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Los Angeles

**Analysis of Occupational Exposures of Black  
Hair Care Professionals in Predominantly Black  
Salons**

A thesis submitted in partial satisfaction  
of the requirements for the degree  
Master of Science in Environmental Health Sciences

by

**Teniope Adewumi**

2015

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ABSTRACT OF THE THESIS

**Analysis of Occupational Exposures of Black  
Hair Care Professionals in Predominantly Black  
Salons**

by

**Teniope Adewumi**

Master of Science in Environmental Health Sciences

University of California, Los Angeles, 2015

Professor Dr. Wendie A. Robbins, Chair

Black hair-salon workers face serious health hazards from the products they use on themselves, products they use on clients, and other health hazards in their work setting. Currently there is a significant research gap in understanding the prevalence of workplace related exposures and health outcomes. The primary objective of this study was to gather data on workplace exposures and health outcomes of hair care professionals in South Los Angeles. The goal was to determine the workplace exposures, assess hair care services provided, investigate prevalence of personal protective equipment and ventilation use in salons, and to obtain data on potential interest in health and safety education programs. The results suggest the need for proper health and safety training within the salon worker community, specifically around chemical hair services. The results also suggest ergonomic workstation assessments and recommendations for hair care professionals would be beneficial to reduce musculoskeletal disorders. Willingness of stylists to learn more about workplace hazards and how to mitigate their risks was high. It is recommended that a training program be developed to educate stylists on creating safer salons.

The thesis of Teniope Adewumi is approved.

Dr. Shane Que Hee

Dr. Niklas Krause

Dr. Wendie A. Robbins, Committee Chair

University of California, Los Angeles

2015

*To my parents, Abayomi and Olufunke Adewumi, for which all of this would not be possible. To my sister, Konyin Adewumi, for her love and support. To my partner, Cameron Gunn, for his words of encouragement and killer smile.*

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# CHAPTER 1

## Background

### 1.1 Introduction

Black women make up a substantial portion of beauty product consumers, spending an estimated 7.5 billion dollars annually (Smith, 2009). The Black hair care industry is currently valued as a 9 billion dollar industry (Glanton, 2012) estimated to reach 500 billion dollars (with the increase of online marketplaces) by the year 2017 (Opiah, 2014). Many hair and beauty products marketed to black women and girls, such as hair relaxers and skin lightening creams, contain toxic chemicals that have not been assessed for their safety (Friedrich, 2011). A report by the Environmental Finance Center, Region XI found that beauty product complaints to the Food and Drug Administration (FDA) were largely composed of hair relaxers and straighteners. The adverse symptoms reported to the FDA included skin irritation, eye irritation, burning, drying of eyes, and drying of skin (Blake, 2007). Despite the numerous complaints relaxers represent 21 percent of the hair care market with expenditures estimated at \$152 million (Opiah, 2014). Black hair care professionals are a vulnerable population at the forefront of the Black haircare industry and are exposed to toxic haircare products on a nearly daily basis, both in using the products on themselves and on their clients. Please note that in this thesis, the following terms are used interchangeably: hair stylist, hairdresser, cosmetologist and hair professional. Black for the purposes of this report is defined as meaning all people who identify as part of the African Diaspora, including but not limited to: Africans, African Americans, Black American,

Black Caribbean and Afro Latinos. Although African American and Black are not interchangeable words, they will be interchangeable in this thesis unless otherwise noted because of the lack of differentiation in some of the published research findings that are cited. Research that looks at Black people in America rarely disaggregates information by ethnicity or nationality.

## **1.2 Occupational Hazards in the Salon Community**

### **1.2.1 Skin and Eye Irritants**

Occupational contact dermatitis is a common health problem that plagues the hair care community. The number of occupational skin diseases that occur in hair care professionals constantly increases. The most common contributing factors to skin damage include water, shampoos, detergents, conditioners, hair dyes, bleaches, permanent wave solutions, and the components of gloves (Kie-Swierzyska, 2009). Prolonged exposure to irritants, exposure to potential allergens such as hair dyes, and pre-existing sensitive skin can greatly increase skin irritation. In the United Kingdom it is estimated that 14-20% of cosmetology students drop out during their first two years due to contact dermatitis (DermNet NZ, 2012). Studies estimate that around 7 out of 10 hair stylists will likely suffer from a form of work related dermatitis in their careers. In addition to contact and allergic dermatitis, stylists are also exposed to other skin disorders including chemical burns and bacterial infections. Another occupational exposure of concern and significant health problem in hair care professionals is eye irritation. Products such as nail polish, hair dye, glues, flat iron sprays and disinfectants can cause significant eye irritation (DermNet NZ, 2012).

