty salon workers regarding their occupational hazards, the prevalence of experiencing the hazards, and the preventive measures they take. The study employed the cross-sectional survey design and was guided by five research questions. The sample was 188 salon workers selected from 80 salons within Umuahia metropolis. The data were collected using a questionnaire and analyzed using frequency tables, percentages, and weighted means. Two academics validated the questionnaire, one in the Home Economics unit of the Department of Vocational Education and one from the Measurement and Evaluation unit of the Department of Psychological Foundations of the Abia State University, Uturu. A Cronbach's alpha reliability score of 0.84 was obtained. The results showed a high level (3.04) of awareness of the hazards associated with hairdressing occupation. The hairdressers also reported experiencing a feeling of tightness in the chest (46.3%), sneezing (67.6%), and itchy or runny eyes (58%) because of exposure to hair care chemicals. Other hazards they experienced were musculoskeletal problems such as neck pain (73.4%), back pain (76.1%), and shoulder pain (64.9%) because of long hours of poor work posture. The result further showed that the use of preventive measures was poor (21.56%) It was recommended among others that local and national health agencies should create more awareness among hairdressers about these hazards and how to prevent them. They should also be enlightened about managing and improving their work environment.

Keywords: Hairdressing, salon workers, musculoskeletal disorders, occupational hazards, Awareness

Introduction

Current emphasis on the acquisition of skills and employability among young persons has resulted in many of them showing interest in operating or working in hairdressing salons. There is, therefore, a proliferation of small-scale salons in which persons with varying sociodemographic characteristics work. Among the characteristics of interest are age, marital status, level of education, work experience, number of hours of work and so on (Tesfaye et al., 2019). A hairdresser is a professional who specializes in hairstyling, cutting, colouring, and grooming services in order to maintain or change a person's image (LanGeek, 2020). Hairdressing usually consists of such hair care services as shampooing, cutting, colouring, styling, and hair extension, scalp treatment, among others. The ability to comprehend the work of a typical hairdresser in the Nigerian setting calls for an understanding of the uniqueness, nature and texture of the African hair compared to the Caucasian, Asian or American hairs. Although there is clear resemblance in the structure and

chemical composition, the African hair is more tightly curled and entangles easily due to having a higher number of knots. It is also drier, more brittle, less shiny, and more fragile on account of the uneven distribution of sebum, and moisture along the hair shaft. These features cause the hair to break easily, and grooming is tough (Alchorne & Abrue, 2008; Archibong et al., 2018). As Moda and King (2019) observed, Afro-Caribbean salon operators are at a higher risk of exposure to pollution than their Caucasian counterparts. This is because of the nature and number of materials used in treating their customers' hair. Many hair treatments have been proven to contain chemicals considered harmful to humans. In addition, much longer hours are spent on styling the clients' hair, leading to long hours of standing and maintaining postures that could result to hazards on the hair stylist.

According to Sasseville (2008), occupational disease is an ailment caused or aggravated because of exposure to work related risk factors. Infection can occur during hairdressing procedures since items such as razors, scissors, combs, clippers, and hairpins can accidentally penetrate the skin, or the hairdresser encounter the body fluid of the client. Due to the nature of the business, salon operators are exposed to several chemicals through both their skin and respiratory system from hair dyes, bleach, shampoos, hair conditioners, hair relaxers, permanent wave solutions, detergents, hair spray and perfumes (De Gennaro et al., 2014; Nemer et al., 2015). This exposure can likewise affect the customers and others present within the indoor environment where these cosmetic products are being used (De Gennaro et al., 2014). An inventory of cosmetic ingredients reported by the European Union and other researchers revealed that products used in the industry contain over 5000 volatile substances that are either harmful, irritants or toxigenic (Mandiracioglu et al., 2009; Liu et al., 2018). Due to the nature of hair products, their frequent use exposes the operators to harmful chemicals which are either known or suspected allergens, carcinogens or organic solvents that arise from activities including hair dyeing, shampooing, hair conditioning, hair sprays, hair relaxing, hair bleaching, Brazilian blowout and many more (Lysdal et al., 2011).

