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### **Laidlaw Research Essay**

**Research question:** How aware are Black women of the increased risks of cervical cancer linked with hair relaxers?

**Background:**

Hair relaxing is a common Black hair styling method in which one uses chemical straightening products to denature the kink in their naturally curly hair. Stemming from colonialism and Westernized beauty standards, Black women are major targets for hair-relaxing products and are its largest consumers. Relaxer advertisements promise Black women more “manageable” and “easy to take care of hair”, however, these advertisements never highlight the increased risks of cervical cancer associated with using their products, contributing to the negative health disparities we see among Black women today.

A recent finding by **Boston University's Chobian Medical School** highlights increased cervical cancer risk among Black women who use chemical straighteners. This finding comes over 100 years after the introduction of hair relaxing, proving the continual marginalization of Black women's health and the failure to comprehensively research the ethical standings and safety of products marketed specifically to them over an extensive period of time. In their study, they state that “long-term use of chemical hair relaxers by postmenopausal Black women was associated with increased risk of uterine cancer. Compared to women who never or rarely used hair relaxers, those who reported using hair relaxers more than twice a year or for more than five years had a greater than 50% increased risk of uterine cancer”( Bertrand, 2023)

Additionally, studies from New York Presbyterian Hospital highlights that hair relaxers are full of chemicals like “formaldehyde” which has been considered “carcinogenic and is the same chemical used to preserve dead bodies”( Dr. Onyinye Balogun, New York Presbyterian Hospital). Research states that, “when they are applied to the hair, we believe they may be absorbed right through the scalp and then enter the body. Through entering the body, they can then alter estrogen-dependent pathways — processes that determine and regulate the amount of estrogen in the body — which can lead to endometrial tumors” (New York Presbyterian). These findings have been pivotal in shaping how Black women approach their hair styling methods and their health. While in-depth research is still being done on chemical relaxers, I wish for my Laidlaw research to bring awareness to the lack of education around toxic chemicals in relaxers, and additionally bring awareness to their association with cervical cancer in Black women.

Due to hair discrimination in the workplace and negative connotations on Black body features, Black women stray away from embracing their natural hair because it is deemed “ugly”, “unprofessional”, and “untamed” by the Western world, and therefore resort to hair relaxing.

The purpose of my project is to measure the awareness of Black women on their knowledge of the increased risk for uterine cancer associated with chemical straighteners ( hair relaxing). The purpose of measuring this data is to show a disparity of education of health risks associated with certain hairstyles in the Black community. By showing this lack of education, more awareness can be spread to Black women.

## **Methods:**

My research is a qualitative study in which I survey Black women of varying ages and educational backgrounds in the U.S. to determine how aware they are of the links of cervical cancer associated with hair relaxation. Through my research survey on Qualtrics, I wish to

measure if age and education are factors that can increase a Black woman's awareness of cervical cancer risk due to hair relaxers. Participants were only eligible to participate in the survey if they were a Black woman between ages 18-65 living in the United states. Using Qualtrics branching logic, eligibility screening questions were implemented in the survey, before research questions were shown. This branching logic allowed for an accurate response population. From my research conclusions, I wish to analyze the number of women unaware of cervical cancer risks associated with hair relaxers, and I wish to identify which age groups, and education statuses are most unaware. Therefore education statuses and age were recorded to measure unawareness associations.

At the end of the survey participants were able to opt into a \$25 Visa gift card raffle, as a thank you for completing the survey. Additionally at the end of the survey educational links explaining the recent findings of hair relaxers' association with cancer risks were provided to equip Black women with the knowledge they need to make informed decisions about their body and health. The survey received 127 responses in which 98 were valid and complete responses that met eligibility requirements . Survey questions varied in open ended questions and closed multiple choice questions to allow for better qualitative and quantitative analysis.

