THE EXPERIENCES OF BLACK WOMEN IN REGARD TO AIR POLLUTION IN TORONTO

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ABSTRACT

The purpose of this thesis is to explore the experiences of Black women regarding air pollution in Toronto. Specifically, it explores the experiences of Black women in Toronto in regard to air pollution and the connections to air pollution and other barriers that Black women may face in Toronto. The thesis used qualitative research alongside air pollution literature in Canada to explain these experiences. The thesis will use the definition of environmental racism and the main theoretical framework of racial capitalism. In Chapter 1, there is a general discussion on the impacts of air pollution, with mention of a ruling of the first death caused by air pollution in the world, in order to showcase the growing concern associated with exposure to air pollution. Furthermore, this chapter explains how air pollution affects population health and focuses on the impact of specific chemicals and compounds associated with air pollution. In Chapter 2, discusses why Black women and their experiences with air pollution are unique compared to the general population in Canada. Furthermore, this chapter explains air pollution and its effects in Toronto, Ontario, including the sources of traffic and industrial air pollution levels, while emphasising the unequal burden of air pollution affecting lower-income groups in Toronto. Chapter 4 explains the theoretical approaches. Chapter 5 will discuss the interview analysis, verbatim quotes from participants and connecting the theories mentioned in the literature review portion to what the participants have mentioned. Chapter 6 will conclude the thesis.

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Table of Contents

CHAPTER 1 INTRODUCTION

There are numerous studies that highlight the affect air pollution has on the health of people living in urban spaces. Climate justice, climate change preparedness, environmental inequality, and environmental racism has expanded the discourse on the health effects of air pollution globally. In 2013, a nine-year old girl named Ella Adoo Kissi Debrah, was rushed to the emergency room in south-east London, England, due to an asthma attack and passed away. Unfortunately for Ella, the last three years of her life leading to her death were filled with visits to the emergency room due to her asthma. Initially her death was ruled acute respiratory failure. However, Ella's mother Rosamund, was aware that they lived in Lewisham on a street in the South Circular, which is one of London's most notoriously congested roads. Rosamund advocated for her daughter's death to be re-examined. It was found that Ella's death was caused by the high levels of nitrogen dioxide (NO2) and other gases. When air quality was tested where Ella lived, it was found to exceed the World Health Organization (WHO) and European Union guidelines on air pollution levels (Marshall, 2020). In court, it was recognised that London, England failed to work towards reducing the levels of nitrogen dioxide in South East London, leading to Ella's death. This marked the first ruling on a death caused by air pollution in the world (BBC News, 2020; Marshall, 2020). Although this case study took place in London, England, the aspects of air pollution causing increased emergency room visits of children and resulting in premature death, can be applied in almost any urban space in the world.

Ella's death aligns with the studies that explain how air pollution effects the health of a population. Exposure to air pollution can cause acute (short-term) health impacts such as increased frequency and length of respiratory symptoms, increased hospitalizations, acute

bronchitis, asthma attacks, and increased hospitalizations for respiratory illnesses (Toronto Public Health, 2004; Lin et al., 2005). Chronic (long-term) health impacts associated with exposure to poor air quality include asthma, chronic bronchitis, reduced lung growth, reduced small airway function, lung cancer, premature cardiovascular death, and reduced life expectancy (Khafaie et al, 2016).

Criterion Air Pollutants and Health Impacts

Air pollution can be linked to four key air pollutants which are sulphur dioxide (SO2), nitrogen dioxide (NO2), particulate matter (PM) which can be broken down into PM2.5 and PM10, and ozone (O3) (Toronto Public Health, 2004; Toronto Public Health, 2007; Ontario Public Health, 2014; Lin et al., 2005; Pinault et al, 2016; Elford & D. Adams, 2020; Zuurbier et al, 2010; Jerrett et al, 2007; Robichaud & Ménard, 2014). The city of Toronto is not immune to air pollution and health issues, with numerous studies suggesting that air pollution contributes to poor health (Toronto Public Health, 2004; Toronto Public Health, 2007; Ontario Public Health, 2014; Huff, 2008). Poor air quality in urban environments is caused by transportation (i.e., gasoline emissions and diesel exhaust) (Elford & D. Adams, 2020; Toronto Public Health, 2004), industrial emissions, dust, and trans-boundary pollution. Toronto is reflective of a more heterogenous spatial distribution because the city has an extensive network of major roads, highways, and expressways (Jerrett et al. 2007). These mechanisms of air pollution contribute to heating up the atmosphere while also affecting cardiopulmonary, cardiovascular, and maternal health (Patel et al, 2021). On a global scale, air pollutants expose populations to respiratory diseases such as asthma and chronic bronchitis and these exposures contribute to mortality rates, further, there is data in the United States that documents the disproportionate mortality rates in Black communities due to air pollution (Patel et al., 2021). Alongside carbon dioxide,

particulate matter, ozone precursors, and other greenhouse gas emissions; wildfires also influence pollution patterns across Canada (World Weather Attribution, 2023; Natural Resources Canada, 2023; Canadian Interagency Forest Fire Centre, 2023; Watts et al., 2021). Individuals who have had long-term or short-term exposure to wildfires can experience cardiopulmonary mortality, lower respiratory disease, asthma, neurodegenerative disease, preterm birth, low birth weight, diabetes, and rheumatic diseases (Watts et al., 2021). This is a cause for concern because due to climate change there has been an increased number of wildfires in Canada and 2023 marked a record-breaking amount for wildfires (World Weather Attribution, 2023; Natural Resources Canada, 2023; Canadian Interagency Forest Fire Centre, 2023).

Social Determinants of Health: Air Pollution

Air pollution affects the population in Toronto in a myriad of ways. In order to understand the affects it is vital to understand how the physical environment can have an impact on an individual's health, alongside socio-economic systems and histories (Toronto Public Health, 2004, 2008). The health impacts of air pollution are further compounded by socioeconomic status. Lower socioeconomic populations in Toronto are exposed to greater levels of air pollution which contribute to health outcomes that then further create health disparities across vulnerable populations in Toronto (Elford & D. Adams, 2020; Toronto Public Health, 2004). This research study will focus on primarily traffic and industrial related air pollution experiences.

The ways in which racism and sexism operate create unique experiences in the ways Black women navigate environmental hazards, such as air pollution. The way systems (capitalism, imperialism, and patriarchy) of oppression intertwine have created sociopolitical environments that degrade the health and well-being of Black women (Prather et al., 2018).

Structurally racist institutions in Canada such as healthcare, law and policing, municipal and federal governments have made Black women more susceptible to air pollution because of the ways environmental hazards are a sociopolitical process (Michelson, 2022). Air pollution is a threat to human health in different ways, and in some circumstances exacerbates symptoms of respiratory diseases (Patel et al., 2021). The health and well-being of Black women is already an experience that is unique and taking into account the experiences of racist institutions would ultimately make for a unique experience while dealing with air pollution (Barlow & Jones, 2018; Michelson, 2022).

The Biopsychosocial Model of Racism explains why dealing with social determinants of health is unique for Black women by stating that experiencing gendered racism causes stress which produces an allostatic load of cortisol in the body (Goosby & Heidbrink, 2013). Levels of cortisol fluctuates throughout a human's life while sometimes becoming high sporadically. Though, the chronic exposure to cortisol can take a toll on the body and increases the risk of chronic diseases such as diabetes and hypertension (Goosby & Heidbrink, 2013). Chronic exposure to high cortisol has shown to have epigenetic vertical transmission of allostatic load which allows trauma induced chronic stress to pass on intergenerationally, which predisposes Black women to chronic diseases (Goosby & Heidbrink, 2013). Furthermore, the literature in the United States explains that the trauma and stresses of systemic racism has been passed down generationally in Black women, which is referred to as intergenerational gendered racialized trauma, and is a direct result of the lasting legacy of the transatlantic slave trade and colonialism (Barlow & Jones, 2018; Michelson, 2022). Intergenerational racialized trauma is considered to be a social determinant of health that Black women navigate. This further explains the ways in which navigating social determinants of health is different for Black women. Which translates to

the ways in which Black women experience air pollution is unique. Studies in the United States (Goosby & Heidbrink, 2013; Barlow & Jones, 2018; Michelson, 2022) explain that navigating environmental hazards are exacerbated by intergenerational gendered racialized trauma for Black women. The intergenerational gendered racialized trauma contributes to other social determinants of health such as food insecurity, employment, income inequality, and sexual violence (Goosby & Heidbrink, 2013; Barlow & Jones, 2018). This is concerning because research in Canada shows that poor Black women experience the highest rates of hypertension due to long commutes to work, holding positions at tedious jobs, and lack of access to quality healthcare (Gagne & Gerry, 2017). Furthermore, in the United States alongside Canada, the transatlantic slave trade left a legacy of hypersexualization of the Black woman's body (Prather et al., 2018; McKittrick, 2006). The hypersexualization of the Black woman's body is a complex discourse, though, enslaved women in the America's were subjected to legal rape, sexual violence, and economic exploitation which left a relic of biases and stereotypes that have exposed Black women to different forms of sexual violence in the modern day (Prather et al., 2018; Parrish, 2020; Arnold, 1990). Human evolution illustrates that the human body can withstand minor harms but constant injuries can slowly limit adaptation, specifically if the body has been disrupted or weakened by chronic stressors and in the context of this thesis, would be environmental hazards alongside other social determinants of health, such as intergenerational racialized gendered trauma (Michelson, 2022; Gee & Ford 2011). It's established that Black women experience social determinants of health uniquely due to structures and histories of racism (Goosby & Heidbrink, 2013; Michelson, 2022; Gee & Ford 2011). Therefore, this would demonstrate that Black women navigate air pollution uniquely because it is also categorized as a social and structural determinant of health (Patel et al., 2021). Air pollution is a social

determinant of health because of the ways in which exposure is based off of geographical location and socioeconomic conditions (Patel et al., 2021). The places people inhabit is influenced by a plethora of processes such as histories, race, gender, age, disability, and income. These factors produce material differences in social determinants of health and in the context of Toronto there will be a focus on where people reside in the city. Socioeconomic status dictates where groups of people reside and is a part of the reasons why neighborhoods are a focus for this thesis. Unfortunately, there is no air pollution data that incorporates race in Canada, however, there is research that highlights socioeconomic conditions dictating exposure to air pollution. However, in the United States it is proven that Black women live in areas with the highest exposure to air pollution (Mikati et al., 2018). The World Health Organization (2014) stated that women experience environmental hazards differently than men, while other social determinants of health also impact the experiences navigating environmental hazards. The discourse on social determinants of health and air pollution is why the experiences of Black women is a topic of focus for this thesis and honouring their experiences are important and can expand the discourse on air pollution in Canada. Furthermore, the purpose of this thesis is to explore the experiences of Black women in regard to air pollution. In order to highlight the linkages of air pollution in Toronto and Black women, the thesis will explore the following questions; what are the experiences of Black women in Toronto in regard to air pollution? Secondly, what are the connections to air pollution and other barriers that Black women may face in Toronto?

