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Black Women’s Vulnerability to Heart Disease: Ultra-Processed Food Consumption and the Social Determinants of Health

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Black Women's Vulnerability to Heart Disease: Ultra-Processed Food Consumption and the Social Determinants of Health

A thesis submitted in partial satisfaction

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in African American Studies

by

Kira Ajiah Maszewski

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ABSTRACT OF THE THESIS

Black Women's Vulnerability to Heart Disease: A Closer Look at Ultra-Processed Food Consumption and the Social Determinants of Health

by

Kira Ajiah Maszewski

Master of Art in African American Studies

University of California, Los Angeles, 2022

Professor Walter R. Allen, Chair

Problem: Black women are the most at-risk group for heart disease and related diseases in the United States. The communities where Black women reside are often positioned in food deserts flooded with ultra-processed foods (UPFs) and devoid of nutritious food options, both of which perpetuate food addiction (FA). A possible link between the social determinants of heart disease in Black women and UPF consumption has yet to be examined in depth.

Hypothesis: Common social, behavioral, and economic factors contribute to Black women's heart disease. Moreover, Black women's heart disease is positively correlated with excess UPC consumption, rendering UPF an extraordinary risk factor for heart disease in Black women.
Methods: This case study uses a self-administered demographic questionnaire and one-on-one conversational interviews from 2 Black women diagnosed with heart disease. The interviews inquired about several topics, including mental health, exercise and activity, eating patterns, and a food frequency questionnaire. The questionnaires and interview responses are analyzed to identify similar themes between the two participants and available literature. Overall, the interviews adopted a life course approach to identify dietary patterns and changes to dietary patterns as responses to life events and the intersectionality experienced by Black women.
Findings: The interviews revealed key factors that contribute to the social determinants of Black women's heart health. Black women's roles as lifelong primary caregivers and providers render them particularly vulnerable to developing FAs in response to chronic stress. Although Black women are aware of the negative impact of poor diet and low exercise on their health, lack of time, resources, and social disconnect from healthcare providers generates a gap between Black women's awareness and practice of healthy dietary behaviors. Generally, Black women are unaware of the harmful effects of UPFs on heart health and vitality. More empirical research should be conducted to examine Black women's excess UPF consumption and disproportionate burden of heart disease.
Study and Implications: The study results support an experiment-based intervention that will examine UPF and heart disease in Black women. The results also support anti-UPFs policies such as restrictions on fast food enterprises and availability of UPFs at small-scale grocers and supermarkets. The findings can also be used to tailor medical policies, including wide scale

requirements for ethnic nutrition studies in formal medical education. In addition, the results can be used to introduce culturally sensitive food-based preventative care in the clinical setting and provide information for local community interventions.

Key Words: cardiovascular disease (CVD), Ultra-processed foods, UPFs, Black women, women's health, racial health disparity, food addiction (FA), mental health, heart disease, diabetes, hypertension, life course, awareness, food apartheid, food oppression, California, Los Angeles, public policy, health policy, caretaker, single-motherhood, healthcare access, healthcare-seeking behaviors, case study

The thesis of Kira Ajiah Maszewski is approved.

Richard A. Yarborough

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University of California, Los Angeles

2022

Dedication

To my mother and grandmother, and all the women that will not get to share their story.

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Chapter 1: Introduction

1.1: Problem

Nowadays, it is common knowledge within the healthcare system that cardiovascular disease is the leading cause of death in the United States. This information is available in many highly regarded health research journals to anyone with internet access to the popular media. A recently published mixed methods study concluded Black[1] communities in the United States exhibit disproportionate rates of heart disease, diabetes, hypertension, and cancers (Der Ananian et al., 2018). Several research publications have identified causes for these problems, including high stress, poor environmental conditions, and a variety of unhealthy personal habits (Howard et al. 2018). According to *Journal of General Internal Medicine*, Black women are unaware of their increased risk for developing heart disease, especially those of lower SES (DeSalvo et al., 2005). A general undersupply of resources and viable food options in Black lower income communities (commonly referred to as food deserts) both generate and exacerbate these phenomena (Bradley and Galt, 2013). It is well documented how the dehumanizing living and working conditions Black people endured during the periods of slavery and post-antebellum set the precedent for this trend in racial healthcare discrepancies (Odoms-Young, 2017). The current food system and underlying policies function to sustain the debilitating health impacts introduced during the era of African enslavement in the Americas. Food justice activists argue "the intersection of institutional racism and economic inequality has stripped communities of color of their local food sovereignty, preventing many of them from eating in the way the food movement

[1] In the present thesis, the term Black refers to self-identified Black Americans of African descent living in the United States.

describes as proper" (Bradley and Gald, 2013). Institutional racism and economic inequality must be examined in tandem to develop a thorough cognizance of conditions that produce disrupted eating patterns. Furthermore, these food deserts are characteristically filled with UPFs[2] which increase the risk of heart disease and related diseases in Black communities (Bradley and Galt, 2013). This issue is even more pressing because the danger of UPFs is not common knowledge within Black communities. Targeting UPF consumption as a byproduct of food insecurity and food apartheid is essential to close the gap between cardiovascular disease risk in Black Americans and white Americans.

1.2: Importance/significance

This study is particularly important for women's health studies because of the disproportionately high rate of heart disease in Black women reported across health science and medical journals (Braun et al., 2016), and the low percentage of Black women who are aware of their increased risk (DeSalvo et al., 2005). A 2021 annual report from the American Heart Association (AHA) indicated 49% of Black women 20 years and older have heart diseases (AHA, 2021). Just one year later, the AHA released an update stating, "based on 2015 to 2018 data, among non-Hispanic (NH) Black adults 20 years of age and older… 58.8% of females had CVD" (Tsao et al., 2022). These data were collected prior to the COVID-19 pandemic; thus, it is safe to assume statistics may be even more drastic in the next report based on data collected during the pandemic. This is due to major disruptions in the national and global food systems

[2] For the purpose of this study, UPFs are defined as "formulations of food substances often modified by chemical processes and then assembled into ready-to-consume hyper-palatable food and drink products using flavours, colours, emulsifiers and... other cosmetic additives" (Baker and Lawrence, 2019).

and economies whose effects were most detrimental for disadvantaged groups, such as Black people (Dabone et al., 2022). Moreover, Black women disproportionately experience heart disease, stroke, and diabetes compared to all other racial groups in the United States (Braun et al., 2016). Black women also experience disparate susceptibility to obesity and high blood pressure (hypertension), both known risk factors for heart disease, stroke, and diabetes (DeSalvo et al., 2005). Additionally, because of the high prevalence of UPFs sold in Black communities, identifying links between excess UPF consumption and heart disease rates could provide a fast action route towards eliminating health disparities. This thesis investigates the relationship between ultra-processed foods and rates of heart disease in Black women and the social, behavioral, and economic factors that increase their vulnerability.

Chapter 2: Literature Review

Chapter 2 provides a comprehensive overview of pertinent literature and related issues. The following topics will be discussed: intersectionality, chronic Stress, and lifelong caregiving, cardiovascular disease in Black communities, Black perceptions of heart disease risk, definition and previously identified effects of UPFs, and food desserts and food apartheid and how they contribute to UPF prevalence and addiction in Black communities. The last subsection will provide an overview of relevant previous works on UPF consumption and heart disease.

2.1: Intersectionality, Chronic Stress, and Lifelong Caregiving

As noted by renowned Professor Kimberlé Crenshaw, "single Black mothers are disproportionately low income, a socioeconomic consequence that is itself a product of the interlocking dimensions of race, class, and gender inequality" (Crenshaw, 2012). In other words, the interconnected nature of race, class, and gender for Black women and mothers overlap to create interdependent systems of discrimination and disadvantage. Thus, the framework of intersectionality helps to illuminate how the social determinants of food consumption perpetuate Black women's vulnerability to heart disease (Crenshaw, 1991).

Black women, who often face the lifelong responsibility of single-parenting due to mass incarceration (Elliot & Reid, 2019) and the disruption of Black families via anti-Black structural racism and the crack epidemic (Dunlap et al., 2006), often must assume the roles of primary caregiver and wage-earner. This affects their ability to care for themselves on a multitude of levels. Taking on multiple roles and responsibilities negatively impacts their quality and access

to health care, self-care, time for activity and exercise, time for meal preparation, money to purchase quality foods, proximity to diverse food options, and so much more. Even as Black women grow beyond their childbearing and childrearing ages, they often must still care for their grandchildren, nieces, nephews, and even older family members (aging parents and grandparents. Ideally, a woman would use this time to begin prioritizing and caring for herself, had she not been able to do so in her younger years. Therefore, due to multiple forms of oppression, namely anti-Black racism, sexism, and economic disenfranchisement, Black women are bound to a lifetime of prioritizing others until they physically cannot care for themselves, let alone anyone else. Racial differences in objective and subjective stressors, such as taking on multiple roles and responsibilities, may lead Black women to experience chronic, elevated stress rates compared to other racial groups. A paper in the *Journal of Perinatology* examined how racial differences in chronic maternal stress may contribute to disparities in pregnancy health outcomes. Using self-reported measures and biological indicators, the researchers found Black women experience more chronic stress than white women (Borders et al., 2015). Moreover, as women have increasingly begun working to earn household income, these added stressors interrupted their ability to prepare traditional and home-cooked meals (Wang et al., 2014). Black women now increasingly rely on pre-prepared meals, fast foods, and UPFs to supplement home-cooked meals. Despite the overwhelming contribution of fast foods and junk foods to child and adult obesity (Almuhanna et al., 2014), there are very limited resources that counter Black women's increasing reliance on unhealthy food options. The convenience, in terms of affordability, availability, and access, of these food options outweighs even individual preference.

2.2: Cardiovascular Disease in Black Communities

After factoring in the impact of the COVID-19 pandemic on human health and vitality, cardiovascular disease remains the leading cause of death across all racial groups in the United States. The Der Ananian et al. (2018) mixed methods study reported that Blacks comprise only "13.3% of the US population (46.3 million people) yet have a three-fold greater risk of developing CVD [cardiovascular disease] and a two-fold greater risk of CVD-related mortality than that of non-Hispanic whites and other ethnic groups." Although Blacks are a minority racial group in the United States, they are the most at risk for developing cardiovascular disease and dying of associated health conditions. A review by UCLA published in the *Journal of the National Medical Association* found that Black women experience greater mortality rates than non-Hispanic white women from CAD [coronary artery disease], hypertension, stroke, and CHF [congestive heart failure]. In fact, "the mortality rate from CAD is 69% higher in black women than in white women. While mortality for black women from hypertension is 352% higher than for white women; Age-adjusted stroke death rates are 54% higher in African American than in Caucasian women; and the age-adjusted mortality rate per 100,000 is 113.4 vs 97.5 for black and white women, respectively" (Williams, 2009). These racialized discrepancies in cardiovascular disease rates are the result of several intersecting factors, many of which fall under the framework of food apartheid.

2.3: Black Women's Perceptions of Behavioral and Physical Risk Factors

A set of studies published in *Circulation* and the *Journal of General Internal Medicine* were conducted to assess contemporary views regarding health, health behaviors, and perceived risk for developing heart disease in different populations of American women. The 2004 study analyzed results from a telephone survey of a nationally representative random sample of women

to contrast Black women's risk awareness in 1997, when the AHA began initiatives to raise awareness of heart disease risk, to Black women's risk awareness in 2004. Although awareness had increased overall, the study reported "Black, Hispanic, and younger women (<45 years old) had lower awareness of heart disease as their leading cause of death than did white and older women" (Mosca et al. 2004). The 2005 study utilized trained researchers to interview 128 black women during the baseline evaluation for a randomized controlled trial in an urban, academic continuity clinic affiliated with a public hospital system. The final report concluded the most at-risk women, those who reported low personal income level and high stress loads, routinely underestimated their risk of developing heart disease (DeSalvo et al., 2005).

Since those early 2000s studies, research has indicated shifts in perceptions amongst Blacks. As noted above, the *International Journal of Environmental Research and Public Health* published a paper in 2018 that assessed CVD-related perceptions and beliefs among Black men and women. The researchers found focus group participants recognized Blacks were at higher risk for numerous chronic illnesses, namely heart disease, and that health and lifestyle factors (stress, hypertension, unhealthy diet, low nutrition, and low exercise) were large contributors to developing CVD. Most focus group participants associated low socioeconomic status with greater life stressors and reduced access to healthy food choices, in addition to being a "potential precursor to not only heart disease but to engaging in fewer healthy behaviors" (Der Ananian et al. 2018, p.13). Based on the conclusions of this paper, it becomes apparent that knowledge of nutrition and risk does not automatically translate to change in behavior. The researchers confirmed this representative population of Black people had a general understanding of the relationship between an unbalanced and unhealthy diet and greater heart disease risk. However, the "burden of cardiovascular disease in the African American community remains high and is a

primary cause of disparities in life expectancy between African Americans and whites" (Carnethon et al. 2017). Thus, factors beyond basic education about healthy and unhealthy foods determine individual dietary choices. It is not difficult to deduce how individuals may perceive economic and transportation costs of acquiring healthy foods, and the extended preparation times, to outweigh the long-term health benefits of maintaining a nutritious, wholesome diet. Persistent disparities suggest current interventions that may work for other groups are not necessarily effective for Black women. A blue-collar or lower-class Black woman not only needs tangible evidence demonstrating the dire necessity for a more nutritious diet, but she also requires access to the means to attend healthy food workshops, shop at further and more expensive grocery stores and farmers markets, and participate in community awareness events. The need for evidence and means are even more necessary for poor Black women and Black mothers, who often must prioritize quantity of food over quality, and time over composition.

The 2005 paper by DeSalvo et al. also revealed unique cultural body image preferences that may be partially responsible for poor dietary choices. When asked to identify key risk factors, "Diet" and "Low Physical Activity" were mentioned often by participants, however "Obesity" and "Overweight" were rarely mentioned. Thus, although the participants were aware that bad diet and low activity cause heart disease, both of which are behavioral factors, they did not point out the physical conditions that put Blacks at risk for secondary illnesses (Hawkins et al. 2006). A cross-sectional study published by the *Journal of Racial and Ethnic Health Disparities* utilized 2001-2003 data from the National Survey of American Life, a nationally representative sample of 3570 African Americans and 1621 Caribbean-Blacks aged 18 years and older to elucidate an inverse relationship between obesity and education, occupation, and family income in Black Americans. Moreover, it recognized the physical condition of obesity among

Blacks disproportionately predisposes them to an "increased risk for type 2 diabetes (Blacks = 13.0%, Whites = 8.0%), [and] coronary heart disease (Black women = 5.2%, White women = 3.9%)" (Barrington et al. 2020). Even though the obesity rate of "non-Hispanic Black Americans [is] 38.3%... as compared with 31.1% for the general US population" (Barrington et al. 2020), Black people may not consider themselves "Overweight" or "Obese" based on cultural or racial body image preferences. Perhaps, Black cultural thresholds for "Overweight" and "Obese" categories are higher than the standards imposed on them by dominant white society. A literature review published in 2006 by the *Journal of African American Studies* found Black women tend to have a greater range in body size satisfaction and did not experience body size dissatisfaction at higher BMIs [body mass index]," (Hawkins et al. 2006). A primary contributor to this race-specific body size preference may be genetic and environmental factors. Specifically, Black women generally have higher musculo-skeletal mass as percent of body weight than white women (Gasperino, 1996). Thus, Black women are healthier than white women at heavier body weights, which may increase their sociocultural satisfaction with overweightness and obesity. Black women also do not readily categorize obesity as a main risk factor for secondary illness and premature mortality. The conclusion is that cultural comfortability surrounding body image may partially explain why only 1in 5 Black women believe she is personally at risk [and] only 36% of Black women knowing heart disease is their greatest health risk (AHA, 2021).

2.4: Ultra-Processed Foods and Disease

Numerous studies and reviews have investigated causative relationships between UPFs and increased heart disease, stroke, and hypertension. UPFs are defined as "formulations of food substances often modified by chemical processes and then assembled into ready-to-consume hyper-palatable food and drink products using flavours, colours, emulsifiers and... other cosmetic

additives" (Baker and Lawrence, 2019). Similarly, processed meats are defined as "any meat preserved by smoking, curing or salting or addition of chemical preservatives" (Chen et al. 2013). Food companies utilize chemicals additives and modified salts to preserve, enhance, and increase the output of food items that have low nutritional value but are highly flavorful and addictive. Some UPFs include chips, sugary drinks, salted and deli meats, canned foods, and frozen prepared meals. According to the Baker and Lawrence prospective cohort study, only a "10% increase in dietary ultra-processed food [resulted in] significantly higher rates of overall cardiovascular disease, coronary heart disease, and cerebrovascular disease" (Baker and Lawrence, 2019). Participants represented a variety of races, and those with the highest consumption rates of UPFs exhibited a 62% higher mortality rate than those with the lowest consumption. In another *Circulation* systematic review and meta-analysis assessing the relationship between processed meats and coronary heart disease, results showed "each serving per day of processed meat was associated with 42% higher risk of CHD [coronary heart disease]" (Micha et al. 2010). Although unprocessed red meats have been found to correlate with increased heart disease risk, "consumption of processed meats... is associated with higher incidence of CHD" (Micha et al. 2010). Unsurprisingly, processed meat consumption also increases the risk of ischemic stroke incidence (Chen et al. 2013), which shares multiple risk factors with heart disease. A large, nationally representative study of male and female U.S. adults reported "higher consumption of ultra-processed food was associated with greater BMI, WC [waist circumference] and odds of overweight, obesity and abdominal obesity" (Juul et al. 2018). This association was even more pronounced for women. Lastly, a recent study published in the AHA *Circulation* journal and *American Journal of Clinical Nutrition* found amongst a sample of 13,446 adults aged ≥ 20 years, "UPF represented more than half of total calorie intake among US

adults" (Zhang et al., 2021). Moreover, there was a graded inverse association between %kcal from UPF and cardiovascular health. At an AHA Epidemiology, Prevention, Lifestyle & Cardiometabolic Health Conference held in May 2021, researchers presented the following findings: "A study of almost 6,000 adults ages 45 and older found that Black adults who ranked within the top 25% of all participants for consumption of ultra-processed food were 55% more likely to have high blood pressure compared to white adults who consumed a similar amount of ultra-processed foods" (Khandpur, 2021a). These studies present strong evidence for causal relationships between UPFs and meats and heart disease.

A published study showed how breastfeeding, complementary feeding, and parental sociocultural factors contribute to food preferences early in life; and determined "children are predisposed to prefer high-energy, -sugar, and -salt foods, and in preschool age to reject new foods (food neophobia)" (De Cosmi et al., 2017). It also found food neophobia can be countered by repeated exposures and offerings to novel food groups during both breastfeeding and complementary feeding stages of a child's life. Overall, this strategy increases a child's willingness to explore new foods and develop a more diverse palate that is reflective of a healthy diet (De Cosmi et al., 2017). When UPFs are introduced at a young age, individuals develop taste preferences that will influence their eating habits for the rest of their lives. They may struggle to find non-processed foods flavorful. Furthermore, UPFs have been found to increase daily caloric intake by displacing "nutritious foods from the diet" due to their high palatability and easy consumption (Baker and Lawrence, 2019). Simply put, consuming UPFs promotes obesity in two key ways: firstly, by increasing daily caloric intake, and secondly, by eliminating nutritious foods from the diet. A study published in 2021 examining the diets of 11,246 U.S. adults found that UPFs represented more than half of daily caloric intake (Zhang, Z. et al. 2021). Predictably

because of their low production costs and high caloric output, UPFs are overly prevalent in lower socioeconomic Black communities. This is a crucial demonstration of resource inaccessibility eclipsing economic inequality to negatively impact vulnerable populations. The long-term concentration of social and economic disadvantage among people of color situates them in environments that do not prioritize the health and well-being of their inhabitants. Concurrently, the prevalence of UPFs, ultra-processed beverages, and additives function as agents for perpetuating food apartheid in Black communities.

2.5: Food Apartheid and Food Deserts

Leading causes of obesity and negative health outcomes, such as length and quality of life, in Black women have been linked to nationwide food insecurity. Food insecurity is one of several social determinants of health; factors that influence where and how people live, learn, work and play can affect a person's overall health and well-being (Wang et al., 2020). A cutting-edge, national study provides evidence of the link between food insecurity and increased risk of cardiovascular death. The researchers reported "every 1% increase in food insecurity was independently associated with a similar (0.83%) increase in the rate of cardiovascular deaths among non-elderly adults" (Wang et al., 2020). Food apartheid recognizes food insecurity is mediated by racial discrimination (Odoms-Young, 2017) thus rendering it systemically oppressive. As defined by activist Dara Cooper, food apartheid is the "systematic destruction of black self-determination to control one's food, hyper-saturation of destructive foods and predatory marketing, and blatantly discriminatory corporate-controlled food system that results in [communities of color] suffering from some of the highest rates of heart disease and diabetes of all time." Adapting its name from the exploitative governmental policies used to exploit South African people and resources, food apartheid redefines the issues of food and nutrition and the

linked health disparities. This terminology empowers activists to tackle the wide-scale social, economic, and racist living conditions that affect food insecurity, and consequently heart disease in Black communities.

The United States Department of Agriculture's Economic Research Service officially defines food deserts as "areas with limited access to affordable and nutritious food, particularly such an area composed of predominantly lower-income neighborhoods and communities" (Bradley and Galt, 2013). Aside from the fact that the average Black household is worth 13 times less than the average White household (Odoms-Young, 2017), many Black communities do not contain readily accessible grocery stores that could provide members with healthy food options in the forms of fresh produce, fruit, and unprocessed meats. The cross-sectional study by Barrington et al. identified "lower rates of obesity and residence in communities with beneficial… neighborhood parks and supermarkets" (Barrington et al. 2020). As such, the presence of more grocery stores effectively reduces obesity, which is directly associated with heart disease risk. Thus, promoting food access via the elimination of food deserts is an essential step towards equitable food security.

Food insecurity among at-risk Black communities is a racialized public health issue. Therefore, while the concept of food deserts is useful in addressing some of the issues underlying food insecurity, it is only one element of food apartheid. Focusing on food deserts as the central issue cannot address the full causal nexus of food apartheid. For example, "opening grocery stores, introducing farmers' markets, and making school food more nutritious" (Bradley and Galt, 2013, p.173) does not eliminate the issues of economic inequality, poor nutritional education, work-family life demands, taste preference, and FA development in Black communities. FA is a "dysregulated eating pattern characterized by difficulties in controlling the

intake of certain foods" (Stojek et al., 2021). Although the concept of FA has not been fully established, it is often grouped with eating disorders such as binge eating disorder (Penzenstadler et al., 2019), and is likely vastly underdiagnosed in low-income, racial/ethnic minorities. Furthermore, a paper on the neurobiology of FA published by the *Current Opinion in Clinical Nutrition and Metabolic Care* reported that "the same neurobiological pathways that are implicated in drug abuse also modulate food consumption" (Blumenthal and Gold, 2010). The addictive quality of foods is exacerbated in UPFs due to "their often-ubiquitous availability and convenience, palatability and quasi-addictiveness, and intensive marketing practices used to promote purchasing and consumption, especially among children and adolescents" (Elizabeth et al., 2020). Moreover, UPFs have been shown to cause dysbiosis "reduce gut-brain satiety signaling resulting from altered physical property created by the processing of foods" (Elizabeth et al., 2020). Therefore, only by examining the systemic undersupply of resources and viable food options combined with the oversupply of UPFs characteristic of food deserts can one develop a comprehensive plan to mitigate racialized food insecurity and the associated health outcomes.

