# Occupational Health Hazards and Safety Measures among Hairdresser Workers in Port Said City

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## ABSTRACT

**Background**: A variety of hazardous substances occurred to hair stylists at work. These include biological, ergonomic, and chemical risks as well as physical and physical-related agents. **Aim**: this study aimed to assess occupational health hazard and safety measures among hairdresser workers in Port Said City. **Subjects and method: Design:** A descriptive cross-sectional research approach was used. **Setting:** The study was conducted at hair salons in Port Said City. **Subjects:** Purposive sample consisted of 209 hairdressers for five months. **Tools**: Four tools were used: a structured interview questionnaire for hairdressers, a knowledge questionnaire about occupational health risks, a practices questionnaire about preventing risks in the field of hairdressing, and observational checklists of safety precautions for preventing hairdressing accidents and using PPE in hair salons. **Results:** it is obvious that 6.7% of the hairdressers who were subjected to the study had good knowledge of general hazards, while 100% of them had unsatisfactory procedures for preventing the risks associated with the profession. In addition, 38.3% of them had poor procedures for increasing workplace safety or reducing accident-causing factors. **Conclusion:** the majority of the studied hairdressers were unsatisfactory in the practices that related to the prevention of the dangers of hairdressing and reduction for causes of accidents in the work environment as well as their good knowledge about overall hazards were deficient. **Recommendation:** The hairdressers should have health education programs to increase their understanding of the precautions to reduce health risks and value cleaning their equipment.

**Key words**: Health, Hazard, Hairdresser, Occupational, Measures, Safety.

# INTRODUCTION

Job risks are known as occupational hazards, and this field of research falls under the umbrella of occupational safety and health and public health. Occupational hazards include both long-term and short-term dangers related to the workplace environment (Amodio, Di Benedetto, Gennaro, Maida & Romano, 2020). Hairdressing is the activity of shaving, trimming beards, cutting hair, colouring hair, conditioning hair, and doing other similar tasks on someone's hair. It also includes offering face and scalp massages with oils, creams, and lotions using either manual or mechanical tools. The act of styling, dressing, arranging, bleaching, and waving hair is known as hairdressing (Kose & Mandiracioglu, 2019).

Over 80% of workers in the world's hair salons are women, making it a mostly female profession (Daka, 2019). Hair salon staff members are subjected to a wide range of hazardous substances during work. They include both physical and chemical elements, like noise and temperature. Chemical elements include hair dyes. Due to improper posture at work and extended workdays, ergonomic risks are also a problem (Mussi and Gouveia, 2018). The use of mechanical instruments, such as needles and blades, is another way that hairdressers carry out their job. Biological risks including fungus, germs, and viruses are made more likely for both clients and hairdressers as a result **(**Linnan, D'Angelo & Harrington, 2018)

Mechanical, physical, psychological, chemical, and biological (biohazards) risks can all be included under the umbrella term "occupational hazards." Poor posture, mechanical strain on the joints, extended periods of time spent standing, longer workdays, skipped meals, and failure to take breaks while working are all examples of mechanical hazard (Demir, Kölgelier, Demi, Özçimen & Inkaya, 2020).

The microclimate parameters (room temperature and humidity, rate of indoor air exchange) should be adjusted to ensure the optimum comfort for both hairdressers and customers. Physical hazards include physical variables such (microclimate, noise, illumination). Workplace discomfort and accidents may result from a stressful environment. It is crucial to maintain the air conditioning system properly (Khalaf, Abd El-Aty, Abdel-Salam & Osman, 2020).

Psychosocial risks include psychological elements that might obstruct work procedures and increase stress, such as bullying, sexual or racial harassment, intimidation, threats, verbal abuse, and in severe cases, physical assault (International Labour Organization (ILO), 2022). In the salon setting, direct contact exposure to chemical risks is rather typical. Nail technicians work with nail paint, liquids for fake nails, glues, strengtheners, removers, and adhesives, while hairdressers often come into contact with chemicals from hair colors and relaxers. These substances can cause burns, mucous membrane irritation, dermatitis, coughing, and airway irritation when they enter the body through the skin and to a lesser extent by inhalation (Scranton, 2014).