CHAPTER 2 LITERATURE REVIEW AND THEORETICAL APPROACHES

Introduction to the Literature

This chapter will first discuss the criterion air pollutants and their health impacts. Furthermore, this chapter will explain the difference between traffic-related and industrial air pollution. The following paragraphs will highlight the specific ways in which air pollution affects the population in Toronto. Specifically, the unequal impact of traffic related air pollution and industrial related air pollution on lower socioeconomic populations in Toronto. The literature section will showcase that there is a form of injustice in regard to which populations are affected by air pollution in Toronto. There is literature in this paper that will elaborate the research on the relationships between people who reside near major intersections and highways being exposed to higher levels of air pollution. It will also show insights from the national pollutant release inventory (NPRI) and the placements of industrial facilities and which residents reside in close proximity to the facilities. The chapter also discusses the theoretical concepts of racial capitalism, alongside the Black sense of place, space, and the body. These concepts are important to incorporate in order to conceptualize the experiences of Black women in Toronto. Racial capitalism was chosen because of how low-income status is one of the most prominent associations to air pollution in the Canadian context and how capitalism does not function without racial hierarchies (Robinson, 1983; Pulido 2016; Wilson Gilmore, 2016). Furthermore, the literature will outline how Black women's experiences are unique in regard to navigating material spaces, alongside the ways in which spaces are political and socially constructed (Smith, 1992, Massey, 1992; Mckittrick, 2007; Razack, 2014). Spaces being socially constructed lies within the inclusion and exclusion of individuals based on race, gender, socioeconomic status, and other differences (Massey, 1992), which in this context is the ways in which the Black woman's body interacts with spaces at different scales. Moreover, spaces produce and reproduces hierarchal social relations, while it creates and sustains inequalities

intergenerationally (Mckittrick, 2011; Smith, 1992; Gilmore, 2002; Razack, 2014). This section will elaborate on how Black women's experiences are distinctive in terms of navigating spaces, which requires the spatial nature of environmental racism to be understood as a place-based, site specific, and a context-specific historical analysis (Waldron, 2018). Including how there are multiple embodiments of state-sanctioned racial and gender violence, and the ways violence is decreed and transferred by the state through institutional processes (Mckittrick, 2011). Including, decision making practices and city policies in the ways that harm the cultures, bodies, and communities of Black women (Waldron, 2018; Mckittrick, 2011; Lipsitz, 2007). Another aspect as to why Black women navigating air pollution is unique is because Black women navigate distinctive health determinants which sometimes involves experiences with systems of racism in health care (Dryden & Nnorom, 2021; Boisvert, 2020), employment (Statistics Canada, 2021; Block & Galabuzi, 2011; Duah Kessi, et. al, 2020), and other institutional organizations within Canada.

Criterion Air Pollutants

Environment Canada tracks several air pollutants, along with heavy metals and organic pollutants that lead to poor air quality. These include sulphur dioxide, ozone, nitrogen dioxide, and particulate matter. This section will highlight how these gases affect the health of individuals and where these gases can be found in urbanized settings.

Sulphur Dioxide

In the context of pollutants in urbanized spaces; sulphur dioxide is commonly understood as a toxic gas that is released through industrial polluters such as coal and fuel/oil burning power stations along with transportation sources (Canadian Institute for Health Information, 2010). In

the United States there have been strong associations found to the exposure of sulphur oxide to lung cancer and cardiopulmonary disease (Pope et al., 2002; Atari et al., 2008).

Ozone

Ozone is formed by an atmospheric reaction with existing air pollutants and is contingent on solar intensity that is also associated with atmospheric temperature. Ozone is a greenhouse gas, which means it contributes to global warming on a ground level (Zhang et al., 2019). Warmer temperatures lead to a longer time for the reaction to produce ozone, resulting in typically higher levels of ozone during warmer summer months (Zhang et al., 2019). Epidemiological studies suggest that prolonged exposure to ozone, specifically more than one to eight hours can have adverse health effects on people (Zhang et al., 2019). Ozone has been theorized to cause adverse respiratory effects such as difficulty breathing, shortness of breath and pain when taking a deep breath, including inflammation of the airways (Nuvolone, et al., 2018; Koman & Mancuso, 2017; Zhang et al., 2019; Lin et al., 2007). It is theorized that long-term exposure to ozone is associated with the development of asthma (Nuvolone, et al., 2018; Koman & Mancuso, 2017; Zhang et al., 2019; Lin et al., 2007). Ozone also aggravates lung diseases such as asthma, emphysema, and chronic bronchitis, while also increasing the incidence of respiratory diseases, asthma attacks, and reducing lung function (Nuvolone, et al., 2018; Koman & Mancuso, 2017; Zhang et al., 2019; Lin et al., 2007).

Nitrogen Dioxide

Nitrogen dioxide is commonly understood as one of the major pollutants in urban spaces, because it comes from motor vehicles which release nitrogen oxides, which is the chemical basis for nitrogen dioxide. Traffic related studies have found that NO2 has significant associations with pediatric asthma development (Anderson et al. 2013; Bowatte et al. 2015; Gasana et al.

2012; Khreis et al. 2017; Takenoue et al. 2012), alongside asthma development among all ages (Anderson et al. 2013; Jacquemin et al. 2015).

Particulate Matter

Exposure to particulate matter pollution has harmful effects on cardiovascular health (Hong et al., 2017). Particulate matter (PM) is a complex mixture of suspended particles that are measured and classified by size and are made up of sulphate, nitrate, silicon, elemental carbon, organic matter, and ammonium ions in different types of concentrations (Canadian Institute for Health Information, 2010; Ryswyk et al., 2017). Particulate matter can be understood in two different forms: P.M 2.5 and PM 10. PM 2.5 can penetrate deep into the lungs and induce systemic inflammatory and oxidative stress responses (Haikerwal, et al., 2015). On a study done in Australia it was found that PM2.5 has been proven to increase hospital admission for ischemic heart disease and cardiovascular disease during wildfires (Haikerwal, et al., 2015). PM 2.5 is known as the leading global environmental risk factor for the burden of disease (Meng et al., 2019). PM10 also is considered a fine particulate and has similar effects as PM2.5 (Hong et al., 2017). PM10 means particulate matter are less than 10 μm in diameter (McKendry, 2000). McKendry (2000) found that in rural British Columbia that PM10 concentrations were dictated by meteorological conditions. Therefore, in the summer, concentrations reach a peak. PM10 pollution is associated with reported increased incidence of respiratory disease, increased use of asthma medication, and reduce lung function (Dockery & Pope, 1992). PM10 is also associated with affecting children that have asymptomatic symptoms (Dockery & Pope, 1992).

Limitations on the Literature

There is a principle of colorblindness embedded in Canadian society. Furthermore, this thesis argues that this ideology of colorblindness extends to the ways in which literature in

Canada does not capture the health impacts that air pollution has on racialized communities (Teelucksingh, 2018). More specifically the ways in which multiculturalism is used to indoctrinate Canadians with the thoughts that Canada is in some way better than the US in terms of police brutality, environmental injustices, and the prison system. These understandings further contribute to falsely portraying the ways in which racial injustices are enacted by the settler-state of Canada in the present day. The idea of multiculturalism in Canada allows for powerful stakeholders to not support racial and social change or make it as though that there doesn't need to be a change and as a country, we have reached the pinnacle of social change (Teelucksingh, 2018). This is why it's vital that research on racialized communities in Toronto are further examined. Research can aid in policy making to improve the outcomes of Black communities in Toronto. The gap in research on Black communities in Toronto is because of how knowledge production in Canada is rooted in settler colonial thought processes. For example, a major limitation to the literature section of this thesis was the lack of air pollution research that illustrated the experiences of racialized people in Toronto. Patricia Hill Collins (2000) elucidates the issue on knowledge production in the *Black Feminist Thought*, the way in which western structures of knowledge have historically been controlled by white heterosexual men. As a result, Black women's experiences transnationally have been routinely distorted within or excluded from what counts as knowledge. Hill Collins further elaborates on how a scholar making a knowledge claim typically must convince a scholarly community controlled by an elite-white social class that a given claim is justified. Thus, if a scholarly community strays too far from widely held beliefs about black womanhood, they run the risk of being discredited. Although this book was published in 2000, it still resonates with the state of knowledge production in the discipline of geography in regard to Black womanhood in Toronto. Still, there is a gap in

knowledge production about the experiences of Black women in the city context. Investigating the linkages between air pollution and Black women was difficult because there was no racialized air pollution data or research in the context of Canada. This thesis used a lot of research from the United States because there was existing discourse on air pollution and Black people. Intersections between race, gender, and income enact a critical role in the way air pollution is experienced. The principle of colorblindness has influenced air pollution data because the research refers to populations groups that are most effected by air pollution as 'low-income status groups' or 'low socioeconomic status groups' without any reference to race and gender. Though, this should not be the standard because a lot of the research in Canada states that data on low-income populations are racialized (Hulchanski & Maaranen, 2018). Therefore, this thesis will seek to contribute to the discourse on air pollution in Toronto, while discussing the firsthand experiences of Black women in Toronto regarding air pollution. Research in Toronto already highlights how socio-economic status can be a factor in the way certain groups of people face higher rates of air pollution in Toronto. There will be a section in the thesis that explains the racialization of low-income populations in Toronto, alongside research that showcases where the highest rates of the Black population resides and where the highest rates of air pollution exposure is in Toronto. There is no research on air pollution in Toronto that specifically focuses on the Black population but this thesis intends to bridge that gap. I argue that Black women have unique experiences navigating air pollution in Toronto.