### 1.2.2 Respiratory Irritants

Prevalent health issues facing hairstylists include breathing and respiratory disorders. Hair care professionals work with many chemicals that are known to cause adverse effects on the respiratory system. Chemicals such as formaldehyde, ammonia, and bleaching agents have been known to lead to breathing difficulties such as coughing and wheezing, heightened sensitivity, and in some cases occupational asthma. Studies have also shown that stylists are at a greater risk than the general public for developing respiratory problems and allergies. A study conducted with 344 women in Nigeria found that respiratory symptoms were more common among hair dressers as compared to controls. Frequent sneezing, cough, and chest tightness were found in the hair stylists. In addition the mean values for pulmonary function tests (FEV1, FVC, and FEV1/FVC) were worse for hair dressers, with no relation to duration of employment in the industry (Adeyeye, 2007). Additionally, a study conducted in Norway compared 100 hairdressers and 95 office workers to determine the prevalence of respiratory symptoms among the occupations (Hollund, 2001). A population based control group was also established in the study. Findings included increased symptoms such as breathlessness in hairdressers younger than 30 years of age and over 40 years of age as compared to the population based control group. The study found that hair dressers reported more wheezing, runny eyes and blocked noses from exposure to hair dyes, bleaching powder and other chemicals used in the salon. The study concluded that the prevalence of acute respiratory symptoms related to chemicals in the salon of hairdressers was higher than the control groups (Hollund, 2001). Respiratory problems such as asthma are a growing problem in the Black community. More than 3 million African-Americans are currently living with asthma, at a higher prevalence than Caucasians. It is estimated that African-Americans are almost three times more likely to die from asthma related causes than Caucasians (Womens Health, 2012). Increased risks from traditional asthma factors such as air

pollution and occupational exposures could leave Black hair dressers at a greater risk of harm when exposed to hair products known to cause adverse respiratory symptoms.

### **1.2.3 Ergonomic Hazards**

Hair care professionals are subject to increased ergonomic risks, most specifically musculoskeletal disorders (MSD). Poor posture, standing for long periods, working long hours, and working through breaks are risk factors that lead to increased MSD risks (Mandiracioglu, 2009). Specific MSDs include lower back problems from standing for long periods, shoulder problems from holding arms above shoulder level for extended periods of times, neck problems from constant head turning, and wrist problems from forceful repetitive movements. Hair styles done by Black stylists can take upwards of twelve hours to complete and many cosmetologists are standing the entire time, working through breaks. Chronic cardiovascular risks such as atherosclerosis has been associated with prolonged standing at work (Krause et al., 2000) Ergonomic problems can greatly reduce the ability for hairdressers to work properly. MSDs are the greatest illness burden in the United States contributing to unnecessary pain and suffering, stress, and ultimately loss of income (Middlesworth, nd ).

### **1.2.4 Volatile Organic Compounds**

A recent research study examined 12 hair salons in Italy to address the following: (1) assess individual exposure of salon staff, hairdressers and customers to volatile organic compounds (VOCs) and (2) identify the products used in each hair salon and activities that were responsible for the presence of VOCs in the salon environment (de Gennaro, de Gennaro, Mazzone, Porcelli, & Tutino, 2014). The study found four VOCs (benzene, naphthalene, ethylbenzene and tetrachloroethylene)

in high concentrations in two of the 12 hair salons studied (de Gennaro et al., 2014). These compounds have high carcinogenic activity, for example ethylbenzene has a lifetime cancer risk (LCR) of  $7.88 \times 10^{-5}$  while tetrachloroethylene has an life time cancer risk of  $8 \times 10^{-5}$ . Compounds with an attributable cancer risk over  $10^{-4}$  are considered a definite risk, those  $10^{-5}$ - $10^{-4}$  are a probable risk and those between  $10^{-5}$ - $10^{-6}$  are a possible risk. de Gennaro and his colleagues identified hair sprays, hair foam, shampoo, balms, hair masks, oils and hair dyes as the hair products responsible for the presence of butane, hexane, methyl ethyl ketone (MEK), isopropanol, butanol, 1-methoxy-2-propanol, benzyl alcohol, camphene, camphor, limonene, alpha-pinene, eucalyptol and menthol at indoor concentrations higher than outdoor levels (de Gennaro et al., 2014). The study also identified that VOC levels remained constant regardless of the salon being closed Sundays and Mondays. They hypothesize that this may be due to the lack of adequate ventilation (de Gennaro et al., 2014).

### **1.3 Professional Hair Product Use and Health Outcomes**

#### **1.3.1 Reproductive Health Outcomes**

A number of studies have shown an increased risk of adverse reproductive health outcomes among female cosmetologists, for example, menstrual abnormalities (Blatter & Zielhuis, 1993), infertility, miscarriage, spontaneous abortion (Axmon, Rylander, Lillienberg, Albin, & Hagmar, 2006; Kersemaekers, Roeleveld, & Zielhuis, 1997), pre-term delivery (Halliday-Bell, Gissler, & Jaakkola, 2009), low birth weight and small for gestational age infants (Halliday-Bell et al., 2009; Herdt-Losavio et al., 2009) when compared to working women in other occupations or the general population. For example, a cohort study based on 3,706 female Swedish hairdressers compared to 3,462 female Swedish non-hairdressers found that hairdressers gave birth to infants that were small for gestational age, had