Biological risk because biological substances, such as bacteria and poisons created by living things, might harm employees' health. When cutting hair, hairstylists may unintentionally or through improper procedures come into contact with their customers' blood, which puts them at risk for blood-borne illnesses. Additionally, they might spread their own illnesses to their customers or infect one client before spreading it to another (Hakim & Abdel Hamid, 2019).

Safety precautions are actions made to safeguard or improve one's level of security. Hairdressers should use personal protective equipment (PPE) such as gloves, aprons, and eye protection and wash immediately with water and soap after any skin contact with chemicals. They should also avoid wearing products that contain known sensitizers, such as some hair dyes, and should wear comfortable shoes with non-skid soles, rotate job duties to prevent overuse injuries, wash their hands frequently to prevent infection, and regularly moisturize their hands (Daka, 2019)

So, in both industrial and community contexts, occupational nursing is crucial. By increasing awareness of the prevention and management of health risks, it enhances the health and safety of employees. Accurate information results in a positive attitude and practice, which in turn provides greater protection against many major health dangers (Wazir& Salim, 2020). In order to lessen exposure to dangers at work, it is also vitally necessary to teach employees on how to handle chemicals and beauty products properly, their toxicity, and occupational health and safety risk assessment (Al Siddiqui et al., 2018).

Additionally, it is essential for community health nurses to have a proven method for efficiently assessing the risks that hairdressers face at work and the risk factors that contribute to those risks, as opposed to basing their clinical judgments on their own subjective opinions and experiences, which expose hairdressers to the dangerous consequences of hazard misclassification. This is why it is important to do the kind of study that could protect this group of hairdressers from these substantial occupational health risks (Lyons, Roberts, Palmer, Matheson & Nixon, 2019).

**Significance of the study**

Hairdressers represent an important occupational group. This group is expected to grow through the coming years, more rapidly than the average of all occupations (Khafagey, Abd El- Aziz & Sarhan, 2023). Studies that were published in Assiut Governorate examined the working conditions and harmful health effects among hairdressers and showed that the majority of them had infectious diseases with varying percentages. As a result, the exposure of hairdressers to serious occupational health risks can result in absenteeism from work, early dropouts, and social security applications at a young age. Furthermore, just a small number of studies have examined occupational risks in the hairdressing industry in Egypt and the aforementioned city, and only a small number of them have used a credible study methodology and generated trustworthy data (Hassan & Bayomy, 2020). The study's objectives were to ascertain the knowledge and practices of hairdressers regarding occupational health hazards and to identify the safety precautions that help to prevent accidents and occupational health hazards.

**AIM Of THE STUDY**

This study aimed to assess occupational health hazard and safety measures among hairdresser workers in Port Said city.

**Research objectives**

1- Determine workers knowledge about occupational health hazards in hairdresser salons at Port Said City.
2- Identify workers practice about occupational health hazards in hairdresser salons at Port Said City.

**3-** Identify safety measures about occupational health hazards in hairdresser salons at Port Said City.

## SUBJECT AND METHOD

### Research Design

This study used a descriptive cross-sectional research approach.

### Setting

The study was carried out at hair salons in the Port Said city, Egypt, which is divided into seven districts: the Al-Ganoub, Al-Zohour, Al-Dawahy, Al-Sharq, Al-Manakh, Al-Arab, and Port Fuad district districts.

### Subjects

A purposive sample of 209 hairdressers, who were attended the previously mentioned setting were included after meeting the following ***inclusion criteria****:*

- Age 18-60 years.
- Both sex (male and female hairdresser workers).
- Available throughout period of data collection through 3 months.
- Willing to participate in the study.