Several studies indicate that hairdressing salon operators are more likely to experience skin disease conditions that include occupational dermatitis than people in other professions (Archibong et al., 2018; Chang et al., 2018; Ibler et al., 2012; Wiszniewska & Walusiak-Skorupa, 2015), as a result of exposure to chemicals or prolonged wet work. This could also be triggered by other factors such as bacterial infections and chemical burns (Steengaard et al., 2016). Dermatitis is defined as inflammation of the upper layers of the skin due to irritant exposure; it usually presents with redness, swelling, itching, and pain. Severity ranges from mild irritation to severe inflammation. People with a history of skin allergies (for example eczema or asthma patients) are more likely to develop dermatitis (Department of Health, Government of South Australia, 2009). Other infections that can be spread in hairdressing premises include skin infections on the scalp, face, and neck such as impetigo and fungal infections such as tinea capitis and ring worm. Burns can also occur during hairdressing procedures involving hot rollers, tongs, and crimpers and when hair is being washed with contaminated water or when stationary or hand-held dryers are improperly used. Ruddy et al. (2001) reports that people have

been infected with head lice from direct hair-to-hair contact with someone who has head lice.

A study in Nigeria revealed that needle stick injuries, reactions to hair relaxing creams, cuts, burns, electric shocks and low back pain constituted occupational diseases among hairdressers with such hazards reported by 5% of respondents (Omokhodion et al., 2009). Due to the fact that most contact is made with the hands and forearms, these regions are largely affected, but spread to other parts of the body (Archibong et al., 2018). In the same vein, musculoskeletal disorders (MSD) have been reported by hairdressers and are usually linked to bio-mechanical, ergonomic and psycho-social professional factors. Prolonged standing, use of vibrating tools, and awkward body postures may greatly contribute to developing these complaints among hairdressers (Hassan & Bayomy, 2015). Previous studies also showed that female hairdressers are at a higher risk of developing reproductive health problems including changes in the menstrual cycles, infertility, spontaneous abortion, low birth weight (LBW) and preterm delivery (Kim et al., 2016).

Many hairdressers are self-employed and engaged in small scale salons, where conditions of service are stringent. This promotes an environment in which there is limited support for them to manage their own health. During a typical work week, a hairdresser can be exposed to hundreds of different chemicals through the skin as well as the respiratory system. Volatile organic chemicals (e.g. toluene, ethanol, isopropanol, ether, diaminotoluene, paraphenylenediamine) contained in hairsprays and setting lotions, as well as ammonia, ammonium per sulphates, hydrogen peroxide, sodium hydroxide, dioxane and organic pigments found in permanent waves cream, hair dyes and hair bleach find their way into the body during application. The occupational environment for these set of people mostly involve unsafe and unhealthy exposures, which in turn leads to significant health hazards such as respiratory, musculoskeletal, skin, and reproductive challenges. In Nigeria, the information on the prevalence of occupationally related hazards reported symptoms among hairdressers, caused by reactive chemicals used in hairdressing salons is limited. It is therefore the aim of this paper to ascertain the awareness level of salon workers regarding this crucial issue, and to find out if they understand the extent to which they are affected by the work hazards present in beauty parlours, including how to prevent them. It is, also, intended to determine the sociodemographic characteristics of the hairdressers.

Objectives of the study: The main purpose of the study was to determine the level of awareness of occupational hazards by hairdressers in Umuahia metropolis.
More specifically, the study intended to;

i. determine the awareness level of the respondents on occupational health hazards associated with hairdressing;
ii. ascertain the extent of experiencing occupational health hazards among the respondents; and
iii. identify the protective measures taken by the respondents while providing services.

Methodology
Research Design: The cross-sectional survey design was adopted for the study.

