



OCCIDENTAL COLLEGE  
Department of Urban & Environmental Policy

*What's going on "hair?": Product Toxicity and Chemical Exposure from Hair Styling Products used by Black, Female Hairdressers in Dorchester, Massachusetts*

This is a thesis submitted in partial fulfillment of the Requirements for the Bachelors of Arts Degree in Urban & Environmental Policy at Occidental College

**Author**

Antoniqua Roberson-Dancy

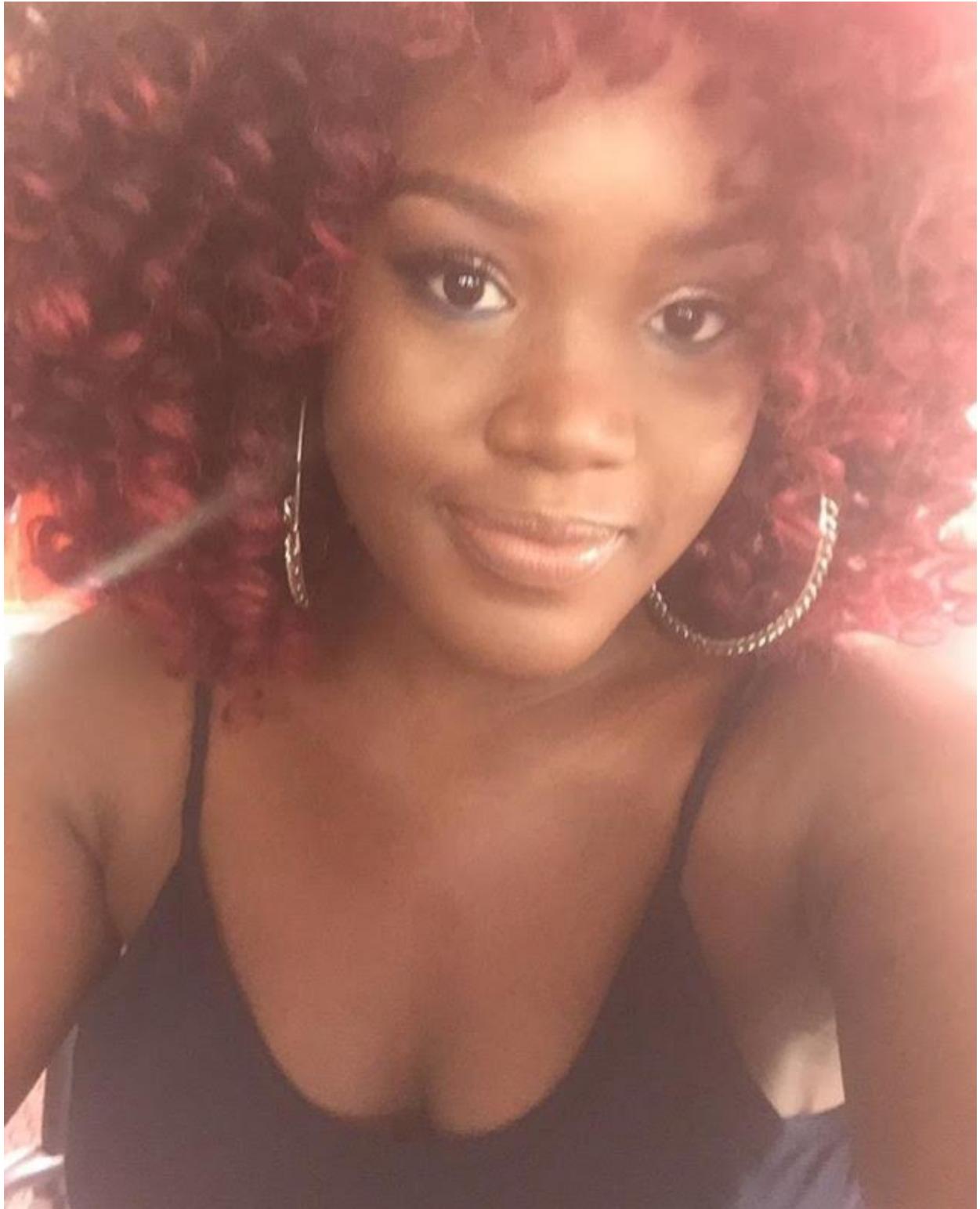
**Supervisor**

Professor Bhavna Shamasunder

Los Angeles, California

## TABLE OF CONTENTS

1. Abstract.....		3
2. Introduction.....		4
3. Background.....		8
<i>3.1 Black Women for Wellness (BWW)</i>		
<i>3.2 Community Profile: Dorchester, MA</i>		
4. Literature Review.....		11
<i>4.1 Synthetic Compound Exposure: Health Effects on the Human Body</i>		
<i>4.2 Occupational Chemical Exposure of Hairdressers</i>		
<i>4.3 Natural Hair Movement Influence on Hair Product Usage within the Black Community</i>		
5. Methodology.....		21
<i>5.1 The Subjects</i>		
<i>5.2 The Process</i>		
<i>5.3 Ethics of Study</i>		
<i>5.4 Follow-up</i>		
6. Findings.....		24
<i>6.1 Product Analysis</i>		
<i>6.2 Surveys</i>		
<i>6.3 Salon Services</i>		
7. Recommendations.....		32
<i>7.1 Personal</i>		
<i>7.2 Future Projects</i>		
8. Conclusion.....		35
9. References.....		36
10. Appendix.....		39



## 1. ABSTRACT

The purpose of this study is to analyze the products most commonly used in Black, hair salons located in Dorchester, Massachusetts. This past year, Teniope Adewumi, a Black Women for Wellness organizer and recent graduate of the UCLA Graduate School of Environmental Health Sciences, conducted a similar study to examine chemical exposure awareness of black hairdressers in South Central Los Angeles. This project will use Adewumi's research to examine the bicoastal trends within the hair profession by comparing the data collected in South Los Angeles, California to Dorchester, Massachusetts. Dorchester is an inner-city neighborhood situated within the Greater Boston, Massachusetts area. Dorchester's demographics show that the neighborhood is not only predominantly Black, which is the demographic of my target subject for study, but its population is primarily working to middle class residents. Thus, Dorchester is an important site for this study because of the concentration of Black, female hairdressers and the social and economic factors that are important defining factors influencing chemical exposure.

The following research is a supplemental study to Teniope Adewumi's, work, ultimately providing data on the haircare trends on the east coast. The study uses surveys and semi-structured interviews to gauge awareness on the subject material. The research examines exposures to synthetic compounds in hair products and reviews the influence of social movements on the hair industry. For the purpose of the study, the term "Black" is defined as a person of the African Diaspora: Black American, Afro-Caribbean, Afro-Latina, African American and African.