major malformations (cleft palate, heart defects and talipes) or suffered from early neonatal death more often than the referent group (non-hairdressers) (Rylander, Axmon, Toren, & Albin close up please2002). Furthermore, results indicated that hairdressers who worked more than 30 hours a week during pregnancy were 1.8 times more likely to have a low birth weight infant when compared to hairdressers who worked less than 30 hours a week (Rylander et al., 2002). The aforementioned study focused on the birth outcomes of cosmetologists but few studies examined the health of children born to women working as cosmetologists. A study by Gallicchio and colleagues used data collected by the Reproductive Outcomes in Salon Employees (ROSE) study to examine health outcome differences between children born to cosmetologists and children born to women working in other occupations of the same age (Gallicchio, Miller, Greene, Zacur, & Flaws, 2010). Results indicated that children born to cosmetologists had a statistically significant risk of being born with a learning disorder (example: attention-deficient hyperactivity disorder (ADHD), attention-deficient disorder (ADD), dyslexia, phonological delay, speech delay, difficulty progressing, short-term memory deficit, executive functioning deficit, reading delay, auditory delay and non-visual computation problem), mood disorder (example: drug addiction, depression, bi-polar disease, anxiety, oppositional defiant disorder, obsessive compulsive disorder (OCD)), or gastrointestinal problems (example: Crohns disease, oesophagus/anal atresia, abdominal hemangioma, gastroesophageal reflux, abdominal duplication cyst, intestine problem, pyloric stenosis and intestinal hole) when compared to children born to non-cosmetologists (Gallicchio et al., 2010). A recent study published in the American Journal of Epidemiology determined that the use of hair relaxers is linked to uterine fibroids in young Black women and girls (Wise et al., 2012).

## 1.4 Personal Hair Product Use and Health Outcomes

A 1998 case study investigated the effects that hair care products containing estrogens and placenta had on four African American girls between the ages of 1.2 years and 7.8 years. The study discovered that the girls began to develop breast and pubic hair in just 2-24 months after the use of estrogen and animal placenta containing products (C.M. Tiwary, 1998). A hormone analysis was completed and identified two types of estrogens in the hair products and their concentrations: estriol concentrations ranged from 16-20 mg/g and estradiol was found at a concentration of 0.04 mg/g (C.M. Tiwary, 1998). During a woman's lifetime there are three circulating natural forms of estrogens in the body: estrone, estradiol, and estriol, with estradiol being the major and most active form of estrogen. Estriol is produced in large quantities by the placenta in pregnant women, and estrone is produced mainly in post-menopausal women. Tiwary's study found that discontinuation of hormone and placenta containing hair products led to the reversal of breast and pubic hair growth in the four African American girls in the study (C.M. Tiwary, 1998). A retrospective study inquired about hair product use in 300 African-American, Hispanic, and White women ranging from ages 18-77 years. The study found that women who reported using hair oils and hair perms were 1.4 times more likely for earlier menarche after adjusting for race, ethnicity and year of birth (T. James-Todd, Terry, Rich-Edwards, Deierlein, & Senie, 2011). Study participants reported using hair oil, lotion, leave-in conditioner, perms and other hair care products before the age of 13 (T. James-Todd et al., 2011). The results showed that African American women were more likely to use hair products and reach menarche earlier than other racial groups (T. James-Todd et al., 2011).

### 1.4.1 Cancer Risk

According to Skin Deep, a report by the Environmental Working Group, one of every 100 products on the market contains ingredients certified by government authorities as a known human carcinogen. This includes shampoos, lotions, make-up foundations, and lip balms. Almost one-third of all products on the market contain one or more ingredients classified as possible human carcinogens. Cancer causing chemicals for both consumers and hair professionals are of special concern given the frequency of which these chemicals are used within the Black community. The Journal of the National Cancer Institute, in 1994, announced that deep-colored dyes when used over a prolonged period of time seemed to increase the risk of both non-Hodgkins lymphoma and multiple myeloma. Similarly, the International Journal of Cancer reported that those who use permanent hair dyes are 2.1 times more likely to develop bladder cancer. Breast cancer is the leading cause of cancer-related deaths among women in the United States (ACS, 2014). Incidence rates of breast cancer are highest among non-Hispanic white women and African American women, 128 versus 119 per 100,000 respectively (ACS, 2013). However, breast cancer mortality rates are higher among African American women when compared to non-Hispanic White women, 31 versus 23 per 100,000 respectively (ACS, 2013). This phenomenon is largely unexplained. African American women are more likely to be diagnosed with more advanced or late stage breast cancer often characterized as estrogen receptor negative (ER-) with larger tumor sizes (Chlebowski et al., 2005). Poor breast cancer prognosis among African American women may contribute to the aforementioned high mortality rates (Chlebowski et al., 2005). A study by Chlebowski et al. examined 156,570 postmenopausal women over a period of 12 years, with the median follow-up conducted at 6.3 years, to determine the factors influencing differences in breast cancer incidence among different racial and ethnic groups and found that ethnicity was the highest, statistically significant predictor of poor breast cancer prognosis, with African