Traffic Related Air Pollution and Unequal Impacts

Air pollution is commonly associated with vehicle emissions such as cars, trucks, buses, trains, and industrial activity. Traffic related air pollution will be a focus in this section given that the thesis focuses on Toronto. Traffic-related air pollution research studies suggest that people

who reside near highways and major roads are exposed to higher rates of nitrogen dioxide and other pollutants compared to people who do not live near major intersections and highways (Public Health Ontario, 2016; Samuels & Freemark; 2022). Therefore, traffic-related air pollution is a major contributor to air pollution in urban areas which contributes to exacerbating respiratory illnesses (Toronto Public Health, 2007; Public Health Ontario, 2014; Pellizzari et al., 1999). Elford and Adams (2020) describe environmental inequality in Toronto as a phenomenon where specific population groups are burdened with environment driven stressors and related health outcomes more than any other population group. Their research focused on commute-related air pollution exposures with children from lower income households facing higher levels of air pollution with the comparison to children from higher income households dealing with less of a burden of air pollution. Children are susceptible in an environmental inequality perspective because they have no control over what is offered to them by their caregivers. Thus, if children grow up with the double burden of low socioeconomic status and high levels of air pollution, it can affect the future of their health because prolonged exposure to air pollution can cause long term affects on their respiratory system such as reduced lung growth, premature cardiovascular death, and reduced small airway function (Khafaie et al, 2016; Toronto Public Health, 2004; Lin et al., 2005). Furthermore, the research elaborated on how pollutants such as N02 are dominated by vehicle activity and a source that may contribute to this pollution would be the diesel emissions from freight truck activity on the major expressways in the city. The highest density of freight truck activity is located in the northwestern part of Toronto and around Pearson Airport is also where some of the highest particulate matter dosages are measured (Elford & Adams, 2020). Therefore, Elford and Adams (2020) suggested that airport activity and related aircraft and truck

emissions is likely playing a role in driving ultra-fine particulate matter patterns across Toronto (Elford & Adams, 2020).

There are other contributing factors in terms of exposure which include duration of commuting and mode of transportation. For instance, a cyclist would have a greater rate of exposure to air pollution than an individual in a semi-insulated environment of a car (Zuurbier et al., 2009, 2010). There is also another aspect where commuters from economically deprived regions are more likely to use public transportation and that has its own exposure risks than individuals with access to private vehicles (Rives et al., 2017). All the information presented thus far aligns with other research on air pollution and inequality in Toronto. For instance, The Canadian Institute for Health Information (2010) published a report that focused on air pollution and health disparities in Toronto, Vancouver, Ottawa, and Montreal. The research outlined traffic related air pollution and facility-based air pollution. The report found that lower economic status individuals in Toronto were more likely than higher income groups to live within 200 metres of a major highway (Pinault et., al, 2015).

Industrial Related Air Pollution and Unequal Impacts

The national pollutant release inventory (NPRI) was created by the Canadian government in 1992 in order to record substance releases to air, water and land, as well as disposals and offsite transfers for recycling from large industrial, commercial, institutional and public works facilities across Canada on a yearly basis (Environment Canada, 2021). By taking a closer look at the locations of these facilities they are often found in closer proximity to racialized communities and neighborhoods that are of lower socioeconomic status (Kershaw et al., 2013). Thus, there is an inequitable exposure to toxic air pollutants in Toronto (Kershaw et al., 2013 &

Huff, 2008). Kershaw et al (2013) uses census tracts to identify the *double burden* which is defined as a population that faces toxic emissions and a high proportion of other inequities.

Furthermore, by using the NPRI, it was found that low socioeconomic and racialized populations were often located in proximity to industrial facilities in Toronto. In terms of facility count, the northwestern and southwestern parts of Toronto have the highest amounts of industrial facilities (Kershaw et al., 2013). Understanding the location and toxicity of industrial sources of pollution; racialized communities and neighborhoods that are low income are often situated near NPRI facilities in Toronto (Kershaw et al., 2013). Furthermore, The Canadian Institute for Health Information (2010) report found that people from the lowest socioeconomic status areas were more likely to live near a pollution emitting facility.

Echoing other reports, Pollution Watch (2008) identified the air release pollutants in the Great Lakes basin and neighborhoods in The City of Toronto. Including the information from the NPRI, the study used census data of the city's most impoverished places and created maps of the areas with the most pollution and poverty. The research found that the poorest places in Toronto had the highest rates of NPRI facilities. Therefore, this research highlights how some neighborhoods in Toronto may be facing a double burden of poverty and air pollution. It is important to note that not all facilities are required to report pollutant releases annually. Thus, there could be additional sources and/or more neighborhoods in Toronto that are facing burdens from pollution that have not been identified (Huff, 2008). Furthermore, land use patterns and housing affordability in Toronto may be able to explain how certain groups are exposed to potential health impacts due to industrial activities. Poorer individuals from visible minority groups may be disadvantaged when facing Toronto's housing market and may be subjected to living in the most disadvantaged neighborhoods (Elford & Adams, 2020; Kershaw et al., 2013;).

In the Pollution Watch report (2008), there were 17 neighborhoods listed in this study, while multiple neighborhood improvements areas (NIAs) from the Toronto Strong strategy have ended up on a list of some of the most polluted neighborhoods in Toronto, including Humbermede, York University Heights, Humber Summit, and West Hill. Determined by Urban Health Equity Assessment Response Tool (Urban Heart) developed in 2010 by the World Health Organization (WHO), the NIAs are defined through the lack of resources and services and socio-economic inequalities the residents experience. The city of Toronto uses this assessment to identify neighborhoods in Toronto that require investment in order to provide access to healthcare, green spaces, employment, and education. The NIAs have been instrumental in creating the Toronto Neighborhood Strong Strategy, which is an action plan to bridge gaps in the inequities found within NIAs by partnering with community agencies and businesses to invest in services.

Environmental Racism: Air Pollution, Location, and Income Inequality in Toronto

The literature in Canada on air pollution and racialized communities is limited and often uses the blanket term "racialized", making it challenging to capture if there truly was any scientific data that highlighted the effects of air pollution in Black communities in Toronto. However, the connection between air pollution and lower socioeconomic groups is clear (Huff, 2008; Kershaw et al., 2013; Pinault et al., 2016; Elford & Adams, 2020). Therefore, for this thesis it is appropriate to include a summary of income inequality in Toronto. In Canada, the literature on air pollution and inequality focuses on how communities of lower socioeconomic status live within close proximity to pollution sources such as highways, major intersections, and industrial facilities. Additionally, Hulchanksi's (2010) report on income patterns could shed

some understanding on neighborhoods in Toronto. He describes Toronto as three cities within one and that income inequality is a key factor to polarization in the city. In Toronto, neighborhoods are becoming increasingly divided by income. While the middle-income neighborhoods are slowly disappearing, low-income neighborhoods are on the rise and by 2015 lower income neighborhoods "made up 39% of all neighborhoods in Toronto compared to 1970 – 2005, where the middle-income neighborhoods made up 66% of Toronto's neighborhoods" (Hulchanski, 2010, Pg. 7). The lowest income neighborhoods are located in the western, northwestern, and eastern parts of the city (Dinca-Panaitescu et al., 2017). The correlation between air pollution and low-income can be understood by the research conducted by Kershaw et al (2013), Elford & Adams (2020), and Huff (2008), which found that the highest dosages of air pollution can be found in the northwestern, western, and eastern parts of the city. Therefore, all the research on air pollution highlights location and proximity to pollution sources. Since, there was no research in Toronto on Black communities and air pollution, it was critical for this study to highlight where the highest population of Black people reside in Toronto. Furthermore, cross referencing all the air pollution research mentioned in this study alongside Hulchanski's (2019) census maps that identified where the population of Black people in Toronto resided aided in finding the correlation between Black people and air pollution in Toronto. Figure 1 illustrates the

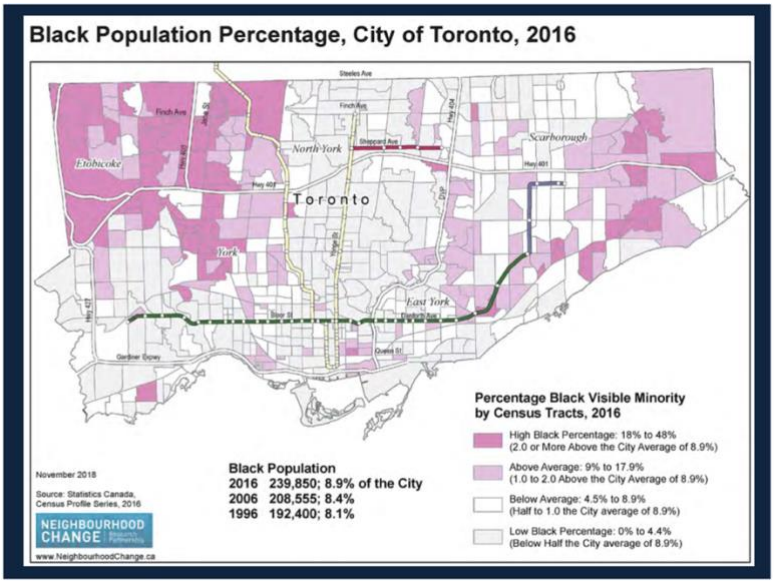

Figure 1 illustrates where the highest percentage of Black people reside in Toronto (Hulchanski, 2016).