2.6: Previous Research & Studies

There has yet to be a comprehensive study that isolates the effects of UPFs as a risk factor for heart disease in Black women and utilized the interview approach to obtain qualitative data on the social determinants that cause excess UPF consumption. However, several studies looked at related issues. A cohort study published in the *Journal of the American Medical Association*, which included 6897 adults who participated in 9-year follow-up visits, found "the largest statistical mediator of the difference in hypertension incidence between black and white participants was the Southern dietary pattern, accounting for 51.6% of the excess risk among

black men and 29.2% of the excess risk among black women" (Howard G. et al. 2018). The study reviewed data from current published literature to identify a link between hypertension and soul food diet in Black populations of men and women. Another study employed a population-based cohort design to stratify processed food consumption by NOVA classification and frequency, in which participants provided repeated 24-hour dietary records. A strength in this design is dietary assessments produce results "more accurate than food frequency questionnaires with aggregated food groups, or than household purchasing data" (Srour et al. 2019).

Though a dietary assessment approach would have produced more accurate results, this thesis utilized a food frequency questionnaire with aggregated food groups combined with household purchasing data because of the restrictions imposed by the COVID-19 pandemic. In efforts to offset inaccuracy, questionnaire and purchasing data were acquired and analyzed in tandem. One other pertinent study published in the *Journal of the American Heart Association* described an established correlation between disparities in diet quality in Black and lower SES populations and disparities in cardiovascular disease burden (Kris-Etherton et al. 2020). It highlighted how the National Institutes of Health has funded multiple centers to target nutrition-mediated health disparities, all of which included "at least one critical dietary component, such as individual-level nutritional, education, dietary behavior–change training, weight loss interventions, or corner store interventions to improve access to healthy foods" (Kris-Etherton et al. 2020). Generally, each program positively impacted eating habits for minorities and disadvantaged groups, with some suggesting successful hypertension control. One limitation was the small sample sizes of the studies and ambiguous means for sustainability so interventions would continue to impact long-term behavior modification and positive CVD outcomes. This study also proposes some policy interventions (Kris-Etherton et al. 2020).

2.7: Research Proposed

2.7.1: Goals

While other studies have identified a correlative relationship between UPFs and increased heart disease and other related disease states, none have utilized a one-on-one style interview format to observe how Black women's' lived experience inform their understanding of nutrition and excess consumption of UPFs. Moreover, none have observed direct connections between Black women's intersectionality, extraordinary vulnerability to heart disease, *and* reliance on UPFs. Many factors such as systemic racism, additional life stressors, low educational attainment, and cultural diet partially account for the gap between knowledge of healthy eating and application of said knowledge. Furthermore, this lack of individual application is responsible for the increasing instances of heart disease in Black women. However, identifying the specific components of the diet that increase the risk for heart disease is valuable. Factors such as systemic racism and outside life stressors are not easily altered, however, changes to dietary choices can be enacted immediately. Identifying excess UPF consumption will help illuminate an essential clue behind Black women's rapidly increasing vulnerability to heart disease. Researchers have examined hypertension and soul food consumption rates between Blacks and whites (Howard et al., 2018), UPF consumption and excess weight gain inclusive of all racial groups (Hall et al., 2019), young Black women's risk for heart disease (Kalinowski et al., 2019), and poor diet as a causative factor for CVD in Black populations (Barrington et al., 2020). However, the current research is scattered and does not coherently address the following research questions.

2.7.2: Research Questions and Hypotheses

This thesis aims to answer the following questions:

(1) What social, behavioral, and psychological factors account for Black women's increased consumption of UPFs and vulnerability to heart disease?

(2) What are Black women's attitudes and perceptions regarding the relationship between their nutrition and heart disease risk?

Researchers hypothesize that there will be common social, behavioral, and economic factors that dictate patterns of consumption and increase vulnerability of Black women to heart disease. Moreover, it is expected heart disease in Black women will be positively correlated with excess UPC consumption, rendering UPFs an unparalleled risk factor for heart disease in Black women.

Chapter 3: Methods

3.1: Research Design

Researchers utilized Google Scholar, PubMed, CDC.org, The AHA, USDA.gov, ScienceDirect.com, and Nature.org to inform and guide the Introduction, Literature Review, Theoretical Framework, Discussion, and Future Research portions of this thesis. A full list of the cited works is available in the bibliography.

Regarding Methods, two individuals were selected using opportunity sampling to participate in a single, one-on-one interview. A sample recruitment script is available in Appendix I. Participants also completed a baseline questionnaire (30-39 questions) before their scheduled interview to confirm eligibility and enable a more conversational interview. The complete baseline questionnaire is available in Appendix II. The interviews were conducted via zoom in private homes. All interviews were recorded with the permission of the participant. The introductory script and consent form that was prior to the formal start of interview are listed in Appendix III and Appendix IV, respectively. The identity of each participant was kept confidential by removing all personal identifiers from the data as soon as possible (before

analysis, committee review, and publication). In addition, all participants received a consent form before beginning the interview. Researchers followed up with both interviewees to review satisfaction with their transcribed interviews. The interview was designed to be 1.5 to 2 hours long, and consisted of approximately 93-100 multiple choice, free response, and yes/no questions. For specificity, questions about exercise or the approximate intake of different food items had 5+ answer choices representing a range of options.

In the first part of the interview, each participant answered a mostly identical set of questions regarding health status, smoking status, disability, family health status, healthcare access, health seeking-behaviors, exercise, and various other factors affecting heart disease vulnerability. In addition, the interview inquired about their specific eating habits, including the number of meals a day, snacking, typical meal composition, frequency of different UPF consumption, and the top 5 regularly ingested UPFs. To ensure both participants were aware of the NOVA classifications, during the interview they were emailed a handout defining the four levels of food processing: unprocessed, minimally processed, processed, and ultra-processed. The handout can be found in Appendix V. Participants were asked about prior eating habits before diagnosis(es) and if/how their habits have changed since their diagnosis(es). In the second part of the interview, participants were given the space to talk about childhood family dynamics and eating patterns to establish lifelong trends and modifications. In this part, participants were also asked questions about stress, coping mechanisms, and eating as a means of coping with chronic stress.

The data acquired from the demographic questionnaire and the interviews were used to construct the story of each participant, substantiate generalizations about Black women's experiences, outline major and unique themes, and compare to available National Health and

Nutrition Examination Survey (NHANES) databases and data generated from other pertinent studies (Kalinowski et al., 2019). A key usage of interview data was to identify factors affecting Black women's food choice and UPF consumption.

3.2: Sample

There were 4 specific eligibility requirements for participants of this study. Participants were required to be (1) Black, (2) cis-gendered women, (3) 40 years or older, and (4) diagnosed with heart disease.

The sample included two self-identified Black women in their late 50s who resided in different regions of California. Coincidentally, the sample did not include African immigrants or children of African immigrants; retrospectively this was ideal because a more diverse sample may have introduced additional confounders (i.e. UPF consumption and general eating patterns affected by major cultural differences). Although increasing numbers of young Black women are being diagnosed with heart disease (Kalinowski et al., 2019), most published research demonstrates a positive correlation with heart disease and age. For example, a recent study conducted by the American College of Cardiology found Black women "ages 20-39 years...had an average systolic blood pressure of 122 mmHg—higher than the 120 mmHg considered normal… [and] systolic blood pressures worsened in older age groups, where middle-aged and older women had an average systolic blood pressure of nearly 133 and 142, respectively" (Napoli, 2021). Considering hypertension affects vast numbers of Black women and is a disparate risk factor for heart disease (Braun et al. 2016), recruiting older participants for this thesis was an appropriate approach. Moreover, older participants allowed researchers to adopt a life course approach when analyzing the data.

Although the initial aim was for a sample of 3-5 women located in the Los Angeles area, the limitations imposed by the COVID-19 pandemic reduced the sample size and altered the geographic eligibility. Ultimately, researchers opted to interview a participant from Central California in addition to a participant from Los Angeles.

3.3: Recruitment

Participants were recruited via email after potential interest was established through mutual acquaintances. A sample recruitment email is included in Appendix I.

3.4: Incentives

Participants received a $25-dollar amazon gift card for their participation in the study. They were also offered future access to the published study. Both participants expressed interest in contributing to the project in hopes that it will support policies and future research that address heart health disparities.

3.5: Data Collection

After receiving email confirmation of interest from each participant, researchers sent out a link to complete the demographic baseline questionnaire and scheduled a time for the one-on-one, virtual interview. The details of both the questionnaire and interview, including structure, purpose, and mode of administration, are provided in sections 3.5.1 and 3.5.2. Interviews took place after the participants completed the questionnaire. Throughout the data acquisition process, researchers continued to review the new relevant literature and updated the questionnaire and interview to reflect new findings.

3.5.1: Demographic Baseline Questionnaire

The demographic baseline questionnaire (Appendix II) was self-administered via the Google Forms online interface 2-3 days prior to the one-on-one interview. The purpose of the

questionnaire was to gather basic information from participants such as age, race, ethnicity, marriage status, city of birth, childhood residence type, childhood family unit, childhood parent income, parental education, parental occupation, current zip code, current residence type, education, employment, children, dependents, and income. Researchers opted to separate these questions from the interview to facilitate a more conversational tone for the duration of the interview. The questionnaire responses were later utilized to construct each participant's background story and inform the researcher throughout their in-depth analysis of the interview responses.

The demographic questionnaire contained 30-39 questions, the number of questions dependent on the participant's answers, and was designed to take 15-25 minutes to complete. The questions were presented as a mix of multiple choice and short response types. The participants were advised to do their best to answer each question to its completion. At the beginning of the questionnaire, participants were provided with multiple contact emails in case they experienced technical difficulties or wished to express concerns during or after the questionnaire. The complete list of questionnaire questions is listed in Appendix II.

3.5.2: Interview

An approximate schedule of the interviews is listed in Appendix VI. Overall, it consisted of approximately 93-100 multiple choice, free response, and yes/no questions to which the interviewees were encouraged to answer to the best of their abilities while taking time to expand upon anything they wished. The answer choices for the food frequency questionnaire (questions 57-78) are included in Appendix VII. Throughout the interview and at the close of each section, interviewees were given the opportunity to request clarification if needed. Despite the extensive number and variety of question types, the tone of both interviews was overall conversational,

easy-going, and free flowing. The purpose of a one-on-one interview format was to harness the power of the qualitative to tell a story about each woman and support broad generalizations about Black women's experiences. The following list includes the subtopics topics discussed in Part 1 of the interview: Health Status, Smoking Status, Disability, Family Health Status, Healthcare Access, Healthcare Seeking Behaviors, Exercise and Activity, Eating Habits, Food Financials and Budgeting, UPF and Ultra-Processed Beverage Frequency Questionnaire, and Assessment of UPF Awareness. The following list includes the subtopics topics discussed in Part 2 of the interview: Childhood, Food Preference Development, Routine, and Stress Coping Mechanisms. Due to the conversational nature of the interview, many other topics were discussed impromptu. Several questions from Part 1 were adapted from the NHANES 2020 Questionnaire Behavioral Risk Factor Surveillance System (BRFSS), which is the world's largest, on-going telephone health survey system tracking health conditions and risk behaviors among adults in the United States and territories (Centers for Disease Control and Prevention, 2021). The full list of questions for both parts is available in Appendix VIII.

3.6: Ethics

To ensure that the researchers followed ethical guidelines, it was necessary to obtain IRB exemption. Both participants gave their oral consent to participate in the questionnaire and interview. Names and personal identifying factors were removed from data. To maintain the confidentiality of participants' information, only research members had access to the password protected data.

3.7: Budget

Interviews took place via zoom, which eliminated the cost of refreshments and travel. At the close of the study, each interviewee was sent a $25-dollar Amazon gift card for their participation. Thus, the total cost was $50 (See Appendix IX).

Chapter 4: Results and Analysis

The following results subsections employ the life course approach to describe the information gathered from the baseline questionnaire and the major themes and content discussed in the interviews. Data is provided in the forms of tables, figures, direct quotes, analysis from the interviewer, and paraphrasing to assist in constructing the story of each participant and support generalizations pertaining to Black women. Sections 4.1 and 4.2 focus on participants individually, and section 4.3 identifies common themes and findings between the questionnaires and interviews. Both participants' answers to the baseline survey are provided in Figure 3 and Appendix X. Due to the extensive length of the interviews, researchers opted to include only key portions of the transcribed interview that were not easily converted to table or figure form. However, the full list of interview questions is listed in Appendix VIII.

Researchers hoped to create an environment of openness and minimal judgment when designing the interview. Although not included in the final transcript of the interviews, there was an air of lightheartedness for the duration of the interviews. In the end, both participants expressed their comfort in talking about themselves and sharing their unique stories. This laid-

back environment allowed for the participants to convey their experiences with limited inhibition[3].

The following list includes the major topics discussed in Part 1 of the interview: Health Status, Smoking Status, Disability, Family Health Status, Healthcare Access, Healthcare Seeking Behaviors, Exercise and Activity, Eating Habits, Food Financials and Budgeting, UPF and Ultra-Processed Beverage Frequency Questionnaire, and Assessment of UPF Awareness. The following list includes the major topics discussed in Part 2 of the interview: Childhood, Food Preference Development, Routine, and Stress Coping Mechanisms. Throughout the interviews, researchers opted to skip some questions if they had already been addressed in a prior section or were otherwise deemed redundant. Overall, 18 questions were skipped in the first interview with Rosalind, and 15 were skipped in the second interview with Elora. Question 9 of Part 2 regarding daily routine was skipped during both interviews to avoid redundancy.

4.1: Rosalind

Rosalind is a 59-year-old Black woman born in Phoenix, Arizona and raised in an urban neighborhood located in central California (See Table 1 and Figure 1 for graphic representations of Rosalind's life course). Rosalind was mostly raised by her mother and older sister and is the youngest of 14 children. Although not all her siblings lived together during her lifetime, Rosalind still grew up in a home overflowing with family where she enjoyed her mother's home-cooked,

[3] Both interviews were transcribed in full, and then edited to ensure clarity and protection of identity. The names of the interviewees are aliases (Rosalind and Elora aka E.K.). Afterwards, the interview transcriptions were reviewed by the respective interviewee before researchers utilized them further. Throughout the transcription process, all efforts were made to maintain the intention behind the original transcription of the interviews. Interviewees were encouraged to suggest further edits, content removal, or reverting to original transcription.

soul food just about every day. Rosalind's mother worked full-time as a maid and returned home every day after school to prepare food for her family. Rosalind recalled fondly that her mother poured her "soul" into her soul food, cooking things that would fill people up, such as cornbread and gravy. Even though Rosalind's childhood meals were concentrated in salt, fat, and sugar, Rosalind was always well fed. Food was the means her mother used to take care of those around her, at home, work, and in the community; every major event in their lives was centered around food. Even though her mother worked every day, Rosalind still grew up impoverished. For most of her childhood, the annual income of her household was less than $25,000. Out of necessity, she was taught to eat everything on her plate and let nothing go to waste.

Rosalind's mother relied on government welfare to subsidize the cost of living and provide for her children, which is why Rosalind spent her childhood in a separate home from her father. To be eligible for welfare assistance, Rosalind's mother could not allow Rosalind's father to live in the home with them. If his belongings were detected by a social worker during a surprise visit, such as clothing, shoes, or trinkets, Rosalind's family's welfare assistance would be abruptly cut off. Consequently, Rosalind was personally affected by the historically racist aspect of government welfare programs, which directly endorsed the destruction of the Black family unit.

Of her 11 older sisters and 2 older brothers, Rosalind is the only one left alive. The Friday before her interview, Rosalind's last sister passed away. Like Rosalind's mother and other siblings, Rosalind's late sister died from heart disease and various comorbidities. Rosalind has been grieving the loss of her family members consistently throughout her life, particularly since her mother passed away for whom she had been the long-term primary caregiver. Rosalind was very close with her mother and shared a home with her for over 12 years in her adulthood. Thus,

Rosalind was devastated by her death, and her life was disrupted in several ways. Dealing with the trauma of loss has led Rosalind to become increasingly reliant on UPFs and fast foods to deal with her emotions, particularly during the COVID-19 pandemic.

Rosalind has pinpointed the causes of her recent weight gain to be stress, health conditions, and lifestyle. Rosalind is a highly educated woman, having earned an associate's, bachelors, and master's degree from accredited universities. Currently, she is pursuing her Ph.D. at the same local university where she acquired her masters. Due to her ongoing educational pursuits, Rosalind lives in university housing and has lived in various university housing units for the past 10 years. As a graduate student, Rosalind is required to work prolonged hours at the computer writing papers and completing assignments. At first glance, one might assume Rosalind's source of stress is her academic career; however, Rosalind believes that her stress comes from constantly having to take care of everyone around her. For example, without regard for her emotional and mental state, Rosalind's family has enlisted her to coordinate her late sister's funeral arrangements down to the small details. Rosalind described herself as the involuntary "matriarch" of the family; she is now responsible for her daughter and husband and was responsible for her late mother and siblings before their passing. Although she did not ask for this title or responsibility, Rosalind now feels an obligation to take them on. If she does not, who else will?

Given that Rosalind was born with an under-formed heart, she has battled with heart conditions her entire life. Over the years, her heart health has continued to worsen, eventually suffering from a heart attack, stroke, and other comorbidities. Although body mass index (BMI) is historically racist and rejected by many progressives (Justin and Jette, 2021), this was the most efficient way to determine body fat percentage given the virtual format of the interview and

complications associated with measuring waist circumference or another methodology. Considering Rosalind's height and weight (5”7 ½ inches and 345 pounds), her BMI is equal to 53.24, which is far above the obesity threshold for women of all races. Rosalind recognizes that her health and life are in jeopardy because of her obesity; however, she has yet to make the drastic changes in diet and physical activity that are necessary to lose weight and improve her overall health. She is ready to start focusing on herself, but only after she has taken care of the funeral arrangements. This seems to be a repeating theme in Rosalind’s life: putting aside her personal needs for the sake of the people around her.

While in college, Rosalind met and married her husband of 4 years. Rosalind’s husband has been supportive of her academic career throughout the duration of their marriage, and respects that she must spend extended amounts of time working at her computer. Although she has been obese since her late twenties, only in the last 10 years has Rosalind’s high body fat percentage become a major concern of her doctor’s. In the 6 years since she began dating her now husband, Rosalind has put on a significant amount of weight. In addition to the health risks associated with morbid obesity, her weight has begun to affect her self-esteem and intimate marital life. The following is a quote from Rosalind interview:

> **My self-esteem and the emotional part of it, I think it's even more so or equal to my physical part that's in jeopardy… even in my sexual part. We have a sex like 3 times a week just to make him feel better. But I don't feel sensual like I did before. And it's not that I have a problem with my weight. I think I'm a very outspoken, open, and transparent person because it is what it is. But with him, it's that I want to be more sensual. We used to have sex a lot more than that, even a couple of times in the daytime. They say ‘like rabbits!’**
>
> **Lately, I put *that* off, because my body is not the way I want it to be. It's even affecting my marital life, and I don't want that…. Since we've been together for 6 years and married for 4, I gained about 80 pounds in 6 years, and 50 pounds in the last 2. That's not good, because he didn't sign up for**

that. He accepts me. I can't read his mind, but based on what he says, and the way he acts. He's like "Okay, you know, I want you for you. And I want you to be happy." And he'll say "Well, Sweetheart, get up and let's walk over here." But I'm in so much tremendous pain, even just walking. My feet swell up so bad that I can hardly find a shoe.

Rosalind's only substantial physical activity comes from sexual intercourse, which has dwindled as of late for multiple reasons including obesity and health conditions. Rosalind is no longer able to fully partake in sexual intimacy with her partner, in terms of frequency and enjoyment. The rate of sexual activity has reduced significantly from multiple times a day to just 3 times a week, which she mainly partakes in for the sake of her husband. Rosalind worries that her husband is having to deal with a version of herself that he did not intend to marry, and that it may cause him to seek romantic partnership elsewhere. Rosalind's newly gained weight makes it even more difficult to take part in even moderate-level activity without pain and swelling, such as walking around her campus. This is very problematic, considering that physical activity is necessary for weight loss and improving her health. And thus, Rosalind finds herself in multiple cycles that prevent her from prioritizing herself and improving her health condition.

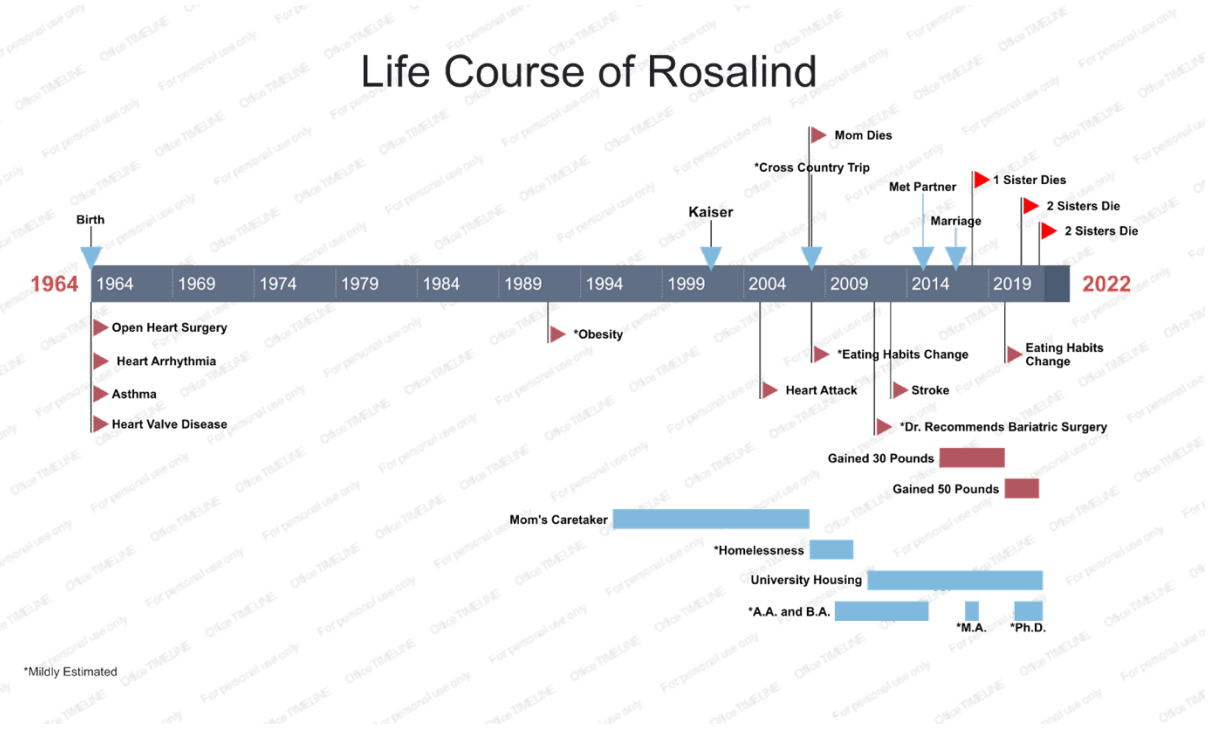
Table 1: Diseases and Conditions - Rosalind (Appendix XI)

Disease/Condition - Rosalind
Asthma
Debilitating Pain
Feet Swelling
Fibroid Tumors (Before Complete Hysterectomy)
Heart Arrhythmia
Heart Attack
High Blood Pressure (non-chronic)
Large Heart
Obesity
Osteoarthritis in the Knee
Overall Poor Mental Health
Overall Poor Physical Health
Plantar Fasciitis
Rheumatoid Arthritis in Right Shoulder
Sleep Apnea
Stress
Stroke → Overall Weakness

Weak Heart

Description of Table 1: Rosalind reported being diagnosed with various health conditions, chronic diseases, and disabilities throughout her lifetime, beginning with the day she was born with a large and weak heart. In addition to the heart conditions she was born with, the diseases that qualified her to participate in this study were heart arrhythmia and heart attack. There were several other diet related NCDs that researchers also considered such as asthma, feet swelling, repeated occasions of high blood pressure, obesity, and arthritis. This table includes the full, alphabetized list of every disease and condition Rosalind self-reported during her interview. Despite her numerous health conditions, Rosalind has never been recommended to take any medications outside of an occasional Lasix prescription to reduce water retention in her legs.