**Key terms:** *Black women, synthetic compounds, environmental factors, exposure, endocrine disruption, reproductive health, occupational hazards, and natural hair*

## 2. INTRODUCTION

Black, female hairdressers are a particularly, vulnerable population. Many face daily exposures to harsh toxins that have been linked to adverse health consequences. Because their profession requires them to work closely with products that contain synthetic compounds, which are often unregulated, these women are put in a situation that forces them to choose between their health and income. They are not only exposed to toxins present in their personal haircare products, but also products they use on clients receiving haircare treatments. Concerns are growing as public health analysts evaluate the severity of the exposures that hairdressers face within their occupation. Critical race theorist, Chandra Ford and Collins Airhihenbuwa, define public health as the “art (i.e., practice) and science (i.e., research) of protecting and improving the health of communities,” later arguing that racism is regularly left out of the dominant definition (Ford and Airhihenbuwa, 2010). Ford and Airhihenbuwa argue that the field inadequately addresses the ways in which public health in the United States upholds the pillars of white supremacy (Ford and Airhihenbuwa, 2010). This research project attempts to breakdown some of the ways in which white supremacy exist within public health, influencing health outcomes.

In their article, *Critical Race Theory, Race Equity, and Public Health: Toward Antiracism Praxis*, Ford and Airhihenbuwa use a 2003 to 2005 case study of an urban neighborhood with high rates of HIV infection to analyze how racism permeates within the environmental and public health field. Public health is not exempt from effects of racism because the field does not operate within a vacuum. However, it is forms of covert racism that produce health inequalities among various demographics. The adverse effects of obesity, diabetes, and other health disorders that are prevalent within poor communities of color are not accidental, but

reflect the physical effects that racism can have on one's health. The racialization of the cosmetic industry disproportionately impacts Black women. Over time, the market has primarily focused on Black women because they are its largest consumer population. Black women spend over 7 billion dollars on hair products annually (Smith, 2009).

As of 2014, the Black haircare industry was 684 million dollars, and its annual revenue incessantly increased each year. Researchers suggest that by the year 2017, the industry will augment to approximately 761 million dollars. This predicted increase does not factor in revenue received from weave sales, independent beauty supply stores, and distributors; however, if it did, the Black haircare industry would be worth roughly 500 billion dollars (Opiah, 2014). For centuries, hair upkeep has been an essential element of Black culture, especially for Black women. Haircare practices within the Black community can be attributed, in part, to the internalized racism that many Black women face as they navigate through a white, heteronormative patriarchal society that perpetuates anti-blackness. In the 2009 documentary, *Good Hair*, comedian, Chris Rock, reveals a few reasons that influence Black women to use specific types of haircare products (Opiah, 2014). Rock argues that one of the most prevalent, yet controversial; products widely used within the Black community are relaxers, referred to as "creamy crack" by many women in the film (*Good Hair*). He discusses the notion of "good" hair versus "bad" hair, explaining how perceptions of ideal beauty standards in the United States, and throughout the world, have encouraged hair straightening techniques (*Good Hair*, 2009).

As trends within the hair shift, hairdressers are also impacted. While one may argue that these issues related to hair are personal rather than political, the critical race theory of public health insist we view the personal as political in an attempt to assess the inequalities within the field. This research uses the public health critical race theoretical framework to assess Black,

female hairdressers' perceptions, awareness, and routes of chemical exposure in their daily work encounters. For the purpose of this study, Black is defined as women of the African Diaspora, which includes, but is not limited to, African, African American, Black American, Afro-Caribbean, and Afro-Latina subjects. The project will analyze their experiences by addressing the following questions:

1. What products and services are most prevalent in Black hair salons in the Dorchester neighborhood of Boston?
2. What is the toxicity of these products and how do they link with evidence of adverse health effects?



### 3. BACKGROUND

The following section outlines the important concepts needed to understand the content within this research project. This study focuses primarily on data collected in the Dorchester neighborhood of Boston; however, it also touches on trends and research conducted by activist and scholars at the Black Women for Wellness organization, located in Los Angeles, California. In order to fully understand the specifics of this research, it is imperative that the reader reviews and learns about the following organizations and topics:

#### *3.1 Black Women for Wellness*

Black Women for Wellness (BWW) is a non-profit organization that works with Black girls and women to promote healthy lifestyles. The organization was created in 1994 by a group of Black women, who initially paired up with the Birthing Program to develop the Shangazi Program. The Shangazi Program worked with new parents for up to one year, giving parents the necessary skills to raise a healthy child and foster healthier living patterns. Later in 1997, BWW became a California 501 (c) (3) non-profit and began doing work in community advocacy and public policy (*Black Women for Wellness*). Today, BWW continues to partner with social justice and public health organizations throughout Los Angeles and neighboring communities to serve its constituency.

BWW's mission statement states, "Black Women for Wellness is committed to the health and well-being of Black women and girls through health education, empowerment and advocacy," which is reflective of the types of projects and programs the organization offers to the community (*Black Women for Wellness*). Currently, BWW's projects include Daughters and Sons in Technology, Sister @ Eight, Sisters in Control, Sisters in Motion, and a host of other social justice programs. Aside from the previous programs, BWW has a publications library that

puts out media and other works that address health education. The news source can be accessed by members and locals in hard copy form at the office and on the BWW website. Though BWW is works specifically to establish agency and healthy living for Black girls and women, the organization is open to individuals that may not identify as Black and/or a female. BWW is an essential resource to the entire community, providing health services to those who seek it.

This past year, Teniope Adewumi, a BWW organizer and recent graduate of the UCLA Graduate School of Environmental Health Sciences, conducted a similar study to the following on chemical exposure awareness of black hairdressers in South Central Los Angeles. This project uses Adewumi's research to examine the bicoastal trends within the hair profession field by comparing the data collected in South Los Angeles, California to Dorchester, Massachusetts. It is important to examine the bicoastal trends pertaining to this topic because geography has a significant influence on the concentration of various African diaspora groups. The north- and southeast is located in closer proximity to Caribbean, which explains why many Caribbean's live in this region. Various ethnic and cultural backgrounds may practice different haircare and styling remedies. In turn, these practices influence their chemical exposure through product usage. The demographic, particularly, vary from those in South Los Angeles. This research provides data that Adewumi's research does not because of the differences in demographics within the Black community.

### *3.2 Community Profile: Dorchester, Massachusetts*

Dorchester is an inner-city neighborhood situated within the Greater Boston, Massachusetts's area. Puritans, originating from Dorset, England, founded the neighborhood in 1630. It has been historically known for its diversity and cultural landmarks, which include waterfronts, residential areas, college campuses, community centers and local parks (Boston

Redevelopment Authority). Dorchester is made up of many smaller communities, such as Savin Hill, Lower Mills, Codman Square, and Harbor Point, which have their own unique assets. These sub-neighborhoods have several locally, owned businesses that serve residents and neighboring community members (Boston Redevelopment Authority). According to the 2010 U.S. Census Bureau report, there were 91,983 residents living in Dorchester, which decreased by over 4,000 residents from the results in 2000. In 2010, over 50 percent of residents in Dorchester identified as a person of color. Within that demographic breakdown, 37.31% identified as Black, 13.78% as Latino, 0.23% as American Indian/Alaska Native, and 11.56% as Asian (U.S. Bureau Census, 2010). The percentage of Black residents in Dorchester exceeded the national average percentage of Black residents, which was approximately 13 percent in 2014 (U.S. Census Bureau, 2014). Over the ten years, however, the ratios of racial/ethnic groups living in the region gradually shifted. These demographic shifts have influenced the neighborhood's average household income levels and property values.

