



## A study on occupational respiratory, musculoskeletal, reproductive and other diseases among cosmetologists

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### Abstract

This study relates to Cosmetologists, which is an emerging profession world-wide. A huge amount of working population has engaged themselves as Cosmetologists and lakhs are undergoing courses in related streams and are expected to join the industry soon. Health is a major concern and there are reports on adverse health outcomes of Cosmetologists as they are exposed to toxic beauty products on nearly routine basis. This paper reviews the various health problems related to salon workers.

**Keywords:** cosmetologist, health hazard, toxins

### Introduction

Cosmetologists are a vulnerable population at the forefront of the hair care, skin care and nail care industry and are exposed to poisonous beauty enhancement products, both in using the products on themselves and on their clients.

Prolonged exposure to irritants, exposure to potential allergens such as hair dyes and pre-existing sensitive skin can greatly increase skin irritation and cause dermatitis.

Improper posture, standing for long periods, working long hours, and working through breaks are risk factors that lead to increased Musculoskeletal disorders (MSD) risks. MSDs include lower back problems, shoulder problems, neck problems and wrist problems. Acute health problems like skin and eye irritation, breathing difficulties and headaches are commonly reported in this community.

There are evidences of elevated risk of adverse pregnancy outcomes, reproductive disorders associated with menstrual cycles and spontaneous abortions linked with this profession.

A number of studies report increasing incidences of occupational asthma among barbers and hair stylists.

Studies indicate that shampoos, lotions, make-up foundations, and lip balms contain human carcinogens. These cancer causing chemicals are of special concern given the frequency with which these chemicals are used within the salon community.

Studies also indicate a positive correlation between adverse health symptoms and duration of experience of a cosmetologist.

Given that most cosmetologists in India are barely qualified after school, and have undergone only short term vocational programme after which they join salons for work, there is hardly any scope for understanding of ergonomic principles and other safety measures, let alone the awareness of possible harm (including cancer and AIDS) that can happen in case of negligence and long term exposure.

There are no government regulations in place which would grant them a license only after screening their knowledge of personal protection and sanitation procedures.

Through this project, we propose to study the health status of cosmetologists in Punjab, India and understand the occupational hazards to which they are exposed on everyday basis. At the same time we intend to deliver an educational programme to cover these "knowledge gaps" and assess the efficacy of this programme by monitoring the health of these workers after receiving the safety training. Cosmetologists work with chemicals so they get prone to various health problems. Keeping this in mind, the objective behind the study is to investigate the prevalence of problems like reproductive disorder, musculoskeletal disorder, cancer, asthma and respiratory disorders among cosmetologists.

### Health hazards of cosmetologist

Health is a fundamental concern and there are reports on adverse health outcomes of Cosmetologists conducted in Vietnam, Colorado, USA, Athens, Connecticut, Taiwan, France, UK, Izmir etc.

In 2008, during a survey a number of employees stated that they faced some health problem after jumping in the aesthetic industry, mainly critical health problems like eye and skin irritation, headache and respiration problems that may be linked with solvent exposure. It was found that the nail technicians usually handle cancer causing cosmetic products which may harm endocrine system or cause cancer (Quach *et al.*, 2008).

### Asthma

Kreiss investigated the prevalence of asthma among cosmetologists in Colorado and found that application of artificial nails, hairstyling and shaving were responsible for the same problem among salon workers (Kreiss *et al.*, 2006)<sup>[1]</sup>. In another research, Reutman demonstrated that the nail specialists, mainly synthetic nail applicators, have increased respiratory problems and threat of having asthma (Reutman *et al.*, 2009)<sup>[6]</sup>. Ameille described that the hairdressers have increased risk of occupational asthma (Ameille *et al.*, 2003)<sup>[9]</sup>.

## Reproductive Disorder

Kersemakers reported that the reproductive system disorders may arise among cosmetologists due to hair sprays having harmful chemicals like ethanol and dichloromethane. Associations with menstrual disorders and spontaneous abortions were also found (Kersemakers *et al.*, 1995) [15].

Halliday reported the increased risk of lower birth weight, premature delivery and perinatal death was higher among hairstylists than in other professions (Halliday-Bell *et al.*, 2009) [17]. In another study, Herdt observed a slightly higher possibility for having a low birth weight of child among cosmetologists in comparison with other licensed experts (Herdt-Losavio *et al.*, 2009) [18].