## **Results:**

- Participant characteristics (n=98)
- N (%) or mean

### **Education/Demographics**

Some high school

- 1 (1.0)

High school diploma

- 13 (13.3)

Some college

- 40 (40.8)

College diploma

- 15 (15.3)

Some graduate school

- 5 (5.1)

Graduate diploma

- 24 (24.5)

Age

- 34.0 ( average)

### **Relationship/Knowledge about Relaxers**

Had heard of hair relaxing

- 96 (98.0)

Has ever relaxed hair

- 74 (75.5)

Hair is currently relaxed

- 18 (18.40)

Family or friends use hair relaxers

- 59 (60.2)

Perceived cancer risk (range: 1-10)

- 6.1

Know that hair relaxers are linked to cancer

- 35 (35.7)

**Will continue to relax knowing cancer risk**

Very unlikely

- 68 (69.4)

Unlikely

- 18 (18.4)

Likely

- 8 (8.2)

Very likely

- 4 (4.1)

**Will tell family or friends about cancer risk**

Definitely not

- 0 (0)

Probably not

- 3 (3.1)

Unsure

- 7 (7.1)

Probably yes

- 35 (35.7)

Definitely yes

- 53 (54.1)

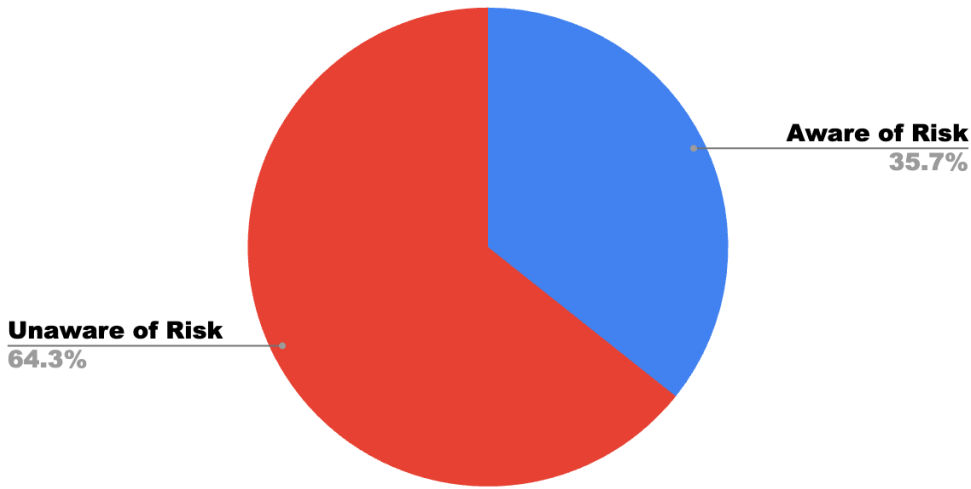
### **Statistical Data Analysis**

- Those who plan to continue to relax their hair are less likely to tell friends and family about the cancer risk from hair relaxing ( $\beta = -0.2$ ,  $p < 0.01$ ).
- No association between ever relaxing hair and knowing cancer risk.
- Those who were aware of cancer risk were more likely to rate the risk of hair relaxing as high ( $\beta = 1.9$ ,  $p < 0.01$ ).
- Greater educational attainment was associated with higher perceived risk of hair relaxing ( $\beta = 0.8$ ,  $p < 0.05$ ).
- Older adults were more likely to be currently relaxing their hair ( $\beta = 0.01$ ,  $p < 0.05$ ).  
Education was not associated with currently relaxed hair.
- Family and friends exert substantial influence on whether a participant is currently relaxing their hair. Participants whose family or friends relaxed their hair were nearly five times as to be currently relaxing their hair than those whose friends or family did not relax their hair (OR = 4.9,  $p < 0.05$ ).

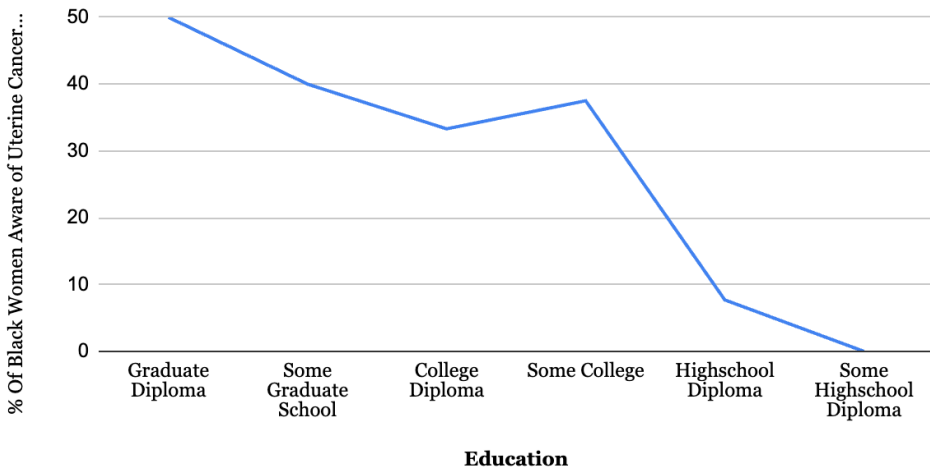
- Women who are currently still relaxing their hair have been doing so for 18 years on average.