In 2014, the median household income on the national level was \$53,046 (U.S. Census Bureau, 2014). On the other hand, the median household income in Dorchester in 2014 was \$30,419. The data collected from the U.S. Census Bureau in 2000, 2010, and 2014 suggests that Dorchester not only has a concentration of Black residents, but that it is also low-income. This study focuses specifically on Black, female hairdresser's exposures to products used and sold in salons. Dorchester's demographics prove that the neighborhood is not only predominantly Black, but its population is primarily working to middle class residents. A focus on Dorchester allows an effective analysis of Black, female hairdressers, working and providing salon services to low-income, predominantly Black clientele.

#### 4. LITERATURE REVIEW

In 2009, the notable comedian, artist, actor, writer and producer, Christopher Rock III, produced and directed a comedy/documentary, called “Good Hair,” that began to shed light on Black women and girl’s experience with hair. In investigating Rock’s assertion, “Good” hair and “bad” hair seem to refer to one’s curl pattern; the tighter and kinkier the pattern, the “worst” the hair is. The “good” hair versus “bad” hair dichotomy stems back to slavery, resulting in sentiments of anti-blackness amongst the black community. Slaves that were considered to have “good” hair were biracial, as they were typically the product of their mother’s rape from her white slave master, resulting in their hair texture. On the other hand, many of those who have been socially conditioned to believe that their hair is “bad,” have turned to relaxers as a means to chemically straighten their hair. Colorism within the black community plays into this dichotomy because it indicates not only who has “good” hair, but also who is eligible to have a particular type of hair texture. Common microaggressions related to Black hair include: “You have “good” hair for a dark skin girl!;” “You have long hair for a Black girl!;” “You have pretty hair. What are you?” Though these comments do not explicitly state that Black women cannot have “good” or long hair, its undertones hint at the concept. Many of these sentiments are highlighted in the 2011 documentary, *Dark Girls*, which documents the daily oppression darker-skinned Black women experience living in a white, patriarchal society (*Dark Girls*, 2011). Despite how long ago this was, these ideologies continue to persist within society because media and society uses controlling images to reinforce these concepts of beauty ideals.

Since the releasing of *Good Hair*, there has been a shift in hair trends following the more recent natural hair movement (Opiah, 2014). The natural hair movement allows Black women, as well as other women of color, to reclaim their identity by embracing their hair in its natural state.

Several Black who previously relaxed their hair have decided to no longer use the product in their, transitioning their curl pattern back to its original form. Products like relaxers are high in toxicity, resulting in both persons receiving the treatment and the individual applying the product to be exposed to chemicals that is associated to negative health consequences.

#### *4.1 Synthetic Compound Exposure: Health Effects on the Human Body*

Global trends related to female reproduction have shifted significantly over the past years, in which studies display a decrease in female reproduction around the world (Crain et. al., 2008). The literature argues that while much of this decline may be attributed to a shift in gender and cultural norms, such as delayed childbearing and the usage of contraception, it can also be linked to environmental factors, including exposures to hazardous chemicals in products, as well as daily interactions with other contaminants (Crain et. al., 2008). Similar to the previous claim, Ford and Airhihenbuwa argue that contemporary mechanisms allow racism to not only exist, but also evolve over time and context (Ford and Airhihenbuwa, 2008). According to Crain et. al.'s (2008) reproductive health analysis review, "conception rates have declined in both Danish and US women, in whom a 44% decline since 1960 has been reported." Scientist believe that the effects of exposure to endocrine disrupting chemicals are contingent on age, arguing that individuals who are exposed at a younger age at greater risk (Vogel, 2008). An adult may not have severe health complications after his or her exposure; nonetheless, the same may not hold true for a developing fetus (Crain et. al., 2008). EDCs are of concern because they can be toxic even at low doses. This means that it does not require it to be a lot of the toxin in one's bloodstream for it to have adverse health effects.

In response, studies have been proposed to further analyze the correlation between environmental chemical exposure and reproductive health; the data would thus be used to

enhance gynecologists, obstetricians and other women's health professionals' understanding of the implications of these materials on their patients' health (Hollund et. al., 2002). Women's health practitioners recognize that there is a correlation between chemical exposure and reproductive health, and have implemented further studies to prove so; despite there not being a distinct linkage between the two, health officials are being encouraged by scientists to inform their patients of the potential health effects of such exposures (Crain et. al., 2008). The research will allow practitioners to deliver effective health precautions to the women the institution serves, providing transparency within the medical realm.

Endocrine disrupting chemicals have negatively influenced health outcomes. The U.S. Environmental Protection Agency (EPA) defines an endocrine disrupting compound as “an exogenous agent that interferes with synthesis, secretion, transport, metabolism, binding action, or elimination of natural blood-borne hormones that are present in the body and are responsible for homeostasis, reproduction, and developmental process” (Diamanti-Kandarakis, 2009). Due to a severely unregulated cosmetics industry, hair products containing EDCs still end up on store shelves. Reports of EDC exposure in humans and animals have indicated estrogen (E) signaling mutations (Crain et. al., 2008). Both Crain et. al. and Diamanti-Kandarakis are that EDCs were initially thought to primarily affect estrogen receptors (ERs), thyroid receptors (TRs), and androgen receptors (ARs), all of which are known hormone receptors (Diamanti-Kandarakis, 2009).

Presently, scientists have more knowledge about some of the effects of EDC exposure, in which the implications are far more expansive than initially suggested. Endocrine disrupting chemicals can be found in byproducts and food, in which the roots of exposure are through inhalation, dermal contact, and ingestion. Diamanti-Kandarakis (2009) notes the fact that natural

“chemicals found in human and animal food (*e.g.*, phytoestrogens, including genistein and coumestrol) can also act as endocrine disruptors,” and have ironically been found in infant formula. The presence of EDCs in baby formula is problematic and alarming to reproductive-health professionals because exposures at an early age influence the child’s health outcomes as he or she ages.

It is difficult to identify endocrine-disrupting compounds because they are unique and do not quite have a distinct make up or structure. In conjunction with the structure of EDCs, there are compounds that may not initially be considered EDCs; however, as the compound reacts with the environment and is broken down to simpler chemicals, the compound then acts as an EDC (Crain et. al., 2008). Many EDCs were genetically modified to have long half-lives, which in turn, result in slow decay of the compound, and when the compound is fully broken down, what it left is frequently reasonably, hazardous chemicals (Crain et. al, 2008). Detecting EDCs is challenging because they often do not share a unique composition or form. As a result, it is difficult to predict if a compound will combust into an endocrine-disrupting chemical (Diamanti-Kandarakis, 2009). Studies suggest that women that have been exposed to these forms of endocrine-disrupting chemicals have shown negative implications on their ovaries. Through ovarian dysfunction etiology examination, scientists are thereby able to analyze development processes that act as disruptors after a woman is exposed to various compounds (Crain et. al., 2008).