Figure 1: Life Course of Rosalind (Appendix XII)



Description of Figure 1: The bright red flags indicate traumatic life events impacting mental health. The maroon flags indicate illness and major health related events. The blue triangles and bars indicate other major life events. For a larger image of Figure 1, see Appendix XII.

Rosalind was born in 1964 with an enlarged heart, which required her to undergo open heart surgery immediately following her birth. At the same time, she was also diagnosed with heart arrhythmia and asthma. In the late 1980s, Rosalind was diagnosed with obesity for the first time while she was in her late twenties. In 1996, Rosalind's mother moved in with her and she became her primary caregiver for the next 12 years until she passed away in 2008. While caring for her mother, Rosalind became a member of the Kaiser Permanente Insurance network in approximately 2002 and continued to be a member to this day. In 2005, Rosalind suffered a heart attack, and in 2008, she decided to drive across the country to visit her daughter in college so that they may grieve her mother's death together. The trip marked a major change in Rosalind's eating patterns, as she began to eat more fast foods and UPFs while on the road, soon developing a taste preference for them. Furthermore, her daughter was pregnant and began to influence her eating habits as she spent time with her. After returning to California, Rosalind found that the home she shared with her mother was no longer available to her, and for the next two years she experienced homelessness. During this time, her eating habits shifted more towards fast food and UPFs out of necessity. While she was homeless, Rosalind earned her associates degree at a local community college. Upon graduating, she moved into the university housing at the university where she would earn her bachelor's and master's degree. In 2012, her doctor recommended bariatric surgery and expressed serious concern about her weight and health, to which she refused. The next year, Rosalind had a stroke. In the year 2017, Rosalind began dating the man whom she would later marry. Since Rosalind began dating her partner, she has gained 80 pounds, 50 of which were gained during the COVID-19 pandemic. In the past 4 years, Rosalind has lost 5 sisters: 1 in 2018, 2 in 2021, and 2 in 2022. Therefore, since 2018, Rosalind has not had a break from grieving her siblings. As a result, Rosalind's eating patterns became more sporadic, marked

by long periods of accidental fasting, followed by ultra-processed snacks and meals. Rosalind entered her current doctorate program in 2020.

Key Excerpts from the Interview (with Analysis from the Interviewer):

★ Indicates Interviewer Analysis

Part 1 - Healthcare Seeking Behaviors

Do you feel comfortable with your current healthcare services?

Rosalind: I feel comfortable with Kaiser. I like it, and I like my doctor because my doctor is Dr. Gothabay, and he is the director of geriatrics. I like that because he specializes in the more mature people, even with all these chronic illnesses and diseases. And he's a straight shooter. I've always tried to follow his orders, but it's just stress… I'm an emotional eater. And then sometimes I forget to eat. That's one of the things: I forget. As my health care provider, I love Kaiser. With its wraparound services, I've never had a problem. I just never followed, but I've never had a problem.

★ Rosalind eats to comfort herself and she eats in response to chronic stress. Rosalind's chronic stress contributes to a gap between her knowledge of healthy eating and application of said knowledge. Her circumstances make it difficult for her to follow instructions from her doctor.

Would you say that they are the best healthcare services that you've received in your life?

Rosalind: Yeah, most definitely, yes. Not the nutritionist, though. They have a horrible nutritionist. They need to get rid of her. Now, I told them that too because she's as big as I am. And that's not saying that she couldn't be effective in her job. Where she's not effective was that she had a big bowl of peanut M&Ms on her desk and she's eating while she's talking to me about healthy choices. Really! And so I stopped because I said "I want M&Ms!" I'm going to her for healthy choices, and she's sitting there tossing them back. And I think that is the culture where we find some people, not all, African Americans, feel like they can get more comfortable. The health practitioners feel like they can get more comfortable with your care. And so for a nutritionist to just sit and eat M&Ms candy, which is horrible, and you're coming here. And she really felt comfortable with me because we were laughing and talking, and she offered them to me. And that's not good.

★ Although it is ideal to have a healthcare provider that is culturally relatable, comfortability amongst Black women can cause other problems with healthcare. A good solution to the lack of Black representation in healthcare is not to only hire more Black practitioners and healthcare professionals. Each healthcare professional must be well-trained and committed to altering their own lifestyles so that they can better advise and influence their patients.

Continued from previous question:

Rosalind: Also, I looked at their profile on Kaiser, and she didn't say anything in her profile about her wanting to be a nutritionist. She just said, "I am a nutritionist." Then she started talking about what she wanted to do. She talked about her hobbies, and how she wanted to be something other than a nutritionist. And I told them "That's not good for you guys to list her like that. Why is she a nutritionist and she doesn't list that?" She said she wanted to be a veterinarian and she started talking about dogs and animals. I said, "Oh, my goodness! This is showing you where her mindset is, so you're not gonna get the best out of her." Now, she might interview very, very well and she might have those skills. But this is secondary to the position she's in, and I think that that's where we fail in holding our people accountable. And saying "Hey, you have failed me as a healthcare provider." We just take it, and we take the incompetences, as well. And that can lead to our high mortality rate, as well. If you can't tell me "Stop eating", or give me some plans or strategies on how I can improve my health by eating, it's increasing my chances of dying. It's just that simple. So, I don't go to her.

★ Rosalind is acutely aware of the subpar treatment she received from the Black nutritionist at Kaiser. She is active in voicing her dissatisfaction and gives strong support for how and why the nutritionist's behavior was unacceptable. There is a lack of accountability because diverse initiatives value representation over quality of work

sometimes. This trade-off is detrimental for women like Rosalind. For example, Rosalind has not consulted with another nutritionist since her experience with this specific nutritionist, despite her desperate need for nutritional advice and dietary alterations. One bad experience was enough to make her feel as though this was counter-intuitive and not a valuable use of her time.

Rosalind: It might be just regional too, because I don't know if that's how it is at all the Kaisers. I just know about Northern Cal in my city. And she's been there for years. I told my doctor, and he said "What?!" But she's still there. He couldn't do anything about it. I told him "Don't send me there because I'm not going." No, it's a waste of time. And she hasn't even followed up. She hasn't followed up and asked "Well, why haven't you come back?" Nothing.

- ★ Despite actively speaking out against her nutritionists' incompetences, nothing has changed. Thus, Rosalind refuses to go back to the available nutritionist in her city.

Part 1 - Eating Habits

47.What about your second meal composition?

Rosalind: Dinner? Well, that's different. I'll fry chicken because my husband loves meat, and he loves gravy. He's from New Orleans. I'll fix like a roast, when I *do* cook, and that's not often. Lately, that's not been often, and I apologize to him. I say "I'm so sorry. I have to cook!" But I'll normally make something fried.

- ★ When Rosalind has time to cook, which is not often, it is usually a fried meal which is reflective of her mother's soul food cooking. Rosalind likes and eats vegetables such as cooked cabbage and fresh salads; however, she doesn't eat enough vegetables and fruits proportionally to offset the effect of UPFs and other unhealthy food options.

50. If you have any existing medical conditions (which you said you did), how have your eating habits changed since your diagnoses?

Rosalind: That's one of the disservices of Kaiser. Instead of pushing bariatric surgery and paying for that, that's included in your medical coverage, they should include that [the weight management class] to where we can afford it. It's like $500 a month or more. It's under them, but you've got to pay for it. So, people die when you can just change that. And if you give more people options and opportunities…

- ★ Rosalind's medical coverage is not optimal for Black women who are obese. The class they offer is a non-invasive method for lowering the risk of heart disease, but the high cost acts as an additional barrier against wellness. This is an instance of economic oppression intersecting with race and gender to render Black women even more vulnerable and at risk.

Continued from previous question:

Rosalind: I just put it in my mind that I know I have to do better, but I was never taught to eat properly. We didn't have that! I'm 14th of 14. My mother had to get food that stretched and and typically that type of food is carbs and starchy foods. You have to get spaghetti, potatoes, and something like that. Beans, which are good, but we had to add something in it. We had to get that. And rice, what are you gonna do with that? Put a little butter and sugar in it, or put a little gravy on it so it will stretch. Gravy went a long way. My mother used to make gravy and a pan of cornbread, and that was our dinner. We didn't have the meat, we had the grease from the meat, so she made gravy out of it. And every now and then you'll find a little bit of meat, but she made a big, thick thing, of cornbread so that it can fill us up with some water or something. Gravy is not good, but that's all we had.

- ★ Rosalind has developed a taste preference from her childhood that impacts her eating habits as a mature adult woman. Even though she knows about healthier eating options now, she still fights her palate's preference for unhealthy foods.

You are not required to take any medications for anything. Is that a choice that you made or is that something that was recommended by your primary doctor?

Rosalind: The things that I have, I didn't need medicine for because I never was prescribed any medicine. The only thing I was prescribed for was if I had a rash or allergy or something like that. Like I said, I don't have chronic high blood pressure and I don't need any high blood pressure pills. I was given a little Lasix sometimes to take the water from my legs and feet. My doctor also wanted to give me potassium, but he said he didn't want me to stay on it because of my heart. For the arthritis and all, he told me "You just gotta walk and get the weight off. So, eat healthier, and if you feel bad, take a Tylenol." But no, I'm not on anything. I guess I don't have any ailments that require a prescription.

- ★ Rosalind's doctor advising her to "eat healthier" is not enough. It's not helping her to make the rapid and wide scale changes that are necessary to improve her health before it worsens. This is the case for many Black women. They need targeted, meaningful, and life-changing care from their practitioners in combination with reduced availability of UPFs and greater access to varied fresh produce.

50a. Do any of your existing medical conditions require a strict diet or elimination of certain foods?

Rosalind: I went from a medium to a triple E wide. I can hardly find a shoe to even get a heel on. Or to walk with my knees. I've got to lose weight to even walk.

- ★ Although Rosalind needs to walk and exercise to improve her health, her medical conditions prevent her from doing so because they cause her so much pain and discomfort. She is somewhat stuck in this predicament.

<u>Part 1 - Food Financials</u>

55. If you could change something about your current food buying habits, what would it be?

Rosalind: The whole point is, if I had a chef… I'm serious! I used to have a maid and I'm gonna get a chef. If you cook it and put it here, I'll eat it. That's the thing. But me fixing it and prepping? Meal prep, Oh my gosh no… And I'm glad because I have a lot of chefs, and I can go there, and the chef has already got it all prepared for me. I put things in my mind to flip it to the good. I tell him "I live, not on a campus, but I live where I have a heated pool, a tennis court, and a movie theater." I name all the good things that I have, and people are like, "Where do you live?" "On campus!" I have access just like it is my house.

- ★ Rosalind is grateful that she will have to purchase a meal plan for the upcoming school year because it will allow her access to more healthy food items because she does not have to prepare the meals. Rosalind maintains a positive outlook on things that are out of her hands. For example, despite the additional cost of a meal plan, she is making the most of her new circumstances.

Continued from previous question:

Rosalind: They have to have healthy options. I think I can do better even with that. My husband said, "I'm not eating over there." And I'm glad because I have a meal plan for myself.

- ★ Had Rosalind's husband wanted to share the meal plan, she might not have seen drastic changes to her eating patterns because they would be influenced by his eating habits. Also, she would have reduced access to food each day because of the fixed number of allotted meals per semester.

56. What do you believe is preventing you from making the changing changes to your current food buying habits, if there are any? If you feel like we've addressed everything, then we can move on.

Rosalind: I think, just making up my mind to stick to it because I already have been equipped with the knowledge. I know exactly how many grams, I know how to read my labels, and I know how to do all of that. Now it's time for the application. That's the whole thing preventing me. Specifically, trying to prioritize myself and say "I'm a priority." I need to include myself in that priority. That's what's preventing me, I'm doing a lot of other people's stuff and putting me last. I was supposed to go for my hair appointment, but I haven't gone there yet. Now, I need to go there because I've been doing everybody's stuff. Making funeral arrangements, I have to do that… but making air travel arrangements for my daughter and finding everybody hotels when they can call themselves? I should let them do that themselves. I'm used to being there for everybody. What's preventing me is not including myself in my priorities, and even setting those priorities. Setting myself up a calendar to see and mark my time. I don't have time management. I don't utilize that skill and I used to teach it, and I just let it go. And it is valuable. So, priority and time management.

- ★ Rosalind recognizes the gap between her knowledge and the application of healthy eating.
- ★ Rosalind feels obligation to others that prevents her from taking care of herself. Although the question was about food buying habits, Rosalind comments on her not being able to prioritize herself because of other people, thus, she has already identified the negative impact of having to assume multiple roles for the benefit of others on her food related behaviors and health.

<u>Part 1 - Ultra Processed Food (UPF) Food and Beverage Frequency Questionnaire</u>

68. Over the last year, how often did you consume instant soups, sauces, and noodles (i.e. ramen noodles) <u>on average</u>?

Rosalind: That's probably hardly ever. I don't like those too much, probably like once a year. My husband does.

- ★ This is one instance that Rosalind's husband does not affect her eating patterns.

70. Overall, in the last year, how often did you consume ultra-processed foods <u>on average</u>?

Rosalind: What are ultra-processed foods?

- ★ Rosalind is unaware of the definition of UPFs.

<u>Part 2 - Childhood</u>

1. Please tell me about your childhood home and what you can remember about the types of food you all would eat regularly?

Rosalind: My mother would cook all the time, and like I said, she stretched the meals… She would make that and it led me to see other people and how they live. We ate a lot of soul food, like real soul food, and it was cooked from the soul, too.

- ★ Rosalind's mother cooked large soul food meals that could feed everyone and keep them feeling full so that everyone would have something to eat.

Rosalind: Growing up, we didn't really go to the store. We had people coming into our neighborhood that sold everything from Tamales to Icees. From the candy lady to the fruits and vegetable guy. Our fruit and vegetable guy was Mr. Dean and we had Mr. Brackenridge. We had a donut man with fresh doughnuts. He lifted his cover and you could smell it. We had an Ice Cream man and Jersey Crown with the milk, Juice, and ice cream being delivered to us, and we were happy.

- ★ Rosalind reminisces about the local food vendors that would come to the neighborhood with everything they needed. This made accessing different types of food more convenient and coming to you, rather than going to food.
- ★ happiness with childhood circumstances and food, contrasts with Int.2 who had to take on cooking responsibilities very young.

Rosalind: My mother cooked everything, so we really didn't get all your highly processed things like sugary cereal.

- ★ Rosalind's mothers cooked most meals, which is a sharp contrast to her life as an adult. Perhaps, this is because Rosalind is a full-time graduate student and self-employed, whereas her mother was a domestic worker that was comfortable in the kitchen setting.

Rosalind: We ate all of the bottom feeding foods like chitlins, and hog maws, and all the intestines. I didn't like it and I still don't to this day, but they did.

- ★ Unlike her siblings and mother, Rosalind has always disliked some foods, and still does. In this way, childhood aversions continue into adulthood.

Rosalind: That's how it was in our household, and we surrounded everything around food: the holidays included food, the deaths included food, and the birthdays included food. Everything was sort of like conversations, but we didn't have a table that we sat down at. We had TV trays. The kids sat on the floor, or we put the food in our lap. Even to this day I'm used to holding a plate and eating. I think if I had the food on the table and sat there, and I watched it, that would be better.

- ★ Rosalind's childhood home created a culture of unhealthy eating that has followed her into adulthood and late adulthood.

Are you able to eat in different environments, or is it "I'm only eating at my desk" or "I'm only eating close to my bed" or "I'm only eating at the table"? Or do you not discriminate?

Rosalind: I don't discriminate, No. It doesn't matter. I'm conscious because my husband likes to eat at the table. We used to because he liked that conversation, but I got a deadline! Or I'll cook his plate and let him go to the table. I just realized the other day, when I looked over it, he was eating by himself. That's why I said I have to change some things and start turning it back around because I don't want him to feel lonesome. And I don't want him to feel the need to find someone else to eat with because he's eating by himself. And he was like, "No, that's okay, sweetheart. I'm okay." But after a while, you're not.

- ★ Rosalind's ever-present responsibilities prevent her from spending time with her husband. She worries that this is negatively impacting her romantic and intimate relationship with her partner, and that one day, he will grow exhausted of it.

1h. How have your eating habits changed overall from childhood to adulthood, and how have they remained the same? Do you still see

influences in your current diet, or is it completely different now?
Rosalind: I still see influences because I have the mindset that I have to eat at all. But I see some change because my mother cooked every day, and I don't. She cooked from scratch and tried to cook as fresh as possible, and I haven't. And we don't have those types of food trucks coming around. We don't have a vegetable guy coming and giving you credit… my mother had a credit with the vegetable man. And then, the food tasted better because the environment wasn't polluted as it is now. You have to use so many different chemicals to get a fresh strawberry, and when you get it it's messed up because it has been sprayed with pesticides and different things. Food doesn't last as long so you find yourself buying less so you won't waste and eating faster because if you let them just sit in your refrigerator… like I bought cucumbers and I came back and they were already bad. It didn't even last a week.

- ⋆ Rosalind notices the changes from her childhood quite acutely: she doesn't cook every day, she doesn't cook from scratch often, she doesn't purchase her food from local food vendors, pollution has caused foods to not taste as good and last as long. Her environment plays into every way her food patterns have changed.

1i. Is there a specific life event that you attribute to your major change in eating habits?
Rosalind: Then I noticed when I got back, I didn't have a place to stay. I started making up my own little dinners or I'd stop at Taco Bell, or Mcdonalds, and it was cheap. My food habits and my choices declined. My choice declined from my mother and my food intake increased, and not in a good way, specifically fast food.

- ⋆ After Rosalind experiences the trauma of losing her mother who was also her best friend, she began to eat at fast food places such as Taco Bell. Also, in response to her mother's death, Rosalind drove across the country to see her daughter and started picking up the habit of eating fast food. Upon returning to California, Rosalind became homeless for two years and had little choice regarding what and when she ate. Thus, her mother's death had a rippling effect in terms of increasing her consumption of UPFs and fast foods. To this day, she and her husband eat Taco Bell for dinner sometimes when she is busy all day working or forgets to eat. Overall, the researcher observed a major decline in eating habits in response to the trauma of loss and housing insecurity.

You said that your mom was a maid, but she also cooked for you guys every single day. How? What was her schedule like? Would she have to be away from the house for a certain number of hours working?
Rosalind: Yeah, my mother would work in the mornings. She'd get us up, get us off to school, and then go to work. She'd come back a little bit after we got out of school, and then she'd be there and cook a meal right there…. She had a soft voice, was never rude, never cursed, loved the Lord, and loved to feed people. Her whole specialty was food!

- ★ Food was Rosalind's mother's love language. In the beginning of the interview, Rosalind states that every major family event was centered around food. Therefore, food had great importance in Rosalind's family.

4.2: Elora

Elora is a 58-year-old Black woman raised in a suburban neighborhood in Los Angeles, CA (See Table 2, Table 3, and Figure 2 for graphic representations of Elora's life course). Elora's parents divorced at the tender age of 9, and thus, she was raised by her mother and father separately into her teens. Elora is the eldest of 2 sisters and 2 brothers, the youngest of which is the fruit of her mother's second marriage. Elora's mother worked full-time as a dietician at the

local country hospital and would often bring home leftovers from the kitchen there to prepare meals for her children. Elora's mother cooked meals for them as a duty and would often throw together the scraps and leftovers from the hospital together to create some sort of meal that would sustain them for the next few hours. Elora recalled with disdain that her mother's staple meals were hamburger helper and pork n' beans and weenies. The following quote is from Elora's interview:

> **We call it slave food. Seriously. She would cook pork n' beans and wieners and she would cook hamburger helper. Sometimes, she would cook Swiss steak with rice and gravy. That's about it. I taught her how to make Jambalaya and how to make dirty rice and stuff like that. I taught her how to do that because I learned it from my grandmother. She would make Mother Burgers. But it wasn't… food was a duty. And it wasn't the joy of eating. It was a duty. "These are my kids, and they need to eat something. I'll make some hamburger helper." And there's something else… She would make cornbread a lot. She would make beans. But we called it slave food. All she ever cooked was slave food. My kids always laugh and say that my mom is a professional slave. If you ask them, "What did she used to cook?" They gon' look at each other and laugh and say, "Pork n' Beans and weenies.**
>
> **I don't think there was enough food to go around. We were very skinny kids. We were very, very skinny. I mean, I didn't pick up weight until after my assault. I was skinny. We were very skinny kids. I graduated from elementary school, probably weighing about 60 pounds.**

Elora began to take on responsibilities around the house at a very young age, to help support her mother. Elora began to learn to cook meals from her grandmother, who had Jamaican ancestry and infused the rich culture into her food. Elora cared for her younger siblings almost as a second mother and would often limit her portion size so that her growing brothers would have enough to eat. On the weekends that she would spend at her father's house, they would usually eat fast food. Even though her mother was employed full-time, Rosalind grew up poor. For most of her childhood, the annual income of her mother's household was less than $35,000. She, too, was taught to eat everything on her plate and let nothing go to waste. When Elora began working

at a local supermarket and hanging out with friends as a high school senior, she discovered the great variety of foods available to her and rapidly began gaining height and weight. She would take on her newly acquired taste preference for more diverse foods into adulthood.

Elora is a grandmother and mother of 3 children. Although she is now divorced, her children mostly grew up in a two-parent household. In 2004, Elora experienced a sexual assault that would impact her life in a great number of ways. Because the assault took place at a hospital by a medical professional while she was partially incapacitated, Elora has trouble interacting with new medical professionals. Despite the outdated care she receives from her current doctor, Elora continues to see her because she is familiar and trustworthy. Elora's mental health has suffered extensively from her assault, in addition to the economic oppression she feels the weight of everyday. For example, Elora wants to buy healthier, fresh, and diverse foods, but the cost is too high to be sustainable. She looks forward to the day a better, more affordable grocery store will open in her neighborhood.

Since 2016, Elora has taken on the role of caregiver for her granddaughter, and in the last year, she has also begun to homeschool her during the week. Elora did not ask for this added responsibility, rather, she had planned to focus on herself now that her youngest son had successfully graduated from college. Caring for and teaching her granddaughter takes up such a significant amount of time in Elora's life that she often is too tired to cook dinner for herself when she gets home. Before the COVID-19 pandemic, she would go on walks and play at the park with her granddaughter and exercise regularly at the gym. However, now she spends the majority of her time sitting or reclining indoors to limit exposure to others. Elora also became the full-time caregiver of her mother after she suffered a stroke in 2019. Between her granddaughter and mother, Elora struggles to find time for herself, let alone consider reentering the dating

world. Elora wants to change her life and begin prioritizing herself; however, her familial obligations seem to always to precedence.

Elora has been diagnosed with many chronic diseases and health conditions, for which she takes more than 20 medications each day. Since her stroke in 1997, Elora's overall health has continued to worsen, eventually developing high blood pressure, cardiomyopathy, diabetes, and other comorbidities. Considering Elora's height and weight (6"0 ¾ inches and 233 pounds), her BMI is equal to 30.95, which is just above the obesity threshold. Elora recognizes that her health and life are in jeopardy because of her obesity; however, she has yet to make the drastic changes in diet and physical activity that are necessary to lose weight and improve her overall health. She is ready to start focusing on herself but struggles to find the time between caring for her granddaughter and mother. Like Rosalind, Elora often puts aside her personal needs for the sake of the people around her.

Elora believes the causes of her declining health to be trauma of assault, chronic stress, existing health conditions, and economic oppression. These factors have led Rosalind to become increasingly reliant on UPFs, ready-made frozen meals, and fast foods, particularly during the COVID-19 pandemic. Furthermore, poor mental health is preventing her from taking the necessary steps to improve the quality of her healthcare, which undoubtedly contributes to Elora's worsening health. Elora has earned a bachelor's degree, master's degree, and J.D. from accredited universities. Elora has also begun to take on the role of involuntary "matriarch" of her family and continues to raise her granddaughter well beyond her desired child rearing years. Although she did not ask for this title or added responsibility, Elora now feels an obligation to take them on.