**Graphs:**

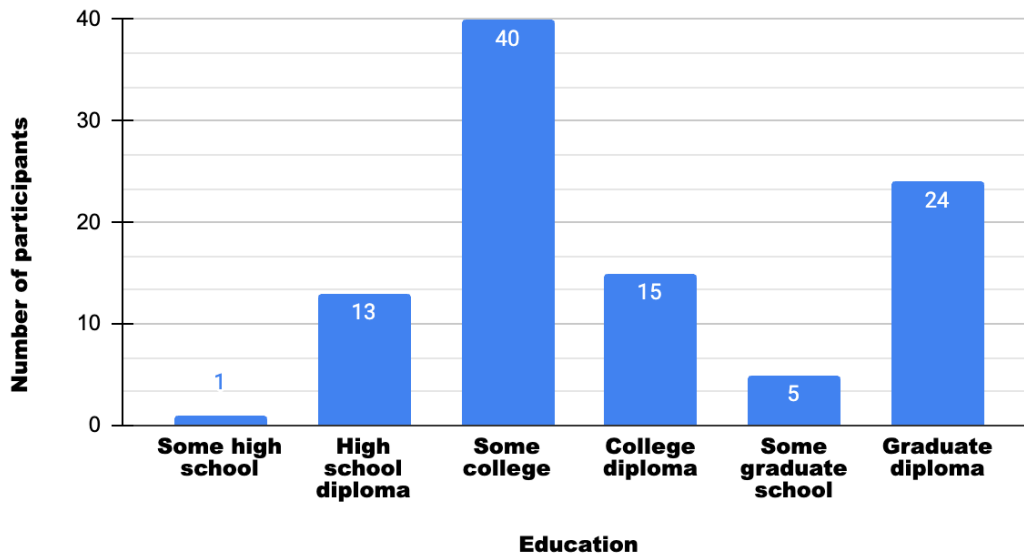
**Number of Black Women Aware of Cervical Cancer Risk Associated with Hair Relaxer Use**



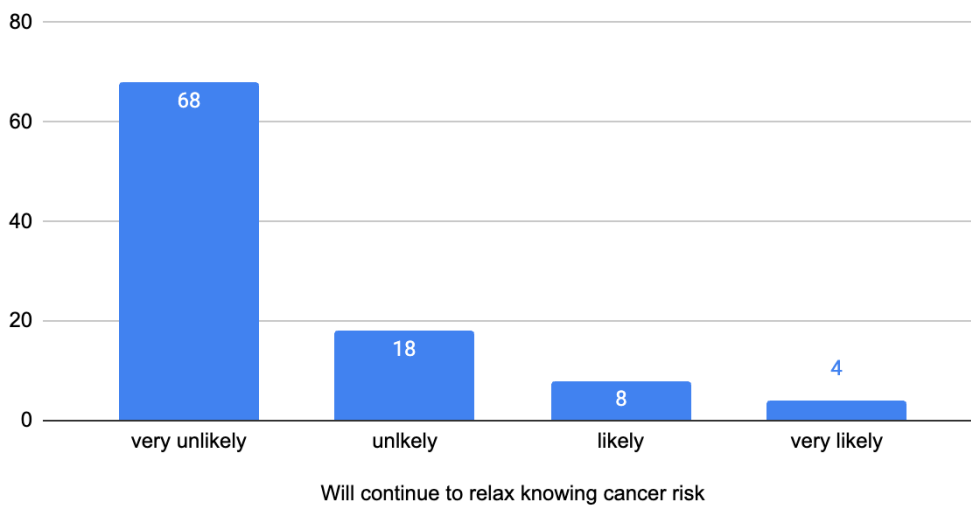
**% Black Women's Awareness of Risk by Education Level**



## Education Levels of Participants



## Number of Black Women Who Plan to Continue to Use Relaxers with Knowledge of Cancer Risk.



## **Themes/Participant Testimonials**

### **Black women learn hair relaxing from their families and culture:**

- “I learned about it from my mom because my grandmother relaxed my mother’s hair at a young age. This led my mom to have relaxed hair for most of her life. I would go with her to the salons so they could give her a touch up and a blow out.”
- “From my family doing it on us since we were kids”