American women being 4.7 times more likely to be diagnosed with ER- tumors than white women (2005). Life-time exposure to estrogen is considered a major risk factor for breast cancer (Feigelson et al., 1996; Henderson & Feigelson, 2000; Henderson, Ross, & Bernstein, 1988; Henderson, Ross, Pike, & Casagrande, 1982). Accepted risk factors for breast cancer include the following but are not limited to: early age at menarche, late age at menopause, age at first live birth, genetics, use of hormone replacement therapy (i.e birth control), adult weight gain, obesity, lack of physical activity, radiation exposure and excess alcohol consumption (Bernstein, Teal, Joslyn, & Wilson, 2003; Donovan et al., 2007; Marie Swanson, Haslam, & Azzouz, 2003).

## **1.5 Conclusion**

Much of the research on hair care professionals comes from Europe specifically from Sweden, Italy and Finland. There is a lack of peer-reviewed research studies on the impact that haircare products targeted towards Black women have on Black hair care professionals and consumers. This review of the literature has shed some light on the documented health effects that hair care products have on Black hair professionals and consumers such as early secondary sexual development, early age at menarche, higher mammographic density, menstrual abnormalities, and low birth weight infants. The review also points to potential adverse health outcomes that have not yet been investigated in this occupational group such as cancer of the bladder and other cancers. In addition to health effects related to hair care products, hair care professionals also face many other typical occupational hazards such as allergies, skin diseases, asthma, and musculoskeletal disorders. There is a safety gap that exists and needs to be addressed ergonomic workstation design, enforcing safety measures, removing harmful toxic chemicals, and empowering the health and well-being of the Black community.

## **CHAPTER 2**

### **Study Objective**

#### **2.1 Objective**

An occupational health and wellness survey was conducted in South Los Angeles, over a period of several months, to assess the workplace safety needs of Black hair care professionals. The objective of the health and wellness survey was to gather data on the prevalence of workplace physical, mechanical and chemical hazards and related health outcomes of Black hair care workers including reproductive health disorders. The data gathered would be used in efforts to implement appropriate workplace interventions.

#### **2.2 Research Aims**

The specific research aims were: 1) To determine what hair care services Black hair care professionals are providing in South Los Angeles; 2) To determine what occupational hazards Black hair care professionals are exposed to; 3) To document health outcomes that are experienced by workers from salon hazards; 4) To assess the prevalence of personal protective equipment (PPE) and ventilation use in salons 5) To assess the health and safety training (if any) hair care professionals in South Los Angeles have received; 6) To assess potential interest in health and safety educational programs.

## CHAPTER 3

### Experimental Methods

#### 3.1 Study Design

This was a descriptive study conducted with Black hair care professionals in South Los Angeles. To accomplish the study aims, a preliminary survey was developed. The survey development process began with an assessment of the study objectives, research aims, and past unpublished surveys conducted by Black Women for Wellness. The preliminary survey was created using properties of previously successful health and safety surveys found in the literature. Some of the questions included information on:

1. Services provided in the salon
2. Products used frequently by stylists
3. Safe handling precautions of chemical products
4. Physical injuries experienced while at work
5. Ventilation used in salons
6. Previous health and safety training

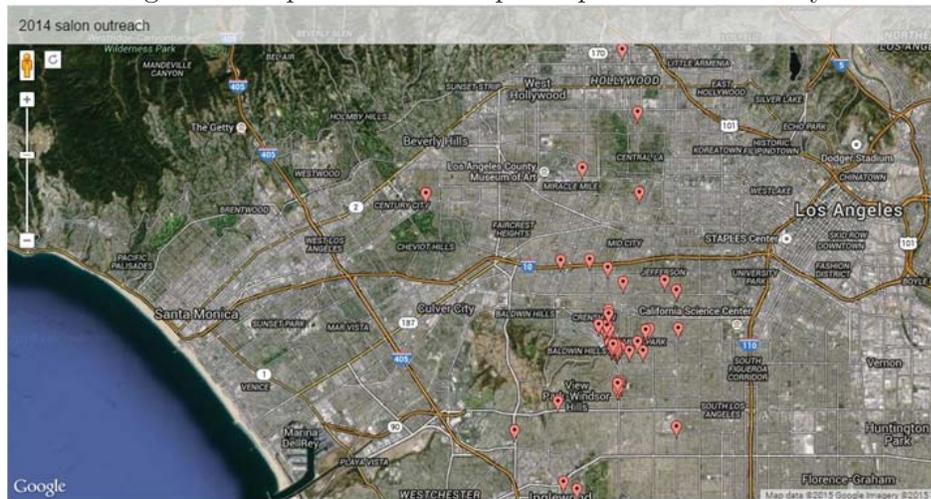
After the preliminary survey was created it was pilot tested among a small sample of Black hair care professionals. Based on feedback from the pilot group the survey content was altered. The finalized survey totaled 33 questions and was

split into two sections. The first section focused on salon services and personal protective equipment use. The second section focused on the stylists specific health issues (if any). The finalized survey that was used for the main study can be found in Appendix A.