Ovarian follicle formation in female fetuses heavily depends on systemic E, inhibin, and activin. Ordinarily, ovarian follicle formation, the maturing meiosis I oocyte is surrounded by a layer of somitic granulose cells (Crain et. al., 2008). On the other hand, however, follicles exposed to EDCs have. Men have been affected by this phenomenon as well, whereby there has

been an increase in men reported having testicular cancer and low semen counts (Crain et. al., 2008 and Diamanti-Kandarakis, 2009). In conjunction with reproductive health implications, exposure to endocrine disruptors has also been correlated to breast cancer in women (Macon, 2013). Aside from consequences to reproductive health, EDC exposure can be correlated to respiratory-related diseases, such as asthma (Dodson et. al., 2012).

#### *4.2 Occupational Chemical Exposure of Hairdressers*

There is very little research on occupational health issues related hairdressers' exposure to synthetic compounds. However, the medical literature that does exist suggests potential occupational hazards for hairdressers that are exposed to these compounds. Risks increase when workers are forced to work in unventilated salons or conditions (Genius et. al., 2004).

Researchers have attempted to determine the possible outcomes, but there is still more research needed to be conducted to adequately assess this population's risk factors. Today, chemicals in hair products have been linked to various health complications, such as skin disorders, respiratory conditions, and cancer. Although there has not been a definitive correlation between exposure and neuropsychiatric symptoms, Genius et. al. argue that "it is recognized that neurotoxicants can express themselves in a 'plethora of possible endpoints,'" encompassing neurobehavioral symptoms additionally.

Black Women for Wellness has recently released a report on the impacts of hair products on Black women's health. The report specifically looks at the following areas of concern: Skin and eye irritations, respiratory disorders, ergonomics, obesogens, cancer, and reproductive issues. According to Flint and Adewumi (2016), approximately "14-20% of cosmetology students [in the United Kingdom] drop out during their first two years due to contact dermatitis." Of those that choose to continue with schooling and work, around 70 percent of hairdresser

experience dermatitis at some point in their career. Dermatitis is a medical condition where the skin becomes irritated, red or inflamed after contact with a chemical or product. Many hairdressers develop the condition after exposure to chemicals in shampoos, conditioner, bleaches, hair dyes and other haircare products. Aside from health implications related to skin and eye irritation, respiratory disorders are amongst the most common forms of medical conditions faced within the occupation. Formaldehyde, and other chemicals, has been known to lead to respiratory conditions, including coughing, wheezing and asthma. Asthma has become a rather common condition within the Black community (Flint and Adewumi, 2016).

In addition to BWW's report, a 2004 case study examining occupational risk, revealed a 37 year old woman "had been experiencing decreased libido, difficulty concentrating, diminished appetite, trouble falling asleep and early morning wakening, and decreased interest in daily life" after exposure; the patient also expressed that she had experienced "debilitating fatigue, severe headaches, recurring dizziness, frequent bouts of apparently unprovoked palpitations associated with marked nausea and occasional vomiting, and intermittent visual changes," for 18 months (Genius et. al, 2004). Initially, physicians struggled to find a reason for her illnesses. After being referred to multiple physicians and gynecologist, she informed her final physician that around the time her illnesses began, she started working as a part-time hairdresser. She worked out of her home five days per week for roughly four hours per day. Her house had poor ventilation, trapping toxic chemicals, and ultimately worsening the effects of her conditions. Though the subject do not show a linear linkage between her work as a hairdresser and her health complications, it is important to note that she was otherwise healthy and had not experienced the previous symptoms until after her exposure.

Black women are disproportionately impacted by adverse health outcomes as a result of this exposure because the haircare industry has been centered on their consumption. They run the risk of developing reproductive or endocrine abnormality as a result of toxic exposure. Already a vulnerable population, such exposures worsen their health outcomes in cases where a patient has breast cancer, uterine fibroids, maternal health, and infant mortality. Hairdressers are exposed to vapors and fumes that lead to respiratory and bronchoconstriction symptoms. Particularly, “persulfate salts and hair dyes have been associated with chronic and remittent asthma in hairdressers and chemical workers,” often times resulting in high levels of immunoglobulin E and occupational eczema from dermal contact (Hollund et. al., 2002 and Hougaard et. al, 2012). When there are high immunoglobulin E (IgE) levels present in the body, the subject may show signs wheezing or asthma. In a study reporting the IgE levels of workers, hairdressers that were frequently exposed to toxic chemicals had higher levels of IgE than office workers and workers that were not exposed as often (Hollund et. al., 2002). The findings suggest the correlation between IgE levels and synthetic compound exposure.

Persulfate salts are compounds or ions that contain anions; they are also strong oxidizers. Exposure to persulfates may induce contact dermatitis, causing contact urticaria, rhinitis, and anaphylaxis (Hougaard et. al, 2012). Despite the fact that it is imperative that hairdressers wear protective gear like gloves when working products, there are cases when they simply do not. If for any reason a hairdresser decides to not use protective gear while working with hazardous chemicals, the individual then become vulnerable to unfavorable health repercussions. In a later project conducted in Denmark, researchers discovered that an otherwise healthy 18 year old hairdresser apprentice displayed forms of eczema after dermal contact to chemicals in hair products she worked with. After interning at the hair salon for 15 months, the subject developed

vesicular hand eczema and asthma (Hougaard et. al., 2012). While she did have a family history of asthma, the findings suggest that her exposure induced these conditions. During a vacation, her eczema and asthma improved significantly. The Denmark study shows that the presence of chemicals in hair products influence health, which is highlighted when the subject's health improves when she is no longer exposed. The studies discussed in this section serve as evidence that hairdresser's exposure to hazardous chemicals increase their health risks.

#### *4.3 Natural Hair Movement Influence on Hair Product Usage within the Black Community*

White supremacy in America has challenged Black women's since the beginning of the country's founding. Controlling images depict white, straight hair textures as desirable, reinforcing the idea that Black hair does not fit into society dominant, beauty mold (Johnson and Bankhead, 2014). The pencil test was a test that determined whether or not a Black person had "good" or "bad" hair; if the pencil could stay firmly in place in the hair, the individual's hair was considered nappy. Aside from images displayed in magazines and other forms of media, Black women come up against economic forces that encourage them to straighten their hair. Natural hair in the workplace is not considered professional, forcing women to practice both physically and chemically straightening methods. Relaxers, commonly referred to as creamy crack, have been around for decades now. Contrary to popular knowledge, Madam CJ Walker did not create relaxers; however, she did play an integral role in their development and commodification. Garrett Morgan originally created relaxers in 1913 as a way to tame Black hair by loosening the natural curl pattern and chemically straightening the hair follicle (Obukowho, 2012). Madam Walkers' five original products, also later known as the "Walker System," were Madam Walker's Wonderful Hair Grower, Temple Salve, Tetter Salve, Vegetable Shampoo, and Glossine (Obukowho, 2012).