### **Black women relax their hair to make it more manageable to style and because it was the beauty standard:**

- “Because my mom told me it would be easier to take care of my hair if it was relaxed. Plus, I wanted my hair to look like White people’s hair.”
- “It was the “beauty standards” back then and my parents couldn’t manage my sisters and I curly/kinky thick hair.”
- “To make it manageable and straight”
- “Was told it was the only way to care for my hair”
- “My mom had my hair dresser relax my hair at 11. That seemed to be the “coming of age time.” I’m sure I was excited to have straight hair and feel more pretty for being closer to Whiteness.”
- “Didn’t necessarily have a choice per se or know better. I will say my hair was much easier to manage, especially as a kid. At the time too there wasn’t as many natural hair products as well”
- “I didn’t have a choice. My guardian forced me to get it because she felt my 4C hair was hard to manage.”

- “It was just culturally appropriate for women in my Ghanaian community as it makes out hair more manageable and due to colonialistic mindsets that makes some of us believe that we look better that way.”
- “For my hair to relax since we Africans have a hard hair texture”

### **Discussion:**

Black women are mainly unaware of the risks chemical straighteners pose to their health. Results show that hair relaxing is a common styling method that has been passed down by multiple generations of Black women, but it is a tradition that is not often questioned. Many testimonials state that Black women learned of hair relaxing from their “family doing it on [them] since they were kids”. While it may seem that African-American women are ignorant to not question the ingredients of products they so frequently use, the root of the problem stems from hair relaxer companies using harmful carcinogenic chemicals in their products knowing how it could affect the health of their main consumers —Black women. Their motivation to still create these products for monetary benefit, raises large ethical questions in the realm of beauty and health.

The inability for relaxer companies to publish health risks associated with using their products, has cost lives and contributes to negative health disparities of cervical cancer in Black women in the U.S. Currently, “Black Women Have [the] Highest Mortality Rate of Cervical Cancer Subtype Compared to All Other Groups” according to the National Cancer Institute. This issue calls for greater questioning of American ethical standards and policies with cosmetic and hair products. Not only are Black women so exposed to these harmful chemicals, but in fact, they are less likely to recover from the development of cervical cancer.

*How are these companies able to sell these harmful products for decades without any scrutiny or a comprehensive analysis of harmful chemicals?* Systematic racism still shapes the lives of minority groups in America, and it shows through the inability to extensively examine products like chemical straighteners which greatly harm the Black community.

Black women relax their hair to make it more manageable to style and because it is the beauty standard. Western beauty standards that resemble White features like straight hair have been projected onto Black women for decades whether that is through TV, social media, or professional standards in the workplace and school. When asked why they relax their hair, Black women state that they relax their hair because they “felt more pretty being closer to Whiteness” and also because they were “told it was the only way to care for [their natural] hair”. From advertisements, to day-to-day interactions, Black women and their natural hair have never been accepted as beautiful in American society. The desire to have “ White people's hair”, not only affects the way Black women see themselves, but additionally affects their health. Black women therefore resort to hair relaxing to achieve a straightened hair look, which is often deemed more professional and tamed. However, little do they know, their strive to resemble western beauty standards greatly affects the health of their reproductive organs and cervix.

America needs to do better in helping Black women embrace their natural hair. This issue dwells in the intersection of beauty and health, and the only way to help the next generation of Black women is to diversify our lens of beauty in the entertainment sector or any social space where Whiteness is the standard. They say beauty is pain, but beauty should not keep Black women in chains. Our beauty should not put our health in vain.

While it seems that chemical straighteners have left Black women in despair. Recently social movements like Sankofa have Black women reclaiming the definition of beauty for

themselves and as a result a large population of Black people are embracing their natural hair. I believe this study is important to the public health sector because of its ability to pinpoint the Roots and reasons for why African-American women relax their hair. Rooted and complex westernized beauty standards, this study is able to identify how education, age, and geographic location may affect a Black woman's knowledge about health risks associated with chemical straighteners/hair relaxers.