### 3.2 Survey Participants

The target population for the survey was Black female hair care professionals, although Black male salon workers were also included. The target location for the surveys was South Los Angeles as there are a considerable number of salons near the Black Women for Wellness office. Surveys also took place in parts of Inglewood, Leimert Park, and Mid-City (Figure 1).

Figure 1: Map of salons that participated in the survey



#### 3.2.1 Survey outreach

Initial contact with survey participants began with unsolicited walk-ins and calls to salons within the target area. Due to construction and governmental surveying that was also occurring in the area, discretion was needed when approaching

salons. The relationship Black Women for Wellness had in the community helped build trust and foster good faith with stylists when approaching them for survey interviews. The survey interviews were conducted through appointments made, after initial contact with hair stylists at their salons. The interview times ranged from 15 to 30 minutes depending on follow-up questions participants needed to answer. Interview questions were read to the hair dressers to take into account any educational level barriers. Survey participants received a \$5 gift card for their participation. Out of the 60 salon workers who were approached about the study, 22 individuals agreed to participate (36% response rate).

### **3.2.2 Consent and IRB**

This study was reviewed and considered exempt by UCLA IRB because the data had been collected by Black Women for Wellness, was de-identified and had followed informed consent. Interviews had been conducted from June 2014 until August 2014.

# CHAPTER 4

## Results

### 4.1 Demographics

The population distribution of the survey respondents was 82% female and 18% male. For age, 45.5% of respondents were between 30-44 years, and 45.5% were over the age of 45. Only 9.1% of survey participants were less than 29 years of age. The median [IQR] worktime as a stylist was 12 [2.534] years. The majority (59%) of stylists learned to perform their job at cosmetology school. (Table 1)

Table 1: Demographics of Black salon worker study participants (N=22)

CHARACTERISTIC	RESPONDENTS (%)
<b>GENDER</b>	<b>18</b>
<b>MALE</b>	<b>82</b>
<b>FEMALE</b>	
<b>AGE</b>	
<b>&lt;29 YEARS</b>	<b>9</b>
<b>30-44 YEARS</b>	<b>45.5</b>
<b>&gt;45</b>	<b>45.5</b>
<b>YEARS IN FIELD</b>	
<b>&lt;5 YEARS</b>	<b>22</b>
<b>5-20 YEARS</b>	<b>18</b>
<b>&gt;20YEARS</b>	<b>60</b>
<b>JOB RELATED EDUCATION</b>	
<b>COSMETOLOGY SCHOOL</b>	<b>59.1</b>
<b>FRIENDS/FAMILY</b>	<b>18.2</b>
<b>OTHER (ONLINE, BOOKS, SELF-TAUGHT, ETC)</b>	<b>22.7</b>

## 4.2 Services Provided

Services provided by stylists fell into two categories: services that required chemical products and natural hair services. Permanent waves and texturizers were provided by 22% of beauty professionals. Permanent straighteners and relaxers were provided by 27% of beauty professionals. Hair dyes were the most offered chemical hair service with 45% of stylists providing them. Natural hair services were more popular among the stylists than chemical hair services. Twists were the most commonly provided service with 60% of stylists offering the service. Locs were provided by 50% of stylists, 41% of stylists provided braids and short natural styles.

Table 2: Services provided by Black salon workers in South Los Angeles (N=22)

SERVICES PROVIDED	RESPONDENTS (%)
PERMANENT WAVES AND TEXTURIZERS	22
PERMANENT STRAIGHTENERS OR RELAXERS (NON-LYE OR LYE RELAXERS)	27
HAIR DYES	45
HAIR EXTENSIONS (I.E. WEAVES, CLIP INS, ETC)	18
PRESS AND CURL (CHEMICALLY TREATED HAIR)	22
BRAZILIAN BLOWOUT	0.04
TWISTS	59
SISTER LOCS	23
LOCS	50
AFROS	13
BRAIDS	40
SHORT NATURAL	40
PRESS AND CURL (NOT CHEMICALLY TREATED HAIR)	31
CURLY STYLES	36

### 4.2.1 Frequency of Services

Permanent waves and texturizers were performed on average 1 to 3 times a week by the all of the stylists who provided the services. Relaxers were done on average 2-4 times a week and hair dyes were done on average 2-5 times a week by stylists

who offered the services. The least frequent chemical hair service performed by stylists was Brazilian blowouts which only 1 stylist provided on average 1 to 3 times a week. Natural hair styles were performed more frequently with sister locs being the most frequent at 4 to 6 times a week on average by stylists who provided the service. Braids and locs were also performed frequently at 3-5 times a week by stylists offering the services.