Table 2: Disease and Conditions – Elora (Appendix XIII)

Disease/Condition - Elora

Anemia
Anxiety
Asthma
Cardiomyopathy
Chronic Obstructive Pulmonary Disease
Depression
Gastroesophageal Reflux Disease
Heart Arrhythmia
High Blood Pressure
High Cholesterol
Injured Right Shoulder → Limited Mobility
Obesity
Overall Poor Physical Health
Pre-diabetes, Diabetes 1, Diabetes 2, Gestational Diabetes
PTSD
Sickle-cell Anemia
Stress
Stroke

Description of Table 2: Elora also reported being diagnosed with various physical and mental health conditions, chronic diseases, and disabilities throughout her lifetime, and provided a list of the 19 or so medications she takes daily (see Table 3). The diseases that qualified her to participate in this study were cardiomyopathy and heart arrhythmia. There were several other diet related NCDs that researchers also considered such as asthma, chronic obstructive pulmonary disease, high blood pressure, high cholesterol, obesity, diabetes I and II, and stroke. This table includes the full, alphabetized list of every disease and condition Elora self-reported during her interview.

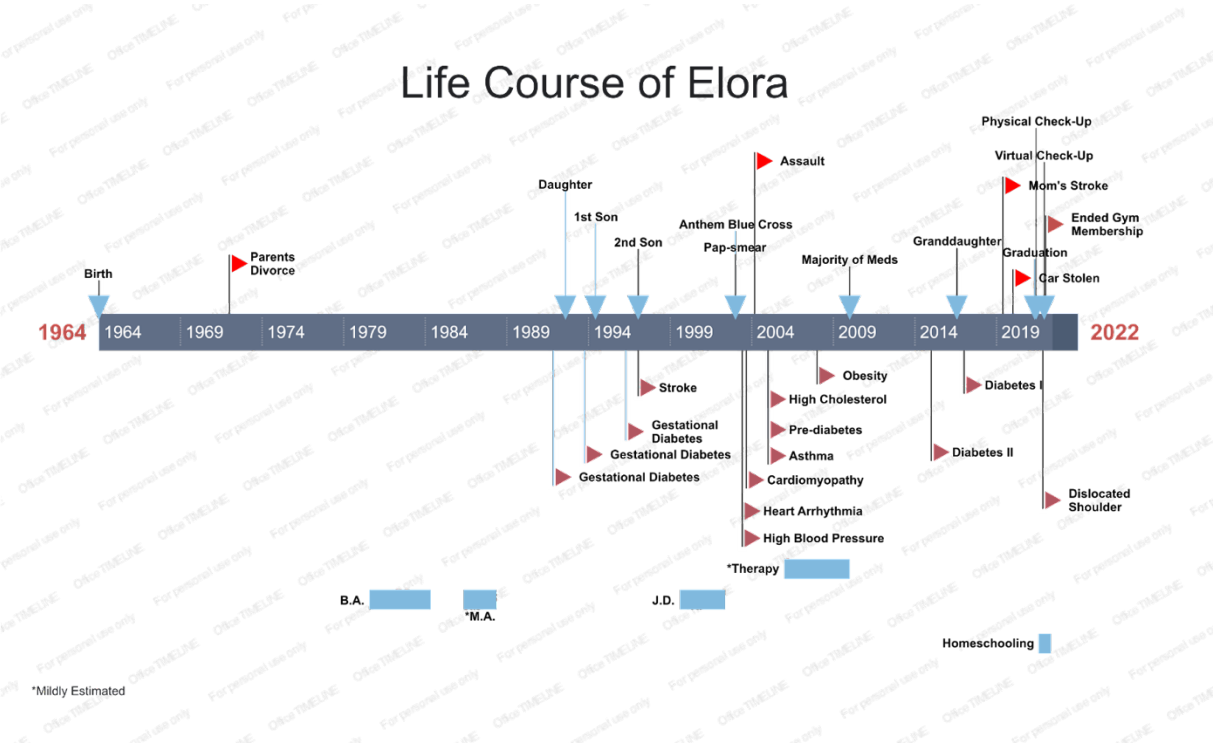
Table 3: Elora's Medications (Appendix XIV)

Medication	*Purpose
Aspirin 80	Heart
Amlodipine	High Blood Pressure
Iron	Blood (Anemia)
Vitamin D	Health Reasons
Furosemide	Taking Water Off the Body
Fluoxetine (Prozac)	Depression
Famotidine	GERD
Glipizide	Diabetes
Hydroxy	Allergies
Losartan	Blood Pressure
Metoprolol	Heart

Potassium (K)	Heart
Simvastatin	Heart and High Blood Pressure
Tradjenta	Blood Sugar (Diabetes)
Basaglar Insulin	Once a Day (Diabetes)
Humulin Insulin	Before Every Meal (Diabetes)
Combivent	Emergency Inhaler (Asthma)
Albuterol	Regular Basis (Asthma)
Albuterol sulfate liquid	Breathing Treatments (Asthma)

Description of Table 3: This is the almost complete alphabetized list of Elora's medication based on her recollection during the interview. The purpose of each medication is based on Elora's interpretation, thus, there may be some inaccuracy. Researchers opted to include Elora's original purposes because they provide insight into her knowledge and perspective regarding her health. Elora cautioned that she could not remember the names of at least 2 medications, which would expand the list to 21 meds per day.

Figure 2: Life Course of Elora (Appendix XV)



Description of Figure 2: The bright red flags indicate traumatic life events impacting mental health. The maroon flags indicate illness and major health related events. The blue triangles and bars indicate other major life events. For a larger image of Figure 2, see Appendix XV.

Elora was born in 1964 to a two-parent household, however, by the age of 9 her parents had divorced and moved to separate residences. For the rest of her childhood, she spent about half the week with either her mother and stepfather or her biological father. In the 1970s and 1980s, Elora earned her bachelors and master's degrees. In 1992, Elora gave birth to her first child and only daughter. During her first, second, and third pregnancies, Elora was diagnosed with gestational diabetes. In 1994 and 1997, Elora gave birth to her first and second sons. While in labor with her second son, Elora had apparently experienced a stroke, which she found out at her follow up appointment. In the year 2003, Elora converted to Anthem Blue Cross from Kaiser Permanente and had her last appointment for a pap smear because of her looming apprehension about going to the doctor's office. Also, in 2003, Elora was diagnosed with high blood pressure, heart arrhythmia, and cardiomyopathy. One year later, Elora experience a traumatic sexual assault in the hospital setting, which causes severe anxiety and PTSD to this day. In 2005, Elora was diagnosed with high cholesterol, asthma, and prediabetes. Elora began to attend therapy for 4 years to develop anxiety and stress coping mechanisms for the multiple traumas she had encountered in her life. Three years later, Elora was first diagnosed as obese by a doctor, and by 2010, she was already taking many of the medications listed in Table 3. Since the birth of her granddaughter in 2016, Elora has become her caregiver 6 days out of the week. In 2015, Elora was diagnosed with type II diabetes, followed by type I diabetes in 2017. Following her mother's stroke in 2019, Elora has also become her live-in caregiver. In 2020, Elora's car was stolen from her driveway at home, which has caused her to become reliant on the vehicle she shares with her

daughter. When her youngest son graduated from college in May 2021, Elora had hoped she would finally get some time for herself and begin to travel. However, at the request of her daughter, Elora began homeschooling her granddaughter full-time for the 2021 school year. In November of 2021, Elora dislocated her shoulder, which seriously hindered her movements and prohibited her from completing typical tasks with ease. In response to the lifted mask mandate in corporate gyms, Elora canceled her membership to reduce exposure to COVID-19. Elora earned her final degree, a J.D., in 2002.

Key Excerpts from the Interview (with Analysis from the Interviewer):

★ Indicates Interviewer Analysis

Part 1 - Healthcare Seeking Behaviors

What do you think has influenced your perception or your experience with dietitians to where you didn't feel open or very receptive to their advice or the conversation?

Elora: I haven't hit a point where I feel like I need to change my diet. I know that my diet is not good. I know that if I change my diet, I'll have a better quality of life. Because I still have a decent quality of life, in my head somewhere, and it doesn't even make any sense, I think I'm going to be that one percent person that is not going to be affected by a bad diet. That's like sometimes you see somebody that's 100 years old that smokes a cigarette every day and has a glass of gin. Now one person said, "Well, you're not supposed to do this." "But hey, I'm 100 and I'm still here.

Continued from previous question:

Elora: I think I have that mindset. I really do. And I don't know what it would take for me to really change how I eat. I know I'm not eating the best. No, I do know. If I had time to really prepare my food. If I had the ability to buy really good fresh fruits and meats… the finances to be able to really pay for the good stuff. And the time. I'd probably invest that time in me and do it. So that's what it would take. But I don't have the time, I don't really have the money, I don't really have access to transportation. I'm just winging it."

★ Elora has not reached a point where she cannot function semi-normally every day, which quiets the need to make drastic dietary changes. In addition to taste preference and FA, this is one reason Elora's knowledge about the side effects of unhealthy eating does not translate into application

In reference to the dietitian that you spoke to or the nutritionist, what was their ethnicity and race?

Elora: Filipino.

Was it a man or woman?

Elora: Filipino woman. I think she acted bothered. Her attitude kind of set mine because I'm a people person, and I can pick up on vibes. And for me, I felt like she was just checking the boxes. She's like "this is your hand; you should have a hand of rice on your plate. You should have at least a full cup of vegetables or a half cup of vegetables and a protein that's not more than 4 ounces." And I was like "Okay, I understand" and she said "Okay, next." I don't think I really felt valued. I thought to myself "just hurry up and talk because I'm going to do what I'm going to do anyway." There was no rapport established between me and her.

★ There is a racial and ethnic disconnect between Elora and her nutritionist, and a general lack of care displayed during their appointment. Her bad experience has negatively affected Elora's position on seeing a nutritionist in the future.

Are you satisfied with Anthem Blue Cross? Do you feel as though they provide you with the

care that you need? Or what would be a recommendation or something for them?
Elora: I think Anthem Blue Cross actually… this is tough because part of the problem probably is me. I don't want to go to different doctors. Take my doctor for example, Dr. Ginnie. My daughter says all the time "mom, she's too old, and you need to have all your medications re-evaluated. You need to see somebody else to see what you should do." So I really don't think I'm getting the best care for me, but the care that I'm getting is adequate enough. With Anthem Blue Cross, they just kind of like… Like, my referral with Anthem Blue Cross. I went without my insulin for like 60 days and my sugars were in the 600s, and it wasn't until I called them and cursed them out that they finally approved more insulin. I don't like that sometimes I have to fight with them for my referrals. The same token is that I can go just about any place, and they do accept Anthem Blue Cross. When the kids were young, I always told them, and it's still true, I could have a helicopter land in the middle of a football field and take them away, and it's covered. Anthem Blue Cross is going to cover that. So…I don't… I can go just about anywhere, I could go to Cedars. I mean there's a lot of different places I can go that would take it, anywhere across the United States. My second son is still on my insurance, and he's going to be on until he's 27. Even if the government gives him insurance, I'm still going to keep him on. My first son just got off of mine last June. I have coverage, and they cover 100% of my medications. I don't have to pay for them. If I had to pay for my meds, I would have been dead a long time ago. Because I probably take about $2,000 worth of medicine every month. I would have been dead. So, the pluses are that they cover me, even though I have existing conditions. But the downside is that I don't think I'm getting the best coverage. But then, the flip side is that a part of it is my anxiety.
How long have you been with Anthem?
Elora: Since 2003.
Would you say that Anthem has been the best insurance that you've had to this date? Or prior to having Anthem, did you have better, worse, or similar experiences with your other coverages?
Elora: I had Kaiser. Me and the kids were on Kaiser. It was fine. What I like about Kaiser is their uniform record-keeping system. No matter which Kaiser I went to, they had my records. But, Blue Cross has met my needs.. When the kids have had injuries, I've been able to go there. It has met my needs. My basic needs.

- ★ Elora self-blames for the ways that trauma has impacted her life and mental health, such as experiencing crippling anxiety at the prospect of working with a new health care provider. Due to forces acting upon her beyond her control, Elora has had to take on the burden of advocating for her own healthcare needs. She does not trust healthcare professionals and doctors. Maintaining familiarity with her current doctor is more important to her than switching to a doctor with updated methods and treatments that could advance her physical health. In this case, Elora values mental health, peace of mind, and feelings of safety even at the cost of her physical health.
- ★ Elora is unable to use the referrals she fights so ardently for because of time and transportation constraints.
- ★ Elora trades quality of care for increased coverage and affordability. Her choice to stay with Anthem is dictated by her ability to provide coverage to her children, thus, Elora's role as a caregiver negatively affects her health and wellness.
- ★ She liked Kaiser insurance because of the uniform record-keeping system, which removed the need to repeat potentially traumatizing experiences to new healthcare professionals she encountered. Perhaps, because the doctors were well-informed, they could handle her condition with more care.

<u>Part 1 - Eating Habits</u>
50a. Do any of your existing medical conditions require a strict diet or elimination of certain food items, even if you haven't made those changes?
Elora: They do. Diabetes requires that I not eat sugars and starches. And then high cholesterol recommends that I shouldn't be eating fats. I think that that would be it. I shouldn't be eating sugars and I shouldn't be eating fats. And I shouldn't be eating pastas and rice and things like that.
50a. Continued: The majority of your diagnosis came around in the 2000s, but they spanned. You had some that came in 2003, 2004, 2005, and then some later in 2017 and 2015.

Thinking back, you can't think of any simple changes in the way you used to eat in comparison to now? Has it pretty much been even keel throughout that 15 year or so period?

Elora: No major changes.

- ★ Rosalind does not adhere to the dietary restrictions, despite recognizing that she should improve her health. Starches and carbs should be cut out of her diet, as well as the chocolate she eats every evening to relieve stress.

Part 1 - Food Financials

55. If you could change something about your food buying habits, what would it be? Or if you could change a few things about them.

Elora: Besides the price? It's almost now you have to decide: do you want meat, or do you want gas? I find it is cheaper for me to just buy Marie Callender meals. And it's not good to just sit up and eat frozen meals, but if I do, then I can get rice or pasta there. I can get meat in there and something that resembles a vegetable. I'll get a bag of frozen corn, frozen greens, or frozen spinach, as opposed to fresh, because over in the frozen section is more economical. You can get a bag of frozen veggies for like a dollar each one. It's more economical and it's more varied. Just say I pay $3 for a Marie Callender meal. To buy the ingredients for that Marie Callender meal, I have to buy chicken, and then I have to buy soy sauce, and then I have to buy rice, and then I have to buy mixed vegetables. It just costs more. It would be like $12 or $14 to make it fresh, whereas this frozen meal is $3 and not time consuming.

Continued from previous question:

Elora: And whatever you don't eat, you gotta throw it out quickly. And it's like "wait a minute this is a waste! I didn't even get a chance to eat this, and I already got to throw it out." As opposed to if it was frozen.

- ★ There are more varied and affordable ready-made, frozen meals and foods. This dictates Elora's food purchasing behaviors, regardless of the reduced nutritional value in UPFs.

Part 2 - Childhood

1i. Is there a specific life event that you attribute to your change in eating habits?

Elora: No. I don't think so.

- ★ Although Elora doesn't believe specific life events have affected her eating habits, in another portion of the interview she attributes moving out of her childhood household to having caused major increases in variety and quantity of food consumption. Elora states that she grew about 5 inches and started to eat very differently during her senior year of high school after she got a job at a supermarket and began eating more with friends.

Part 2 - Exercise and Activity

7. If you could name three things, what would you say hinders your level and amount of physical activity and exercise?

Int.2: Time is a constraint. My energy level is a constraint. And I couldn't work out with my weights now, the way I want to because of physical limitations.

4.3: Combined Data

Table 4: UPF and Ultra Processed Beverage Frequency Questionnaire (Appendix XVI)

	Rosalind	Elora
57.	1 to 2 times a day.	Twice a week.
58.	Once a day.	Maybe once a week.
59.	4 to 5 times a day.	3 to 4 times a day.
60.	I would just say probably once a week. The ice cream that's every other day cuz I do the no-sugar popsicles, and I don't eat sour cream or anything like that.	I don't eat sour cream… I almost want to say one or 2 times a week.

61.	About 3 to 4 times a day.	Every day. One or 2 times a day. That's not true… I don't always eat candy, but then again, I do like to eat chocolate. One time a day. Yup. That's probably one or 2 times today.
62.	Probably like once a week.	Maybe one or 2 times a month.
63.	Once a week, because I don't like bread like that. I get a sandwich, but it's not like I get that every day. I'll say about once or maybe twice a week.	Yeah, I probably eat bread 2 to 3 times a week.
64.	No, I don't eat those.	Once a month.
65.	Probably once a month. When I go to Chipotle, I get chips with that sometimes, but I'm not a dip person.	Once a month.
66.	That has to be like once a month… not even once a month. I'm not a cereal person.	0. I like banana nut crunch. But how often do I eat it though? That's more of a grain… twice a month.
67.	None.	0.
68.	That's probably hardly ever. I don't like those too much, probably like once a year. My husband does.	Once a week.
69.	Probably 1 to 2 times a day.	Probably, just about every day. At least every day. One to 2 times a day.
70.	Like 1 or 2 times a day.	I get it. The Cheez-It was a really good example. That's again, that's probably 2-3 times a day.
71.	French fries, candy, potato chips, sodas, and Costco hot dogs.	It would be cheese, sour cream, bread, lunch meat, and probably sausage.
72.	Oh, God! 2 to 3 times a day.	Oh, all day long. 3 to 4 cans a day.
73.	Oh, no, I'm not doing that too much. I would say once a week.	No. One, maybe, a month. Does this include lemonade or sweet tea or something like that? Yeah, probably once a month.
74.	None.	None.
75.	I would say once a month, because I like the frozen lemonade that I make, and different things like that.	I might have a smoothie 3 times a year. I'll go to Jamba Juice like I said maybe 3 times a year. Other than that, none.
76.	Oh, no. None!	0.
77.	Oh, shoot. 2 to 3 times a day on some of it. When I'm eating like that, I'll go to fast food.	Remember, I have fast food twice a week. If I have fast food twice a week, I will have a drink twice a week.
78.	Skipped.	Skipped.
79.	Skipped.	The top 5 drinks would be: Diet Dr. Pepper, Diet Coke, Mocha Frappe from McDonalds, sweet tea, and Simply Lemonade.

Description of Table 4: The pink highlighted areas represent food groups that were consumed at least once a week. Overall, Rosalind consumes UPFs and drinks with greater frequency than

Elora; however, they both consume fast foods, packaged snacks, candies, pre-prepared meals, UPFs, and SSBs multiple times per day, every day.

Table 5: Assessment of Ultra Processed Food (UPF) Prior Awareness (Appendix XVII)

	Rosalind	Elora
80.	I was aware of processed, but not ultra-processed.	No.
81.	Yes, heart disease and heart attacks. Yes, because of the high content of fat and sugars.	I'm sure that there are. I don't know what they are, and it would probably be helpful to put that information out into the mainstream. I'm sure that there are, but I just don't know.
82.	No.	No.

Description of Table 5: Both women are unaware of the effects of UPFs, it is safe to assume that the emerging research on UPFs is not common knowledge amongst Black women. Rosalind and Elora are highly educated; thus, the average Black woman is probably even less aware of the impact of processed foods and UPFs in their health. Elora specifically notes that it would be helpful to start disseminating this information out to the public so that it may become common knowledge.

Figure 3: Baseline Questionnaire Responses (Appendix X)

1*	Rosalind	Elora
2*	59	58
3*	Female	Female
4*	No	No
5	n/a	n/a
6*	Black or African American	Black or African American
7	n/a	n/a
8	n/a	n/a
9	Black/African American	Black/African American
10	n/a	n/a
11*	Married	Divorced
12*	Phoenix, Arizona	Los Angeles, CA, USA
13*	Single-parent/guardian home	Two-parent/guardian home
14	Female	n/a
15	Both, my mother/sister	n/a
16	n/a	n/a
17*	Stockton, CA	Carson, CA
18*	Urban	Suburban
19*	Less than $25,000	Less than $35,000
20*	11th - Mother	Mother-Some College
21*	Unknown - Father	Father-Some College
22*	Domestic worker	Mother-Lab Assistant
23*	Ranch Supervisor	Father-Truck Driver
24*	95204	90746
25*	2 years	20+ years
26*	Suburban	Suburban
27	Yes - 2 years	n/a
28*	Masters	21 years
29	A.A, B.A, M.A.	Psychology, BA; Clinical Psychology, MA; Juris Doctor, J.D.
30*	Self-employed, A Student	Self-employed
31*	Live on campus	Own
32	0	n/a
33	1	3
34*	0	1
35	n/a	Mother
36*	Less than $35,000	Less than $25,000
37	n/a	n/a
38	n/a	n/a
39	Provided	Provided

* Indicates required question

Description of Figure 3: These are the complete responses of Rosalind and Elora to the Demographic Baseline Survey. This information was used to inform the life course analysis of each woman's responses to the interview questions and to ascertain accurate portrayal of their stories.

Excerpts Expressing Common Themes (with Analysis from the Interviewer):

★ Indicates Interviewer Analysis

Part 1 - Health Status

9. To your knowledge, are you now pregnant?

Elora: I wish I was doing the thing to get me there, but the answer would be no.

★ Both women have a desire for physical intimacy, despite their medical conditions. Physical intimacy is very important for emotional fulfillment. Sexual activity is

possibly one of the main ways Black women are motivated to be active.

Part 1 - Health Seeking Behaviors

27. Please tell me about your healthcare seeking behaviors.

Elora: And it's very, very real too. If I go on to her office and she says "well, can so and so or Dr. Melendez help you today?" I start to have anxiety attacks. But it's just a step by step, day by day basis. Because I went to therapy for 4 years, I've learned some tools on how to work with it. But some days are good and some aren't.

- ★ Both women express discomfort with non-Black and preference for Black healthcare professionals. Here, Elora talks about the anxiety she experiences in response to a new Spanish doctor, and later mentions her negative experience with her Filipina nutritionist. There is a socio-cultural disconnect and lack of rapport.
- ★ It is vital to ask these types of questions because there are many different factors that affect healthcare and healthcare seeking and the ability to get the proper treatment.
- ★ Outside factors influence healthcare seeking and eating patterns.

Part 1 - Eating Habits

45 Continued: Do you regularly forget to eat?

Rosalind: Yeah, because I'm so intensely trying to keep up with deadlines. It's just me on the computer and working at my office, and I forget. So, I just gotta keep going. Until my husband says "Well, sweetheart, what did you eat?" And I'll realize "You know what, I haven't eaten anything." And so he'll bring a sandwich or something like that. Sometimes, I've gone the whole day and I didn't even eat anything, at all.

- ★ Chronic stress and responsibility directly interfere with self-care and healthy eating. This neglect leads to snacking or eating fast food, for example, she mentions Taco Bell, Chick-Fil-A, McDonalds, a slice of cake, french fries and soda, etc. in the next two sections. Elora also is often so tired from caring for her granddaughter that she forgets to eat dinner or just eats chocolate as a late-night snack before bed.

45 Continued: After those prolonged periods of not eating, when you eat a meal, is it typically larger than one of those 2 meals we were talking about? Or would it be smaller?

Rosalind: No, it depends. No, I don't eat up a big plate of things. No, never. Where I gain weight is when I forget. When I finally eat something, or if I've cooked something, I'll warm it up, but I'm eating dinner at 2 in the morning. And I'm sitting here until 7 in the morning, then I'm laying down. Or I'll go get Taco Bell and get 2 burritos. So, I say, "Okay, let me go and get this at 10 at night." Like last night, I didn't eat. I ate a sandwich earlier that day for lunch, but I didn't eat anything else. And I told my husband "Oh, I forgot to eat dinner. I didn't cook dinner." And he said, "Well, you want to go?" Well, that was at 11 o'clock last night, and I hadn't eaten anything. So he'd said, "Oh, I got some chips," and I said, "Well, give me the chips and give me a soda." That's what I did and I was like "Oh, okay."