Over a century later and relaxers are still commonly used in the Black community. Relaxers, and other hair straighteners, typically contain sodium hydroxide, calcium hydroxide, guanidine carbonate, guanidine hydroxide, thioglycolic acid, and lithium hydroxide. Despite its prevalence, many Black women have joined the Natural Hair Movement. The movement challenges racial ideals by centralizing black consciousness. Critical race theorist, Ford and Airhihenbuwa, argue that “race consciousness” and “racism” are not synonymous (Ford and Airhihenbuwa, 2010). Similar to Ford and Airhihenbuwa’s claims, Constance Ulmer argues that “Black women are starting to change the historical perception of their own beauty by celebrating, instead of denying, certain attributes of their physical selves that have not been accepted in our historically white culture, which considers white attributes of beauty the norm,” essentially defining the Natural Hair Movement as a form of deviance and self-empowerment (Ulmer, 2001). The Natural Hair Movement gives Black women agency over their identity and beauty ideals by challenging dominant, cultural norms. The movement allows Black women to reclaim their blackness and embrace their natural characteristics. It also encourages them to use homemade organic hair products rather than synthetic products to promote healthy hair and healthy lifestyles. Social media has played an integral role in the Natural Hair Movement. Viewers can access natural hair tips from other women transitioning through Black twitter and videos on YouTube. As the movement continues to gain popularity, it will be interesting to chart the trends within the industry and the possible commodification of natural hair products.



## 5. METHODOLOGY

### *5.1 The Subjects*

The inclusion criterion for subjects in this study is that they must be Black, female hairdressers that work in Dorchester, Massachusetts. Subjects must be 18 years of age or older to participate in the study. For the purpose of this study, Black is defined as being of the African Diaspora: African, African American, Black American, Afro-Caribbean, and Afro-Latina. Black women are disproportionately affected by exposure because the market presently targets them. The research aims to reveal the implications of white supremacy as an agent in public health by analyzing the experiences of a marginalized group of women.

### *5.2 The Process*

Dorchester is a predominately Black and Brown neighborhood, hence my reason for focusing my sample in the region. Because the study defines Black women as women of the African Diaspora, the six salons I conducted my research at were chosen to represent a sample of the operating salons in that area: Black American, Afro-Caribbean, Afro-Latina, and African. The primary salons serving this neighborhood are located along Washington Street. I created a list of products sold and services provided at the salons in a journal. After recording the products sold in each salon, I researched the products and ingredients alongside the following databases: Good Guide and Skin Deep. Using the information provided on the databases, I was able to create a chart that listed the top five hazardous products found in the six hair salons. This chart identifies the chemicals of harm, listing the negative health implication correlated to exposure. In addition to reviewing products sold and used in the salons, I administered the survey created by Black Women for Wellness' Healthy Hair Initiative, in which I received data from three of the six salons. Subjects were asked to complete the survey to its entirety and participate in a semi-

structured interview thereafter. The interviews would have allowed the hairdressers to discuss their experiences, both socially and health-related, working within the field and economic drivers of that work.

### *5.3 Ethics of Study*

To minimize these risk factors, interviewees were informed that their responses will remain confidential, but the data collected will be featured in my senior comprehensive project for the Urban & Environmental Policy department at Occidental College. Additionally, I will provide BWW a copy of my findings. I was unable to complete any interview sessions; however, I was able to collect data on the products used and sold at the salons. I then used the information I collected on product toxicity to develop an inventory of the services provided. Lastly, I examined hair products using reputable databases that provide information on toxicity and health impacts. Much of the research I completed did not cause harm to any of the subjects in the study. To ensure their safety, I kept the surveys I was able to get completed confidential.

### *5.4 Follow-up*

Because BWW has done research on hairdresser exposure safety and awareness at black hair salons in South Los Angeles, California, this research will add onto the study, providing bicoastal data on black, female hairdressers exposures through product use. This project serves as an addition to BWW's initial project, providing insight into exposures from products used in Dorchester. Together, this research provides an analysis of exposures from particular product use. Furthermore, provided resources to the salon workers for safer, alternative haircare practices. At the end of the data collection, subjects were given the opportunity to share their final concerns. This is an ongoing research project and my senior comps will contribute to our

knowledge of Black Female hairdresser experiences using chemicals as a part of their daily work.

## 6. FINDINGS

### 6.1 Product Analysis

*Figures 1a-b* display the products that were found in the six salons chronicled in the study. The tables not only highlight the types of products used and sold in the salons, but also the products' toxicity and consumer safety scores. Both tables can be found in the appendix section if needed to referencing purposes. *Figure 1a* identifies and measures product toxicity. All of the products listed in the table are products that are used within the various hair salons along Washington Street. The rankings along the rightmost column score the product according to hazards caused by ingredients and its potential health risks. On Skin Deep, a mobile application that allows consumers to search products and receive information on the product's toxicity, products with ratings that are closest to the score zero are the safer; those with scores closest to 10 have higher toxicity levels. On the other hand, the Good Guide scoring works in the opposite manner; scores closest to zero have a higher toxicity level and have been correlated to negative health effects.

Some of the more hazardous products, including the Olive Oil edge control; Crème of Nature Exotic Shine Hair; TRESemme Climate Control Mousse; and Africa's Best relaxer kit, contained DMDM hydantoin, linal, geraniol, propylparaben, and fragrance. DMDM hydantoin is an antimicrobial, formaldehyde releaser preservative. It can be found in various cosmetics products. Exposure to DMDM hydantoin can lead to irritation and allergic reactions. When applied to the hair, the compound may lead to skin irritation for both the client and the hairdresser if she is not wearing gloves during the application. Historically, relaxers have been used to "tame" black hair, forcing Black women to assimilate into white dominated beauty standards.

According to Skin Deep, “approximately 20% of [United States] cosmetics and personal care products contain a formaldehyde-releaser and the frequency of contact allergy to these ingredients is much higher among Americans compared to studies in Europe;” however, the chemical has been restricted in Japan. DMDM hydantoin can also be found in Let’s Jam Shining & Conditioning Gel Extra Hold, as well as the Olive Oil brand edge control, shampoo, and conditioner. Despite the fact that some of these products are not of high concern overall, DMDM hydantoin presence can lead to similar health implications as the Africa’s Best relaxer. Contrary to the Africa’s Best relaxer kit, the Murray’s Hair Care Beeswax was the safest product used in the hair salons. The only ingredient of high hazard that is in the beeswax is fragrance. Fragrance is one of those ingredients that give the cosmetic corporate the liberty to hide toxins that would otherwise be banned in the United States.

Consumers should avoid products with this ingredient because the ambiguity of what is in that particular fragrance makes it difficult for researchers to assess the risk analysis of the chemical make up. Fragrance can be found in nearly all of the products listed in the figure above. The cosmetic industry has used tactics that not only take advantage of legal loopholes, but it has also false advertisement as a means to increase its capital gain. Many of the brands market themselves by using terminology that implies product safety or natural ingredients. For example, the brands, Olive Oil and Crème of Nature with argan oil. These brands name natural oils because it gives the consumer the illusion that he or she is buying a more organic product, thus safer. Instead, the data suggest that this is not the reality. Both edge controls from the previous brands scored poorly.