highest percentage of Black people can be found in the western, northwestern, and eastern parts of Toronto, subsequently linking the air pollution literature to the racialized income inequality data. While the burden of air pollution falls on the lowest income demographic in Toronto (Huff, 2008; Kershaw et al., 2013; Pinault et al., 2016; Elford & Adams, 2020), the research on income inequality in Toronto illustrates that the burden of poverty in Toronto falls on the population of Black people (Hulchanski & Maaranen, 2018). Hulchanski & Maaranen (2018) explain due to public policy, labour and housing market dynamics, alongside discrimination, all enact a perilous role in the income inequality and racial/ethnic segregation in the city. Hulchanski & Maaranen (2018) suggest that discrimination in the labour market has furthered contributed to the segregation of Black people in Toronto. Furthermore, figures 1 and 2 illustrates how Hulchanski (2019) uses census maps to explain that while there are concepts of voluntary ethnic concentration within Toronto, this is not the case for Black people in Toronto. The overwhelming evidence suggests discrimination in the housing and labour market in Toronto has caused Black people to be segregated into specific locations within Toronto (Hulchanski, 2019). Similar to Hulchanski (2019), this thesis uses Bourne & Walks (2011) definition of segregation: "*a social group is considered 'segregated' if the spatial distribution of its members differs significantly from that of the larger population; the greater the difference in spatial distributions the higher the degree or level of segregation*" (Bourne & Walks, 2011, Pg.534).

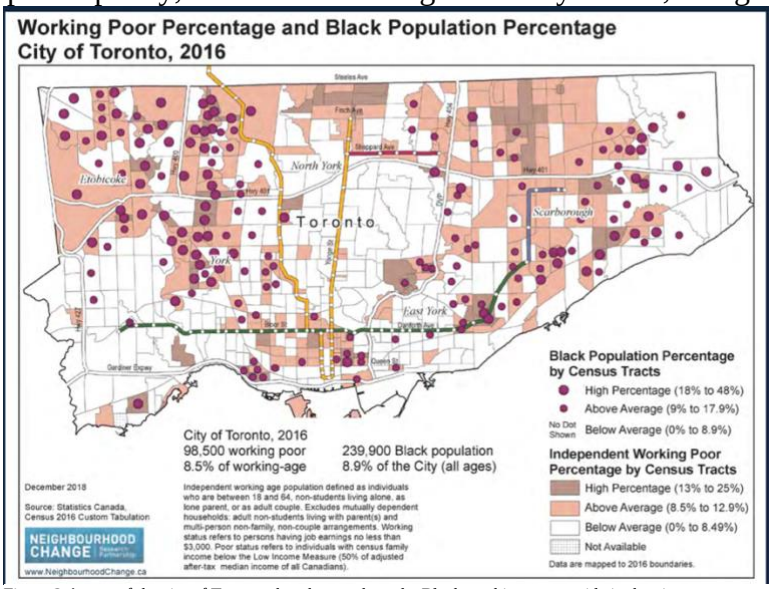

Figure 2 A map of the city of Toronto that shows where the Black working poor reside in the city. (Hulchanski, D. (2019). How segregated is Toronto. Neighborhood Change Network

This thesis uses this definition of segregation to further argue that air pollution inequities exist in the Black communities in Toronto, due to the location and proximity of the highest rates of air pollution in Toronto, and the spaces Black people are segregated into. This section showcases that the highest levels of air pollution can be found in the northwestern, western, and eastern parts of the city, while Hulchanksi (2019) elaborates that the population of the Black working poor are isolated in these same regions. Due to the intricate processes of air pollution, proximity, and locations of the population of Black people in Toronto this study will use Ingrid Waldron's (2018) definition of environmental racism: "*one of several forms of state sanctioned violence perpetrated upon the lands, bodies, and minds of Indigenous and Black communities through decision making processes and policies that have their roots in a legacy of colonial violence in Canada and other white settler nations*" (Waldron, 2018, Pg.37). Waldron (2018) explains in her book *There's Something in the Water* the pattern of the Nova Scotian government placing toxic industrial facilities and dumps near or inside Indigenous and Black communities, while also highlighting the double burden of toxic waste dumps and lower income falling on Indigenous and Black populations in Nova Scotia. Furthermore, it's important to view the issues surrounding air pollution in Toronto with an environmental racism lens because this definition captures how deeply ingrained land value is inscribed with ideologies about race (Waldron, 2018; Pulido, 2016). There is often a pattern within Canada in which land becomes of lesser value when racialized bodies inhabit that land. Space has always been political and environmental racism can't be understood without understanding the history of the space.

Environmental racism at the city scale has many complexities. Those complexities include how Black people can experience certain processes through policy and practices such as discriminatory practices in policing in predominantly Black neighborhoods, alongside a lack of

access to affordable housing, healthcare and mental health services, higher education, and employment opportunities. Furthermore, the ways in which school district boundaries are designed, transit designs, placement of major roads and highways, and zoning regulations all legislate a vital role in transferring people to different geographical locations where they experience varying levels of exclusion and inclusion based on race and other intersectional identities, which all contributes to the level of exposure to air pollution. Subsequently, linking exposure to air pollution as being a form of environmental racism. Therefore, policy designs shape geographical location, with Black people experiencing disproportionate rates of low-income and poverty in Toronto, as well as being located in places with the greatest environmental risk (Pulido, 2016; Waldron, 2018). These processes are experienced by Black residents in Toronto's neighborhoods, which is a part of the way air pollution exacerbates inequalities faced by Black women in Toronto.

CHAPTER 3 LITERATURE REVIEW: THEORY

Racial Capitalism

The discourse on Environmental racism focuses on how racial capitalism manifests in the spaces that face environmental hazards. The scholars that focus on environmental racism continuously mention how racial capitalism is a key tenant of how environmental racism manifests in spaces (Pulido, 2016), while racial capitalism can only be understood by grasping how the flow of capital is dictated by racial hierarchies (Wilson Gilmore, 2002 ; Pulido, 2016; Melamed, 2015). These understandings are the reasons why racial capitalism is an appropriate theory to explain the experiences of Black women in Toronto's neighborhoods in regard to air pollution. In the *Environmental Racism: Air pollution, Location, and Income Inequality in Toronto* section, the literature emphasised the strong correlation between air pollution and economic status in Toronto. Racial capitalism will be used theoretically to explain these

connections. The rest of this section will explain the understandings of racial capitalism and then place the theory in a contemporary context within Toronto.

The term racial capitalism was initially coined by two journalists in South Africa to explain how the economic system functioned in post-apartheid South Africa. However, Cedric Robinson (1983) popularized the term in his iconic book *Black Marxism: The Black Radical Tradition*. In his book, Robinson argued that Karl Marx's original explanations and understandings of capitalism failed to comprehend racial hierarchies and radical movements outside of Europe. Furthermore, Robinson (1983) challenges the idea that racism began with colonization. He showcases how racialism predates capitalism, while also examining how racism and capitalism did not break off from an old-world order but rather evolved from it to produce a modern world system of racial capitalism (Robinson, 1983). He also explains that the first European proletarians were all racial subjects and they were also victims of dispossession, colonialism, and slavery within Europe. By using this example, it explains how racialism predates capitalism and racialism was a structure before capitalism was conceptualized. Therefore, conceptualizing racialism as a material/discursive formation that produces differential human value and is embedded in the global landscape is quite distinctive from conceptualizing it as just an additive (Pulido, 2016; Melamed, 2015). Racialism is the system which shapes the value placed on humans and land.

Additionally, capitalism always intended to segregate certain groups of people into different classes, racialism predating capitalism would mean racial ideologies have always been used to justify labour hierarchies that subsequently lead to capital being distributed unequally (Pulido, 2016; Wilson Gilmore, 2002). In the context of Toronto, Hulchanki (2019) explains that due to discrimination in the labour market and housing market, Black people have been

segregated to the northwestern, western, and eastern parts of the city. As noted earlier, some of the highest sources of air pollution are located in these same areas of the city (Huff, 2008; Kershaw et al., 2013; Pinault et al., 2016; Elford & Adams, 2020), providing indirect support that capital is not distributed equally in Toronto. Further, the distribution of capital shapes the experiences of Black people in regard to air pollution because the amount of income an individual has access to will dictate the level of exposure individuals have to air pollution in Toronto (Elford & Adams, 2020; Rives et al., 2017; Canadian Institute for Health Information, 2010; Pinault et., al, 2015). Based on Hulchanki's (2019) work, the distribution of capital in Toronto is based on racial hierarchies. The literature on income inequality and air pollution in Toronto suggests that racial capitalism is in fact demonstrated in Toronto through location and proximity to air pollution, income inequality, and the spaces in the city that Black people are segregated within. Ruth Wilson Gilmore (2002) expands the discourse on racial capitalism by explaining that racism is a practice of notion, while organizing relations within and around the state's sovereign territories. Including functioning as a power that creates a profit-driven world that is always increasingly commodifying people and places at different scales, which subsequently makes hierarchies of what is human and worthy of capital gain. Thus, taking into account the thoughts of scholars (Robinson, 1983; Pulido, 2016; Gilmore, 2002), racialism is the structure that controls people's access to capital, location, and land. If using these understandings of racial capitalism, then it would be appropriate to state that Toronto is reflective of this and that Black people's experiences in the city are exacerbated by air pollution, moreover for the context of this thesis Black women have unique experiences navigating air pollution because they reside in geographical locations in Toronto where capital isn't distributed equally, thus experiencing income inequality and intergenerational racialized gendered trauma, which are both social

determinant of health. Experiencing income inequality and intergenerational racialized gendered trauma, and air pollution which are all social determinants of health, generate a unique experience navigating air pollution. These experiences can be further understood in the Interview analysis portion.