- ★ Rosalind does not eat very large portions, rather she eats high calorie UPFs and fast foods after sustained periods of not eating and sedentarism. This is the reason she believes she is obese.

Continued from previous question:

Rosalind: But see, that's not good either. I think it's a myth and a misconception that people have. They have a perception that because you're obese, you eat a lot, and that's not true in some cases. It is because we forget to eat, or we'll go through the fast-food line. And I'll go through the fast-food line when I'm going between interviews, or different things like that, and I'll grab something from Chick-Fil A, a sandwich or something. Or I'll grab something from Mcdonald's or something like that, and I just keep on going. Sometimes, I just grab a large French fry and keep rolling with a soda. But see, that's not good. And those are the things. Or I'll get some sweets or something. I'll get a little piece of cake from S-Mart Foods, and I will fill my day with all of the junk. But when I cook, sometimes, I just don't have the time, or I don't feel like doing that because I'm on the computer. So, I have to take it.

- ★ The women are squeezing in time to eat meals between work and responsibilities, all the while prioritizing the needs of others in their lives.
- ★ Both women do not feel they have the time or energy to cook home-cooked meals every day.

Continued from previous question:

Rosalind: I'm at that point, as well, because I'm having multiple issues. It was a wakeup call for me. And I'm her power of attorney, so I had to be there

and see that. And I was telling the Lord the other day, and even my husband, I said "I have to go ahead and take care of myself, because I can't even do it. I wouldn't make it, if I shut down. God forbid, if I had another heart attack or a stroke, I wouldn't make it because my body is already in jeopardy. I said, "No, I have to change." They have this program at Kaiser, and I was on it before, but it was so expensive I couldn't afford it and my mind wasn't there to stay on it. But instead of the surgery, I don't want bariatric surgery. They have this program that helps you lose weight. It's a weight management program. When I first was on it, I lost 20 pounds in a month and I think I need to go back on it to just get this weight off because the longer it stays on, it is decreasing my chances to live. I need something that's guided by a professional doctor that I trust. And they can manage me because they do blood pressure checks every week, blood checks every week, physical checks every week, and they stay on top of you. So, I told my husband "I need to do that." That's what I have to do.

- ★ Like Elora, Rosalind recognizes that she needs to take her health more seriously. Also, like Elora, Rosalind wants to be guided by a healthcare professional that she can trust.

Continued from previous question:

Rosalind: We live in food deserts already, and even African Americans that you're studying, we're at the bottom of the total pole. Anyway, we're at high risk as it is. Our mortality rate is super high.

Because of our environments, our culture, our habits, our practices, and also the systemic and social constructs that even give us those choices to kill us. What do we do? This has been for all of our generations. I've learned that it's not just the choice that you make, and it's not just your fault. And it's not just genetic, there is a little bit of genetics in it, but not that much to where you can't change that.

Even when our parents and our grandparents did all the things they did, this is a social construct killing us. The choices that they have systematically set up for us even in our areas of concentrated poverty… They created food deserts. This was in the general, urban plan of development in low-income housing. It all skims back to capitalization on us. You have to go here, and you have to travel. In bad health and poor health, it pays a lot for a lot of people. So we're the ones. And they can capitalize on the fact that black people can't read considering the literacy rate. Low literacy is also associated with our health because we can't read to be well. And then the higher prices on food. Well, you can go and get vegetables, but the vegetables you got a fan flies or gnats, and we get the lowest grade of vegetables. Nothing looks nice or pretty or appetizing so that you want to eat it. So we stay with the sense that "Okay, let me get some cabbage. It lasts a little bit longer." Then the greens go because the greens are wilted. We don't know anything about arugula or asparagus, or any of that. We're not eating that type of food, even avocados. They're mainly given to or targeted at white people or Hispanics, not black people. In some of our neighborhoods, the food has changed. It's different or it's not even available in our neighborhood. You won't find different things. You might find a carrot every now and then, because we have those different little storefronts that don't have space for fresh vegetables and fresh fruits. When you have your urban gardens, or you have all of that, that's not in our neighborhood. And that's why people think it's a trend to just have a little garden. But then, you don't even know how to do that. Who knows how to garden? So, it's bad.

- ★ Both women are aware of the lack of variety and quality foods available in their neighborhood supermarkets and grocery stores. This element of food apartheid hinders their ability to cook health, flavorful, and nutritious meals.
- ★ Processed food industries pay store owners for marketing space that makes it difficult for small scale farmers and producers to compete. Moreover, UPFs require less refrigeration and have longer shelf life, which is more cost-efficient for small scale grocers and supermarkets. Thus, they are being outcompeted for valuable space in Black communities.

Continued from previous question:

Therefore, I know I have to do better. And I said I'm gonna bury my sister, her funeral's Friday, a week from now. I said I'm gonna lay her to rest and then I would start taking care of myself and making sure that I don't go that route that soon. Yeah, it decreased my activities. I can hardly do anything, even breathing.

- ★ Both women feel compelled to put others before themselves, even though they desperately need to focus on themselves to improve their worsening health.

46. Over the last year, what was your typical 1st meal composition (food type and proportion)?

Elora: My first meal of the day is probably going to be a diet coke or a cup of coffee.

Okay, in reference to the question we asked, "How many meals do you have a day?" you would consider that to be your first meal?

Elora: In that aspect… that's what my meal is. That would be my meal. And then my second meal, I'll either eat a super late lunch and skip dinner, or I'll skip lunch and eat dinner."

- ★ Elora also has long periods of time with no complete meal. This may lead to an over reliance on snacks and UPFs to satiate, like Rosalind.

Part 1 - Food Financials

55. Continued:

Rosalind: Exactly! I can do my salads and I have that choice now. And that will give me an opportunity to even walk over there and increase my steps, because my steps are really short.

- ★ People in these women's lives impact their eating habits and patterns. Rosalind's husband impacts her eating both positively and negatively.

Part 1 - Food Financials

56. What do you believe is preventing you from making the changes you want to make in your food buying habits? You said the price. You mentioned proximity to your home. Is there anything else you think you might want to add?

Elora: Also, time. To cook fresh food, you need to have time for meal preparation. I don't always have that time. As I said, I'm with the baby from 6 in the morning to at least 6 at night. That's 12 hours. A lot of times, like last night, I don't even eat dinner. I was so tired yesterday from being with her. I made "Meatsas Pizzas" for lunch, which is sourdough bread that you put spaghetti sauce, fresh cheese, and pepperonis on and put in the oven. That's what I made for lunch, and because I'd eaten lunch late, while driving home I was like "Hmm, I'm probably going to have an ice cream sandwich for dinner." And I ended up not having any dinner at all. And then, this morning I haven't had breakfast yet, which is really bad. I can't take my medicines on an empty stomach because if I do I get sick. And if I don't take my medicines at the right time… I need to do better…Time is a big thing. If I wasn't watching the baby every day, I would have time to do my self-care. I could take my time doing everything. Because I'm trying to give her the priority, and then squeeze my meds and insulin in, this is just not ideal. And I know it, but I always tell myself, "I still take the majority of my medications, and I'm still cute, and I still feel good… So I'm healthy." But when you read the list of everything going on… I have so many things going on. Any one of them could kill me at any moment. And that speaks of the depression of it.

You feel as though you have to place yourself on the back burner because of your responsibilities and other things you're prioritizing?

Elora: Mmhmm.

- ★ Considering her caregiving roles, Elora forgets to eat or is too tired to do so. Her daughter is a single mother and works full-time, while Elora is also a single mother. Single-motherhood, disenfranchisement, capitalism, and poverty all intersect to negatively affect the nutrition of Elora and her daughter

Part 2 - Childhood

1. Continued:

Rosalind: There were really no different foods that were introduced to us. We didn't know anything about how to cook asparagus. "What is that?" Or hummus, "What is that?" Or even artichokes, we'd never seen an artichoke and how they eat it. I'm still kind of impressed to watch somebody eating one. I'm like, "Wow, you peel that back there, and you dip and eat it?" We never had that kind of stuff. Or arugula or the different types of lettuce such as romaine. You had an iceberg and that's it. My mother would get Spinach, because she would add spinach to our greens. You got slick leaf collard greens and mustard greens and those were the 2 greens that you got and maybe a little spinach to take the bitterness out. You have to eat everything on your plate, and our portion sizes were large. And you have to eat everything on your plate!

- ★ Food apartheid in both women's childhoods led to low variety, overly large portion sizes, and lack of nutritional education.

1. Continued: Would you say that your mom enjoyed cooking for you all? Or was that something that she took on as a responsibility and was consistent about it?

Elora: I think that if she cooked for us, she did it as a duty. I learned how to cook at a really young age. So,

I did much of the cooking after my stepfather moved in."

- ★ Elora became a caregiver at a very young age, and it has continued well-beyond ideal childbearing and rearing years.

1i. Continued: When did she pass away?

Rosalind: 2008. I was much smaller. I was 210 pounds, and that's big but it's not as big as 345 pounds. After my mother died I was homeless, and I had to eat different things on the run. I had to eat those noodles that I hate, but it was Cup Noodles and I just had to add hot water. I found myself adjusting and in my mind that I had to go through this. I was experiencing the trauma of losing a loved one that I had cared for for almost 12 years. For 11 and a half months I was her primary care provider. She was not only my mom, but we were also friends and that was everything.

- ★ Trauma and chronic stress are affecting Rosalind's life in every way. In this example, she has experienced dramatic weight gain and housing insecurity. For Elora, trauma and chronic stress have led to severe anxiety and declined healthcare seeking.

<u>Part 2 - Stress Coping Mechanisms</u>

10. What kinds of things stress you out the most?

Elora: My daughter. She stresses me out the most. She's a whiner, a nagger, a procrastinator. She stresses me. She *is* stress. And I have no control over it. I have to see her every day, because I have to take care of the baby. The fact that I'm homeschooling the baby every day, that stresses me. When my second son graduated last year in May, I was like, "My last child is out of college. I'm good, I don't have to do any PTC. I don't have to do anything with school ever again!" And then, come August, she's like "Oh, mom, the baby is going to be homeschooled, and you're going to be teaching her." And I'm resentful because it takes up so much of my time. I thought maybe this is the year that I could get *me* a life and I could get a friend. I could go out and do things, but I can't, because I'm tied down to the baby. I'm at a point in time in my life where I could literally go travel all the time. I could spend time with my sons, or I could spend time with a friend. I can't do that because of her schedule. I get every other weekend off and a half a day during the week. And it's tiring. And I just try to take it with a good grain of salt, because when I look at that baby and her smile, and how much she wants me and needs me to be there… That's my saving grace. That's what keeps me going. If I had to just deal with my daughter? I love her, but I would cut her off the same way I cut off my ex-husband. I wouldn't even deal with her anymore."

- ★ Elora, like Rosalind, is responsible for the care and well-being of family members belonging to multiple generations. These women are lifelong and perpetual caregivers. Elora cares for her mother, daughter, and granddaughter, despite having strained relationships with the former two. Like Rosalind, who is frustrated with the lack of consideration her family members show in terms of the tasks they ask her to take on, Elora's greatest stress is having to deal with her daughter who has introduced an unsolicited responsibility into her life. Prior to her passing in 2008, Rosalind was also her mother's primary caregiver for 12 years. Both women have taken on an unwanted matriarchal role, with little regard for their physical and mental health.

10. What kinds of things stress you out the most?

Rosalind: It's not even money, because I'm okay with money. Just ignorant people. What stresses me out is when somebody like my husband says "No, that's not hard for you to do," to counter my words. That bothers me because that's calling me a liar. It stresses me out having to take on multiple roles. Others don't consider "Well, she's burdened too, and I don't want to bother her." I noticed that even after my sister's death everybody was calling me with their problems and not saying "She's got to be hurting herself." People being inconsiderate and adding more workload stresses me out. And they won't do it back, it's not a reciprocal process, at all. That really stresses me.

- ★ As is the case for both women, they have identified their obligation to care for different members of their family as the leading cause of stress in their lives. Both women want to prioritize themselves but are prevented from doing so daily. Rosalind is stressed out by her husband's ignorance and family's lack of consideration for her time. Elora is stressed by her daughter, whom she must deal with every day out of necessity.

Chapter 5: Discussion

The intersecting forms of oppression, experienced by Rosalind and Elora, are culprits for Black women's chronic stress. Black women's existences across cultures are marked by similar oppressive circumstances, such as single-parenting and lifelong caregiving, poverty, mental and physical trauma, assault, and inaccessibility to the bare necessities of healthy living. Although these circumstances are experienced to varying degrees by other races in the United States, they are exacerbated for Black women due to structural racism and its fruits, including mass incarceration, generational trauma, redlining, health disparities, low access to education and personal development opportunities, and so many more. Rosalind and Elora each faulted lack of time, resources, and the inescapable responsibility of taking on multiple roles for those around them as the leading factors preventing them from making preferable health and dietary choices.

During analysis of the interview data for common themes, these 9 major themes arose: (1) childhood taste preference has lasting influences into adulthood, (2) transitions from home-cooked meals in childhood to ready-made and fast food meals in adulthood, (3) the ways in which multiple roles and responsibilities interfere with self-care and prioritization even beyond optimal childbearing and rearing years, (4) chronic stress fueling FA, emotional eating, and excess UPF consumption, (5) time and financial constraints dictating food purchasing and preparation, (6) lack of awareness of UPFs and their negative impact on health, (7) long lapses between meals interspersed with UPFs and fast food, (8) cultural disconnect from health care professionals, and (9) eating and exercise patterns disrupted by the COVID-19 pandemic. Generally, these 9 common themes produce the gap in knowledge and application regarding healthy and unhealthy eating behaviors in Black women and perpetuate detrimental patterns of consumption.

Due to the effects of food apartheid in Black communities, both women learned at an early age to eat everything that is put in front of them. More implicitly, they learned that food portion size was something out of their control. They had each become acclimated to eating until they were full and had emptied their plates, rather than eating until they were satisfied and leaving food left. Because the two women grew up in impoverished circumstances, nutrition and healthy eating were not the focus. Their mother's made food that would stretch to feed everyone. Rosalind's mother's food was crafted to feel good emotionally, packed with fat, sugar, and salt. Elora's mother did not have the talent for soul food, she still cooked meals heavy in starches, gravy, and other items to help stretch the food.

Although Elora's mother was a dietician, she worked many long hours a day and could hardly afford to buy a variety of healthy foods for her family, let alone find the time to prepare diverse, fibrous, and balanced meals optimal for growing children. On the other hand, Rosalind's mother relied on food stamps and welfare to afford the cost of groceries and housing and could not permit her children's father to live in their home if he was discovered by a social worker. This is one way that structural racism presents itself in government institutions to destroy the Black household and perpetuate a cycle of poverty and financial dependence.

Well into adulthood, both Rosalind and Elora pinpointed ways their childhood eating patterns have affected their current patterns. For Rosalind, she still enjoys soul food and eats many of the same dishes her mother used to prepare, such as greens, cabbage, fried foods, and other popular dishes. Although Elora was not a fan of her mother's "slave food," describing it as a collection of repetitive and bland recipes composed of left-over scraps whose sole purpose give them something to eat, she often cooks Jamaican-inspired soul food dishes that her grandmother shared with herein her youth. Moreover, the people in their lives today greatly impact their

eating habits and patterns. Rosalind's husband influences her eating both positively and negatively. On one hand, Rosalind frequently forgets to eat for hours on end, and her husband reminds her to do so. However, he usually brings her chips and soda, takes her to fast food places such as Taco Bell, or asks that she cook meals with plenty of meat and gravy. Elora watches her granddaughter six days a week, from the early mornings to the evenings when her daughter gets off work. Given that she is almost always with her granddaughter, this dictates what foods she can buy and eat. Furthermore, Elora's daughter frequently eats fast food, and brings her fast food at least 2 times every week. Dealing with her daughter and granddaughter takes up so much time that Elora is rarely able to prepare the kinds of elaborate, tasty, and well-balanced meals that she prefers.

Black women's roles as lifelong primary caregivers and perpetual breadwinners render them particularly vulnerable to developing FAs in response to chronic stress. There are multiple instances where Rosalind pointed out FA taking hold in her life, such as when she traveled across the country to visit her daughter and experienced homelessness in response to her mother's death, both of which were dictated by trauma and low economic constraints. In multiple instances during her interview, Rosalind stated that she sought out UPFs and fast foods to comfort herself in times of stress or poor mental health. At one point, she even goes as far to state "I eat my stress… that's what I do." In this way, one can observe how chronic stress, trauma, and economic oppression intersect to cause weight gain, FA, and UPF consumption. Also, the disparate burden of heart disease and its comorbidities on Black women is likely exacerbated by cultural preferences, namely a greater threshold for size and weight.

Although Black women are aware of the negative impact of poor diet and low exercise on their health, lack of time, resources, and social disconnect from healthcare providers generates a

gap between their knowledge and application of said knowledge. In the event that Black women receive treatment from Black healthcare professionals, they often experience subpar healthcare services. As for the reason behind this subpar treatment, there are undoubtedly many. Some that rank the most consequential may be low resources, incompetent training, and difficulty balancing professional and personal responsibilities. Rosalind's impression of Black healthcare professionals was impacted by a bad experience with a Black nutritionist employed at Kaiser. After recalling the nutritionist ate from a bowl of M&M's and offered them to her during her consultation, Rosalind concluded "That is the culture where we find some people, not all, African Americans, feel like they can get more comfortable. The health practitioners feel like they can get more comfortable with your care." Generally, Black women are unaware of the particularly harmful effects of UPFs on heart health and vitality in general which is evident by the complete lack of awareness expressed by Elora and the partial unawareness of Rosalind (Appendix XVII). Moreover, given that both interviewees have received degrees in higher education, it is safe to assume that general populations of Black women are even more unaware. More empirical research should be conducted examining Black women's excess UPF consumption and disproportionate burden of heart disease.

The final theme that arose time and time again in the interviews was the extent to which the COVID-19 pandemic has impacted the women's diet and exercise related behaviors, and thus, impacted their NCDs. Among some of the most salient issues were reduced access to places designated for physical activity and exercise, overall reduced transportation, reduced free time due to added responsibilities, increased difficulty using referrals and attending in-person doctor's appointments, increased time spent reclining or sitting in combination with overall reduced physical activity, poorer food quality due to disruptions in the food system, inability to partake in

activities that promote mental health, and excessive weight gain and eating. These experiences and more are shared with Black women throughout the United States, and even abroad. A paper published by the *Journal of Racial and Ethnic Health Disparities* investigated how food insecurity reinforced the negative impact of the COVID-19 pandemic on health and mortality in African, Black, and Caribbean (ABC) populations. The literature review found that the COVID-19 pandemic has "exacerbated food insecurity and other health disparities within racialized populations including ACB people, due to systemic anti-Black racism; inadequate representation in decision-making; and issues of cultural appropriateness and competency of health services" (Dabone et al., 2022). It advised that policies be implemented that increase access to food, medicine, and shelter for racialized communities to reduce ABC food insecurity and health crises.

As a preliminary step towards preventing heart disease in Black women, this thesis aimed to illuminate the social determinants of some diet related NCDs. It is recognized across health science journals, researchers, and policymakers that no one solution will eliminate heart disease in Black women. In addition to the suggested policy and community level interventions, government-funded community intervention programs must be specifically targeted towards Black women. For example, local community centers and schools must employ certified local and transplanted Black professionals to teach the community about UPF risk, diet, nutrition, healthy food alternatives, and disease risk. Programs should focus on promoting alternatives for processed meats and other UPFs to lower the risk of coronary heart disease in Black women. A prospective cohort study published by the *British Medical Journal Publishing Group* followed 43 272 men without cardiovascular disease or cancer at baseline to determine the effect of processed meats on CVD. The researchers concluded that higher processed meat intake was

correlated to total CVD, and that "substituting high quality plant foods such as legumes, nuts, or soy for red meat might reduce the risk of CHD, while substituting whole grains and dairy products for total red meat, and eggs for processed red meat, might also reduce this risk" (Al-Shaar et al. 2020,). Black educators must be required to remain updated on the growing body of research regarding issues of UPFs, disparate health outcomes, and implications. All pre-kindergarten through 8th-grade schools should require nutritional courses that are interactive, informative, and culturally relevant to the student population. Every Black and underserved school should be provided resources to construct and upkeep community gardens for instructional and nutritional purposes. Lastly, information regarding local sustainable farming programs and afro-indigenous farming projects should be advertised to the general public via community centers, gyms, schools, workplaces, and media.

Chapter 6: Limitations

There were various limitations of this study, particularly those imposed by the recent COVID-19 pandemic. Most notable is the small sample size, which is the result of severely limited communication and participant availability. The sample was limited to California (Central and Southern), so data is not necessarily reflective of the traditional southern diet that is more prominent in different parts of the country. Lastly, because the sample size was small, researchers were only able to acquire qualitative data, and could not confirm a causal relationship between UPF consumption and increased rates of heart disease.

In addition to the small sample size, due to restrictions caused by COVID-19, it was increasingly difficult or impossible to schedule meetings with interviewees, reach out to potential participants, pass out physical fliers and brochures, and speak in communal, public spaces.

Interviewers could not conduct interviews in the comfortability of the participants' homes or other relaxing spaces. The importance of limiting exposure to COVID-19 was underscored by the participants' comorbidities. Moreover, being that qualifying participants were required to have been diagnosed with heart disease, the vulnerability of each participant required that all interviews be conducted virtually, which eliminated those who do not have stable access to the internet and video conferencing due to financial circumstances. These participants would have been of lower SES and subjected to economic oppression, which would have rendered them ideal participants considering their experience with more complex intersections of oppression. Lastly, due to limited knowledge of the Yale Food Addiction Scale (YFAS), participants were not evaluated for FA using the YFAS. Researchers inferred FA given the poor mental health and self-assessed emotional eating reported by the participants.

Chapter 7: Future Research: Evaluated Intervention

To amplify the voices of the subjects at hand, this thesis was designed to allow participants to tell their stories how they desired. The purpose of the baseline questionnaire and interview were to gain direct information about the Black women's nutrition-related experiences and identify relationships between intersectionality, behaviors, and health outcomes. Overall, the study contributed qualitative data pertaining to Black women's unique perspectives on how food has affected their health and life. Although valuable data was gathered regarding childhood eating patterns, adult eating patterns, and understanding the life-course of dietary patterns, the nature of the data acquisition process does not allow one to identify a causative relationship between UPF consumption and elevated rates of heart disease in Black women. An evaluated intervention should be designed and conducted to provide evidence for such relationships.

Chapter 8: Policy Implications

8.1: Medical Field

The results of this thesis and the proposed evaluated intervention should be used to tailor medical and public policy programs to better suit the specific needs of Black women. Dissemination of the effect of UPFs on Black women's health in the medical field could introduce greater requirements for nutrition studies in formal medical education and promote food-based preventative care that is culturally and racially sensitive in the clinical setting. Culturally relevant messages and shared experiences are necessary to effectively persuade Black populations to adopt dietary recommendations and behaviors that will improve heart health (Winham, 2010). To personalize educational information, interventions should utilize relatable images, engaging vernacular, and prominent Black figures when possible. The Der Ananian et al. study illustrated that basic education without cultural tailoring and dissemination is inadequate and will not enact significant change in Black dietary choices (Der Ananian et al., 2018). Furthermore, health care initiatives should apply more focus towards preventing the development of heart disease, rather than treating it once it already exists. This can be accomplished at the educational level in medical schools, and also by requiring hospitals, doctors, and clinics to create programming that provides a comprehensive nutritional curriculum to child and healthy patients. As mentioned in the literary review, Black women that are most at risk for developing heart disease have the lowest perception of being at risk (DeSalvo et al., 2005), therefore the programming should put specific emphasis on raising awareness. Health care settings should also inform patients about local and federal financial and educational resources that can aid them in maintaining a nutritious diet free of UPFs.