### Exclusion criteria

- Children and geriatric.
- Physical and mental handicap

### Sample size

The sample size was estimated based on A previous study showed that the prevalence of occupational health hazards among hairdressers in Egypt is 16% (Hakim & Abdel-Hamid, 2019). the sample size was calculated using the following parameters:

- ***n****= sample size*
- ***n***= (z/Δ) ² P (100- P)

- **$Z\alpha^2$** = the value of standerd normal distribution for type 1 error probility for the sided test and equal 1.96 at 95% confidence of certainty
- **Δ =** The width of the confidence interval = 5%
- **p =** the expected proportion in population based on previous studies

**Therefore, Sample size (n) = $(1.96/5)^2$ 16x (100- 16)= 230 hairdresser**

Due to the expected non-participating rate (10%); the final sample size will be 209 workers**.**

**Tools of data collection**

Data were collected through using of the following four tools:

**Tool 1: A structured interview questionnaire sheet for** hairdressers

After analyzing the pertinent literature, the researcher took it from **(Bigambo, 2017)** and translated it into plain Arabic. There were four sections as following:

- **Part 1**: This section is concerned with information on the study's hairdressers, including their age, education, marital status, place of residence, and income.
- **Part 2**: Medical history of hairdressers and their families, including the existence of chronic disorders and the years of complaint
- **Part 3**: Health practices, such as smoking, sleeping, and maintaining personal cleanliness, were a concern both at work and outside of it.
- **Part 4**: This section was about hairdressers' work in hairdressing sector, including their years of experience, their shift schedules, and their daily work hours.

**Tool (II): Hairdressers' knowledge questionnaire about occupational health hazards**

The researcher translated it into plain Arabic after examining the pertinent literature, adopting it from (Bigambo, 2017). It consisted of 19 multiple-choice questions that the researcher prepared through an interview with hairdressers in order to gauge their familiarity with occupational health risks.

**Scoring system**: A correct answers took score (two), incomplete correct answers took score (one) and the incorrect answers took score (zero). This score was converted into a

percent score .Hairdresser worker knowledge was considered good if the total score was (75%) or more and fair if the total score was less than (75%) to (50%) or poor if the total score was less than (50%).

**Tool (III): Hairdressers' practices of knowledge questionnaire regarding the prevention of hairdressing hazards:**

After studying the pertinent literature, it was taken from (Bigambo, 2017) and translated by the researcher into plain Arabic. To evaluate hairdressers' behaviors and knowledge on the avoidance of hairdressing risks in hair salons, the researcher created a questionnaire consisting of 19 multiple-choice questions.

**Scoring system:** Hairdresser worker practices were considered satisfactory if the total score was **(75%)** or more and unsatisfactory if the total score was less than **(75%).**

**Tool (IV): Observational checklists of Safety measures for hairdressers**

After researching the pertinent literature to evaluate hairdressers' practices addressing the avoidance of hairdressing accidents and use of personal protective equipment devices in hairdressing salons, it was adapted from (Bigambo, 2017) and translated by the researcher in straightforward Arabic.

**Scoring system:** Hairdresser workers considered had low practice of safety if the total score was less than **(50%)** and had moderate practice of safety if the total score **(50%)** to less than **(75%)** and had good practice of safety if the total score was **(75%)** or more.

**Validity of the tool**

- The Port-Said Faculty of Nursing's research ethics committee granted formal clearance for the study's execution. Hairdressers were then given the okay verbally to participate in the study after being given an explanation.
- A panel of five family and community health nursing specialists from Port Said University evaluated and corrected the research instruments' content validity for their clarity, substance, order of items, and relevance or irrelevance of material.

**Reliability of the tool**

A statistician used the Cronbach's alpha coefficient test to determine the internal consistency of the generated tools and the reliability of the tools for the entire questionnaire. Tool 1 had an outstanding scale reliability of r = 0. 88, Tool II had an excellent scale reliability of r = 0. 79, Tool III had an excellent scale reliability of r = 0. 89, and Tool IV had an excellent scale reliability of r = 0. 86.

**Pilot study**

A pilot study was undertaken after the development and validation of the study tools and before starting the data collection phase. It was carried out on a sample of about 10% of the main study sample. The purposes of the pilot study were to test the applicability, clarity, and feasibility of the study tools, and it served to estimate the time needed to complete the forms. It also helped to find out any obstacles and problems that might interfere with data collection. Based on the findings of the pilot study, certain modifications of the tools were done, and hence the pilot sample were not included in the main study sample and the number of pilot sample was **21** hairdressers. The pilot took **1 month** from 15/10/2020 to 15/11/2020.Data collecting began and lasted for three months.