Although the Crème of Nature products in the study overall have a moderate scoring on the Skin Deep application, it is leaning towards to the more hazardous products. The Olive Oil

edge control scored within the hazardous bracket. The limited regulation of the cosmetic industry creates a platform for corporate entities to opportunity to exploit its consumers. Both edge control products contain cetareth-25, PEG-7 glyceryl cocoate, phenoxyethanol, methylparaben, and linalool. Cetareth-25 is one of those chemicals that seemingly fall through the leapholes. Its chemical makeup has been restricted in the United States and deemed “not safe for use on injured or damaged skin” (Skin Deep). Nonetheless, it is still found in several products listed in *Figure 1a*. Both cetareth-25 and PEG-7 glyceryl cocoate have the ability to penetrate through the skin surface, which is individually may not be a major concern; however, in the presence of more hazardous chemical, this can lead to severe health issues.

Despite the fact that the products listed in *Figure 1b* do not have data listed on the Skin Deep or Good Guide database applications, *Figure 1a* outlines the ingredients by hazardous level. The rankings by hazard level can be used to assess the toxicity of the products listed in *Figure 1b*. If a product is made up of similar ingredients that are hazardous, the consumer can self evaluate the product’s potential risk to his or her general health. Although the average, daily consumer may not be able to adequately score a product, he or she can reference the ingredients on the back of the product and look up the ingredient to learn about potential risks. These results prove that there is still a lot more research to be done on various products and chemical compounds. Due to the United States loosely regulated cosmetic industry, there are many chemicals on the store shelves that either do not have any data or are compounds that are otherwise banned in consumer products in other nations.

As noted in *Figure 1c*, the Africa’s Best relaxer; Optimum Care Salon Collection Optimum Care Anti-Breakage No-Lye Relaxer System, Regular; Crème of Nature Exotic Shine Hair Color; TRESemme Climate Control Mousse; and Olive Oil relaxer were among the most

hazardous products found in the six salons chronicled for the study. The ingredients of concern present within these products were: eugenol, geraniol, linal, propylparaben, DMDM hydantoin, fragrance, p-phenylenediamine, butylparaben, isobutylparaben, resorcinol, oxybenzone, amylcinnamaldehyde, and cocamide dea. These chemicals have been correlated to health conditions ranging from respiratory diseases to cancer. For more specifics regarding exposure to these chemicals and the health implications, refer to *Figure 1c* in the Appendix section of this paper.

## 6.2 Surveys

### I. Challenges to the Research

For the current research project, I struggled to collect quantitative and qualitative data from the subjects. Initially, the project wanted to combine quantitative and qualitative data on the material to provide a holistic. It would incorporate the data collected from the surveys, along with the interview transcriptions, to help personalize the experiences within the work. When developing the project, I tried to make it as user friendly and empowering as possible. Much of the research presently published on the subject matter focuses heavily on measuring exposure, and does not reveal the reality behind the lived experiences of such a small portion of the general work sector. This project was going to begin the work of doing just that. When I began the research in December 2015, many of the women working at the hair salons were not receptive to me. I became a frequent visitor to some of the salons, attempting to develop a relationship that would foster a sense of trust between the women and I. It became evident very quickly that five weeks were not going to be a sufficient amount of time to both gain trust and gather data on the material. When asked, many of the hairdressers refused to participate in the study, insisting that

the 33 question Black Women for Wellness survey was too long and the interview questions were personal and triggering.

Some stylist stated that they were interested in participating in the study, but that their tight work schedule allowed for very little time to adequately answer the survey questions and allot time for an interview session. Many of those that did agree to an interview session asked to be shown the questions prior to the session. Upon reading the questions, they instantly refused to participate. When I drafted the interview questions, I knew that some may be emotionally triggering; however, I did not anticipate not being able to receive a single interview. Having completed the research, I now understand that five weeks is an insufficient amount of time to gather this type of data. Five weeks is insufficient amount of time because it does not give the interviewer and interviewee enough time to develop a relationship where both parties feel comfortable enough to discuss the sensitive topics raised during the interviews. This research is very personal and connected to individual's livelihoods, so it imperative that the interviewer and interviewee have time to get to know one another before opening up.

In addition to time constraints, my age and lack of incentives may have also contributed to my inability to collect a substantial amount of data from the subjects. I believe many of the women working in the salons did not take me serious because I was only 21 years old at the time of my initial data collection. Most of the women I spoke to at the salons were 35 or older. I think that my age certainly influenced these women's opinion regarding the importance of project. Some of the hairdressers may not have participated because I did not provide an incentive for them to do so. With a survey as long as the one I used was, I should have reached out to the Urban & Environmental Policy department at Occidental College to request funding so that I

could offer compensation as an incentive to complete the survey. Had I had money to offer as an incentive to the subject, I may have been able to get more hairdressers to participate in the study.