### **4.3 Personal Protective Equipment and Ventilation**

The prevalence of personal protective equipment use among the survey participants varied. When asked how often they wore an apron 68% of the hair care professionals responded always, 18% never or rarely wore aprons. A total of 81% of stylists never wore any eye protection when working with chemical products or while working on clients in general. Glove use had the most variation with 45% of stylists responding that they never or rarely wore gloves and 50% of professionals responding that they always or often wore gloves. Face mask use was even worse than eye protection in that none of the stylists wore a face mask at work. Ventilation equipment use among the stylists included 72% using a table fan, 45% having a salon ventilation system, 54% having an open window, and 54% having a second door left open during work hours.

### **4.4 Health Outcomes**

Over 68% of survey participants indicated that they currently had health insurance. Those who were insured indicated that they were covered through Covered California or private coverage. Those without health insurance indicated expense, lack of information, and use of herbal remedies as reasons for not having health insurance. When asked how they would rate their overall health 68% of survey

participants responded excellent. Fewer than 13% rated their health as poor or fair. Top health issues reported that were believed to be related to work were irritation (skin, nose, and eye), fatigue/tiredness, stress, and difficulty breathing. Top physical injuries experienced while at work included pain in wrists, pain in fingers, cuts, loss of wrist function, loss of finger function, back pain, and leg/foot problems.

Table 3: Health Outcomes faced by Black hair salon workers while working in the salon (N=22)

HEALTH OUTCOMES EXPERIENCED	RESPONDENTS (%)
MIGRAINES	0.09
CHEMICAL BURN	0.09
NAUSEA	13
LOSS OF FUNCTION IN HANDS	13
DIZZINESS	18
LOSS OF FUNCTION IN WRISTS	18
LOSS OF FUNCTION IN FINGERS	18
DIFFICULTY BREATHING	22
SKIN IRRITATION	27
HEADACHES	27
ANXIETY	27
EYE IRRITATION	31
NOSE IRRITATION	36
CUTS	36
BACK PAIN	36
PAIN IN HANDS	40
STRESS	54
PAIN ON WRISTS	54
PAIN IN FINGERS	54
FATIGUE/TIREDNESS	59

#### 4.4.1 Reproductive Health Outcomes

When asked if they had ever worked at a hair salon while pregnant only 11% of female stylists responded that they had. A majority of respondents said they left work while they were pregnant. Notable reproductive health outcomes within the survey participants included uterine fibroids among 28% of female stylists and 22% reported having a miscarriage in the past.

## 4.5 Training

As stated earlier, nearly 60% of surveyed stylists received formal education from cosmetology schools. When asked if they had received any training on health effects of chemical hair products, 59% replied that they had not received any training. Of those who did receive training, beauty school and independent research were popular answers to where they had received training on health effects of chemical hair products. Over 82% expressed concern about the effects of chemical products on their health and 89% were concerned about the potential health effects of chemical products on their clients. 73% of stylists indicated interest in learning more about safe healthier workplaces and meeting with other workers or owners to talk about safer salons.

## CHAPTER 5

### Discussion and Conclusions

#### 5.1 Discussion

This study examined the Black salon worker community to obtain what potential health hazards that the community may face. Specifically the study looked at services provided by hair care professionals, frequency of the services, personal protective equipment use, ventilation measures, and health of the stylists. The goals of the study were to identify potential health hazards in hopes of mitigating exposures that could cause adverse health outcomes.

##### 5.1.1 Services Provided

Identifying the services provided by salon workers is important in classifying what specific exposures may be present in salons. Understanding what chemical hair services are done can help narrow the focus for intervention and product substitution methods. Permanent waves, relaxers and hair dyes were the most commonly offered service and were done the most frequently. A review of the literature identified possible adverse effects of chemical and other services (Chapter 1). Services identified in the review most important to stylists in the study include relaxer use and hair dyes. Natural hair services are important in understanding ergonomic risk factors that hair stylists face. Twists, sister locs, locs, and braids were natural hair styles provided and performed frequently. These services can take upwards of 12 hours to complete depending on client preferences. Working for such long

hours, using intricate braiding techniques, standing long periods, and working through breaks can lead to serious ergonomic problems .

### **5.1.2 Personal Protective Equipment and Ventilation**

Personal protective equipment use among the hair dressers varied depending upon the type of equipment. Aprons were most frequently (68%) used followed by gloves (50%) then eye protection (20%) and lastly face masks (or respirators) (0%). Aprons are important for all stylists to wear in that they protect from chemicals splashing on clothes. All stylists interviewed did not have separate work clothes and went home in their work clothes. This can cause exposure to chemicals and other hazards that end up on clothes. Glove use is very important in protecting stylists from chemical exposures and occupational illnesses such as dermatitis. The survey results were alarming in that only 50% of stylists used gloves while working. All stylists interviewed had some sort of ventilation source in their salon. The most popular source was a table fan. The location of table fans in the salon varied from being behind the stylist to being directly in-front or on the floor. Several stylists had multiple sources of ventilation including a table fan, leaving a back door open, and opening a window. Circulation of air is important in salons to keep the shops from filling with fumes from hair processes.