**Filed work**

The data had been collected over a period of 5 months, the actual field work was carried out from the beginning of January 2021 to the end of May 2021. The researcher visited the study settings, met with the eligible hairdresser , explained to them the study aim and invited them to participate in the study. After taking their consent, the researcher started the interview using the first and second tools. It took approximately 30-45 minutes. The researcher collected data 3 days per week and each day the researcher visited two salons and met two hairdresser in each salon.

**Ethical considerations**

The study protocol was approved by the Port Said University Faculty of Nursing's research and ethical committee. Each participant (hairdressers) was told of the research's purpose and was given the opportunity to verbally assent before the study began. While being informed of their right to withdraw at any time without giving a reason or to

decline to participate. According to the researcher, the study does not harm mothers. Participants were allowed to exit the research whenever they pleased without incurring any charges, and the privacy and confidentiality of the information collected were guaranteed throughout all study phases.

## RESULTS

**Table (1)** showed that 38.8% of the studied hairdressers were aged between 18 to less than 30 years old and 53.1% of them were females.. Regarding the marital status, 67.9% of the studied hairdressers were married and 52.7% of them had secondary education. Regarding to the number of daily sleep hours, the mean hours of sleep was 7.9±1.3**.**

**Table (2)**: Concerning health habits of the studied hairdressers, it was clarified from this table that, 95.7% of the studied hairdressers washed the face and hands together at work environment and 29.2% of them washed hands only at the home after finishing the work. Furthermore,31.1 % of the studied hairdressers were smoking and 61.5% of them smoked cigarettes, also 60% of them smoked at work.

**Table (3)** explained that, 77%, 94.7%, 51.2% and 75.1% of the studied hairdressers had fair knowledge about physical hazards, chemical hazards, mechanical hazards and biological hazards respectively while, 64.1% of them had good knowledge about psychological risks and the vast minority of them (6.7) had good knowledge regarding overall hazards.

**Table (4):** indicated that, all (100%) the studied hairdressers were unsatisfactory regarding practices related to prevention of the dangers of hair dressing with mean 18.59± 3.24.

**Table (5):** showed the overall practices of safety measures to prevent danger or causes of accidents and the total mean was 5.68 ± 2.40, it was shown that 38.3% of them had low practices of safety or reduction for causes of accidents in the work environment, while 26.8% of them had good practices.

**Table (6):** clarified that, there was statistically significant positive relation between age of the studied hairdressers and their total mean knowledge about chemical

and overall hazards, with a statistically significant differences at p = 0.003* and 0.031 respectively. On the other hand, there was statistically significant positive relation between educational levels of the studied hairdressers and their total mean knowledge about chemical, mechanical, psychological, biological and overall hazards, with a statistically significant differences at p <0.001, p= .009. 0.043, p< 0.001 and p= 0.001 respectively , while, there was no relation between socio-demographic characteristics of hairdresser worker and total mean knowledge about physical hazards**.**

**Table (1):Distribution of the study sample according to :socio-demographic data (n= 209):**

| Items | No. | % |
|---|---|---|
| **Age** | | |
| 18 <30 | 81 | 38.8 |
| 30-<40 | 75 | 35.9 |
| 40-<50 | 43 | 20.6 |
| ≥50 | 10 | 4.8 |
| Mean ± SD. | 33.15 ± 9.26 | |
| **Gender** | | |
| Male | 98 | 46.9 |
| Female | 111 | 53.1 |
| **Number of rooms** | | |
| Mean ± SD. | 3.50 ± 0.99 | |
| **Number of family members** | | |
| Mean ± SD. | 4.86 ± 1.27 | |
| **Monthly income** | | |
| Enough and more | 6 | 2.9 |
| Sufficient | 128 | 61.2 |
| Not enough | 75 | 35.9 |
| **Marital status** | | |
| Single | 45 | 21.5 |
| Married | 142 | 67.9 |
| Divorce | 16 | 7.7 |
| Widow | 6 | 2.9 |
| **Educational level** | | |
| Illiterate | 8 | 3.8 |
| Read and write | 35 | 16.7 |
| Primary education | 20 | 9.6 |
| Secondary education | 110 | 52.7 |
| University education | 36 | 17.2 |
| **number of daily sleep hours** | | |
| Mean ± SD. | 7.89 ± 1.29 | |