The design was adopted because the researcher did not in any way manipulate or influence the data obtained nor were the respondents influenced in any way.

Population of the Study: The study population consisted of 200 hairdressers identified by the researcher in 80 hair salons within Umuahia metropolis. Due to a manageable population size, no sampling was carried out. Twelve (12) persons, however, declined to participate, thus, leaving a total of 188 participants.

Instrument of Data Collection: A structured questionnaire was used to collect data. The questionnaire was divided into four parts: Part 1 requested the demographic information of the respondents. Part 2 elicited information on the general knowledge on the risk involved in hairdressing occupation. This was measured using a 1-5 scale (1 = Not at all aware, to 5 = Very aware). Part 3 was used to obtain data on health-related challenges they have encountered/or are currently facing because of their work. Part 4 obtained information on the protective measures being taken by the respondents.

Validity and Reliability of Measuring Instrument: To ensure validity of the instruments used in the study, face validity technique was employed. The questionnaire received the approval of two academics in the Home Economics unit of the Department of Vocational Education and one from Measurement and Evaluation of the Department of Psychological Foundations of the Abia State University, Uturu, who ensured that the questions were in line with the objectives of the research. Secondly, the questions were tested for clarity to avoid ambiguity of language. To ascertain the reliability of the questionnaire, the questionnaire was administered to twenty (20) participants selected from outside the metropolis. The instrument was administered twice, while the data obtained were subjected to a reliability test using Cronbach's alpha reliability which showed a correlation coefficient of 0.84.

Method of Data Collection: Data was collected over a period of two months. An average of 7-8 questionnaires were shared per day and salons were visited between 11am – 4pm three times a week between Thursdays and Saturdays. The chosen timeframe coincides with peak business hours and the days were chosen based on their closeness to the weekend, considering that most women often book their hair services appointment around this time. The copies of the questionnaire for data collection were distributed with the help of two research assistants. The research assistants underwent a comprehensive training session covering the objectives of the study, ethical considerations, and protocols for questionnaire distribution and respondent interaction. Specific instructions were provided on approaching salon owners, explaining the purpose of the study, and assisting respondents with any questions or clarifications needed. Role-playing exercises were conducted to simulate real-world scenarios and enhance the assistants' readiness for fieldwork. These assistants aided in sharing the questionnaires and providing aid and clarification to the respondents wherever needed. They ensured the efficient dissemination of the questionnaires and facilitated the collection process, contributing to the overall success of the data collection phase. All questionnaires were retrieved on the same day. A total of 200 copies of the questionnaire were printed for data collection, however, only 188 were distributed. All administered copies were retrieved successfully. Consents were obtained from the

participants by ensuring they signed the consent page attached to each questionnaire.

Data and Statistical Analysis: The data gathered were analysed quantitatively using frequency tables, percentages and mean. The benchmark for weighted mean was 3.0 that determines acceptance or rejection of the questionnaire item.

Results

Table 1 presents the sociodemographic characteristics of the hairdressers. It indicates that 34% of the respondents which constitute the majority are within the age bracket of 26 to 35 years. A good majority of the women (61.1%) were married; however, only 17.5% have attained the tertiary level in education. Majority (47.3%), of the respondents were apprentice, 37.8% had over 7 years of experience in the industry and 11.7% worked for an entire week, with a minimum of 8 working hours, each day.

Table 1: Respondents' demographic data

Variables			
Age	**16 – 25**	**26– 45**	**46 and above**
Frequency	49	116	23
Percentage	26.0	61.80	12.20
Marital status	**Single**	**Married**	**Divorced**
Frequency	71	115	2
Percentage	37.70	61.10	1.10
Education	**Primary**	**Secondary**	**Tertiary**
Frequency	44	111	33
Percentage	23.40	59.00	17.50
Employment status	**Owner**	**Worker**	**Apprentice**
Frequency	78	21	89
Percentage	41.50	11.20	47.30
Work experience	**1-3yrs**	**4-6yrs**	**7yrs and above**
Frequency	34	83	71
Percentage	18.10	44.10	37.80
Daily working hours	**8am-4pm**	**8am-6pm**	**8am -8pm**
Frequency	27	109	52
Percentage	14.40	57.90	27.70
Workdays per week	**1-5 days**	**6days**	**7days**
Frequency	14	152	22
Percentage	7.40	80.90	11.70