8.2: Increasing Access Via Farmer's Markets and Online Shopping

Although it would be ideal to open up new grocery stores in every Black community to eliminate food deserts and decrease prevalence of UPFs, that solution is time-consuming and expensive. According to Kris-Etherton et al. SNAP, the largest nutrition assistance program in the United States, serves approximately 1 in 7 Americans, of which 25% are Blacks. It also reported that "evidence suggests that revisions to public policy to increase the affordability of healthy foods may benefit low-income groups and those using food assistance programs most significantly" (Kris-Etherton et al., 2020). In 2017, SNAP launched an online purchasing pilot program for the following stores: Amazon, Dash's Market, Fresh Direct, Hy-Vee, Inc., Safeway, ShopRite, Walmart Stores Inc., and Wright's Markets, Inc., and more. However, delivery fees and other associated charges are sometimes not covered by SNAP benefits, and some stores offer no delivery options. This is inconvenient for low-income customers that are located far from a grocery store with a variety of healthy foods. In response to the COVID-19 pandemic, the grocery stores participating in the state of California have expanded to include Albertsons, ALDI, Cardenas Markets, Food 4 Less, FoodMaxx, Lucky Supermarkets, Pavilions, Rancho San Miguel Markets, Sam's Club Scan and Go, Save Mart Supermarkets, Sprouts Farmers Market, Super King Market, Superior Grocers, Vons, and Whole Foods (Food and Nutrition Service U.S. Department of Agriculture, 2022). Policymakers can immediately and permanently increase access by requiring all grocery stores, corner stores, gas stations, and farmers markets to accept online shopping and subsidize delivery fees for SNAP and WIC users. Expanding access to online shopping would allow individuals to shop at farther grocery stores and reduce the monetary and temporal costs associated with traveling. A study by the US Department of Agriculture found that "SNAP participants consumed more calories from solid fats, added

sugars, soda, and alcohol, consumed fewer vegetables and fruits, and had poorer overall diet quality" than income-eligible nonparticipants (Kris-Etherton et al., 2020). Therefore, the SNAP program must be severely altered in order to improve the nutrition and health status of its participants. Micha et al. suggested that "disparities in diet-related cardio metabolic deaths... might be partly addressed... by expanding the SNAP Food Insecurity Nutrition Incentive program to provide wider incentives for purchasing fruits and vegetables as well as nuts/seeds and adding restrictions or disincentives for unhealthier products such as SSBs [sugar-sweetened beverages], processed meats, and high-sodium foods" (Micha et al. 2017). Local farmers can be incentivized to set up their stands in economically disadvantaged areas by making participation tax-deductible. In addition to the online purchasing requirement, all stores that offer cold foods, including cold food bars, college campuses, gas stations, and mom and pop organizations, should be required to accommodate customers paying with SNAP and WIC.

8.3: Anti-UPC Policy

Additionally, the results of the evaluated intervention would fill a knowledge gap regarding the unique effect of UPFs on Black women's heart health and can be used to support anti-UPFs policies such as restrictions on fast food enterprises, availability of UPFs at small-scale grocers and supermarkets, and provide information for local community interventions. As mentioned in section 8.1, a tax to reduce consumer buying could be imposed on items found to increase serious health risks. Additionally, the Food and Drug Administration (FDA) should introduce regulations that require informative and transparent labeling for all UPFs, warning consumers of their negative health impacts. A set of comparative case studies were published by the *Obesity Reviews* to determine the feasibility and effectiveness of front-of-package warning labeling (FOPL) to discourage UPF production and consumption in Chile and Mexico. Researchers

consider FOPL as a key method to help consumers "identify calorie-rich ultra-processed foods and beverages with added sugars and almost no nutritional value in addition to foods high in saturated and trans fats and sodium… Hence, FOPL is expected to empower consumers to reduce their consumption of these obesogenic foods and beverages and to help prevent diet related non communicable diseases (NCDs)" (Pérez-Escamilla et al., 2021). Regarding the Chile policy change, the researchers found "the industry showed strong compliance with 95% of packaged foods and beverages… [and] about 60% of the consumers self-reported using the FOPL when interviewed about food shopping decisions; these results were independent of educational level. Consumers' food perceptions and knowledge improved; purchases of unhealthy beverage and food purchases decreased; and industry driven product reformulation decreased sugars and sodium in some food products" (Pérez-Escamilla et al., 2021). Guided by Chile's successful FOPL policy, the United States FDA should adopt similar labeling regulations to reduce UPFs prevalence. Further, the associated disease risks should be clearly labeled on food items. To corroborate the Pérez-Escamilla et al. study, Baker and Lawrence et al. suggested that "front of pack labeling, food taxation, and restrictions on food marketing," should be implemented for all UPFs and meats (Baker and Lawrence, 2019). FOPL may help to address predatory advertising targeting vulnerable Black and Brown populations, particularly those with limited education, and support stricter caps on UPF sugar and salt content.

Chapter 9: Conclusion

Heart disease in Black women is a multi-factored issue that is perpetuated by inequitable policies, economic oppression, racism, and a food system that values profit over consumer health and well-being. Therefore, the solution to eliminate heart disease risk must be coordinated amongst multiple facets of society, particularly the food, health care, and educational systems.

These synchronized educational and policy-based initiatives can reduce UPFs availability and desirability in Black communities, and thus reduce cases of heart disease in Black women.

The interviews with Rosalind and Elora revealed keystone factors that contribute to the social determinants of Black women's heart health. Black women's roles as lifelong primary caregivers and providers render them particularly vulnerable to developing FAs in response to chronic stress. Although Black women are aware of the negative impact of poor diet and low exercise on their health, lack of time, resources, and socio-cultural disconnect from healthcare providers generates a gap between Black women's awareness of healthy dietary behaviors and application of said awareness. Generally, Black women are unaware of the harmful effects of UPFs on heart health and vitality. More empirical research should be conducted examining Black women's excess UPF consumption and disproportionate burden of heart disease.

Appendices

Appendix I: Sample Recruitment Script/Email

(*Date*)

Re: Black Women's Vulnerably to Heart Disease: A Closer Look at Ultra-Processed Food Consumption and Social, Behavioral, and Psychological Factors

Dear: (*Name*)

I am writing to let you know about an opportunity to participate in a voluntary research study about showcasing Black women's experiences to advocate for target heart disease interventions. This study is being conducted by Kira Maszewski at the University of California, Los Angeles (UCLA).

Participation includes:

- completion of a questionnaire (20-30 questions)
- one virtual conversational interview (1-2 hours).

Upon completion of the survey, you will receive a $25 dollar Amazon or grocery store gift card.

This study's inclusion criteria are as follows:

1. Self-identified cis-gendered Black women
2. 30 years or older
3. Diagnosis(es) of heart disease or related condition (hypertension, stroke, diabetes I and II).

After we have received a reply to this email confirming that you would like to participate in this study, you will receive a follow up email to schedule an interview date and time and also a link to a short questionnaire. I am available by email, phone, text, and zoom to discuss any questions you may have regarding your potential participation in this study. Please do not hesitate to reach out!

If you would like additional information about this study, please contact us at kmaszewski@g.ucla.edu or 209-263-2963.

Thank you for your consideration, and once again, please do not hesitate to contact us if you are interested in learning more about this project.

Kira Maszewski
Principal Investigator
Graduate Student Researcher
University of California, Los Angeles (UCLA)

Appendix II: Baseline Questionnaire

Demographic Baseline Questionnaire

This pre-interview questionnaire is designed to take 15-25 minutes. The following questions are presented as a mix of multiple choice and short response. Please do your best to answer each question to its completion. Thank you.

If you encounter any issues, please contact kmaszewski@ucla.edu or kiranaszewski@gmail.com.

* Required

1. **What is your full name?** *
   Your name will be coded and removed from response to maintain confidentiality.

2. **What is your age?** *

3. **What is your sex assigned at birth? What gender do you identify as?** *
   Example: Female, Woman

4. **Are you Hispanic, Latino/a, or Spanish origin?** *
   Mark only one oval.
   - ◯ Yes
   - ◯ No

5. **If yes, are you**
   If not applicable, please leave blank.
   Check all that apply.
   - ☐ Mexican
   - ☐ Mexican American or Chicano/a
   - ☐ Puerto Rican
   - ☐ Cuban
   - ☐ Another Hispanic, Latino/a, or Spanish origin

6. **Which one or more of the following would you say is your race?** *
   Check all that apply.
   - ☐ White
   - ☐ Black or African American
   - ☐ American Indian or Alaska Native
   - ☐ Asian
   - ☐ Pacific Islander

7. **If you selected yes to Asian, what subgroup(s) do you identify with?**
   If not applicable, please leave blank.
   Check all that apply.
   - ☐ Chinese
   - ☐ Filipino/a
   - ☐ Japanese
   - ☐ Korean
   - ☐ Vietnamese
   - ☐ Asian Indian
   - ☐ Northwest Asian/ Middle Eastern
   - ☐ Other Asian

8. **If you selected yes to Pacific Islander, what subgroup(s) do you identify with?**
   If not applicable, please leave blank.
   Check all that apply.
   - ☐ Native Hawaiian
   - ☐ Guamanian or Chamorro
   - ☐ Samoan
   - ☐ Other Pacific Islander

9. **If answered Black or African American, which one or more of the following do you identify with?**
   If not applicable, please leave blank.
   Check all that apply.
   - ☐ Black/African American
   - ☐ Black African
   - ☐ African Caribbean
   - ☐ Other African Descent

10. **If answered American Indian or Alaska Native, please use this space to describe your tribal affiliation.**
    If applicable, please provide answer regardless of official/legal tribal affiliation.

11. **Are you...** *
    Mark only one oval.
    - ◯ Married
    - ◯ Divorced
    - ◯ Widowed
    - ◯ Separated
    - ◯ Never married
    - ◯ A member of an unmarried couple
    - ◯ Not involved in a romantic relationship

12. **Where were you born? (City, State, Country)** *

13. **What type of home did you spend the majority of your childhood in? (select all that apply)** *
    Check all that apply.
    - ☐ Single-parent/guardian home
    - ☐ Two-parent/guardian home
    - ☐ Multi-generational home
    - ☐ Multi-family home
    - ☐ Other: _____

14. **If you selected "Single-parent/guardian home", what was the gender of the parent/guardian?**
    If not applicable, please leave blank.

15. Where you raised by a member of your family that is not your mother or father? If so, please provide their familial relationship to you.
If not applicable, please leave blank.

16. Where you raised by someone that is not a member of your family? If so, please explain.
If not applicable, please leave blank.

17. In what city and state did you spend the majority of your childhood? *

18. Where was your childhood home located? *
Mark only one oval.
- Urban
- Suburban
- Rural
- Other:

19. For the majority of your childhood, what was the annual household income from all sources— *
Mark only one oval.
- Less than $25,000
- Less than $35,000
- Less than $50,000
- Less than $75,000
- $75,000 or more

20. What is the highest education level of your parent/guardian 1? *
Please include relationship to you.

21. What is the highest education level of your parent/guardian 2? *
Please include relationship to you. Write N/A if not applicable.

22. What is the primary occupation of your parent/guardian 1? *
Please include relationship to you.

23. What is the primary occupation of your parent/guardian 2? *
Please include relationship to you. Write N/A if not applicable.

24. What is the ZIP Code where you currently live? *

25. How long have you lived in the current city you reside in? *

26. Where is your current home located? *
Mark only one oval.
- Urban
- Suburban
- Rural
- Other:

27. Have you ever experienced homelessness? If so, when and for how long?
If not applicable, please leave blank.

28. What is the highest grade or year of school you have completed? *

29. Do you have any degrees? If so, please list them.
Example: Biology, B.S.; Sociology, M.A.

30. Are you currently...? Please select all that apply. *
Check all that apply.
- Employed for wages
- Self-employed
- Out of work for 1 year or more
- Out of work for less than 1 year
- A Homemaker
- A Student
- Retired
- Unable to work

31. Do you own or rent your home? *
Mark only one oval.
- Own
- Rent
- Other:

32. How much is your monthly rent/mortgage payment?
If you do not pay rent/mortgage, please leave blank.

33. Do you have any children? If so, how many?

34. How many minors live in your current household? *

Mark only one oval.

- 0
- 1
- 2
- 3
- 4
- 5 or more

35. Are you a caretaker for an elderly or disabled person in your current household? If yes, please describe the person's relationship to you.

36. Is your annual household income from all sources— *

Mark only one oval.

- Less than $25,000
- Less than $35,000
- Less than $50,000
- Less than $75,000
- $75,000 or more

37. Please use this space to clarify/add anything that you feel appropriate.

38. Please use this space to ask any questions you may have about the questionnaire.

39. Please provide the best email to reach you for further contact.

Appendix III: Sample Interview Script

Hello_____, thank you for being here with me today and participating in this interview. Before we begin the interview, I just want to introduce myself and what this research is about. My name is Kira Maszewski, I am a second-year graduate student in the Department of African American Studies at UCLA. The purpose of this interview is to hear about your nutrition-related experiences as a Black woman and possibly identify relationships between behaviors and health outcomes. We hope to gain knowledge about your perspective regarding how food has affected your health and life. We are interested in your childhood eating patterns, your current eating patterns, and understanding how your dietary patterns have changed over the years. Most importantly, we want to hear your story, told how you would like to tell it. It is our hope that this interview will be as conversational as possible following the short set of multiple choice and yes/no questions at the beginning. Do you have any questions so far?

I want you to know that at any time, you can excuse yourself without any consequences. Here is a consent form that is asking for your permission to participate in this study. I will give you a few minutes to review the information on the form and confirm that you are interested in participating. Please let me know if you have any questions regarding the form and I can answer them. I also ask for your permission to audio record the interview and to take notes during our dialogue. In order to protect your real name and identification, I will transcribe the dialogue by inserting a pseudonym. Before we begin, I want to emphasize this: Please feel free to share whatever you wish during this interview, and if you would rather not respond to a particular question, simply say "pass". I will provide you with a copy of the transcript of your interview to go over and make sure there are no errors and that you are comfortable with everything that was said. In the event that you are unsatisfied with a portion of the transcript, I will remove it. We are now ready to begin the interview process. Do you have any questions before we start with the beginning set of questions?

Appendix IV: Consent Form

University of California, Los Angeles

CONSENT TO PARTICIPATE IN RESEARCH

Black Women's Vulnerably to Heart Disease: A Closer Look at Ultra-Processed Food Consumption and Social, Behavioral, and Psychological Factors

Kira Maszewski, B.S. from the Department of African American Studies and Dr. Walter Allen, from the Department of Education at the University of California, Los Angeles are conducting a research study. You were selected as a possible participant in this study because you are a Black woman 30 years or older who has been diagnosed with heart disease or a related health condition (hypertension, stroke, diabetes). Your participation in this research study is voluntary.

WHAT SHOULD I KNOW ABOUT A RESEARCH STUDY?

- Someone will explain this research study to you.
- Whether or not you take part is up to you.
- You can choose not to take part.
- You can agree to take part and later change your mind.
- Your decision will not be held against you.
- You can ask all the questions you want before you decide.

WHY IS THIS RESEARCH BEING DONE?

The purpose of this study is to is to explore the lifetime experiences of Black women to provide insight into their food preferences, food consumption, and food access. Furthermore, this study aims to assess the kinds of resources that are available for these Black women, and further illuminate the social, behavioral, and psychological factors that render Black women vulnerable to heart disease. Finally, the research aims to suggest targeted interventions geared towards Black women that will normalize diets heavy in minimally and unprocessed foods and improve food access, availability, and acceptability.

HOW LONG WILL THE RESEARCH LAST AND WHAT WILL I NEED TO DO?

Participation will take a total of one questionnaire and one interview, taking up to two hours and thirty minutes. If you volunteer to participate in this study, the researcher will ask you to do the following:

- Take a questionnaire to establish baseline demographics and health status.
- Meet with the researcher for a virtual sit-down interview answering questions around your health status, food consumption, and experiences related to food.

ARE THERE ANY RISKS IF I PARTICIPATE?

- Possible discomfort in sharing medical history and past experiences related to food.

ARE THERE ANY BENEFITS IF I PARTICIPATE?

- You will not directly benefit from your participation in the research.

THE RESULTS OF THE RESEARCH MAY

- Inform policies around food access and education, and inform scientists, clinicians, and nutritionists on how to prevent and manage heart disease in Black women.

WHAT OTHER CHOICES DO I HAVE IF I CHOOSE NOT TO PARTICIPATE?

- Your alternative to participating in this research study is to not participate.

HOW WILL INFORMATION ABOUT ME AND MY PARTICIPATION BE KEPT CONFIDENTIAL?

The researchers will do their best to make sure that your private information is kept confidential. Information about you will be handled as confidentially as possible, but participating in research may involve a loss of privacy and the potential for a breach in confidentiality. Study data will be physically and electronically secured. As with any use of electronic means to store data, there is a risk of breach of data security.

Use of personal information that can identify you:

- Name, age, zip code, race, gender, contact information (email and phone number), city of birth.
    - The names will be coded into pseudonyms during the transcribing process.

How information about you will be stored: After the study is complete all emails and phone messages will be deleted, names will be coded with pseudonyms once the interviews are transcribed. The transcribed interviews will be stored by the researcher on their personal private electronic devices (laptop and USB).

People and agencies that will have access to your information:
The faculty and staff of the UCLA Department of African American Studies and Department of Education may have access to the transcribed information upon request. Authorized UCLA personnel may have access to study data and records to monitor the study. Research records provided to authorized, non-UCLA personnel will not contain identifiable information about you. Publications and/or presentations that result from this study will not identify you by name. University employees are bound by strict rules of confidentiality.

How long information from the study will be kept:
The contact information will be kept until after the study is completed, and the audio recordings of the interviews will be kept for an exact year from the date recorded.

USE OF DATA FOR FUTURE RESEARCH
The data that is to be collected will be used to write articles for medical, nutritional, and health disparities journals and inform future policies for Black women's health. Your de-identified data may be kept for use in future research.

WILL I BE PAID FOR MY PARTICIPATION?
Participants will be compensated with a $25 amazon or grocery store gift card upon completion.

WHO CAN I CONTACT IF I HAVE QUESTIONS ABOUT THIS STUDY?

The research team:
If you have any questions, comments or concerns about the research, you can talk to the one of the researchers. Please contact: Kira Maszewski (Principal Investigator) at 209-263-2963 email: kiramaszewski@gmail.com and Dr. Walter Allen (Faculty Sponsor) Email: wallen@ucla.edu

UCLA Office of the Human Research Protection Program (OHRPP):

If you have questions about your rights as a research subject, or you have concerns or suggestions and you want to talk to someone other than the researchers, you may contact the UCLA OHRPP by phone: (310) 206-2040; by email: participants@research.ucla.edu or by mail: Box 951406, Los Angeles, CA 90095-1406.

WHAT ARE MY RIGHTS IF I TAKE PART IN THIS STUDY?

- You can choose whether or not you want to be in this study, and you may withdraw your consent and discontinue participation at any time.
- Whatever decision you make, there will be no penalty to you, and no loss of benefits to which you were otherwise entitled.
- You may refuse to answer any questions that you do not want to answer and still remain in the study.

You will be given a copy of this information to keep for your records.

Appendix V: Interview Hand-Out "The Food Processing Need-To-Know"

Informational

The Food Processing Need-To-Know

NOVA CLASSIFICATION

"Based on the purpose, nature, and degree of food processing, the NOVA classification outlines four food groups: unprocessed or minimally processed foods, processed culinary ingredients, processed foods, and ultra-processed foods (UPFs)" (Zhong et al., 2021).

UNPROCESSED AND MINIMALLY PROCESSED

"Unprocessed or minimally processed foods are whole foods in which the vitamins and nutrients are still intact. The food is in its natural (or nearly natural) state. These foods may be minimally altered by removal of inedible parts, drying, crushing, roasting, boiling, freezing, or pasteurization, to make them suitable to store and safe to consume. Unprocessed or minimally processed foods would include carrots, apples, raw chicken, melon, and raw, unsalted nuts" (McManus, 2020).

PROCESSED AND ULTRA-PROCESSED

Processing changes a food from its natural state. Processed foods are essentially made by adding salt, oil, sugar, or other substances. Examples include canned fish or canned vegetables, fruits in syrup, and freshly made breads. Most processed foods have two or three ingredients. Some foods are highly processed or ultra-processed. They most likely have many added ingredients such as sugar, salt, fat, and artificial colors or preservatives. Ultra-processed foods are made mostly from substances extracted from foods, such as fats, starches, added sugars, and hydrogenated fats. They may also contain additives like artificial colors and flavors or stabilizers. Examples of these foods are frozen meals, soft drinks, hot dogs and cold cuts, fast food, packaged cookies, cakes, and salty snacks" (McManus, 2020).

IDENTIFYING UPFS

UPFs include but are not limited to: fast food, many fried foods, sweet or savory packaged snacks (e.g., chips, crackers, cookies), sweet or savory dairy products ("sour cream, cream cheese, ice cream, frozen yogurt"), candies and cake mixes, pastries, mass-produced packaged breads and buns, margarines and spreads, sugar-sweetened breakfast cereals, cereal bars and energy bars, instant soups, sauces, and noodles (ie. ramen noodles), and many ready-to-heat and pre-prepared products: poultry and fish nuggets, hot dogs, sausages, deli meat, pies, pasta, and pizza dishes (Zhong et al., 2021; Monteiro et al., 2019)

FOR ANY QUESTIONS CONTACT KMASZEWSKI@G.UCLA.EDU

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FOR ANY QUESTIONS CONTACT KMASZEWSKI@G.UCLA.EDU

Appendix VI: Sample Interview Schedule

Time	Task
8:55 AM	Log in 5 minutes prior
9:00 AM	Welcome, Check-In, Review consent form and email fact sheet
9:10 AM	Read Script Inform interviewee general format of interview: Part 1 series of questions (~ 25 minutes) Part 2 open ended questions that are more conversational (~30 minutes to hour) Maximum of 2 hours total
9:15 AM	Give time to read consent sheet, ask for verbal consent to participate and record interview
9:20 AM	Start recording and Begin Interview
9:50 AM	5-minute break
10:00 AM	Open-ended/conversation questions
10:55 AM	Provide closing remarks Gift card for their participation Will share the published research Offer to share transcription of interview to confirm comfortability (their formal opportunity to make edits or removed items)
11:00 AM	Conclude Interview

* Elora's interview was conducted in the early afternoon, rather than morning time.