**SD: Standard deviation**

**Table (2):Distribution of the study sample according to healthy habits(n = 209)**

| Items | No. | % |
|---|---|---|
| **Personal hygiene during the work** | | |
| Take a full bath | 9 | 4.3 |
| Washing the face and hands together | 200 | 95.7 |
| **Personal hygiene at the home after finishing the work** | | |
| Take a full bath | 118 | 56.5 |
| Washing the face only | 30 | 14.3 |
| Washing hands only | 61 | 29.2 |
| **Smoking** | | |
| Yes | 65 | 31.1 |
| **Type of smoking** | | |
| **Cigarettes** | 40 | 61.5 |
| Shisha | 25 | 38.5 |
| **Smoke at work** | **(n = 65)** | |
| Yes | 39 | 60.0 |

**Table (3):Distribution of the study sample according to levels of knowledge about occupational health hazards to hairdresser salon workers (n = 209)**

| Items | Poor (<50%) | | Fair (50%-<75) | | Good (≥75%) | | Total Score |
|---|---|---|---|---|---|---|---|
| | No. | % | No. | %. | No. | % | Mean ± SD. |
| **Physical Hazards** | 40 | 19.1 | 161 | 77.0 | 8 | 3.8 | 2.97 ± 0.66 |
| **Chemical Hazards** | 6 | 2.9 | 198 | 94.7 | 5 | 2.4 | 3.76 ± 0.76 |
| **Mechanical Hazards** | 4 | 1.9 | 107 | 51.2 | 98 | 46.9 | 4.47 ± 1.0 |
| **Psychological risks** | 34 | 16.3 | 41 | 19.6 | 134 | 64.1 | 4.11 ± 1.93 |
| **Biological hazards** | 49 | 23.4 | 157 | 75.1 | 3 | 1.4 | 2.79 ± 1.62 |
| **Overall hazards** | **32** | **15.3** | **163** | **78.0** | **14** | **6.7** | 18.10 ± 4.18 |

**Table (4):Distribution of the study sample according to total practices related to the prevention of the dangers of hairdressing (n = 209)**

| Practices related to the prevention of the dangers of hairdressing | No. | % |
|---|---|---|
| Not satisfactory (<75%) | 209 | 100.0 |
| Satisfactory (≥75%) | 0 | 0.0 |
| **Total Score** | **(0 – 36)** | |
| Min. – Max. | 7.0 – 25.0 | |
| Mean ± SD. | 18.59 ± 3.24 | |
| Median | 19.0 | |
| **% Score** | | |
| Min. – Max. | 33.33 – 69.44 | |
| Mean ± SD. | 52.23 ± 7.88 | |
| Median | 52.78 | |

**SD: Standard deviation**

**Table (5):Distribution of the study sample according to overall of practice about Safety Means (n = 209)**

| Items | No. | % |
|---|---|---|
| **The causes of accidents in the work environment** | | |
| Low (<50%) | 80 | 38.3 |
| Moderate (50-75%) | 73 | 34.9 |
| Good (≥75%) | 56 | 26.8 |
| **Total Score** | **(0 – 10)** | |
| Min. – Max. | 0.0 – 10.0 | |
| Mean ± SD. | 5.68 ± 2.40 | |
| Median | 6.0 | |
| **% Score** | | |
| Min. – Max. | 0.0 – 100.0 | |
| Mean ± SD. | 57.08 ± 23.98 | |
| Median | 60.0 | |