Awareness level of the respondents on occupational health hazards associated with hairdressing

Data in table 2 indicates the knowledge of work-related health hazards among the hairdressers. The respondents were aware of work hazards such as body aches due to prolonged standing (mean = 3.90), respiratory problems (3.70), infection due to contact with clients' body fluids (3.30) and skin problems due to contact with chemicals (3.20). A good number (54.30%) of the respondents showed high level of awareness of body aches, respiratory problems (49.50%), infections (40.40%) and

skin problems (31.40). There was a low-level awareness of reproductive problems with only 8.0% being highly aware and 51.60% not aware of the problem.

Table 2: Hairdressers' level of awareness of work hazards in workplace

Variables	Highly Aware F (%)	Aware F (%)	Moderately Aware F (%)	Slightly Aware F (%)	Not Aware F (%)	Mean
Skin problems, are because of constant exposure to hair chemicals	59 (31.40)	38 (20.20)	18 (9.60)	34 (18.10)	39 (20.70)	3.20
Exposure to infections contact with fluid, blood, or soiled work tools.	76 (40.40)	47 (25.0)	38 (20.20)	10 (5.30)	7 (9.00)	3.30
Exposure to reproductive toxicants in hair products	15 (8.00)	17 (9.0)	26 (13.80)	33 (17.50)	97 (51.60)	2.04
Risk of respiratory problems (chest tightness, cough, sneezing, eye irritation)	93 (49.50)	25 (13.30)	19 (10.10)	14 (7.40)	37 (19.60)	3.70
Body ache (pain in the neck, shoulder, and lower back) due to poor work posture	102 (54.30)	36 (19.10)	9 (4.70)	17 (9.00)	24 (13.80)	3.90
Grand mean = 3.9						

Extent of experiencing occupational health hazards among the respondents.
Table 3 reveals the proportion of the respondents who have experienced health-related problems associated with hairdressing. The common health challenges reported by hairdressers while carrying out hair care activities include feeling of tightness in the chest (46.3%), sneezing (67.6%), itchy or runny eyes (58%), neck pain (73.4%), back pain (76.1%), and shoulder pain (64.9%).

Table 3: Health problems reported by hairdressers while using some hair products during work hours

Variables	Yes F (%)	No F (%)
Shortness of breath while using chemicals like hair dyes, relaxers, texturisers.	74 (39.4)	114 (60.6)
Coughing when using chemicals such as hair relaxers and colours	91 (48.4)	97 (51.6)
Sneezing as a result of inhaling chemicals in hair products	127(67.6)	61 (32.4)
Tightness in the chest because of exposure to chemicals in hair products	87 (46.3)	101 (53.7)
Eye irritation from chemicals and airborne particles	109 (58)	79 (42)
Skin burns caused by contact with hot combs, straighteners, and chemicals	62 (33)	126 (67)
Neck pain during or after hair styling activities	138 (73.4)	50 (26.5)
Shoulder pain during hair plaiting and other hair styling activities	122(64.9)	66 (35.1)
Waist pain	104 (55.3)	84 (44.7)
Hand and wrist pain during or after hair perming, plaiting and others.	89 (47.3)	99 (52.7)
Back pain during or after work in the salon.	143 (76.1)	45 (23.9)
Leg pain from standing while offering hair styling services.	81 (43.1)	107 (56.9)
Knee pain during or after hair plaiting, perming, dyeing and others.	33 (17.6)	155 (82.4)
Swollen feet after prolonged standing from hair styling activities	64 (34)	124 (66)

Protective measures taken by the respondents while providing services

Table 4 shows the protective measures taken by the respondents while providing services. Data shows a low adoption of preventive measures by hairdressers such as hand gloves (29.8%), nose mask (14.4%), apron (6.4%), and the availability of adequate ventilation (17.6%).