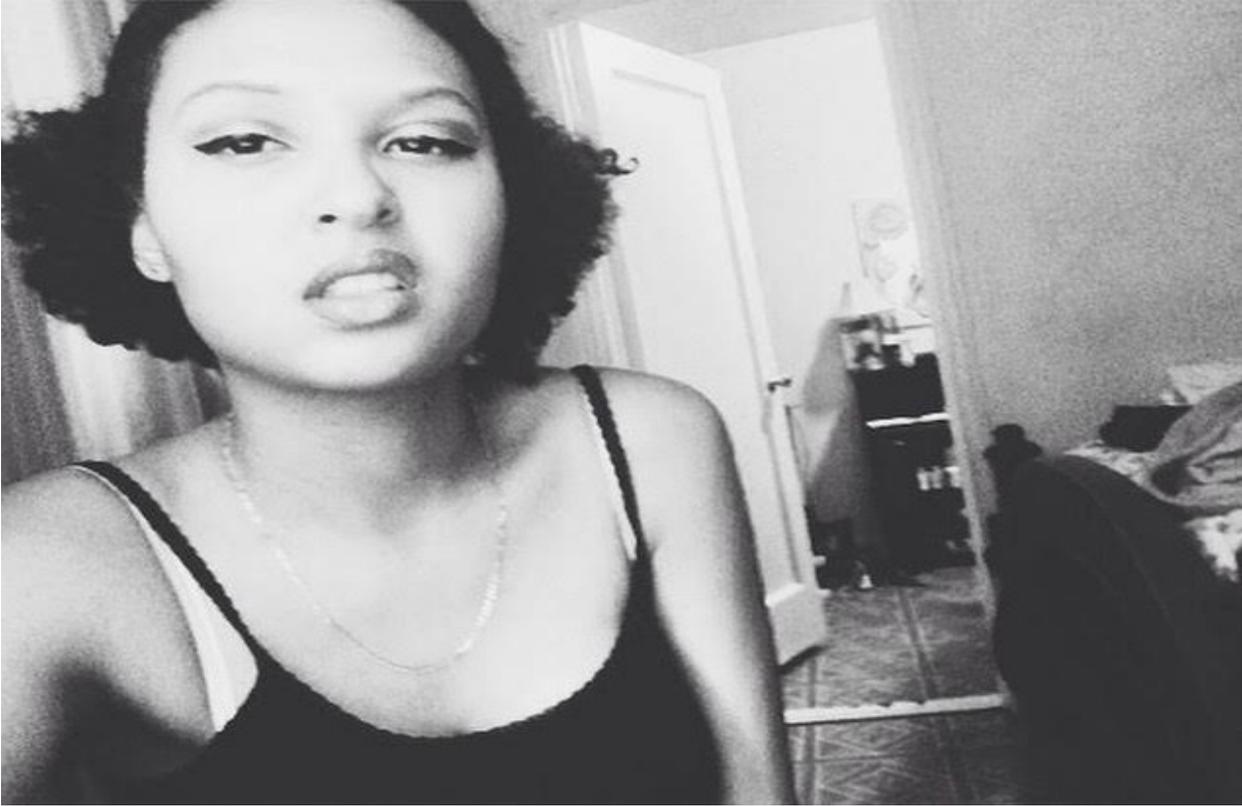
### *6.3 Salon Services*

Many of the professional hair stylist chose not to participate in the study; however, based on the services provided within each salon, one can infer the possible various forms of toxic exposure. Four of the six salons listed above offer relaxer treatments to their clients. *Figure 1a* shows that the more hazardous chemicals in relaxers are fragrance, cocamide dea, and DMDM hydantoin. If the salon offers the service, there are likely two routes of exposure for the stylist: dermal contact or inhalation. The first route occurs when the stylist applies the relaxer to the hair without using protective gear, such as plastic gloves. This exposure route will likely only happen when and if the hairdresser is working closely with the product, having an impact on the person rather than the entire shop. Those who are not working directly with relaxers can also be subject to exposure if the salon is not properly ventilated. In this case, both the stylist, the client and others working in the salon can be exposed after breathing in the toxic fumes.

Aside from relaxers, wash and roller sets and hair coloring also utilize products that can be high in toxicity. Wash and roller sets require that the hairdresser first wash and condition her client's hair, followed by applying setting lotion and/or mousse to the wet hair before using rollers to curl the hair. Hair coloring requires that the hairdresser applies a hair dyeing serum to her client's head. If for any reason the hairdresser does not use protective gear during this process, such as plastic gloves, she increases the possibility for dermal contact and skin irritation. Some of the safer hairstyles listed in *Figure 2a* are the braids, two-strand twist (i.e. Senegalese twists), and dread retwist and hair weaving. Despite the fact that the hairdresser may be exposed to minor toxins in the shampoo and conditioner, varying by brand, the previous styles do not include the using of products that are higher in toxicity. To style dreadlocks, for example, one

must simply use hair oils to moisturize, while also using hair gel and beeswax to retwist and loc the client's hair roots. These styles are considered natural styles, in which serve as protective styles for Black hair. The styles attempt to strengthen and protect the hair, rather than modify its original curl pattern and form. In turn, they often use fewer chemicals to achieve the overall look.

Dreadlock styling and braids proved to be the safest haircare methods in terms of product toxicity; however, Adewumi's study showed while these methods do not rely on highly toxic products, they do lead to ergonomics. Ergonomics risks are commonly connected to work-related musculoskeletal disorders (MSD) as a result of hairdressers "poor posture, prolonged standing, extended hours, and working through breaks" (Flint and Adewumi, 2016). Dread retwisting and braiding requires that stylist stand for long hours, typically with very little breaks. These methods also require a substantial amount of hand action that may lead to musculoskeletal disorders within the hands. Figure 2a takes a look at products found in the salons with no information on its toxicity. Though the services provided in *Figure 2a* do not give definitive answers for the rate at which each hairdresser working in the salon is at risk, it does give insight on exposure possibilities. Those that complete styles that work directly with the more hazardous toxins are by no surprise at higher risk; however, others in the shop are not excluded from the potential negative health implications that have been correlated to exposure. The types of services offered to clientele affect all parties working and utilizing the salon. The services provided, partnered with the hair salon's ventilation practices, are indicators of the health impacts.



## 7. RECOMMENDATIONS

### *7.1 Personal*

If one is looking to be safe when determining products, I recommend transitioning to organic, homemade products. The YouTube and social media have made transitioning and healthy hair much easier for the interested consumers. Rather than buying artificial products, consumers can now learn how to make their own products. There are tutorial videos that provide the average consumer with information to make that transition. In prior years, the natural hair movement and other natural cosmetic movements may not have been able to thrive as much as they do today. The presence of social media is just one of the many reasons why these movements have been successful and encouraging for all people. Many YouTube phenomenons not only promote healthy hair through these organic methods, but also overall healthy living and minimal exposure. Ultimately, I highly recommend that consumers make organic hair products because it reduces chemical exposure from artificial products, and it is also seemingly easy to do if one uses social media, and other sources of media, as a resource.

While the organic method is the healthier way to maintain healthy hair and decrease chemical exposure, this method may not work for all consumers. For those who struggle to develop their own products or do not wish to, I would recommend downloading the Skin Deep and Good Guide databases. These databases allow consumers to either scan the product or manually enter the product name and find get a ranking on the product. If one can, I recommend buying products that have lower toxicity scores. These databases are seemingly new, so there is a possibility that a product may not have any data on it. In the event that this happens, stay away from products containing DMDM hydantoin, lialial, geraniol, amylcinnamaldehyde, propylparaben, cocamide dea, methylisothiazolinone, and fragrance within them.

## *7.2 Future Projects*

Because the data I collected is insufficient to adequately access Black hair trends in Boston, I recommend someone picking up the project and collecting the data that I was unable to obtain. One of my biggest challenges completing this project was time constraint. This research can be very sensitive to both the researcher and the subject, so it is important the two are able to become comfortable with one another and establish a relationship before moving directly into the touchy subject matter. Considering the women's work schedules, personal preferences and is comfortable, five was not enough time to establish the necessary relationships to make the data collect less stressful on both ends. The gravity of this type of research requires that the researcher has at least three to five months to collect data from approximately 15 subjects. This gives the researcher time to get to know their participants and establish more authentic responses.

Aside from the time constraints I was faced with, the survey length had a significant influence on my data collection as well. Many of the hairdressers were reluctant to complete the survey because they found the 33-question survey to be rather long. Those that did participate in the survey showed that they began losing focus towards the end of the survey, leaving some questions either blank or without a complete response. To improve the project, I would recommend developing a shorter survey with similar content. The interviews are a significant part of the research because they allow the researcher to get a better understanding of the hairdressers' experience. If a future Urban & Environmental Policy student picks up this project, I suggest that the student uses the interview questions provided in the appendix section of this research. Future students may also add questions he or she believes addresses the underlying reasons why Black women enter the work and what their experiences are once they are in the position.