Furthermore, Melamed (2015), Waldron (2018), and Pulido (2016) explain that land value is dictated by which racial inhabitants occupy the land, I use these understandings to illustrate that the spaces that Black people inhabit in Toronto are reflective of this ideology. These authors also explain that settler colonialism led to massive land theft in North America and became the foundation of those countries' national territories at the cost of indigenous nations. The entire western world's foundational wealth was accumulated through slavery of Black bodies and the genocide of Indigenous people. Robinson (1983) also states that capitalism should be understood as racial capitalism because capitalism was founded on the degradation and commodification of racial identities, this can be understood by the historical perspective of North America's foundational wealth accumulating from the enslavement of Black bodies which gave the western world free labour for a period of time, subsequently aiding countries such as Canada and the United States to move on from the industrial era (Pulido, 2016; McKittrick, 2011; Waldron, 2018; Robinson, 1983). Canada is a settler colonial state, in which white bodies benefit from the ways in which racial capitalism operates on settler colonial states, while racialized bodies are battling the existence of a system that was built to profit from racialized identities and other vulnerable groups and this should be understood in the context of Toronto and the low-income population being racialized demographic. Consequently, racial hierarchies meld with land value, plus the histories and practices of the land to differentially produce capital, while producing environmental injustices (Bonds & Inwood, 2016). In order to understand how racial

capitalism manifests in the context of this thesis, it requires greater attention to the essential processes that shaped the modern world, such as settler colonialism and slavery which are structures that operate under racial capitalism. Canada is still living with the legacy of these processes, and racial capitalism requires that we place contemporary forms of racial inequality in a materialist, ideological and historical framework (Robinson, 1983; Pulido, 2016; Melamed, 2015). In regard to environmental racism and white people inhabiting spaces in Toronto where environmental hazards are manifesting, Pulido (2016) explains that this argument is devoid of how racialism operates as an ideological and capitalist process. Therefore, unfortunately for the white people that inhabit land in Toronto which has already lost value due to Black people residing there, thus, alongside other racialized populations white people have to suffer the consequences of racial capitalism. Due to the ideological processes of racial capitalism, whiteness can't save someone when they reside in a space that has lost its value due to being associated with racialized people.

Space, Black Sense of Place, and The Black Woman's Body

Neil Smith (1992) particularises that the *body* is a site for the physical identity of oneself, while the scale of the body is socially constructed, where the body constructs space in a metaphorical sense in addition to the literal physiological space. The body is a site for many meanings, it has desires and fears that also functions as a biological organ that contends with who truly possesses the power over it physically, socially, and metaphorically. In order to bridge literature on racial capitalism and what makes the Black woman's experience unique in regard to navigating air pollution, I say that the *scale* of the Black woman's *body* is in a constant state of battle over power, the historical politics of reproduction, rape, abortion, and caring for the physical body, all while battling state control over the body in contemporary forms of resistance,

creates for a unique experience navigating all spaces. The current study, however, focuses on the distinctive experience of navigating air pollution in Toronto. For this study, *place* will be understood by the way Neil Smith (1992) elaborates on *scale* being the range of different kinds of *places* that are as intimate as the body and as abstract and distinctive as a productive region. I assert that Neil Smith's (1992) explanations on places and scale to be taken into account when conceptualizing the experiences of Black women in regard to air pollution in Toronto. Physiologically, Black women's respiratory organs may come in contact with air pollution the same way as any other person, although taking into account the scale of how they interact with air pollution is contingent on how their gendered identity interacts with the state, home, and institutions, which subsequently exacerbates the hardships they face when dealing with air pollution and creating a unique experience. These experiences can be further understood in the Interview Analysis section. Furthermore, Mckittrick (2006) details that the Black woman's body historically was a site for capital gain due to the slave ship, the slave auction block, and the plantations which made the site of the Black woman's body spatialized and considered public property. In thru, this made the body to be viewed as naturally submissive, and a form of reproductive technology due to being used as a vessel to produce more slaves. Thus, the production of space and the scale of the body is inherently a political and capitalist process, which subsequently forces us to question who truly possesses social, regional, and economic power or for this study, how do these scales shape the hardships Black women face in navigating air pollution. The literature in this section establishes that the social constructions of space, place, and the body mold the experiences of people, moreover the Black women's body dealing with discriminatory practices in employment (Duah Kessie et. Al, 2022), healthcare (Dryden & Nnorom, 2021; Boisvert, 2020), and other institutional violence can illustrate the complexities in

the scale which subsequently demonstrate unique and difficult experiences navigating air pollution.

Another piece of literature that can aid in understanding the space, place, and body of the Black woman in a contemporary lens; McKittrick (2011) discerns how spaces historically inhabited by Black people before or after slavery have been deliberately harmed by policies and practices by using "urbicide" which is described as "*the deliberate death of the city and wilful place annihilation*" (McKittrick, 2011, p.951). Previously in the literature review section, it referenced how the Black working poor population in Toronto are segregated to certain parts of the city. Those same spaces also have some of the highest rates of air pollution in the city, this correlates to the ways in which urbicide is enacted on these parts of the city, such as environmental, social, and economic deterioration in the places that Black people occupy. Huey P. Newton elaborates in his autobiography *Revolutionary Suicide* (1973), that the ways in which the state-sanctioned racial violence is enacted on Black people is considered normal because Black bodies in the America's have faced violence in many facets, such as slavery, segregation, and genocides across the diasporas, inflicted by settlers and colonialists equally. Thus, Black people's sense of place is in constant annihilation because violence inflicted upon them has always been the norm, and segregation continues to appear in different patterns across different era's in the diaspora, while in Toronto it is evident because of income inequality and discriminatory practices in the labour market which have placed Black people in the edges of the city. Urbicide can be used to understand the ongoing battle for power with the Black woman's body and *place*. McKittrick (2011) further describes the Black sense of place as the diverse spatial practices where the structural workings of racism kept Black people in spaces and tagged them as placeless. While the Black diaspora within their communities innovatively worked

within and across, to form a black sense of place. Using McKittrick's understandings of the Black woman's body, the Black sense of place, plus the historical complexities of the black identity in Canada, help form the correlation to Black women's contemporary experiences with air pollution. I maintain the initial claim that higher rates of air pollution being found in lower-socioeconomic neighborhoods and Black people being segregated to these same spaces due to their access to capital, further illustrates how the state's deliberate policies and practices dictate where the highways, major intersections, and industrial facilities are placed, which subsequently create for unique experiences navigating air pollution for Black women in Toronto.

CHAPTER 4 METHODOLOGICAL APPROACHES

Study Objectives

The overall goal of this research is to highlight the unique experiences of Black women in Toronto in terms of air pollution and air quality. Secondly, to examine the research on air pollution in Toronto while possibly bridging the gaps in research on Black communities in Toronto. More specifically, the research explores the following two themes:

1. To understand the experiences of Black women in Toronto, in regard to air pollution.
2. To find connections to air pollution and other barriers that Black women may face in Toronto

Recruitment

This study includes 19 interviews of Black women aged 18 to 30 years old. Initially, interviews were expected to be one hour long. However, that was not realistic considering the length of questions and the time people could offer for the interview. Consequently, the majority of the interviews were 20 - 30 minutes long. Participants were recruited through posts on social media platforms such as Instagram and Twitter. In addition, community engagement experts in organizations such as Women's Health in Women's Hand's, 1919 community, Toronto Community Housing, and local mosques were contacted. The recruitment took place from November 2022 to February of 2023 with the help of these organizations. In order to find participants, location alongside information about air pollution sources mentioned in the literature review portion were taken into consideration in regard to recruitment. Additionally, in this section there is an explanation on neighborhood improvement areas (NIA's) because of the insights from the *Pollution Watch* report (2008) and since many of the participants resided in NIA's, even though this was not criteria to be involved in the study. Some of the neighborhoods mentioned include, Lawrence Heights, Queensway, Mount Dennis, Elms Old Rexdale, Black

Creek, Glen-Field Jane Heights, Rustic, Clanton Park, and Weston. Table 1 outlines the sample characteristics Emails were sent out to community organizations and shared amongst community members. Outreach was also done with mosques that were located near the neighborhoods mentioned in Table 1. Furthermore, the inequities faced by the populations that reside in NIA's were mentioned by the participants during the interviews.

Participants were recruited to participate in one-on-one structured interviews. Structured interviews follow a predetermined and standardized list of questions, a methodology that typically comprises a list of carefully worded and ordered questions (Hay & Cope, 2021). Each respondent was asked exactly the same questions in exactly the same order. Other interview structures such as semi-structured and unstructured were an option. However, structured interviews aided in receiving diverse and different insights on the same set of questions in this study.

Remuneration was given as an option for in-person interviews. However, the majority of interviews were done using the Zoom platform and in the ethics applications it was specified that they would not receive compensation if the interview was done using zoom. The recruitment process initially started off with sending out emails, posting on social media, and visiting mosques and community hubs that were located in predominantly Black communities. However, the best form of recruitment appeared to be through word of mouth, meaning that participants shared the thesis with other women and then other women reached out in order to be a part of the study.