### **5.1.3 Health Outcomes**

A large portion of hair dressers interviewed indicated that they believed their current health was excellent. Although the stylists believed their health to be excellent many experienced irritation (skin, nose, and eye), fatigue/tiredness, stress, and difficulty breathing. These health symptoms are similar to those reported in the literature. In addition pain in wrists, pain in fingers, cuts, loss of wrist function, loss of finger function, back pain, and leg/foot problems were common.

These can possibly be attributed to the long hours, intricate hair styling techniques, and lack of ergonomically efficient workstations. Notable reproductive health outcomes in the surveyed group included uterine fibroids and miscarriages. Several studies in the literature have shown increased adverse reproductive health outcomes among female hair professionals (Chapter 1). The cross-sectional design of the present study does not allow conclusions about causation. However, it is important to understand all exposures faced by stylists that might potentially affect health .

## **5.2 Conclusions**

Black women spend more money in the beauty industry and disproportionately use products containing toxic chemicals such as hair relaxers (which contain ingredients such as sodium hydroxide, thioglycolic acid, and lithium hydroxide) compared to White women. In addition to using products on themselves Black hair care professionals also encounter additional risk of exposure during their work. Health disparities faced by Black women included high incidence of breast cancers, asthma and other negative health outcomes. Occupational workplace exposures faced by surveyed salon workers included chemical hazards, ergonomic hazards, respiratory irritants, and reproductive hazards. The results of this study suggest that additional research into occupational hazards faced by the Black salon community are in order. The results of the study also show a willingness from stylists to learn more about workplace hazards and how to mitigate their risks.

## CHAPTER 6

### Recommendations

Firstly, the information gathered from the study must be disseminated to the hair care professionals. Many times in communities of color studies are done and the results are not distributed back to the affected communities. From the survey results it is evident that there is a lack of health and safety knowledge within the salon community. Upon delivery of the survey results it would be pertinent to provide information to stylists about where they can learn more about fostering safer workplaces. Distribution of outreach materials, such as pocket shopping guides, that are engaging would be a way to help facilitate conversation about the importance of salon safety and health. Secondly, Black Women for Wellness in connection with an occupational safety and health professional should work to develop a health and safety training program for salons within their community . The training should focus on areas of concern identified in the survey; ergonomic issues, reproductive disorders, and lack of personal protective equipment use. Another recommendation would be for the development of a Healthy Salon Recognition Program for stylists to be educated about salon safety, supported, and rewarded for completing the program requirements. For the program to work there must be consumer driven action, support from local city councils, and salon community support.

Lastly, there must be more research from the academic sector on salon workers of color. Research needs to be done on the chemical composition of products used in hair salons and biological monitoring of salon workers. Product ingredient

evaluation was not within the scope and capacity of this study. Additional studies should focus on gathering ingredient data from manufactures and evaluating the chemical toxicity of the product used by salon workers. More research can help bring to light negative health outcomes the particular group faces and can lead to facilitating policy changes.

## APPENDIX A

\*Survey used for study attached below



BLACK WOMEN FOR WELLNESS

### Healthy Hair Initiative Survey

By completing this survey, you help Black Women for Wellness (BWW) identify how to best meet your needs and the needs of your community when it comes to black hair products. Completion of this survey will also help address your possible occupational safety needs as a hair stylist.

We thank you in advance for your time and cooperation!

1. Complete Salon Address:

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2. Hair Stylist Code Number. Please write in the boxes the following information.

Salon's Name	FIRST LETTER of your First Name	Your Month of Birth	Your Day of Birth

3. What is your gender? Please circle one.

Male

Female

Transgender

Other: \_\_\_\_\_

I do not wish to answer

4. How old are you? Please check one.

18 or younger

19-24 years

25-29 years

30-44 years

45 or older

refuse to answer

5. How long have you been a stylist? \_\_\_\_\_

6. Where did you learn how to perform your job as a stylist? Please check one.

Cosmetology school

Family or friends

On the job

Other: \_\_\_\_\_

7. How many hours a week do you work? Please check one.

9 hours/week or less

10-20 hours/week

21-30 hours/week

31-40 hours/week

41-50 hours/week

51 hours/week or more

8. Which of these services you provide? Please check all that apply.

	How many times a week do you provide these services			
Check all that apply	Services	1-3 times	4-7 times	8 or more
	Permanent waves and texturizers			
	Permanent Straighteners or Relaxers (non-lye or lye relaxers)			
	Hair dyes			
	Hair extensions (i.e. weaves, clip ins, etc)			
	Press and curl (chemically treated hair)			
	Brazilian blowout			

	Nails			
	Spa			
	Other: _____			

9. Which of the following natural hair services do you provide? Please check all that apply.

		How many times a week do you provide these services		
Check all that apply	Services	1-3 times	4-7 times	8 or more
	Twists			
	Sister Locs			
	Locs			
	Afros			
	Braids			
	Short natural			
	Press and curl (not chemically treated hair)			
	Curly styles			
	Other: _____			

10. List 5 products that you frequently use. Include type of product, brand and/or manufacturer (i.e. Nexxus Pro. Mend Conditioner).