**Table (6): Relation between scores of knowledge about occupational hazards and socio-demographic characteristics of hairdresser worker(n = 209)**

| A- Socio-demographic characteristics | Knowledge about occupational hazards | | | | | |
|---|---|---|---|---|---|---|
| | Physical hazards | Chemical hazards | Mechanical hazards | Psychological risks | biological hazards | Overall hazards |
| | Mean ± SD. | Mean ± SD. | Mean ± SD. | Mean ± SD. | Mean ± SD. | Mean ± SD. |
| **Age** | | | | | | |
| 18 <30 | 47.94 ± 9.27 | 59.67 ± 15.34 | 74.07 ± 16.67 | 70.16 ± 31.48 | 41.56 ± 29.00 | 58.68 ± 15.23 |
| 30-<40 | 52.22 ± 13.24 | 63.78 ± 12.37 | 76.89 ± 19.35 | 68.67 ± 32.53 | 47.56 ± 28.04 | 61.82 ± 14.84 |
| 40-<50 | 47.67 ± 10.01 | 64.34 ± 5.84 | 71.71 ± 11.80 | 62.02 ± 35.51 | 50.00 ± 21.82 | 59.15 ± 10.47 |
| ≥50 | 50.00 ± 0.00 | 70.00 ± 7.03 | 73.33 ± 8.61 | 80.00 ± 7.03 | 63.33 ± 7.03 | 67.33 ± 2.63 |
| **H test (p)** | **6.750 (0.080)** | **13.738* (0.003*)** | **6.142 (0.105)** | **2.359 (0.501)** | **7.637 (0.054)** | **8.860* (0.031*)** |
| **Gender** | | | | | | |
| Male | 48.30 ± 9.11 | 61.22 ± 14.11 | 71.77 ± 15.21 | 68.71 ± 28.24 | 49.66 ± 26.32 | 59.93 ± 13.55 |
| Female | 50.60 ± 12.29 | 63.81 ± 11.21 | 77.03 ± 17.42 | 68.17 ± 35.29 | 43.69 ± 27.34 | 60.66 ± 14.34 |
| **U test (p)** | **4987.000 (0.206)** | **5000.000 (0.153)** | **4437.000* (0.013*)** | **4791.0000 (0.110)** | **4495.000* (0.020*)** | **5244.000 (0.652)** |
| **Monthly income** | | | | | | |
| Enough and more | 44.44 ± 8.61 | 55.56 ± 8.61 | 86.11 ± 12.55 | 83.33 ± 0.00 | 66.67 ± 0.00 | 67.22 ± 3.28 |
| Sufficient | 49.22 ± 11.04 | 61.07 ± 15.27 | 72.14 ± 18.25 | 67.45 ± 33.91 | 44.01 ± 27.49 | 58.78 ± 16.00 |
| Not enough | 50.44 ± 10.95 | 65.78 ± 5.41 | 77.78 ± 12.66 | 68.89 ± 30.06 | 49.11 ± 26.41 | 62.40 ± 9.69 |
| **H test (p)** | **2.156 (0.340)** | **14.152* (0.001*)** | **8.442* (0.015*)** | **1.371 (0.504)** | **7.072* (0.029*)** | **2.220 (0.330)** |
| **Marital status** | | | | | | |
| Single | 47.78 ± 10.42 | 57.04 ± 19.30 | 72.22 ± 19.78 | 62.59 ± 36.44 | 40.74 ± 30.27 | 56.07 ± 18.41 |
| Married | 49.30 ± 10.67 | 63.73 ± 10.37 | 73.71 ± 15.42 | 68.43 ± 30.92 | 46.13 ± 27.12 | 60.26 ± 12.45 |
| Divorce | 52.08 ± 10.32 | 66.67 ± 0.00 | 89.58 ± 11.98 | 77.08 ± 32.13 | 58.33 ± 8.61 | 68.75 ± 7.29 |
| Widow | 61.11 ± 17.21 | 66.67 ± 0.00 | 72.22 ± 8.61 | 88.89 ± 8.61 | 66.67 ± 0.00 | 71.11 ± 6.89 |
| **H test (p)** | **6.713 (0.082)** | **10.150* (0.017*)** | **17.489* (0.001*)** | **8.459* (0.037*)** | **7.833 (0.050)** | **16.251* (0.001*)** |
| **Educational level** | | | | | | |
| Illiterate | 50.00 ± 0.00 | 62.50 ± 7.72 | 75.00 ± 8.91 | 58.33 ± 36.73 | 50.00 ± 30.86 | 59.17 ± 16.01 |
| Read and write | 51.90 ± 10.52 | 66.19 ± 9.47 | 76.19 ± 12.32 | 81.90 ± 11.70 | 60.95 ± 17.12 | 67.43 ± 6.86 |
| Primary education | 46.67 ± 10.26 | 51.67 ± 26.98 | 55.00 ± 29.67 | 55.00 ± 38.27 | 43.33 ± 29.81 | 50.33 ± 23.22 |
| Secondary education | 49.38 ± 10.91 | 65.12 ± 4.85 | 76.39 ± 12.51 | 66.05 ± 33.64 | 43.36 ± 26.47 | 60.06 ± 11.22 |
| University education | 49.07 ± 13.18 | 58.33 ± 16.18 | 78.70 ± 16.24 | 71.30 ± 33.48 | 45.37 ± 29.17 | 60.56 ± 16.34 |