Appendix VII: Answer Choices During Interview (57-78)

Answer Choices

a. **never or less than once/month**

b. **Once a month**

c. **Twice a month**

d. **Three times a month**

e. **Once a week**

f. **Twice a week**

g. **Three times a week**

h. **Four times a week**

i. **1-2 times/day**

j. **3-4 times/day**

k. **4-5 times/day**

Appendix VIII: Interview Questions

Part 1

Interview Questions - Multiple Choice and Yes/No

Health Status

1. Would you say that in general your health is—
    a. Read: 1 Excellent 2 Very Good 3 Good 4 Fair 5 Poor Do not read: 7 Don't know/Not sure 9 Refused
2. Now thinking about your physical health, which includes physical illness and injury, for how many days during the past 30 days was your physical health not good?
3. Now thinking about your mental health, which includes stress, depression, and problems with emotions, for how many days during the past 30 days was your mental health not good?
4. During the past 30 days, for about how many days did poor physical or mental health keep you from doing your usual activities, such as self-care, work, or recreation?
5. Are you currently taking any medications (including birth control), and if so what kinds and for how long?
6. Has a doctor, nurse, or other health professional ever told you that you had any of the following? For each, tell me Yes, No, Or You're Not Sure.
    a. Ever told you that you had a heart attack also called a myocardial infarction? If yes, when did it take place?
    b. (Ever told) (you had) angina or coronary heart disease? If yes, what was the date of onset?
    c. (Ever told) (you had) heart arrhythmia? If yes, what was the date of onset?
    d. (Ever told) (you had) heart failure? If yes, what was the date of onset?
    e. (Ever told) (you had) heart valve disease (endocarditis and/or rheumatic heart disease)? If yes, what was the date of onset?
    f. (Ever told) (you had) pericardial disease? If yes, what was the date of onset?
    g. (Ever told) (you had) cardiomyopathy (heart muscle disease)? If yes, what was the date of onset?
    h. (Ever told) (you had) congenital heart disease? If yes, what was the date of onset?
    i. (Ever told) (you had) any other type of heart disease that has not been listed? If yes, what was the date of onset?
    j. (Ever told) (you had) a stroke? If yes, what was the date of onset?
    k. (Ever told) (you had) asthma? If yes, Do you still have asthma and what was the date of onset?
    l. (Ever told) (you had) diabetes/prediabetes/borderline diabetes? If yes, how old were you when you were told you had diabetes?
    m. (Ever told) (you had) a metabolic syndrome? If yes, what was the date of onset?
    n. (Ever told) (you had) high blood pressure? If yes, what was the date of onset?
    o. (Ever told) (you had) high cholesterol (high levels of LDL "bad" cholesterol or low levels of HDL "good" cholesterol)? If yes, what was the date of onset?
    p. (Ever told) you were obese or recommended weight loss? If yes, how old were you when you were told this?
7. What is your current stress level (1 being least stressed, 5 being most stressed)?
8. What is your usual stress level (1 being least stressed, 5 being most stressed)?
9. To your knowledge, are you now pregnant?
10. About how much do you weigh without shoes?
11. About how tall are you without shoes?
12. Please use this space to add/clarify anything from the previous section you feel appropriate.

Smoking Status

13. Have you smoked at least 100 cigarettes in your entire life?
14. Do you now smoke cigarettes every day, some days, or not at all?
15. Do you currently use chewing tobacco, snuff, snus, or other tobacco products every day, some days, or not at all?
16. Have you ever used an e-cigarette or other electronic vaping product, even just one time, in your entire life?
17. Do you now use e-cigarettes or other electronic vaping products every day, some days, or not at all?

Disability

18. Do you have a disability (diagnosed or undiagnosed)? If so, please name or describe it to the best of your ability.

Family Health Status

19. Has a family member been diagnosed with a heart disease mentioned in the 'Health Status' portion of the questionnaire (heart attack, coronary artery disease, heart arrhythmia, heart failure, heart valve disease,

pericardial disease, cardiomyopathy, congenital heart disease, or other)? If so, what is their relationship to you, and what heart disease(s)?

20. Has a family member been diagnosed with any of the other diseases mentioned in the 'Health Status' portion of the questionnaire (stroke, asthma, diabetes/prediabetes/borderline diabetes, a metabolic syndrome, high blood pressure, high "bad" cholesterol, or obesity)? If so, what is their relationship to you, and what heart disease(s)?
21. Please use this space to add/clarify anything from the previous section you feel appropriate.

Healthcare Access

22. Do you have any kind of health care coverage, including health insurance, prepaid plans such as HMOs, or government plans such as Medicare, or Indian Health Service?
23. Do you have one person you think of as your personal doctor or health care provider?
24. Was there a time in the past 12 months when you needed to see a doctor but could not because of cost?
25. About how long has it been since you last visited a doctor for a routine checkup?
26. Please use this space to add/clarify anything from the previous section you feel appropriate.

Healthcare Seeking Behaviors

27. Please tell me about your healthcare seeking behaviors.

Exercise and Activity

28. Does your work involve vigorous-intensity activity that causes large increases in breathing or heart rate like [carrying or lifting heavy loads, digging or construction work] for at least 10 minutes continuously?
29. In a typical week, on how many days do you do vigorous intensity activities as part of your work?
30. How much time do you spend doing vigorous-intensity activities at work on a typical day?
31. Does your work involve moderate-intensity activity that causes small increases in breathing or heart rate such as brisk walking [or carrying light loads] for at least 10 minutes continuously?
32. In a typical week, on how many days do you do moderate intensity activities as part of your work?
33. How much time do you spend doing moderate-intensity activities at work on a typical day?

The next questions exclude the physical activities at work that you have already mentioned.

34. Do you walk or use a bicycle (pedal cycle) for at least 10 minutes continuously to get to and from places?
35. In a typical week, on how many days do you walk or bicycle for at least 10 minutes continuously to get to and from places?
36. How much time do you spend walking or bicycling for travel on a typical day?

The next questions exclude the work and transport activities that you have already mentioned.

37. Do you do any vigorous-intensity sports, fitness or recreational (leisure) activities that cause large increases in breathing or heart rate like [running or football] for at least 10 minutes continuously?
38. In a typical week, on how many days do you do vigorous intensity sports, fitness or recreational (leisure) activities?
39. How much time do you spend doing vigorous-intensity sports, fitness or recreational activities on a typical day?
40. Do you do any moderate-intensity sports, fitness or recreational (leisure) activities that cause a small increase in breathing or heart rate such as brisk walking, [cycling, swimming, volleyball] for at least 10 minutes continuously?
41. In a typical week, on how many days do you do moderate intensity sports, fitness or recreational (leisure) activities?
42. How much time do you spend doing moderate-intensity sports, fitness or recreational (leisure) activities on a typical day?

The following question is about sitting or reclining at work, at home, getting to and from places, or with friends including time spent sitting at a desk, sitting with friends, traveling in car, bus, train, reading, playing cards or watching television, but do not include time spent sleeping.

43. How much time do you usually spend sitting or reclining on a typical day?

Eating Habits

44. Over the last year, how many meals did you eat a day on average?
45. Over the last year, how many snacks did you eat a day on average?
46. Over the last year, what was your typical 1st meal composition (food type and proportion)?
47. Over the last year, what was your typical 2nd meal composition (food type and proportion)?
48. Over the last year, what was your typical 3rd meal composition (food type and proportion)?
49. Over the last year, what was your typical snack composition (food type and proportion)?

50. If you have any existing medical conditions (refer to the 'Health Status' portion of the questionnaire), how have your eating habits changed since your diagnosis(es)?
    a. Do any of your existing medical conditions require a strict diet or elimination of certain food items? Please explain.

Food Financials

51. What percent of your total monthly budget would you say you spend on food and groceries?
52. Now, what percent of your monthly food budget do you spend on fast food?
53. What percent of your monthly food budget do you spend on fresh produce?
54. Are you satisfied with your current food-buying habits?
55. If you could change something about your current food buying habits, what would it be?
56. What do you believe is preventing you from making these changes?

Ultra Processed Food (UPF) Food and Beverage Frequency Questionnaire (Adapted from NHANES Food Frequency Questionnaire)

57. Over the last year, how often did you consume fast food on average?
    a) never or less than once/month
    b) Once a month
    c) Twice a month
    d) Three times a month
    e) Once a week
    f) Twice a week
    g) Three times a week
    h) Four times a week
    i) 1-2 times/day
    j) 3-4 times/day
    k) 4-5 times/day
    l) ≥6 times/day
58. Over the last year, how often did you consume fried foods on average?
59. Over the last year, how often did you consume sweet or savory packaged snacks (e.g., chips, crackers, cookies) on average?
60. Over the last year, how often did you consume sweet or savory dairy products ("sour cream, cream cheese, ice cream, frozen yogurt") on average? (Zhong et al., 2021)
61. Over the last year, how often did you consume candies on average?
62. Over the last year, how often did you consume cakes, pies, and pastries on average?
63. Over the last year, how often did you consume mass-produced packaged breads and buns on average?
64. Over the last year, how often did you consume margarines and spreads on average?
65. Over the last year, how often did you consume dips on average?
66. Over the last year, how often did you consume sugar-sweetened breakfast cereals on average?
67. Over the last year, how often did you consume cereal bars and energy bars on average?
68. Over the last year, how often did you consume instant soups, sauces, and noodles (i.e. ramen noodles) on average?
69. Over the last year, how often did you consume ready-to-heat and pre-prepared products on average (i.e. poultry and fish nuggets, hot dogs, sausages, deli meat, pies, pasta, and pizza dishes)?
70. Overall, in the last year, how often did you consume ultra-processed foods on average?
71. Over the last year, what were your top 5 regularly ingested UPFs?
72. Over the last year, how often did you consume soda pop on average?
73. Over the last year, how often did you consume sugar-sweetened fruit drinks on average?
74. Over the last year, how often did you consume flavored milk on average? [This includes but is not limited to: strawberry and chocolate milk.]
75. Over the last year, how often did you consume sugar-sweetened frozen drinks on average? (This includes but is not limited to: milkshakes, frozen yogurt shakes, and sugar-sweetened smoothies.)
76. Over the last year, how often did you consume energy drinks on average?
77. Over the last year, how often did you consume other restaurants and fast food drinks on average?
78. Overall, in the last year, how often did you consume ultra-processed beverages on average?
79. Over the last year, what were your top 5 regularly ingested ultra-processed beverages?

80. **Prior to today, were you aware of the definition of processed and ultra-processed foods?**
81. **Are you aware of any possible health effects caused by or related to processed and ultra-processed foods?**
82. **Are you aware whether it is recommended by the United States 2020-2025 Dietary Guidelines to limit processed and ultra-processed foods for health?**

PART 2

Interview Questions - Open-Ended

Childhood

1. **Please tell me about your childhood home and what you can remember about the types of food you all would eat regularly? (May read follow up questions)**
    a. **How many meals and snacks did you eat a day?**
    b. **What was the typical meal composition (type and proportion of proteins, carbs, fruits, and veggies)?**
    c. **What kinds of snacks did you eat?**
    d. **Was there someone in the house who regularly prepared home-cooked meals? Can you tell me more about their relationship to you and their racial/ethnic background?**
    e. **What genre of food would you say was the norm in your childhood home? (Soul, fusion, american, mediterranean, etc.)**
    f. **Compared to your childhood, do you feel that you eat more home-cooked or processed foods as an adult?**
    g. **What genre of food would you say is the norm in your current home? (Soul, fusion, american, mediterranean, etc.)**
    h. **How have your eating habits changed since you became an adult?**
    i. **Is there a specific life event that you attribute to your change in eating habits?**

Food Preference

2. **Do you have a preference for home-cooked meals versus pre-prepared foods and meals? If so, please explain.**
    a. **What would you say has influenced your preference?**

UPFs

3. **What do you know about processed and ultra-processed foods? Feel free to name as many foods as you can that you believe fall into the category of processed and ultra-processed foods.**
4. **Are you aware of any possible health effects caused by processed and ultra-processed foods?**
5. **Compared to your childhood, do you eat more processed and ultra-processed food as an adult?**

Exercise and Activity

6. **Do you feel comfortable/satisfied with your current level and amount of physical activity and exercise?**
7. **If you could name three things, what would you say hinders your level and amount of physical activity and exercise?**
8. **What kinds of physical activity do you enjoy the most and why?**
    a. **Does anybody in your life partake in these activities with you?**

Routine

9. **Can you walk me through what a typical day looks like for you? Please feel free to provide as much detail as you can (times, locations, what mood you were in, etc.).**

Stress Coping Mechanisms

10. **What kinds of things stress you out the most?**
11. **How do you manage your stress? (May read follow up questions)**
    a. **Where did you learn these coping mechanisms?**
    b. **Have you ever felt that eating food helps you to manage your stress or balance your emotions? If yes, what kinds of "comfort foods" do you usually find yourself seeking out or consuming?**
        i. **After you have consumed your "comfort food," how long until the stress returns?**
        ii. **Do you ever feel as though your stress is completely eliminated?**

References: 2020 BRFSS Questionnaire. (2021, July 12). Retrieved from https://www.cdc.gov/brfss/questionnaires/pdf-ques/2020-BRFSS-Questionnaire-508.pdf.

Appendix IX: Budget

	Number of Items	Cost Per Item (USD)	Total Cost (USD)
Gift Cards	2	$25	$50
Total Budget			$50

Appendix X: Baseline Questionnaire Responses

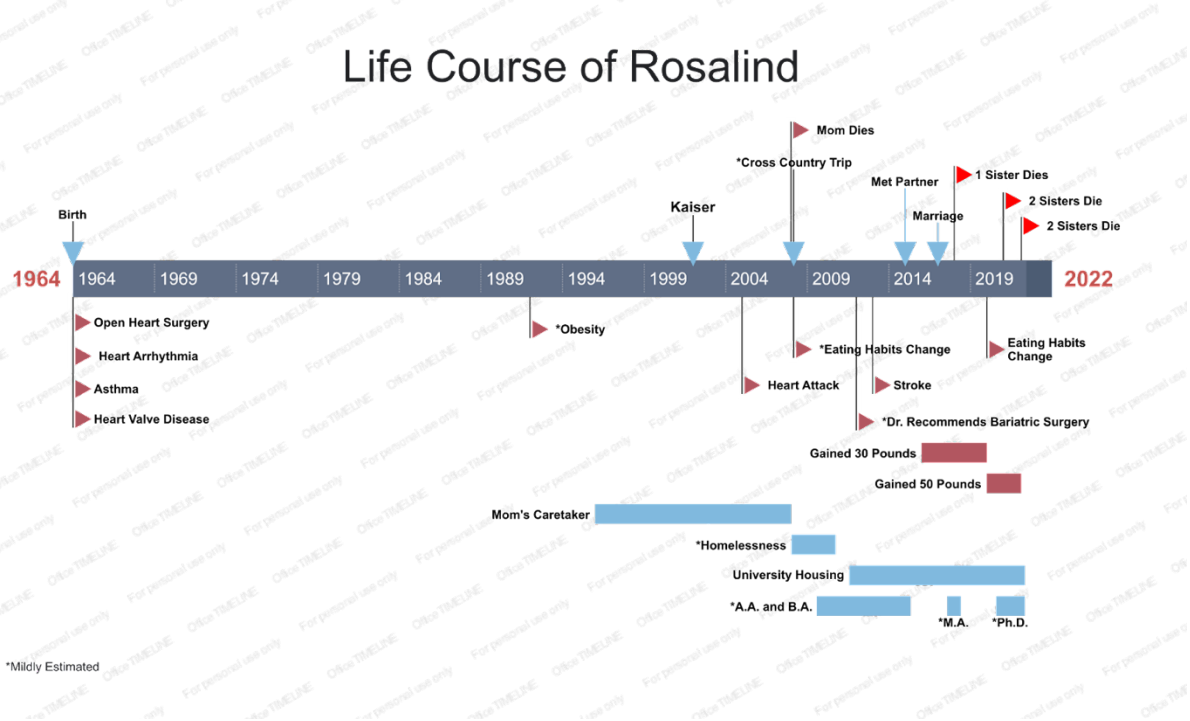
1*	Rosalind	Elora
2*	59	58
3*	Female	Female
4*	No	No
5	n/a	n/a
6*	Black or African American	Black or African American
7	n/a	n/a
8	n/a	n/a
9	Black/African American	Black/African American
10	n/a	n/a
11*	Married	Divorced
12*	Phoenix, Arizona	Los Angeles, CA, USA
13*	Single-parent/guardian home	Two-parent/guardian home
14	Female	n/a
15	Both, my mother/sister	n/a
16	n/a	n/a
17*	Stockton, CA	Carson, CA
18*	Urban	Suburban
19*	Less than $25,000	Less than $35,000
20*	11th - Mother	Mother-Some College
21*	Unknown - Father	Father-Some College
22*	Domestic worker	Mother-Lab Assistant
23*	Ranch Supervisor	Father-Truck Driver
24*	95204	90746
25*	2 years	20+ years
26*	Suburban	Suburban
27	Yes - 2 years	n/a
28*	Masters	21 years
29	A.A, B.A, M.A.	Psychology, BA; Clinical Psychology, MA; Juris Doctor, J.D.
30*	Self-employed, A Student	Self-employed
31*	Live on campus	Own
32	0	n/a
33	1	3
34*	0	1
35	n/a	Mother
36*	Less than $35,000	Less than $25,000
37	n/a	n/a
38	n/a	n/a
39	Provided	Provided

* indicates required question

Appendix XI: Disease and Conditions - Rosalind

Disease/Condition - Rosalind
Asthma
Debilitating Pain
Feet Swelling
Fibroid Tumors (Before Complete Hysterectomy)
Heart Arrhythmia
Heart Attack
High Blood Pressure (non-chronic)
Large Heart
Obesity
Osteoarthritis in Knee
Overall Poor Mental Health
Overall Poor Physical Health
Plantar Fasciitis
Rheumatoid Arthritis in Right Shoulder
Sleep Apnea
Stress
Stroke → Overall Weakness
Weak Heart

Appendix XII: Life Course of Rosalind



Appendix XIII: Disease and Conditions - Elora

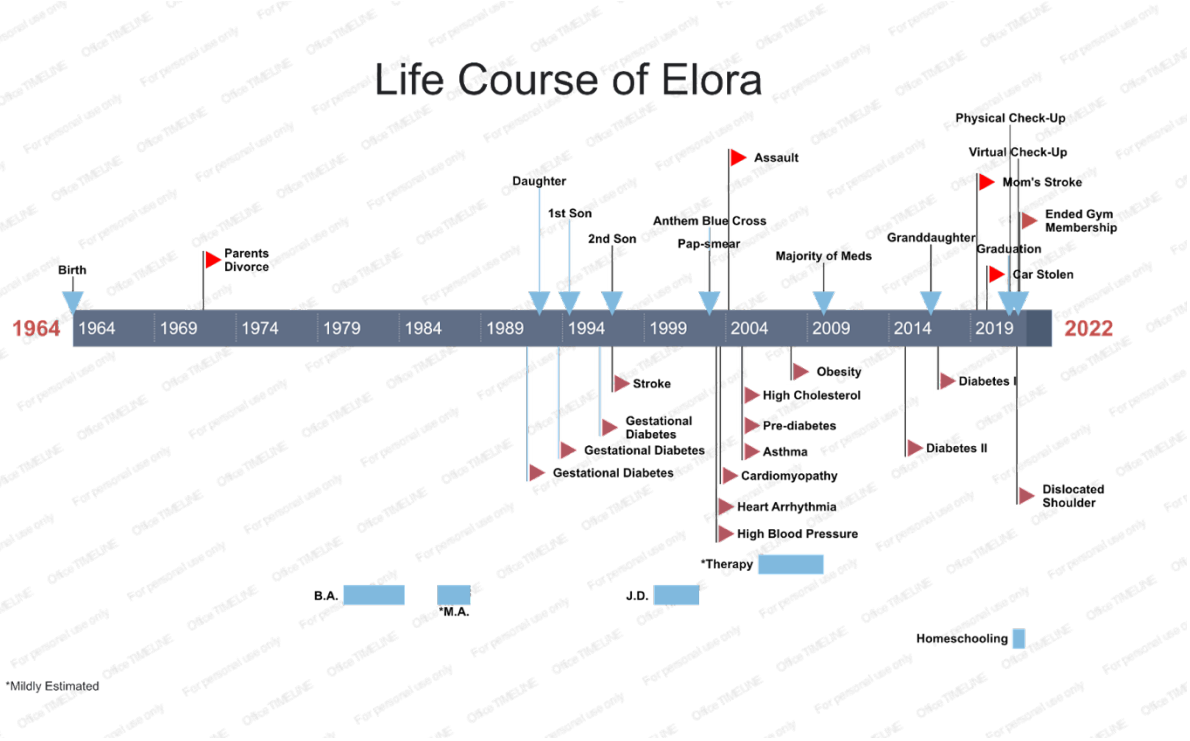
Disease/Condition - Elora
Anemia
Anxiety
Asthma
Cardiomyopathy
Chronic Obstructive Pulmonary Disease
Depression
Gastroesophageal Reflux Disease
Heart Arrhythmia
High Blood Pressure
High Cholesterol
Injured Right Shoulder → Limited Mobility
Overall Poor Physical Health
Pre-diabetes, Diabetes 1, Diabetes 2, Gestational Diabetes
PTSD
Sickle-cell Anemia
Stress
Stroke

Appendix XIV: Elora's Medications

Medication	*Purpose
Aspirin 80	Heart
Amlodipine	High Blood Pressure
Iron	Blood (Anemia)
Vitamin D	Health Reasons
Furosemide	Taking Water Off the Body
Fluoxetine (Prozac)	Depression
Famotidine	GERD
Glipizide	Diabetes
Hydroxy	Allergies
Losartan	Blood Pressure
Metoprolol	Heart
Potassium (K)	Heart
Simvastatin	Heart and High Blood Pressure
Tradjenta	Blood Sugar (Diabetes)
Basaglar Insulin	Once a Day (Diabetes)
Humulin Insulin	Before Every Meal (Diabetes)
Combivent	Emergency Inhaler (Asthma)
Albuterol	Regular Basis (Asthma)
Albuterol sulfate liquid	Breathing Treatments (Asthma)

* Elora's interpretation of each medication's purpose. May not be completely accurate.

Appendix XV: Life Course of Elora



Appendix XVI: UPF and Ultra Processed Beverage Frequency Questionnaire

	Rosalind	Elora
57.	1 to 2 times a day.	Twice a week.
58.	Once a day.	Maybe once a week.
59.	4 to 5 times a day.	3 to 4 times a day.
60.	I would just say probably once a week. The ice cream that's every other day cuz I do the no-sugar popsicles, and I don't eat sour cream or anything like that.	I don't eat sour cream… I almost want to say one or 2 times a week.
61.	About 3 to 4 times a day.	Every day. One or 2 times a day. That's not true… I don't always eat candy, but then again I do like to eat chocolate. One time a day. Yup. That's probably one or 2 times today.
62.	Probably like once a week.	Maybe one or 2 times a month.
63.	Once a week, because I don't like bread like that. I get a sandwich, but it's not like I get that every day. I'll say about once or maybe twice in a week.	Yeah, I probably eat bread 2 to 3 times a week.
64.	No, I don't eat those.	Once a month.
65.	Probably once a month. When I go to Chipotle, I get the chips with that sometimes, but I'm not a dip person.	Once a month.
66.	That has to be like once a month… not even once a month. I'm not a cereal person.	0. I like the banana nut crunch. But, how often do I eat it though? That's more of a grain… twice a month.
67.	None.	0.
68.	That's probably hardly ever. I don't like those too much, probably like once a year. My husband does.	Once a week.
69.	Probably 1 to 2 times a day.	Probably, just about every day. At least every day. One to 2 times a day.
70.	Like 1 or 2 times a day.	I get it. The Cheez-It was a really good example. That's again, that's probably 2-3 times a day.
71.	French fries, candy, potato chips, sodas, and Costco hot dogs.	It would be cheese, sour-cream, bread, lunch meat, and probably sausage.
72.	Oh, God! 2 to 3 times a day.	Oh, all day long. 3 to 4 cans a day.
73.	Oh, no, I'm not doing that too much. I would say once a week.	No. One, maybe, a month. Does this include lemonade or sweet tea or something like that? Yeah, probably one a month.
74.	None.	None.
75.	I would say once a month, because I like the frozen lemonade that I make, and different things like that.	I might have a smoothie 3 times a year. I'll go to Jamba Juice like I said maybe 3 times a year. Other than that, none.
76.	Oh, no, none!	0.
77.	Oh, shoot. 2 to 3 times a day on some of it. When I'm eating like that, I'll go to fast food.	Remember, I have fast food twice a week. If I have fast food twice a week, I would have a drink twice a week.
78.	Skipped.	Skipped.
79.	Skipped.	Top 5 drinks would be: Diet Dr. Pepper, Diet Coke, Mocha Frappe from McDonalds, sweet tea, and Simply Lemonade.