Table 4: Use of Protective Measures

Variables	Yes F (%)	No F (%)
Use of hand gloves	56 (29.8)	132 (70.2)
Use of nose mask	27 (14.4)	161(85.6)
Use of apron	12(6.4)	177(94.1)
Adequate ventilation	33(17.6)	155(82.4)
Regular hand washing	47(25)	141(75.0)
Regular breaks	53(28.2)	135(71.8)
Well positioned wash tub	72(38.3)	116(61.7)
Use of comfortable chairs	84(44.7)	104(55.3)

Discussion of Findings

The study investigated the level of awareness of health hazards related to hairdressing and identified the proportion of respondents who had experienced the hazards. Concerning the hairdressers' level of awareness of occupational hazards associated with their job, the findings showed a considerable level of awareness regarding skin problems such as eczema, dermatitis, discoloured nails, etc, associated with hair products. While awareness about skin problems resulting from exposure to hair care chemicals was relatively high (3.20), understanding of reproductive challenges and respiratory discomforts due to irritants was comparatively lower (2.04). It is crucial for hairdressers to be aware of all potential risks, including the less obvious hazards, to protect themselves and their clients completely. The consequential implication arising from the insufficient awareness regarding internal health issues potentially stemming from their occupation is that hairdressers may unknowingly endure such health complications, oblivious to the exacerbating impact of continued exposure in their line of work. Rectifying this knowledge deficit stands to enhance the overall safety and welfare of hairdressing professionals.

Moreover, heightened awareness among hairdressers regarding the inherent occupational risks enables them to make more informed decisions concerning their career path, thus fostering a proactive approach to personal health and safety. This position agrees with Mohammed et al., (2023), who discovered that 54.3% of the studied hairdressers in Benha City, Egypt, had average knowledge about occupational health hazards, while 41.1% had poor knowledge and only 4.6% had good knowledge about occupational health hazards. In contrast, Abia et al., (2016) recorded a high awareness level of occupational hazards among its respondents in Cameroon. Equally, the respondents' awareness of their susceptibility to infection through unhygienic routes received statistical support (3.3), just as the understanding that respiratory discomforts caused by irritants

led to chest tightness, coughing, and sneezing, among others (3.7).