**U: Mann Whitney test** **H: Kruskal Wallis test**

***: Statistically significant at p ≤ 0.05**

## DISCUSSION

Hairdressers are subject to a variety of health risks at work, but occupational health ensures complete protection of the worker's physical, mental, and social well-being; as a result, good hygiene habits and adequate safety measures play significant roles in lowering the burden of communicable diseases at workplaces (Al-Rabeei, Al-Thaifani & Dallak, 2020).

The present study's findings about the researched hairdressers' characteristics showed that more than half of them were female. This result was consistent with a study by Ukeme, Eyo, and Ukpe (2020) who studied, "Knowledge, Attitudes and Practices of Hand Washing Towards the Prevention of Transmissible Diseases Among Hair Dressers in Uyo Metropolis of Akwa Ibom State, Nigeria," which found that women made up two

thirds of the profession's workforce. These results might be explained by the fact that most female clientele choose to visit female-only hair salons because they desire greater privacy. Consequently, women made up the majority of hairstylists in the workforce.

Additionally, the majority of the surveyed hairdressers earned enough money each month. This finding was consistent with a study by Abia, Fomboh, Ntungwe, Abia, Serika, and Ageh (2019) titled "Assessment of Occupational Health Hazards Awareness and Common Practices amongst Barbers and Hairdressers in Cameroon," which discovered that the majority of hairdressers earned a living that was satisfactory. The present study's findings might be attributed to consumers visiting hair salons more frequently than necessary to receive care in a comfortable setting and pay for stylists enough money.

It was made clear from this recent study's findings on the health habits of the investigated hairdressers both inside and outside of the workplace that the great majority of them cleansed their faces and hands simultaneously. This study is independent of Ferreira's study from (2021) who conducted a study about, "Occupational health hazards of female hairdressers in Jacarepagua, Rio de Janeiro, Brazil," which found that the majority of hairdressers failed to use the restroom or wash their hands while at work. This present result could be due to The participants' extensive use of potentially harmful goods, such as hair colors and styling tools that cause skin issues so, it forced them to wash the face and hands continuously

The current study noted that large percentages of the investigated hairdressers had fair awareness of physical risks, chemical hazards, mechanical hazards, and biological hazards in connection to degrees of knowledge regarding occupational health dangers to hairdressing salon employees. This finding conflicts with that of Ashraf, Farwa, Muhammad, and Saira (2019), who investigated the knowledge and practices of barbers regarding hepatitis and hepatitis C in Bahra Kahu, Islamabad, and showed that the majority of hairdressers have adequate knowledge of chemical hazards and of transmissible diseases related to their line of work. These current findings may be explained in light of the possibility that longer workdays will provide workers more experience, which will raise their degree of risk awareness and exposure knowledge.

It was determined that all of the researched hairdressers had inadequate practices linked to the avoidance of the hazards of hairdressing, with a total mean score of (18.59±3.24), in terms of the overall level of hairdressers' practices in this area. Similarly, Nazlim, Servet, Lutfi, Serap & Ahmet (2018) reported that more than half of the participant had poor practices regarding protection against occupational hazards in hairdressing salons, in which their study focused on "The knowledge and practices of Palastinian hairdressers and barbers on blood borne diseases." Given that a lack of training and educational programs about occupational health prevention may have a detrimental impact on their practices.