Study

Some of the participants didn't have enough knowledge on air pollution, which made the interviews shorter at times, although, this showcased another aspect to the qualitative data collected. There were participants that had an understanding of air quality in their neighborhoods

being 'poor' and used this to make connections to themselves and the other individuals in their families that are dealing with respiratory diseases. All participants were knowledgeable about systems of racism and poverty. The majority of interviews were done through Zoom and this was appreciated by the participants because it was easier to participate. The question that participants were engaged with the most was "Based on your experiences, what are the significant challenges Black women tend to face in your community?" At this point in the interview, the participants would make the connections of air pollution and racism in their neighborhoods. When connections about racism in their neighborhoods were made while they were speaking, they would mention police surveillance, difficulty finding employment, and racism faced when accessing healthcare.

Table 1. Participant Overview

Name	Neighborhood	Neighborhood Improvement Area	Toronto Community housing/Co-op	Age	Takes Public Transit	Asthma	In Person or Virtual
Participant 1	Glenfield-Jane Heights	Yes	Yes	20	Yes	Yes	In Person
Participant 2	Queensway	No	yes	20	Yes	Yes	In Person
Participant 3	Mount Dennis	yes	no	26	No	No	In Person
Participant 4	Rustic	yes	Yes	26	Yes	No	In Person
Participant 5	Mount Dennis	yes	No	30	Yes	Yes	In Person
Participant 6	Lawrence Heights	no	Yes	30	Yes	No	In-Person
Participant 7	Elms Old Rexdale	yes	yes	26	No	yes	Virtual
Participant 8	Harbour Front-City Place	no	No	26	Yes	no	Virtual
Participant 9	Black Creek	yes	Yes	19	Yes	no	Virtual
Participant 10	Lawrence Heights	no	Yes	30	No	No	In Person
Participant 11	Clanton Park	yes	No	26	No	yes	Virtual
Participant 12	Islington	no	Yes	26	Yes	no	Virtual
Participant 13	Glenfield-Jane Heights	yes	Yes	19	Yes	No	Virtual
Participant 14	Black Creek	yes	Yes	22	Yes	No	Virtual
Participant 15	Church- Wellesley	No	No	26	Yes	yes	Virtual
Participant 16	Kensington-Chinatown	No	Yes	24	Yes	Yes	Virtual
Participant 17	Mount Olive-Silverstone-Jamestown	Yes	No	29	Yes	no	Virtual
Participant 18	Black Creek	yes	Yes	26	Yes	Yes	Virtual
Participant 19	Weston	yes	Yes	21	Yes	Yes	Virtual

Introduction to Themes

The interviews were transcribed verbatim and were grouped into four themes: navigating the healthcare system with respiratory diseases, participant awareness of air pollution and air quality, participant ideas on improvement for their neighborhoods to combat air pollution, and lastly the ways in which air pollution intersects with other social determinants of health. These

themes were chosen based on the insights from participants. Furthermore, many participants had respiratory diseases, therefore 'navigating the health care system' was a vital theme because many of the participants expressed frustrations with the health care system. Furthermore, 'participants awareness of air pollution and air quality' was grouped as its own theme because of the level of understanding the participants had of air pollution in their neighborhoods. The participants all lived near major intersections or highways, therefore their experiences revolved around living in these spaces, which led to unique experiences. Finally, 'the way air pollution intersects with social determinants of health' is a theme because of the correlation between the literature review section, plus all participants mentioned difficulty accessing employment which made them feel as though it was impossible to move out of the neighborhoods they resided in, which subsequently affects their experiences with air pollution. Majority of participants resided in low-income neighborhoods. The conversations about air pollution always led participants to engage in topics about difficulty finding employment, the poverty they experience in their neighborhoods, and how this contributed to their experiences of air pollution.

Neighborhood improvement areas

Neighborhoods shape the quality of people's lives by being a part of the foundation of people's daily routines and affect access to public and market services. Although debated, neighborhoods can be considered as the fabric of urban living (Galster 2008; van Ham & Manley 2009; Slater 2013; Hulchanski & Bourne, 2019). These are the reasons why neighborhoods are a key element of focus for this thesis. Furthermore, research mentioned in the literature review put an emphasis on area's located in the western, eastern, and northwestern parts of the city (Kershaw et al., 2013; Elford & Adams, 2020). Therefore, the neighborhoods the participants resided in were cross referenced with the areas identified as having poorer air quality while also

cross referencing if the neighborhoods selected were categorized as a Neighborhood Improvement Areas (NIA's) in Toronto.

The majority of women that participated in this study were from neighborhoods that are predominantly populated with Black people and are part of Toronto's Neighborhood Improvement Areas (NIAs) which are characterized by numerous inequities such as unemployment, premature mortality, low graduation rates, and low income. This study incorporates those inequities alongside air pollution, maintaining the argument that Black women experience air pollution uniquely in Toronto neighborhoods. NIAs are neighborhoods that have a lack of resources and services that lead to exacerbated inequalities in these spaces. In 2005, Toronto City Council identified 22 social planning neighborhoods in order to be a part of their priority areas for investment. In 2012, city council took a different approach and developed the Toronto Strong Neighborhoods strategy given the initial focus in 2005 for improvements were just crime rates and service access. The new strategy incorporated a series of other inequities faced in these neighborhoods, including economic development and physical infrastructure. Through this strategy, research identified the neighborhoods that needed more services and resources by using the Urban Health Equity Assessment Response Tool (Urban Heart) framework developed in 2010 by the World Health Organizations (WHO). The Urban Heart framework was adapted for local use in Toronto and applied to the Toronto Strong Neighborhoods Strategy. This framework has four main sections for development, while using 15 indicators for measurement of the neighborhood which included; marginalized groups, economic development, social development, participation in decisions making, physical surroundings which included green space and walkability, and healthy lives which included premature mortality and mental health (Toronto Strong Neighborhood Strategy, 2014). From

these measurements, there were 31 neighborhoods that were identified as neighborhood improvement areas which were areas that had the lowest scores.

CHAPTER 5 INTERVIEW ANALYSIS

Introduction

This chapter highlights the interviews with participants and relates to the macro-discussions on racial capitalism. The interviews were quoted verbatim, with minor edits of grammar, to fit the thesis. The sample group for the participants were all Black women, between the ages of 18 and 30. There was a total of 19 participants and 13 of the participants lived in a Toronto Community Housing complex, while 11 participants lived in Neighborhood Improvement Areas (NIA).

Theme 1: Navigating the Healthcare System with Respiratory Diseases

This section highlights the experiences of participants navigating the healthcare system for respiratory diseases. In this section there will be linkages to large theoretical concepts of racism in the healthcare system, while explaining the difficulties faced by the participants. For instance, poor air quality often exacerbates asthma (Anderson et. al, 2013; Anenberg et., al, 2018; Bowatte et. Al, 2015; Gasan et. al, 2012; Khreis et. al, 2017; Takenoue et al., 2012), and multiple participants dealt with respiratory issues including asthma:

> *"Asthma was something I developed not early on in life, later in life. I was only diagnosed with it couple of years ago. But that being said, I've experienced the same things throughout my childhood. However, I was only diagnosed with it now. Especially looking at the black woman in my household. All of us have it. And the symptoms have been the same throughout our childhood. It's just now that we've been diagnosed with it and now, we have a puffer. But when we were younger, we had issues with breathing and being outside for long periods of time."* – Participant 11

For Black participants, navigating the health care system as they seek help for their asthma is highlighted by multiple difficulties that intersect with race, religion, low-income status, housing opportunities and immigrant status. For example, as a visibly Black Muslim first-generation immigrant woman living in low-socioeconomic housing, participant 1 experienced difficulties in navigating the healthcare system, education system, police surveillance, and employment, all of which were impacted directly by her multiple identities. She refers to the doctor she sees as someone who is familiar with her community, although she feels that the doctor dismisses her concerns. Her unease is compounded by the realization that being able to speak English helps system navigation, while those who are unable to speak English likely experience greater barriers to care:

> *"I mean, my own Doctor who is, I'm not going to mention her name. But she is someone who works and is very familiar with patients in my area. I feel like she was very dismissive, very disregarding of any of my health concerns, to the point where I just gave up with her. I actually stopped seeing her because I felt like I was just being dismissed. And you know, it's very scary to have health concerns and have your caregiver not hear you out. It makes you not want to even open up to them. And they're supposed to be the ones who you go to for when you have health concerns. And again, I'm someone who speaks English, so I can only imagine how it is for people like my mom who don't speak English and have a lot of health issues. How are they supposed to navigate the space like that, where it's very dismissive?" – Participant 6*

Common feelings that the participants described included, 'feeling ignored' or 'not being believed' or 'being dismissed' by health care professionals. Many participants mentioned having asthma. There were many instances of participants explaining that when they were having asthma attacks, doctors would explain their symptoms as a mental health concern, specifically an anxiety attack, while participants needed to explain that they had to deal with worsening symptoms until healthcare professionals took their health concerns seriously. Participant 16, for example, found it difficult to receive a diagnosis for her asthma symptoms, though similar to

participant 6, the healthcare professional didn't take her concerns as an immediate health emergency. Instead, the healthcare professional explained her symptoms as an anxiety attack. However, the participant was voicing frustration for the misdiagnosis of an anxiety attack because she had to deal with worsening symptoms until she received a diagnosis.

> *"Towards healthcare professionals my health concerns were just that 'I'm having an anxiety attack'. Though, I already know I've had asthma since 2017. I have been dismissed. and I feel like in our health care system there are barriers in that aspect. There's a possibility of racial discrimination in a sense of the health care professional not taking my health concerns seriously. While not recognizing that this wasn't addressed until I saw a specialist. They didn't believe what I was experiencing was a health concern." – Participant 16*

Participants explained that when their concerns around their worsening asthma symptoms were brought to their doctor's attention, they were either not taken seriously or there was not any immediate action taken for supporting their symptoms. These experiences further contribute to the initial argument that was mentioned in the literature review portion, which was that Black women have distinctive experiences when navigating air pollution. The difficulty receiving a diagnosis for their symptoms added further hardship to their experiences navigating air pollution. Their experiences of facing racism and biases while navigating the healthcare system in Toronto can impact their experiences navigating environmental health determinants. While participants commented on this broadly, it also had implications for the care of respiratory complaints.