Appendix XVII: Assessment of Ultra Processed Food (UPF) Prior Awareness

	Rosalind	**Elora**
80.	I was aware of processed, but not ultra-processed.	No.
81.	Yes, heart disease and heart attacks. Yes, because of the high conteNo,nt of fat sugars.	I'm sure that there are. I don't know what they are and it would probably be helpful to put that information out into the mainstream. I'm sure that there are, but I just don’t know.
82.	No.	No.

Appendix XVIII: Future Research - Evaluated Intervention Budget

Category	Item	Qty.	Cost	Subtotal	~ Total
Personnel	project staff research annual fellowships	10	$ 20,000	$200,000	$200,000
Personnel	chef consultant fee - cooking sessions with recommendations	60 cooking sessions	$ 300	$18,000	$18,000
Personnel	part-time clinic staff	30 staff for 4 months	$ 1,200	$144,000	$144,000
Supplies	food and supplies for cooking sessions	60	$ 350	$21,000	$21,000
Supplies	flyers	5,000	$0.045	$225	$225
Supplies	pins	5,000	$0.0139	$ 69.5	$ 70
Supplies	light refreshments for community members and student volunteers	2,500	$ 2	$ 5,000	$ 5,000
Equipment	kitchen rental for cooking sessions	1,200 hours	$30	$36,000	$36,000
Equipment	unique food preparation devices and items	25	$300	$7,500	$7,500
Travel	chef to and from school stipend	60	$30	$1,800	$1,800
Lodging	few select essential personnel	3 people	$1,500 per person per month	$162,000	$162,000
Other	offset food plan profits	varies	varies	Up to $200,000	Up to $200,000
Other	UPF meal plan subsidies	30	varies	Up to $1,800	Up to $1,800
Other	open access publication fees	15	$1,200	$18,000	$18,000
	Total Project Allowance				$815,395
	Administrative fee				$0
	Total Grant request				$1.5 mil

Appendix XIX: Evaluated Intervention

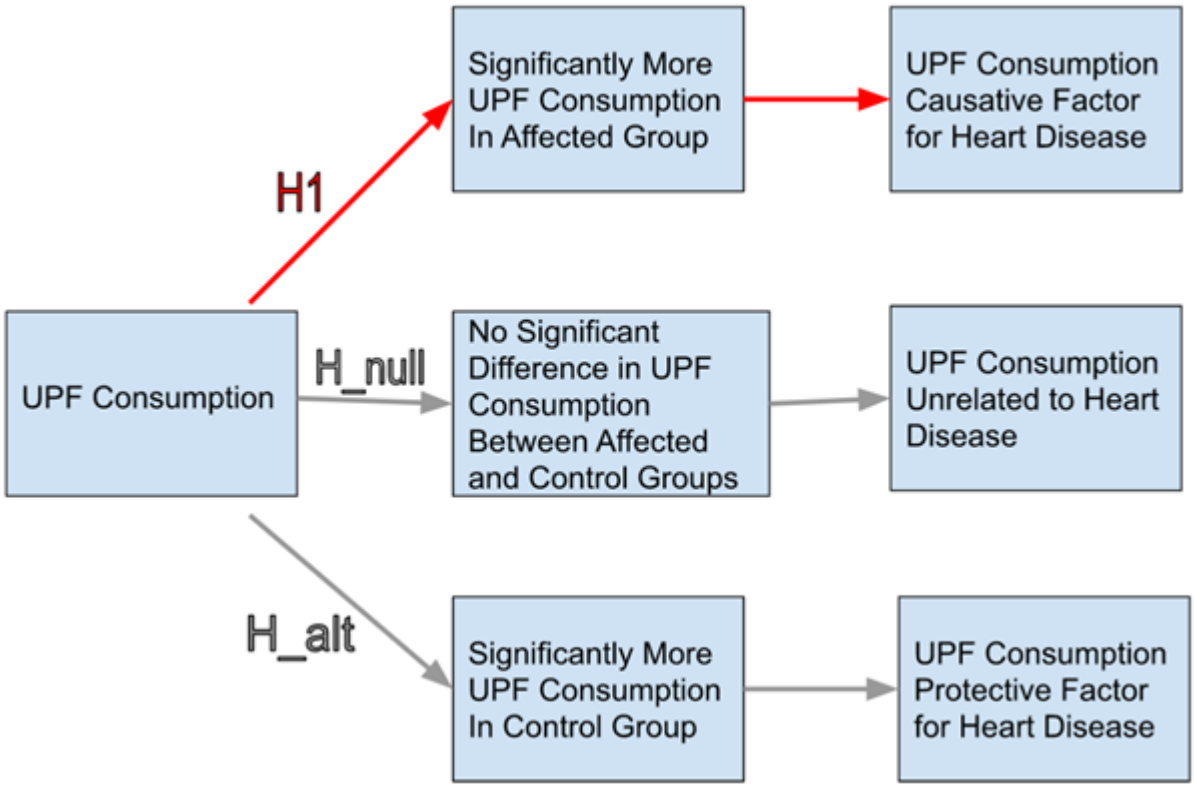
1.0: Objectives and Specific Aims

Black women are the most at-risk group for CVD and related diseases in the United States (DeSalvo et al., 2005). This is partially due to the positionality of many Black communities in food deserts devoid of nutritious food options and flooded with UPFs (Bradley and Galt, 2013). A review published in the Annual Review of Nutrition utilized a developmental systems perspective to focus on how genetic predispositions interact with aspects of the eating environment to produce phenotypic food preferences (Birch, 1999). The review found that the location of childhood and early, repeated exposure to food types contribute remarkably to food preference and nutrition awareness, which mediate overall consumption of UPFs (Birch, 1999). Although studies and large scale literature reviews have found positive correlations between UPFs and heart disease amongst study populations (Al-Shaar, et al., 2020; Baker & Lawrence, 2019; Chen et al., 2013; Juul et al., 2018; Kris-Etherton et al., 2020; Micha et al., 2010; 2017; Srour et al., 2019; Zhang, et al., 2021; Zhong et al., 2021), a specific link identifying high UPF consumption as the leading cause of the disproportionate rates of heart disease in Black women has yet to be illuminated. After this project demonstrates such a link, an array of anti-UPFs policies can be implemented to reduce UPF consumption in minority communities, such as restrictions on fast food enterprises and availability of UPFs at small-scale grocers and supermarkets. Perhaps most like the design and goals of the proposed project, a study by Boysen et al. used available data on global tariff differences to determine whether UPF taxation would be effective in reducing associated adverse health outcomes. The researchers found the tariff differences "to be significant and substantial and to differ by income level of the country as well as by gender… the results show that policies affecting the consumer price differential between

the two food groups are effective in influencing obesity and underweight prevalence and that these two issues cannot be treated separately" (Boysen et. al 2019). Moreover, by using the NOVA classification to separate food items into discrete groups, the researchers were able to "comprehensively investigate the effects of import tariffs on all highly processed foods with respect to obesity and underweight on a global scale" and conclude that UPF taxation is an effective method of reducing UPF consumption and associated health outcomes (Boysen et. al 2019).

Therefore, the goal of this project is to generate empirical evidence that supports the proposition of UPF taxes in Black communities. To that end, this project aims to increase the cost of UPFs at a historically Black college and university (HBCU) to identify the link between UPC consumption and cardiovascular disease. The proposed hypotheses are detailed in Figure 4.

Figure 4: Evaluated Intervention Hypothesis



Ideally, with a $1.5 million research budget to be spent over three years, this project contrasts two demographically comparable colleges with a high proportion of Blacks where one has agreed to tax UPFs and subsidize minimally and unprocessed foods and the other has not. The objective of the project is to generate statistically significant differences in means between the aggregated data obtained from the intervention group and the control. The timeline for each phase of the study is outlined in the "Project Design" section of this proposal. The intervention group will be Black women attending Spelman College, although the trial will likely affect other races attending the college, and the control group will be Black women attending Xavier University of Louisiana. The measured health outcomes will be pre and post intervention low-density lipoproteins (LDL), high-density lipoproteins (HDL) cholesterol levels, systolic blood pressure (2021 National Healthcare Quality and Disparities Report, 2021), and waist

circumference (Flint et al., 2010) serve as a proxy for rates of heart disease, stroke, obesity, and possibly other heart-related conditions.

At the two-and-a-half-year mark of the project, the generated empirical evidence of an observed link between UPFs and heart disease will be presented to nutrition policymakers and community stakeholders to craft UPF taxation bills. The objective is to present the results of the study to a minimum of fifty policy makers and community stakeholders, and eventually be referenced by at least one UPF tax bill impacting Black women. In addition, knowledge regarding the impact of UPFs can support the introduction of culturally sensitive food-based preventative care in the clinical setting and provide information for other local community interventions.

1.1 Project Design

The project employs a quasi-experimental design comparing the behaviors and health outcomes of an intervention group and a control group over a period at similar academic institutions. Because meal plan selection will be influenced by students' demographics such as taste preference, culture, socio-economic status, and prior nutrition education, researchers at the intervention school will create marketing strategies to promote the purchase of minimally and unprocessed meal plans. A 2021 study featured in *Meat Science* reported "that higher consumer perceptions of nutritional content, sensory appeal, and price lead to higher attitudes toward frozen meat and in turn, increase purchase intention" (Hati et al., 2021). Therefore, to promote the purchase intention of the intervention group, there will be a concerted effort on behalf of the research staff and Spelman College to disseminate to the students the high nutritious value, tastiness, and cost effectiveness of the minimally and unprocessed meal plans. The specific

methods of dissemination are further outlined in Phase II of the "Phases of Intervention and Evaluation" section.

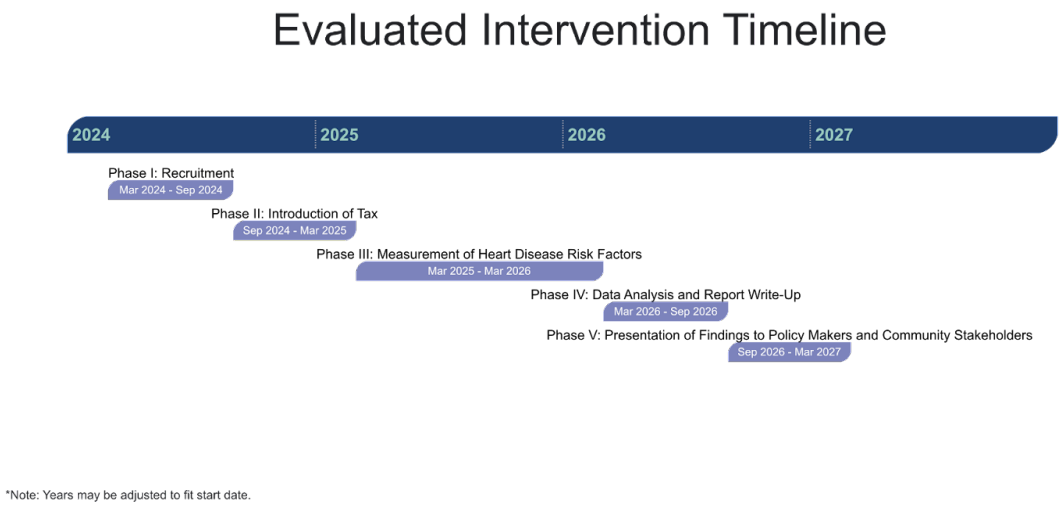
1.2: Study Population

The study population will consist of adult self-identifying Black women enrolled in classes at Spelman College and Xavier University of Louisiana. There will be no upper age limit for participants, although researchers anticipate the vast majority will fall between the 18- to 30-year-old range. This age group (~18 to 30 years old) is ideal for this study because many health conditions are positively correlated with increasing age. Thus, utilizing data from younger participants will eliminate confounding health conditions. Moreover, a 2021 report from the AHA indicated that 49% of Black women 20 years and older have heart diseases (AHA, 2021). Just one year later, the AHA released an update stating that "based on 2015 to 2018 data, among non-Hispanic (NH) Black adults 20 years of age and older… 58.8% of females had CVD" (Tsao et al., 2022). This data was collected prior to the COVID-19 pandemic; thus, it is safe to assume the statistic may be even more drastic in the next report. Furthermore, a study looking at preventative measures for heart disease in Black women reported that cardiovascular risk factors appear early in life. Consequently, prevention should begin well before the age of 40 to be effective (Napoli, 2021). All participants must reside in university-owned housing and purchase a meal plan. The purpose of excluding those that do not reside in university-owned housing is that students living on campus tend to be captive consumers with less latitude to get their meals elsewhere. Spelman College will serve as the experimental group and implement a scheme whereby the prices of ultra-processed foods are increased 30% and the prices of minimally processed foods are decreased 30%. Xavier University of Louisiana will serve as the control

group and will undergo no changes. There will be no upward bound to the sample size; however, the goal is to gather data from at least 250 participants per campus.

1.3: Phases of Intervention and Evaluation

Figure 5: Evaluated Intervention Timeline



Phase I: Recruitment (6 months)

In this phase, Spelman College (intervention) and Xavier University of Louisiana (control) will be invited to participate in the project. Spelman will be given time to co-develop meal plan alterations for the two meal plan options. Food scientists educated in NOVA food processing classification will help determine the level of processing for all food items prepared in the dining halls and campus food retailers (Zhang et al., 2021). Both plans will be designed to be matched for presented calories, energy density, macronutrients, sugar, sodium, and fiber (Hall et al., 2019). Current students, local community volunteers (ideally affiliated with non-profit organizations and churches) and accredited chefs will be consulted throughout the recipe-making

process to ensure cultural appropriateness of each food. Emphasis will be placed on cultural appropriateness and relativity while considering a food item's flavor, method of preparation, presentation, and familiarity. A paper published in the *American Journal of Lifestyle Medicine* found that "if dietary recommendations conflict with cultural meaning of certain foods, they will not be followed. 'Culturally tailoring', or adapting a dietary message can promote acceptance of a dietary change to reduce CVD risk" (Winham, 2009). Thus, only through this method can researchers ensure the acceptance of new food items. Input from current students, local community volunteers, and accredited chefs will be obtained virtually via surveys and in-person via developmental workshops.

The first meal plan will be rated 30% higher than the baseline fee of prior years and include UPFs; the second will be rated 30% lower than the baseline fee and contain minimally and unprocessed foods. Any fiscal offset in Spelman's total profits generated from the meal plan fees will be subsidized by the project treasury.

Relevant health clinics affiliated with each university will be approached to participate in the study's pre and post health assessments. Local staff will be trained in the health assessment procedures including the verbal waiver agreement and briefing of the assessments' research purposes. If there are insufficient staff available, student volunteers and researchers will be invited to participate in the study to conduct the health assessments. However, health assessments will mostly be conducted as part of students' routine checkups.

Phase II: Introduction of Tax (6 months)

Prior to the beginning of the school year when students normally are invited to purchase meal plans, Spelman College will officially notify its students of the school's meal plan alterations and the associated tax changes. Throughout Phase II, students will be encouraged to

switch to the minimally and unprocessed plan via the same communication methods if they originally opted out of this plan. Spelman College will implement the scheme whereby the price of the plan inclusive of UPCs is increased 30% and the price of the plan inclusive of minimally and unprocessed foods is decreased 30%. The same taxes will be applied to other campus food retailers including student stores, restaurants, vending machines, etc. Xavier University of Louisiana will proceed as normal with no changes to its meal plans or food retailers. Dining hall staff and campus food retailer employees will be briefed on each meal plan's restrictions to prevent unpermitted food purchases or swapping. At the close of the six-month period, project staff will determine if there is a significant number of students that have purchased the healthier meal plan by accessing the school's aggregate invoice record.

Phase III: Measurement of Heart Disease Risk Factors (12 months)

If the researchers find that Spelman saw reduced consumption of ultra-processed foods in the dining halls and campus retailers, then they will commence with Phase III. Research staff will connect with health clinics serving the students of the two HBCUs to identify women meeting the study criteria. To determine if the reduced consumption of ultra-processed foods in the special intervention college was associated with lower CVD risk factors, clinicians will perform a pre and post health assessment on consenting students. The assessment will measure outcomes including LDL and HDL cholesterol levels, systolic blood pressure (2021 National Healthcare Quality and Disparities Report, 2021), and waist circumference (Flint et al., 2010). According to the U.S. Department of Health and Human Services Office of Minority Health, high levels of LDLs and low levels of HDLs are risk factors for Black women developing heart disease. In addition, high systolic blood pressure is a symptom of hypertension, which is disproportionately prevalent in populations of Black women compared to non-Hispanic Whites

and a known indicator of cardiovascular disease (2021 National Healthcare Quality and Disparities Report, 2021). Given the questionability of BMI as an indicator of fat to muscle and bone ratio in Black women, waist circumference is the most feasible anthropometric measure of CVD risk (Flint et al., 2010). Students from both meal plan groups will undergo pre-health assessments in the first two months of Phase III. Depending on the date of pre assessment, students will return for the post assessment. The data of both meal plan groups will be aggregated for comparison with the control. According to a prospective, randomized, controlled trial examining reductions in LDL cholesterol levels, on average, patients following the Ornish diet lost 24 lbs in a year and had a 37% reduction in LDL cholesterol levels (HDL cholesterol levels were unchanged) (Ornish et al., 1990). Therefore, it is assumed that the 12-month period of Phase III is sufficient to produce significant changes in measured outcomes.

Xavier University of Louisiana will mimic Spelman's Phase III protocol. The difference is that there will only be one meal plan group and, therefore, it will suffice as the ideal control.

Phase IV: Data Analysis and Report Write-Up (6 months)

Immediately following the end of Phase III data collection, project staff will begin performing comparative statistical analysis using the pooled data from the intervention school and the control school. Data will be excluded from respondents that are pregnant/breastfeeding or have other non-related chronic conditions. The groups should be relatively identical, therefore the UPF consumption can be isolated as the independent variable. The statistical tests performed will be an independent t-test to determine significance in differences in mean, standard deviations, and a p-value. Researchers will perform the t-test under the assumption that both groups are sampled from normal distributions with equal variances. The t-test will determine whether the means of the affected and control groups are equal. A p-value will be used to

determine whether the difference in means of the two groups is significant. All statistical data from the survey responses will be determined using a well-reputed statistical program (i.e., SAS programming). In the case that researchers perform analysis by hand, they will perform the following steps in order: a significance level of 0.05 will be used with a one-tailed test; calculate the standard deviation (from the mean and between sample groups); use the standard error formula for the two groups; determine the t-score; find the degrees of freedom; use the t-table to determine the p-value. The staff members will obtain qualitative feedback for the study via a voluntary Qualtrics survey disseminated to the entire eligible student body (i.e., Black women living in residence halls or school housing who purchased meal plans). This survey will evaluate the overall experience with campus dining of students at each HBCU. The community volunteers, hired chefs, dining hall staff, campus food retail staff, and health clinic staff at both schools will receive a similar survey to evaluate their overall impression of the project, perceived strengths and weaknesses, and the success of the program at that school. All data will be screened for errors or discrepancies before it is added to the final report. Health clinicians and student volunteers at the health clinic will be encouraged to give their honest opinion regarding the effectiveness of the project including suggestions.

Phase V: Presentation of Findings to Policy Makers and Community Stakeholders (6 months)

In this phase, the official project report will be distributed to nutrition policy makers and community stakeholders across the United States by making direct contact with these individuals or reaching out to affiliated organizations with a vested interest. Given that research regarding UPF health outcomes is a rapidly growing body of research, project staff will use this momentum to pitch study results to professionals belonging to a range of disciplines. In addition, the study's

aggregate data and write-up will be made available to potential grant investors and interested parties via journals on food equity, nutrition, public policy, health policy, and health disparities including the *American Journal of Public Health*, the *Journal of Ethnic and Racial Health Disparities*, the *Office of Minority Health*, etc. The researchers aim to publish to at least 30 free and open-access journals.

1.4: Limitations

Although the dining halls and store campuses of Spelman will all reflect the imposed taxes, there still exist some logistical and geographical limitations. Firstly, students may not be deterred by the 30% tax on the plan with UPFs and incentivized by the 30% tax decrease in the plan without and, thus, may opt to purchase the more expensive meal plan. This may affect the validity of the preliminary data that justifies Phase III (Measurement of Heart Disease Risk Factors) of the project. Furthermore, because the students have the option to choose their own meal plan, this introduces potential confounders: taste preference which is mediated by an exposure to minimally and unprocessed foods at a young age, culture, personal and family income, and level of prior nutrition education. To mitigate this, Spelman will advocate for healthier choice across the board via electronic newsletters, social media, bulletins, and other forms of information dispensing platforms. Also, the project will provide a limited number of subsidies for students with financial need who would like to purchase the UPF plan on a first come, first served basis. Secondly, some may begin purchasing UPFs from close by communities if they find it exceedingly difficult to adjust their taste preference after a lifetime of heavy UPF consumption. To mitigate this, the healthier meal plan will be modeled after a fusion of traditional Black southern, urban, Caribbean, and African foods as closely as possible. Thirdly, some may transition to equally unhealthy options (deep fried foods, over-salting food, etc.) or

increase online purchasing of UPFs, both of which are plausible confounders that must be accounted for in the data analysis phase. One way to prevent this is to request a schoolwide ban on delivery of UPFs to addresses associated with the Spelman campus. Students may apply for exemption from the ban if they have an existing metabolic or other condition that requires UPF consumption for health reasons (i.e., sugar-sweetened beverages (SSBs) to maintain blood sugar). Another way is to relay the project's goals to nearby food retailers and request they implement food displays that highlight minimally and unprocessed products. This will likely yield varying degrees of compliance due to existing marketing contracts and the overall increased marketability of UPFs. Lastly, the sampling pool of the proposed project is limited, therefore, there may be some unforeseen variables that will not present substantial effects until a UPF tax policy is in effect.

1.5: Sustainability

Unfortunately, there may be some political downsides to taxing UPFs because fast food calories are currently cheaper than calories derived from fresh produce. For the sake of sustainability, UPF tax bills may create a temporary need for small and large food retailer subsidies and incentives. Although it would be ideal to eliminate food deserts by opening new grocery stores that provide minimally and unprocessed foods in every Black community, that solution could take decades to come to full realization. Policymakers can immediately increase access and reduce cost of minimally and unprocessed foods by expanding the Black women's grocery purchasing options to include farmers markets and online shopping for Supplemental Nutrition Assistance Program (SNAP) and the Women, Infants, and Children program (WIC) users. More information on SNAP and WIC policy changes can be found in section 9.2. In the long run, the UPF tax should decrease demand for UPFs and increase demand for minimally and

unprocessed foods. This shift in demand will hopefully kickstart reformation of local food systems into ones that increase accessibility, acceptability, and availability of minimally processed and unprocessed foods in Black communities.

1.6: Human Subjects Protection Considerations

1.6.1: Ethics

To ensure that the study follows ethical guidelines for human participants, project staff will obtain Institutional Review Board (IRB) approval from both institutions. Although the study only involves consenting adults, every participant will give their oral or written consent to participate in the pre and post intervention health assessments to their health care provider. Any names and personal identifying factors will be removed from data and analysis will be performed on anonymous, pooled data. All other questionnaires will be completely anonymous, and results will be presented as aggregate data therefore identifying information such as students or parents' names will not be used. To maintain the confidentiality of participants' information, personal identifiers will be immediately replaced with codes and only research members will be given access. Hard copies of the data will be stored in a locked location, and the data inputted into the computer will be password protected.

1.6.2: Benefits

Potential benefits to the intervention group are lower risk for heart disease and cheaper access to minimally and unprocessed foods. Intervention students will be made aware of increased health benefits of their group by Spelman College official newsletter. The newsletter will encourage wide scale transition to minimally and unprocessed diets. Students will receive no direct financial incentive.

1.6.3: Risks

There are no associated health risks for the intervention or control group. Based on food preference, the intervention group may be inconvenienced by the UPF tax; however, they will have greater access to minimally and unprocessed foods. Considering the health benefit of minimally and unprocessed foods, the inconvenience is justified.

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