Moreover, it was shown by the current study that more than one third of them had poor safety practices or a decline in accident-causing factors at work. The current findings were in line with Moore, John, and Cherie Mille's (2017) research on "Skin, hair, and other infections associated with visits to barber shops and hairdressing salons," which found that the vast majority of hairdressers had subpar working practices for safety measures to control risks for hazards. This outcome might be explained by the lack of collaboration among hairdressing employees and the absence of safety protection equipment in hairdressing salons, both of which had an impact on the improvement of safety procedures.

It was shown that there was a statistically significant difference between educational levels of the studied hairdressers and their total mean knowledge about chemical, mechanical, psychological, biological, and overall hazards, with a statistically significant difference at p 0.001, p=.009. 0.043, p 0.001, and p= 0.001 respectively. Similarly, in a study titled "The Effects of Interventional Health Education on the Conditions of Hairdressing Salons and Hairdressers Behaviors in Egypt by" Mohammad, Shahin, Raheb, Mahnaz, and Batool (2019), they found a relationship between hairdressers' knowledge and their educational level, with a statistically significant difference between them at p 0.001. This present study finding could be attributed to the educational level is very important for hairdressers to understand their workplace exposures as evidenced by the higher percentage of the studied hairdressers had technical secondary degree in education which helped them to pose a higher chance for adequate and correct knowledge about hairdressing hazards and how to protect themselves.

## CONCLUSION

It was concluded that, the majority of the studied hairdressers were unsatisfactory in the practices that related to the prevention of the dangers of hairdressing and reduction for causes of accidents in the work environment as well as their good knowledge about overall hazards were deficient.

## RECOMMENDATIONS

The research advised that**,** the hairdressers should have pre-employment health education programs to increase their understanding of the precautions to reduce health risks and value cleaning their equipment.

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# مخاطر الصحة المهنية وتدابير السلامة بين مصففي الشعر في مدينة بورسعيد

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يتعرض مصففو الشعر لمجموعة متنوعة من العوامل الضارة في مكان العمل. وتشمل هذه العوامل الكيميائية والفيزيائية بالإضافة إلى المخاطر البيولوجية. لذلك المعرفة الصحيحة بعوامل الخطورة واتباع تدابير السلامة بين مصففي الشعر يؤدي إلى تقليل النتائج الصحية الضارة. **الهدف:** تقييم مخاطر الصحة المهنية وتدابير السلامة بين عمال تصفيف الشعر في مدينة بورسعيد. **التصميم:** تم استخدام تصميم بحث وصفي مستعرض. **المكان:** تم إجراء البحث بصالونات الحلاقة بمدينة بورسعيد بمصر. **العينة:** عينة هادفة تضمنت ٢٠٩ من عمال تصفيف الشعر لمدة ٥ أشهر. **الأدوات:** تم استخدام أربع أدوات: استبيان مقابلة منظم لمصففي الشعر ، واستبيان معرفي حول مخاطر الصحة المهنية ، واستبيان ممارسات حول منع المخاطر في مجال تصفيف الشعر ، وقوائم لمراقبة احتياطات السلامة لمنع حوادث تصفيف الشعر واستخدام معدات الوقاية الشخصية في صالونات تصفيف الشعر. **النتائج:** أظهرت الدراسة الحالية أن ٦.٧٪ من مصففي الشعر محل الدراسة لديهم معلومات جيدة بالمخاطر الكلية ، في حين أن جميعهم لديهم ممارسات غير مرضية تتعلق بالوقاية من مخاطر تصفيف الشعر ، وأيضا ٣٨.٣٪ منهم لديهم ممارسة منخفضة لتدابير السلامة والحد من أسباب الحوادث في بيئة العمل. **الخلاصة:** كانت الممارسات الآمنة لمعظم مصففي الشعر والتي تتعلق بالوقاية من مخاطر تصفيف الشعر والحد من أسباب الحوادث في بيئة العمل غير مرضية وكذلك كانت معلوماتهم الجيدة بالمخاطر العامة قليلة. **التوصيات:** يجب توفير برامج التثقيف الصحي لمصففي الشعر لتوعيتهم حول تدابير الوقاية من المخاطر الصحية وقيمة تعقيم أجهزتهم.

**الكلمات المرشدة :** الصحة ، الخطر ، مصفف الشعر ، المهنية ، الإجراءات ، السلامة.