The findings on the extent of experiencing occupational health hazards showed that many of the respondents have had health problems as a result of hairdressing activities like using hair sprays, applying hair relaxers, etc. More than half (58%) of them have had itchy eyes, sneezing (67.6%), and nose tightness in the chest (46.3%), among others, due to contact with hair care products. Experiencing health problems such as itchy eyes, sneezing, and chest tightness due to exposure to hair care products poses several dangers to hairdressers. Firstly, these symptoms can significantly impact the overall productivity of individuals by hindering their ability to perform their duties effectively. Itchy eyes and sneezing, for example, can cause discomfort and distraction, leading to difficulty focusing on tasks and completing them efficiently. Similarly, chest tightness can make breathing difficult, resulting in fatigue and reduced stamina, further impairing productivity. Moreover, these health problems can also have a detrimental effect on the well-being of individuals. Chronic exposure to irritants in hair care products can exacerbate respiratory conditions such as asthma or bronchitis, leading to long-term health complications. Additionally, repeated exposure to harmful chemicals may increase the risk of developing allergies or sensitivities, affecting the hairdressers' quality of life both inside and outside the workplace. Furthermore, neglecting these symptoms or failing to address the underlying occupational hazards can potentially lead to more serious health issues over time, jeopardising the overall well-being and longevity of individuals. A study by Saraga et al. (2014) measured respirable particulate matter or RPM (i.e., suspended particle fraction with aerodynamic diameter<4μm) in the breathing zone of Greek volunteers, including two hairdressers and eight customers in a hair salon. A hairdresser using hairspray and a hairdryer was exposed to the highest levels of RPM (286μm−3). Caroe et al. (2016) established that hairdressers are at risk of developing occupational contact dermatitis due to their intense and frequent contact with liquids as well as chemical components contained in hair products like creams, waxes, gels, dyes, and bleaches. Dodson et al. (2012) further buttresses this in a study that quantified endocrine disruptors and asthma-related chemicals in a wide range of cosmetics, personal care products, cleaners, sunscreens, and vinyl products. The study found that ingredients in products used in hair and nail salons include endocrine disrupting compounds (EDCs) like parabens and phthalates. EDCs can mimic or block endogenous endocrine function, with wide-ranging health implications, including reproductive effects. Furthermore, it was agreed that prolonged standing and awkward body postures were contributory factors to pain in the neck, shoulder, and lower back (54.3%). Neck pain (73.4%), back pain (76.1%) and shoulder pain (64.9%) were the most common forms of musculoskeletal problems reported by the respondents. This result agrees with the findings of Hassan and Bayomy (2015) in a study about occupational respiratory and musculoskeletal symptoms among Egyptian female hairdressers. The results revealed that, the most prevalent musculoskeletal pains reported by the hairdressers over the past 12 months were elbow and shoulder pain as well as back pain. The respondents also reported that the most frequent chronic pains (7.5%)

were back and knee pains while hand and wrist pain led 12.5% of hairdressers to visit a doctor. Meanwhile, shoulder and back pain caused 13.8% of the respondents to be absent from work due to sickness.

Lastly, regarding the application of protective measures, a majority of the respondents reported the non-use of hand gloves. This might be due to inability to work effectively while wearing them making them unable to provide satisfactory services to their clients. This finding is supported by Moda and King (2019) who found that hairdressers often ignored hand gloves during wet activities because the multi-tasking nature of the job required putting it on and taking it off; hence most participants did not fancy using them, while others stated that the frequent use of gloves made their hands sweat and that glove-use could cause allergic reactions. The inconsistent use of personal protective equipment leads to exposure to hazardous chemicals in the workplace, making hairdressers more susceptible to occupational illness; unfortunately, the use of personal protective equipment (PPE) has not been totally emphasized in the profession of hairdressing (Jack, 2009). PPEs such as gloves and nose masks that can serve as adequate protection against physical contact with chemical substances such as phenylenediamine and formaldehyde have been neglected. Overall, the application of protective measures were poor including adequate ventilation of the premises which is essential during the use of hair chemicals and sprays.

Conclusion

This study sheds light on the level of awareness, experiences, and use of protective measures regarding occupational hazards among hairdressers in Umuahia metropolis. The findings reveal a significant level of awareness among hairdressers regarding certain occupational health hazards, particularly skin problems and respiratory discomforts caused by hairdressing activities. However, there is a gap in awareness concerning internal predicaments like reproductive challenges due to infection. The study also highlights a high prevalence of health complaints among hairdressers, including respiratory symptoms, musculoskeletal problems, and skin irritations, which are often attributed to exposure to chemicals and prolonged standing. Additionally, the use of protective measures among hairdressers is inadequate, with low utilization of hand gloves, nose masks, and other personal protective equipment. These findings underscore the need for increased education and enforcement of safety measures in hairdressing salons to mitigate occupational health risks and promote the well-being of hairdressers.

Recommendations

Based on the outcome, this paper recommends the following.

1. Health agencies should create more awareness and enlighten hairdressers on ways to prevent, manage, and improve their work environment.
2. Efforts should be made by government regulatory agencies to monitor the activities of manufacturers of hair products in order to prevent the influx of hazardous chemicals in the market.
3. Lastly, hairdressers should endeavour to secure work environment with larger space and adequate ventilation.

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