Some limitations of the study include lack of representation from all 50 states in the United States, and low number of participants per state. For example, there was only 1 respondent in the states of Washington D.C, South Carolina, Nevada, California, Illinois, Pennsylvania, and consequently their answers to the questions were the only representation for their entire states. One person representing an entire state is obviously irrational and therefore collecting more responses from each state would have been beneficial for the analysis of this research data. On the other hand, this study found strength and its ability to qualitatively understand why women relax their hair and where they learned it from, and also was successful in understanding the Black woman's relationship with relaxers. The study also had strength in northeast states like Massachusetts Connecticut New York and New Jersey where there were large numbers of participants causing more accurate data that is more representative of the awareness of health risk in those areas. In general though, the purpose of the study to measure awareness was successfully completed.

### **Conclusions:**

From data analysis, a majority of Black women are unaware of uterine cancer risk associated with hair relaxer use. A majority of them are willing to share their newfound knowledge with their friends and family. A majority of Black women share sentiments that hair

relaxers are a common hair styling method in which they were taught to use without proper education or knowledge of its risks to their health. The unawareness for such health risk among Black women is reflective of the racist nature of American ethical standards and their inability to provide full disclosure of health risks associated with their products. To protect Black women's health, stricter regulations on hair relaxer hazards should be implemented, alongside increased funding for research into their chemical composition. Strict regulations need to be established by the FDA on the safeness and ethical standing of hair products like relaxers. Additionally, notable warnings should be placed on hair relaxers and similar products to ensure informed decision making among women.

### **The Research Process:**

This Laidlaw research project taught me resilience, troubleshooting techniques, and patience. To begin my project, I had to submit an application to Tufts IRB which is an institution that checks the ethical standing of all human subject research at Tufts University. The IRB screening process was the longest and most tedious part of my research experience this summer. In working with IRB, I had to send multiple revisions of my research plan and was provoked to think deeply about my research proposal and the reasoning behind certain questions in my survey. It was a frustrating experience at times because whenever I thought I was done with my research revisions, there always seemed to be something else that stuck out that needed more clarification or revision. I even reached a point where I was unsure if I would have enough time to actually send out the research survey for participant responses. The Tufts IRB revision process took me two and a half months (Mid May- end of July) to complete and I had one month to distribute and analyze my data. I was approved by Tufts IRB at the end of July and received a lot of help and support from my research mentor, family, and friends on outreach/distribution of the

research survey. I sent the survey into online platforms like The Tufts University Black Jumbos chat where I was able to reach a lot of Black women in one spot. In general, I found social media and LinkedIn to be very influential in my outreach process as well. After collecting responses, my research mentor helped me analyze and code my data with statistical analysis. Her expertise in the field of public health was extremely helpful to me throughout the entire research process. I met with my faculty mentor once a week and kept her updated on my IRB process. She would give me advice and tips on how to word certain questions in my survey to ensure clarity and specificity. In the end, I was able to analyze my data with the help of my research mentor, and was glad to find some astounding results!

Additionally, as Qualtrics was a new platform for me, I ended up gaining a lot of troubleshooting skills because I had to learn how to use certain logic features on Qualtrics and in general, had to learn the ins and outs of the platform. At times, Qualtrics was confusing for me to use and understand, but through trial and error, I soon mastered the platform and consequently gained troubleshooting skills and exercised patience.

All in all, my Laidlaw research experience helped me to develop valuable skills that will be essential and beneficial for my future. With my aspiration to one day become a physician, I hope to use these new skills in the future to better serve the communities I find myself in.

I am so grateful and honored to have had this research experience and support because I don't think I could have ever done this alone! Thank you Laidlaw, Dr. Mandelbaum, and my family and friends for your support!

**Why I am passionate about this subject:**

Having grown up as a Ghanaian-American girl frequently exposed to the usage of hair relaxers, I am motivated to address the Western beauty standards driving this dangerous practice

in nations like Ghana and the U.S. Through generational use, rooted in racist colonial notions for desirable hair, many Ghanaian and American women embrace straight hair textures despite health risks. By educating the youth, parents, and hairdressers on the carcinogenic chemicals in relaxers and the roots of their popularity, I aim to challenge perceptions that natural hair is unacceptable while reducing cervical cancer prevalence among Black women. I believe this is a public health issue that is not mainstream because it is related to the health of Black women, who are often underrepresented in medical research. My blended cultural identity and family history with relaxers compel me to tackle this issue at the intersection of public health and oppressive beauty standards. I believe education and leadership on this topic can help save Black women's lives.

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