## 8. CONCLUSION

The cosmetic industry has heavily impacted the Black community. The pressures and influence of white heteronormativity has significantly enforced beauty norms, leading to many Black women feeling insecure about their hair. These insecurities often pressure women into getting harmful treatment, such as relaxers, in their hair to chemically straighten their hair and essentially assimilate to white culture. This study shows the cosmetic industry presently, and for years, has not only targeted Black women, but has also disproportionately exposed them to severely toxic chemicals that have been correlated to negative health effects. Black, female hairdressers are a vulnerable population because they are forced to work with the materials that are closely tied to environmental racism. Their profession requires them to work closely with products that contain synthetic compounds; these women are ultimately put in a situation that forces them to choose between their health and income. This research is still relatively new and needs to continue. There are still many products and chemicals that do not have any data on its effects on reproductive and general health. As this research furthers, consumers will be given more information in how to remain safe.

## REFERENCES

- Adewumi, Teniope. *Analysis of occupational exposures of black hair care professionals in predominantly black salons*. University of California: 2015.
- “At a Glance: Dorchester.” *Boston Redevelopment Authority*. N.p., n.d. Web. 01 Dec. 2015. <<http://www.bostonredevelopmentauthority.org/neighborhoods/dorchester/at-a-glance>>.
- Black Women for Wellness*. N.p., n.d. Web. <<http://www.bwwla.org>>
- Crain, D. Andrew, Sarah J. Janssen, Thea M. Edwards, Jerrold Heindel, Shuk-Mei Ho, Patricia Hunt, Taisen Iguchi, Anders Juul, John A. Melachlan, Jackie Schwartz, Niels Skakkebaek, Ana M. Soto, Shanna Swan, Cheryl Walker, Teresa K. Woodruff, Tracey J. Woodruff, Linda C. Giudice, and Louis J. Guillette. “Female Reproductive Disorders: The Roles of Endocrine-disrupting Compounds and Developmental Timing.” *Fertility and Sterility* 90.4 (2008): 911-40.
- Dark Girls*. Dir. Bill Duke and D. Channsin Berry. Prod. Bill Duke and D. Channsin Berry. Perf. Viola Davis. 2011. Documentary.
- Diamanti-Kandarakis, Evanthia, Jean-Pierre Bourguignon, Linda C. Giudice, Russ Hauser, Gail S. Prins, Ana M. Soto, R. Thomas Zoeller, and Andrea C. Gore. “Endocrine-Disrupting Chemicals: An Endocrine Society Scientific Statement.” *Endocrine Reviews* 30.4 (2009): 293-342.
- Dodson, R. E., Nishioka, M., Standley, L. J., Perovich, L. J., Brody, J. G., & Rudel, R. A. (2012). “Endocrine Disruptors and Asthma-Associated Chemicals in Consumer Products.” *Environ*
- Flint, Nourbese N., and Teniope Adewumi. Ed. Meridith Merchant and Janette RobinsonFlint. *Natural Evolutions: A Compilation of Results, Cultural Insights, Health, and Research around Black Women’s Hair and Health* (2016): *Black Women for Wellness*. Black Women for Wellness. Web.
- Genuis, Stephen J., and Shelagh K. Genuis. “Human Exposure Assessment and Relief From Neuropsychiatric Symptoms: Case Study of a Hairdresser.” *The Journal of the American Board of Family Medicine* 17.2 (2004): 136-41. *mental Health Perspectives*, 120(7), 935-43.
- Ford, Chandra L., and Collins O. Airhihenbuwa. “Critical Race Theory, Race Equity, and Public Health: Toward Antiracism Praxis.” *Am J Public Health American Journal of Public Health* 100.S1 (2010)
- Good Hair*. Dir. Jeff Stilson. Screenplay by Chris Rock, Jeff Stilson, Lance Crouther, and Chuck Sklar. Prod. Paul Marchand. Perf. Chris Rock. 2009. Comedy/Documentary.
- Henderson, A. *Redefining the identity of black women: “natural” hair and the natural hair movement*. The George Washington University, 2015.
- Hollund, Bjørg Eli, Bente Elisabeth Moen, Grace M. Egeland, Erik Florvaag, and Ernst

- Omenaas. "Occupational Exposure to Hairdressing Chemicals and Immunoglobulin E Synthesis." *Scandinavian Journal of Work, Environment & Health Scand J Work Environ Health* 28.4 (2002): 264-69.
- Hougaard, K. S., Hannerz, H., Bonde, J. P., Feveile, H., & Burr, H. (2006). The risk of infertility among hairdressers. five-year follow-up of female hairdressers in a danish national registry. *Human Reproduction*, 21(12), 3122-6.
- Hougaard, M. G., Menné, T., & Søsted, H. (2012). Occupational eczema and asthma in a hairdresser caused by hair-bleaching products. *Dermatitis : Contact, Atopic, Occupational, Drug*, 23(6), 284-287.
- Huff, James, Joseph Haseman, and David Rall. "Scientific Concepts, Value, and Significance of Chemical Carcinogenesis Studies." *Annu. Rev. Pharmacol. Toxicol. Annual Review of Pharmacology and Toxicology* 31.1 (1991): 621-52.
- Johnson, Tabora A., and Teiahsha Bankhead. "Hair It Is: Examining the Experiences of Black Women with Natural Hair." *JSS Open Journal of Social Sciences* 02.01 (2014): 86-100. Web.
- Obukowho, Patrick. "Chapter 3: History and Evolution of Relaxers." *Hair Relaxers: Science, Design, and Application*. Allured Business Media: Carol Stream, IL, 2012. 25-29. Print.
- Opiah, Antonia. "The Changing Business of Black Hair, a Potentially \$500b Industry." *The Huffington Post*. TheHuffingtonPost.com, n.d. Web. 04 Dec. 2015. <[http://www.huffingtonpost.com/antonia-opiah/the-changing-business-of-\\_b\\_4650819.html](http://www.huffingtonpost.com/antonia-opiah/the-changing-business-of-_b_4650819.html)>.
- Macon, Madisa B., and Suzanne E. Fenton. "Endocrine Disruptors and the Breast: Early Life Effects and Later Life Disease." *J Mammary Gland Biol Neoplasia Journal of Mammary Gland Biology and Neoplasia* 18.1 (2013): 43-61. Web.
- Smith, Stephanie D. "Essence Panel Explores Beauty Purchasing." *WWD*. N.p., 18 May 2009. Web. 07 Nov. 2015. <<http://wwd.com/beauty-industry-news/color-cosmetics/essence-panel-explores-beauty-purchasing-2139829/>>.
- Ulmer, Constance. "Beauty Matters, And: Hair Matters: Beauty, Power, & Black Women's Consciousness, And: The Face of Our Past: Images of Black Women from Colonial America to the Present (review)." *NWSA Journal* 13.2 (2001): 196-200. Web.
- Vogel, Sarah A. "The Dose Makes the Poison' to 'The Timing Makes the Poison': Conceptualizing Risk in the Synthetic Age." *Journal of Environmental History* 13.4 (2008): 667-73. Print.