- 1.
- 2.
- 3.
- 4.
- 5.

11. On a scale of 1-4 how safe do you think the products are that you use. Please circle one.

1	2	3	4
Not safe	Somewhat safe	Safe	Very safe

12. How important are the following when making a decision about purchasing a product?  
Please rank them from 1 to 8, 1 being the most important.

	Rank
Price	
How well it works	
Recommendations from others	
Product ingredients	
Health effects on stylists	
Accessibility	
Fragrance	
Product packaging	

13. Do you make your own products? Please check one.

Yes

No

a) Why or why not?

b) If yes, what ingredients do you typically use?

c) How often do you use those ingredients?

d) Where do you get your product information, when it comes to making your own?

14. How often do you take any of the following precautions when handling chemical products at work? Please check one for each of the following.

	Never	Rarely	Often	Always
I wear a protective apron				
I wear goggles				
I wear gloves				
I wear a face mask				
Other: _____				

15. How often do you take any of the following precautions when applying chemical products on your clients? Please check one for each of the following

	Never	Rarely	Often	Always
I use protective creams				
I put an apron on them				
Other: _____				

16. Have you received any training on the potential health effects of chemical hair products? Please check one.

Yes

No

a) If so, where did you receive this training?

b) What kind of information was provided?

17. On a scale of 1-4, how concerned are you about the effects of chemical products on your health? Please circle one.

1	2	3	4
Not concerned	Slightly Concerned	Moderately Concerned	Very concerned

18. On a scale of 1-4, how concerned are you about the health effects of chemical products on the health of your clients? Please circle one.

1	2	3	4
Not concerned	Slightly Concerned	Moderately Concerned	Very concerned

19. What would prompt you to use less toxic hair care products?  
Please rank them from 1 to 7, 1 being the most important.

	Rank
Price	
Accessibility	
Effectiveness	
Reliability of the product	
Product ingredients	
Health improvements for the stylistts	
Other:	

20. Do you recommend healthy hair products to your clients? Please check one.

Yes

No

a) If yes, what healthy hair recommendations do you make?

21. Do you have health insurance? Please check one.

Yes

No

a) If yes, are you covered through (please check one)

Covered California

Private Coverage

Dependent Coverage

Other: \_\_\_\_\_

b) If no,

I looked and it was expensive

I haven't looked but I think it might be expensive

I don't look where to find information about health insurance

Other: \_\_\_\_\_

22. How would you rate your health? Please circle one.

1	2	3	4
Poor	Fair	Good	Excellent

23. Have you experienced any of the following health symptoms while working in the salon?  
Check all that apply.

	Check all that apply
Skin irritation	
Nose irritation	
Eye irritation	
Nausea	
Fatigue/tiredness	
Headaches	
Migraines	
Difficulty breathing	
Dizziness	
Stress	
Anxiety	
Chronic pain Please indicate what body parts:	
Other:	

24. Have you experienced any of the following physical injuries while at work?  
Check all that apply.

	Check all that apply
Chemical burn	
Pain in wrists	
Pain in fingers	
Pain in hands	
Cuts	
Loss of function in wrists	
Loss of function in fingers	
Loss of function in hands	
Back pain	
Leg/ foot problems	
Other	

25. Have you ever worked at a hair salon while you were pregnant? Please check one.

- Yes
- No
- Not applicable

26. Do you have a medical history of any of the following health related problems?  
Check all that apply.

	<b>Check all that apply</b>
Asthma	
Carpal tunnel	
Chronic dermatitis	
Breast cancer	
Cancer Please indicate type(s):	
Uterine fibroids	
Difficulty conceiving	
Miscarriage	
Low birth weight	
Premature birth	
Birth defect in child	
Other:	

27. Have you experienced any other health symptoms that you suspect might be related to your work? Check one.

- Yes
- No

a) If yes, please explain.

28. Have you heard of any stylist who have experienced miscarriages, infant death or have given birth to low birth weight, premature babies?

Yes

No

a) If yes, can you tell us more about what you have heard?

29. Does the salon have any of the following forms of ventilation? Check all that apply.

Table fan

Salon ventilation system

Ceiling fan

Window

Second door that opens

30. Are you interested in learning more about a safer and healthier workplace?  
Please check one.

Yes

No

31. Are you interested in meeting other workers or owners to share and talk about a safer and healthier workplace?  
Please check one.

Yes

No

32. Would you be interested in possible air monitoring at your workplace?  
Please check one.

Yes

No

33. What additional information or training would you want related to the topics in this survey and your overall health. Check all that apply.

Health impacts of hair care products on stylists

Protective measures stylists can take when handling chemical products

A list of dangerous product brands

Health impacts of hair care products on clients

Information on safer alternative products

A fact-sheet on the chemicals in hair care products and their effects

Information about health insurance

Other: \_\_\_\_\_

Black Women for Wellness sincerely thanks you for your time and cooperation!

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