Participants finding a Diagnosis

There was a common understanding among participants that they needed to advocate for themselves because they understood that they were already going to face some sort of dismissal during the process of getting a diagnosis for their symptoms. There were some participants that would give up on finding a diagnosis for their symptoms of asthma because they had to constantly deal with healthcare professionals that didn't believe their claims. Some participants

were healthcare professionals and noted that they have seen firsthand how Black women are treated in these spaces, specifically when Black women would mention the amount of chest pain they were in, healthcare professionals rarely took those concerns seriously. Pain isn't something that can be measured; thus, pain is self-reported which means that the treatment is solely based on whether the healthcare professional believes the individual.

In seeking healthcare, advocacy was critical but also problematic. Participant 10, for example, noted that:

> *"The healthcare system in Ontario is really, really bad. Unfortunately for people of colour right, you have to really advocate for yourself and make sure things are in writing or else they don't take you seriously." – Participant 10*

Participant 2 voiced similar concerns, recalling a time when she was explaining to her doctors that she is experiencing chest pain while her puffer isn't fixing the symptoms. However, the doctors did not take action based on her concerns. Instead, they continued to prescribe her different versions of puffers. She further explained that there are also logistical issues while navigating the healthcare systems. She is frustrated that people with breathing related issues have to still wait for long periods of time in the emergency room.

> *"I've gone to doctors about chest issues. And I'm like my puffer, is not helping and the doctor isn't taking that seriously. They're like, "oh, we'll give you one that is a bit stronger". And I'm like, I feel like it's something else. I feel like there's like this thing that, medical professionals don't understand; you know your own body more than they do sometimes. Sometimes I'm not taken seriously. So, it's upsetting. Healthcare in general, for example emergency rooms. I've had to go in there for breathing problems before and like it's crazy how much you have to wait when you're struggling to breathe and you have to wait, you know. And although they fast track you, if you have like chest problems or anything because it's serious. It's still a long wait. Like for someone who is dealing with breathing issues, you know" - Participant 2*

Racist perceptions could possibly explain why most of the participants felt their pain was dismissed by healthcare professionals. There is a possibility that racial bias exists in healthcare settings (Dryden & Nnorom, 2021; Boisvert, 2020) that the participants were in; there is an aspect of the history of slavery and colonialism, which led to false beliefs among scientists, scholars, and healthcare professionals that Black people were biologically different than white people and can withstand higher amounts of pain than their white counterparts (Hoffman et al., 2016). Although this has been disproven, these beliefs have led to the mistreatment of Black people historically within the healthcare systems in North America. This could possibly explain the dismissal of concerns but also how covert anti-blackness within the healthcare system operates.

Furthermore, participant 5 notes the frustrations and difficulty of getting a diagnosis. As a health care provider herself, she sees the problem from the supply side:

> *"However, it's still very difficult, like even these nuances of like accessing care and also having to go back several times to just get a diagnosis. But even though my symptoms are the same. It's like it differs from Doctor to doctor, which shouldn't be the case because they all under the same college. I'm also a healthcare professional, so I do see that challenge as well. The challenge of those people who don't persevere, who never get that diagnosis and who just become avoidant." – Participant 5*

Some of the frustration expressed by participant 5, alongside other participants can be understood by the work of Coleman et al., (2022) who explains that the healthcare system in Canada centres on the biomedical model. Coleman argues that the biomedical system oversimplifies explanations of health and attributes outcomes to "bad" or "good" behaviours, which then implies that unhealthy behaviours are a symptom of moral failure (Coleman et al., 2022). This model pays little attention to the systemic causes of illnesses or social determinants

of health. Thus, on top of the already existing biases and stereotypes, the biomedical model further creates a barrier for marginalized populations (Coleman et al., 2022).

Disregard for Participant's respiratory symptoms

There was a common theme among participants that health care professionals did not take their symptoms and concerns seriously in regard to their respiratory disease symptoms. The concerns of participants align with the literature review section in this thesis. In the literature review portion, it mentioned how systemic racism is when racism is embedded in governments, policies, and institutions. Anti-black racism is a form of systemic racism that is specifically faced by Black people in Canada and has been declared a public health crisis by the Toronto Board of Health (Dryden & Nnorom, 2021; Boisvert, 2020). Subsequently, the participants statements about being 'ignored', 'not being believed', or 'being dismissed' is rooted in systemic anti-black racism. Anti-black racism can be traced to Canada's history of slavery and the lasting legacy, then after the abolishment of slavery was the enforcement of segregation through specific laws and policies (United Nations Humans Right's Council, 2017).

For example, participant 14 is a Black woman who is also a healthcare professional. She gives a perspective of working in the healthcare system. The participant explains that there are biases that exist within the healthcare system. She explains that Black women's claims of pain are not believed enough. Although this isn't in regard to respiratory diseases, she explains the difficulties Black women who are patients face when seeking support for their claims.

> *"As a nurse, I often see a lot of black women that are treated during like labor and deliveries; physicians or nurses won't believe, when they're in pain. So, they are more neglected than other women who are not black because they believe that all black women have like a higher pain tolerance" – Participant 14*

The policies and practices of segregation were found in healthcare, education, residential accommodation, employment, and other economic opportunities. Therefore, history clarifies for us that anti-black racism is deeply ingrained in institutions, policies, and practices that are either normalised in Canadian society or considered invisible by the groups in power. The invisibility and contemporary form of anti-black racism operates by spatial segregation, economic disadvantage, and social exclusion (Dryden & Nnorom, 2021; United Nations Humans Right's Council, 2017). Furthermore, participants feelings of being dismissed when seeking a diagnosis for their breathing related health issues; there is a possibility of anti-black racism operating in the healthcare systems that they encounter in Canada. Every participant mentioned some form of encountering healthcare professionals that dismissed their claims. Additionally, participants understood that there was systemic racism and bias within the health care system. The participants acknowledged that systemic barriers existed and equated those barriers to the treatment they received from healthcare professionals.

Participant 1 also experienced the difficulty of getting a diagnosis for her chronic bronchitis, while having to continue to go back and forth with worsening symptoms to the doctor. It wasn't until the fifth visit to the doctor when she received a diagnosis.

> *"Yes, I wasn't diagnosed with bronchitis until my fourth family Doctor visit. Like, each time I went, they thought I was just like a common cold. Or like I was coughing mucus and they thought like it was just normal. And I think like after the fourth time or like the fifth time, he said 'oh, I think you have bronchitis and he gave me a puffer, but that was pretty much it. And during the school times, like I remember when I was in school, teachers would think that I was lying when I want to use my puffer. Plus, whenever we go to the doctors for my sister's asthma, she would tell them "no, I feel like this isn't strong enough" And then the doctor would say "No, this is enough." And it wasn't until she got a black woman as a doctor. Who then made the decision and said we're going to increase her dosage for the medicine that she was taking'."- Participant 1*

The experiences of Participant 1 can be understood in the context of how racism and biases against Black people in the healthcare system, manifest into difficulties getting diagnosed for respiratory diseases, therefore, resulting in a distinctive experience while navigating air pollution in Toronto. Furthermore, the participant explains while in middle school, she had to step away from class to use her puffer accompanied with the aero chamber. She elaborates that teachers didn't believe her when she needed to use her puffer, the assumption was that she was lying. Furthermore, the participant dives further into the experiences of her sister as well, stating that neither of them was believed when they expressed the worsening of their symptoms.

Theme 2: Participants awareness of Air Pollution and Air Quality

Participants understanding of AQHI

Some participants explained that they had an understanding of the air quality health index (AQHI). Most participants explained that they referred to the weather app on their phones in order to see whether there were any air quality statements being made. Most of the participants that were aware of the AQHI were also participants that had asthma. This can also showcase that individuals are aware of the environment they live in and do take precautions when there are air quality statements. For instance, participant 16 lives in a low socioeconomic neighborhood, alongside other factors that are a part of her identity that affect her experiences with air pollution. She elaborates that she is aware of the air quality health index, while keeping track of it because her asthma is affected by air quality of where she lives and works. Some of the participants were aware of the air quality health index. Participant 16, for example, acknowledged that she used it, given her asthma was impacted by local air quality:

> *"It does like certain times where I feel like I have to stay home because of like the air quality. On the weather app, it does show me like the air quality index*

> *which sometimes is pretty bad, so it will recommend me to stay home." – Participant 16*

While participant 16 was aware of the AQHI and its usefulness, she was one of the few participants that directly identified it and noted that it was used. Although most participants did not use the AQHI, they were aware of the relationship between poor air quality and the impact on their health. Participant 2, for example, was aware of the impact of traffic on local air quality, her ability to participate in outdoor activities such as walks, and ultimately her asthma. She also appears to note some sort of injustice, although she does not necessarily use academic jargon such as systemic racism, environmental injustice, and environmental racism.

> *"I Have asthma. It affects me especially if I'm going on walks. I live in a place where there is a main road. Therefore, if I want to go on a walk outside my house, it's near all the cars and traffic. Which is Rexdale and Hwy 20. So, when I go for a walk the road is right beside me. The cars, sometimes the pollution like the gas coming out of the car, sometimes affects my breathing. A lot of factories and you see when you drive in my neighborhood, a lot of pollution coming out of these factories. I can't even imagine the amount that it is. I don't think it's a coincidence that it's always in these lower income and majority black communities. I think they're placed there because they know these people won't say anything. I think in a sense they don't have the knowledge to say anything. The reason why I mention race is because sometimes people actually realize something is racist, but systemic racism, they don't see it. I think about these things all the time. Like, is it a coincidence that all these factories and like you know these places, they burn garbage and stuff, are in these neighborhoods? In my opinion, I don't think so. You don't see them in all these suburban areas. You don't see all those factories. You don't see many cars; you don't see like major highways and roads. Near these areas. And there's a reason for that" - Participant 2*

Possibility of environmental injustice

Huff (2008) found that some of Toronto's neighborhood improvement areas were dealing with the double burden of pollution and poverty. Furthermore, referring to Table 1, six of the participants that resided in Toronto's neighborhood improvement areas had asthma, while all the participants that didn't have asthma resided outside of the neighborhood improvement areas.