In 2010, another study was made for examining the health outcomes of children born to cosmetologists compared to children of females in other professions (Galichio *et al.*, 2010).

Victoria explained probable reproductive system threats for cosmetologists (hair and nail specialists) due to chemical exposure and sharing of work area (Pak *et al.*, 2013) [3].

In a study, Quach examined that women working as cosmetologists (including hair and nail services) and manicurists have an increased risk for maternal complications (Quach *et al.*, 2015) [5].

## Nose irritation and allergies

Leino studied the prevalence of rhinitis with eye symptoms, rhinitis, dyspnoea, dyspnoea accompanied by cough, and cough with phlegm among hairdressers (Leino *et al.*, 1997) [10].

Hannah White gathered information about the dangers, safety practices and health problems of nail salon staff in nail salons and found nose irritation and allergies to be most prevalent. In context of safety practices, it was observed that gloves and masks were rarely used. (White *et al.*, 2015) [2].

In a study, Hassan demonstrated that there were noteworthy links between frequent chemical hair services and eye irritation, nose irritation, dermatitis, and phlegm (Hassan *et al.*, 2015) [13].

## Carcinogens

In a study, Guidotti found that female cosmetologists, hairdressers and manicurists have maximum cases of multiple myeloma (Guidotti *et al.*, 1982) [19].

Teta investigated the cancer rate among female cosmetologists (Teta *et al.*, 1984) [20].

Tsigonia investigated the exposure of salon workers to various chemical products usually used in salon. It was found that health can be conserved by following certain practices such as proper air circulation of the areas, keeping the packages closed of beauty products when not in use and by using chemical free beauty products (Tsigonia *et al.*, 2010) [8].

## Musculoskeletal Disorders

In a study, risk factors related to occupational musculoskeletal problems were investigated and shoulder unease came out to be most prevalent, in addition to this lower back and neck discomfort were also found to be major problems. The study revealed that ageing also increase the level of musculoskeletal discomfort (Fang *et al.*, 2007) [11].

Tsigonia performed a study and found neck pain, hand and wrist pain and lower back pain as a major problem among salon workers (Tsigonia *et al.*, 2009) [8].

In a study, Lee described that the effect of job stress through fatigue on musculoskeletal problems to be noteworthy (Lee *et al.*, 2012) [12].

Hassan demonstrated that elbow, shoulder and back pain were the most prevalent musculoskeletal pains, back and knee pains found to be the most frequent chronic pain, hand and wrist pain caused many hairdressers to see a doctor (Hassan *et al.*, 2015) [13].

Aweto investigated the prevalence of musculoskeletal disorder among women, the most commonly affected body parts unfolded to be low back, shoulder and neck. The study revealed that the incidence of musculoskeletal disorders were considerably linked with the age of cosmetologist and standing period while working (Aweto *et al.*, 2015) [14].

## Conclusion

The study relates to Cosmetologists which is a growing profession world-wide. World-wide studies indicate prevalence of health problems like skin and eye irritation, Dermatitis, breathing difficulties, occupational Asthma, headaches, musculoskeletal disorders, menstrual abnormalities, infertility, miscarriage, spontaneous abortion, pre-term delivery, low birth weight when compared to working women in other professions or the general population. Maintenance of correct body posture while performing salon procedures, following ergonomic principles during services, use of bio-mechanically favourable equipment, ensured use of mask and gloves, proper ventilation, yogic regime inclusive of breathing techniques like pranayam and other hygiene and safety measures that are likely to greatly reduce the risk of adverse health conditions caused by toxic chemicals and prolonged working hours.

## References

1. Kreiss Kathleen, Reza Esfahani S, Vinicius Antao CS, John Odencrantz, Dennis C. Lezotte, and Richard E. Hoffman. "Risk factors for asthma among cosmetology professionals in Colorado. Journal of occupational and environmental medicine. 2006; 48(10):1062-1069.
2. White Hannah, Khalid Khan, Christine Lau, Holden Leung, Dede Montgomery, Diane Rohlman S. Identifying health and safety concerns in Southeast Asian immigrant nail salon workers. Archives of environmental & occupational health. 2015; 70(4):196-203.
3. Pak Victoria M, Martha Powers, Jianghong Liu. Occupational chemical exposures among cosmetologists: risk of reproductive disorders. Workplace health & safety. 2013; 61(12):522-528.
4. Quach Thu, Kim-Dung Nguyen, Phuong-An Doan-Billings, Linda Okahara, Cathyn Fan, and Peggy Reynolds. A preliminary survey of Vietnamese nail salon workers in Alameda County, California. Journal of community health. 2008; 33(5):336-343.
5. Quach Thu, Julie Von Behren, Debbie Goldberg, Michael Layefsky, and Peggy Reynolds. Adverse birth outcomes and maternal complications in licensed cosmetologists and manicurists in California. International archives of

- occupational and environmental health. 2015; 88(7):823-833.
6. Reutman Susan R, *et al.* A pilot respiratory health assessment of nail technicians: symptoms, lung function, and airway inflammation. *American journal of industrial medicine.* 2009; 52(11):868-875.
  7. Tsigonia Alexandra, Argyro Lagoudi, Stavroula Chandrinou, Athena Linos, Nikos Evlogias, and Evangelos C. Alexopoulos. Indoor air in beauty salons and occupational health exposure of cosmetologists to chemical substances. *International journal of environmental research and public health.* 2010; 7(1):314-324.
  8. Tsigonia Alexandra, Dimitra Tanagra, Athena Linos, Georgios Merakoulas, Evangelos C. Alexopoulos. Musculoskeletal disorders among cosmetologists. *International journal of environmental research and public health.* 2009; 6(12):2967-2979.
  9. Ameille J, Pauli G, Calastreng-Crinquand A, Vervloet D, Iwatsubo Y, Popin E, *et al.* "Reported incidence of occupational asthma in France, 1996-99 the ONAP programme. *Occupational and environmental medicine.* 2003; 60(2):136-141.
  10. Leino Timo, Lauri Tammilehto, Ritva Luukkonen, and Henrik Nordman. Self reported respiratory symptoms and diseases among hairdressers. *Occupational and environmental medicine.* 1997; 54(6):452-455.
  11. Fang, Hsiao-Lin, Robert CC Chen, Hsiao-Ping Fang, and Qin Xu. "An ergonomic approach to an investigation into the risk factors leading to work-related musculoskeletal disorders for Taiwanese hairdressers. *Proceedings of International Association of Societies of Design Research IASDR, 2007.*
  12. Lee, Hye-Young, Seo-Yeon Choi. Effect of emotional labor, job and psychosocial stress, and fatigue of beauty industry workers on the perceived symptoms of musculoskeletal diseases. *Journal of the Korea Safety Management and Science.* 2012; 14(4):51-58.
  13. Hassan OM, Bayomy H. Occupational respiratory and musculoskeletal symptoms among Egyptian female hairdressers. *Journal of community health.* 2015; 40(4):670-679.
  14. Aweto, Happiness Anulika, Bosede Abidemi Tella, Omobolanle Yewande Johnson. Prevalence of work-related musculoskeletal disorders among hairdressers. *International journal of occupational medicine and environmental health.* 2015; 28(3):545-555.
  15. Kersemaekers, Wendy M., Nel Roeleveld, and Gerhard A. Zielhuis. Reproductive disorders due to chemical exposure among hairdressers. *Scandinavian journal of work, environment & health.* 1995, 325-334.
  16. Gallicchio Lisa, Susan R. Miller, Teresa Greene, Howard Zacur, and Jodi A. Flaws. Health outcomes of children born to cosmetologists compared to children of women in other occupations. *Reproductive Toxicology.* 2010; 29(3):361-365.
  17. Halliday-Bell, Jacqueline A, Mika Gissler, Jouni Jaakkola JK. Work as a hairdresser and cosmetologist and adverse pregnancy outcomes. *Occupational medicine.* 2009; 59(3):180-184.
  18. Herdt-Losavio, Michele L, Shao Lin, Charlotte M. Druschel, Syni-An Hwang, Matthew P. Mauer, and G. Anders Carlson. The risk of having a low birth weight or preterm infant among cosmetologists in New York State. *Maternal and child health journal.* 2009; 13(1):90-97.
  19. Guidotti Sylvana, William Wright E, John Peters M. Multiple myeloma in cosmetologists. *American journal of industrial medicine.* 1982; 3(2):169-171.
  20. Teta Jane M, Judy Walrath, Wister Meigs J, John Flannery T. Cancer Incidence Among Cosmetologists 2. *Journal of the National Cancer Institute.* 1984; 72(5):1051-1057.