The recognition of the overlap between location and air quality was not universal across participants, although it was noted in several cases. For example, Participant 8 noted:

> *"We know that, certain low-income neighborhoods are predominantly racialized, and often, like these neighborhoods, are predominantly black. These neighborhoods don't have the greatest air quality. Therefore, they are going to try to seek help from health care providers, but they're also facing anti Black racism with them"- Participant 8*

Moreover, participants that resided near industrial facilities in the Black Creek neighborhood explained that they believed that the industrial facilities affected their air quality. For example, participant 1 who lives in the Black Creek NIA highlights the factories nearby to where she lives and the impact on her time spent outside in her neighborhood, once again highlighting that participants are aware of air quality of where they live, plus, understand how it affects their wellbeing:

> *"I live right next to a factory. I also used to work next to a building that had factory near it. Every time I used to go on break to get food, I would walk past the factory and it would always have, like, a bad smell. It would always smell, really bad. And like, I don't want to be outside because it smelt dirty and I could see the smoke coming from the factory." Participant 1*

Another concern was that a lot of participants stated that the amount of time they spent outdoors was inhibited because of the air quality or respiratory conditions such as asthma. Nine of the participants stated they have asthma. The majority of participants mention that they lived near major intersections or highways. These participants explained that when they go outside their homes and do physical activity, the pollution affects their time outdoors. Some participants, for example, reported 'bad smells' or 'thick air' in their neighborhood of Mount Dennis and Black Creek. Mount Dennis and Black Creek are also mentioned in the in the literature review

portion of the thesis. Where it was mentioned how there is an existing double burden of air pollution and low socioeconomic status, in NIA neighborhoods (Huff, 2008).

Geographical Location, Income, and Race

Participants also acknowledged the geographical location of their neighborhoods and predominant race of that space being Black people. Participants believed that their race and economic status was the reason why they lived in this location. They made connections of potential systemic racism, environmental injustice, and their locations. This understanding can also relate to the literature review portion that highlights how based on geographical locations Black women experience varying levels of exclusion and inclusion based on race and gender. Furthermore, in the literature review portion it was mentioned that environmental racism scholars (Pulido, 2016; Waldron, 2018) describe that there is often a pattern within Canada in which land becomes of lesser value when racialized bodies inhabit that land, while Pulido (2016) explains that the value of land is contingent on whether or not racialized bodies inhabit that space. These insights can be applied to how many of the participants in this study either lived in a NIA or live in a TCH complex, which can be understood as a low socioeconomic space that is deprived of capital to further the development of communities. Moreover, this is an instance of how racial capitalism manifests in Toronto neighborhoods. Firstly, all participants have mentioned that their racial identity has dictated the way they navigate air pollution. Although there is no research/data that states that Black women experience higher levels of air pollution compared to any other population of people; their distinct experiences of navigating anti-blackness in the healthcare system, difficulty gaining employment (Statistics Canada, 2021; Duah Kessie et al., 2022), which ultimately affects their agency to change their geographic location, while also navigating neighborhoods that have a lack of access to resources, ultimately

fits the definition of racial capitalism. The organizing of racial bodies into hierarchies has created spaces in which population access to capital is dictated by their race and the value of the land that is inhabited. However, using Pulido's (2016) insights that land loses capital value when racial bodies inhabit that land, would illustrate that these experiences listed, further defend the notion that racial capitalism is present in the spaces that the participants occupy. Which evidently is a part of the structures that are affecting the ways in which Black women in Toronto experience air pollution differently from other groups of people.

Participant 19 explains her experiences, without using academic jargon, that showcase a micro instance of how racial capitalism manifests for her. For example, she elaborates that her race, geographical location, and socioeconomic status affect her experiences with air pollution and access to capital in her community. She has a deep awareness of how the intersections of where she lives, her race, and socioeconomic status overlap and magnify her health concerns and the challenges she faces. She expresses her beliefs of Black women's voices being heard, while linking that to whether her concerns of injustice are heard or not.

> *"I'm black, in housing, in a lower income area, they don't care to do anything about it because of the way the world and the system is made to oppress black people. And as a black woman, when you speak up for yourself, it's kind of hard to be heard. Especially when it comes to something such as, 'the air quality here is really bad', and if I'm the only person saying that, then they're going to look right past me because of my skin colour. But if a white person was saying 'that our air quality is not too great, it's muggy and stuffy'. Then they would look into it." – Participant 19*

Furthermore, some participants were also not aware of how air quality could affect their health when outside or did not feel the need to look into the air quality index. Thus, these reasons can be further understood in theme 4 discussion. For example, participant 17 explains that she isn't aware of scientific air pollution assessments, though, does keep track of the humidity index.

> *"I think from like a proper like environmental perspective, I don't assess air quality and think if this is going to affect how I'm going about my day. But I know like for example when it's like humid outside, I'm more inclined to do things indoors" Participant 17*

Participants that resided near industrial facilities in the Black Creek neighborhood, explained that they believed that the industrial facilities affected their air quality. Furthermore, some participants that had respiratory issues, were also not aware of how air quality could affect their health when outside or did not feel the need to look into the air quality index. Thus, these reasons can be further understood in the theme 4 section. For instance, participant 18 lives in the Black Creek neighborhood, while also living in a Toronto Community Housing neighborhood. She talks about her experiencing with asthma throughout her life, while pointing out she lives nearby to a highway. This indicates that she is aware that it affects her quality of air.

> *"I'm a 15-minute drive from getting to a highway. There is a lot of construction in my area. Had asthma growing up, I still technically have asthma. I've always had it as like a little kid as well. It was bad until I started high school. Every once in a while, I'll be like coughing, but when I was in elementary school, it was worse. I've lived in the same neighborhood since I was a kid." – Participant 18*

Theme 3: Participants ideas on improvement for their Neighborhoods to combat Air Pollution

Participant's job occupation

Participants in this study worked in various sectors and included nurses, social workers, and city planners. This therefore allowed for a wider range of responses in terms of their experiences. Participants that worked in the healthcare field explained the need for healthcare professionals to be trained in anti-black racism, disability justice, anti-oppressive, and trauma informed frameworks in health care, which would aid in diagnosing Black women that show symptoms of respiratory diseases, which in turn is connected to the experiences of Black in

Toronto navigating air pollution in their neighborhoods. They explained that frontline workers not understanding these frameworks put vulnerable populations at risk of not being understood or dismissed; specifically populations that are already dealing with other social determinants of health, and have the burden of living in an urban space that is dealing with the effects of traffic-related air pollution. Participants in the social work field explained the importance of educational programming around air pollution and how to combat its impacts. The more knowledge that communities receive, the more chances they could mobilize and change their circumstances. Examples include information programs that focus on how to navigate the healthcare system and that can aid Black women in getting a diagnosis for respiratory diseases. Similarly, having more Black educators, researchers, environmental experts, and healthcare professionals could expand awareness and knowledge.

Participants awareness of the spaces they inhabit

The participants showcased that there is room for community capacity building, if the communities receive the resources and information about pollution in their areas. There was an understanding among participants that communities needed to mobilize in order to be heard and could only do that with knowledge translation from environmental experts, researchers, and educators knowledgeable of air pollution. Moreover, there was a need for capacity building in communities. To do this, however, there would first need to be knowledge translation, which would empower communities to build capacity in their neighborhoods, including programs on how to attain higher education.

For instance, participant 11 has asthma but is also a healthcare worker and she explains her perspective as patient and worker in healthcare. She believes that to better the outcomes for Black women and their experiences with air pollution, there needs to be a focus on the ways to

navigate the healthcare system for Black women with respiratory diseases. The participant also explains that there needs to be education on how to advocate for yourself as a Black woman with respiratory health issues. The participant explains that this suggestion can be a short-term goal, while the education for health care providers can be a long-term goal.

> *"Faster intake processes as well as having people that have the understanding of Anti-black racism, discrimination, disability justice, all of these kinds of frameworks, are vital because I think a lot of the times there is that lack of anti-oppressive practice and trauma informed care. Which further alienates and disengages folks, especially black folks, from these spaces. Yes, the bare minimum is to have a black person there. Have somebody there who speaks different languages, like we are trying to be inclusive, but I think that there's still lack of training around how to support folks, especially when they're seeking supports like this. Like there is some sort of dignity that needs to be there and a lot of the times there's lack of that from frontline workers and that's for several different reasons. It it's like some of them really want to help you and it's just the system itself was created very problematically. So, they have their own barriers as well as that lack of understanding and that lack of empathy. Empathy, I think, is a skill that you build upon. However, if there are trainings and understandings of the different experiences of folks. I also think itself in getting a diagnosis like there should be a minimum time in which you see a physician. I think for people to be waiting months for a family doctor is absolutely ridiculous, especially when you are looking at some of these community health systems. Saying 'we only have like 3 doctors who are taking patients' and it's like, but you're serving a community, you're saying your catchment area is from all the way down here to down the next street and it's like in that catchment alone you have several thousands of people, like, that's not conducive to what you're trying to do, like healthcare teams, especially community healthcare teams, was supposed to be there as the preventative first step, intervention knowledge sharing mobilization. So, a lot of different layers; streaming of funding as well, like they're super underfunded. And super under staff. So, I just see so many barriers." – Participant 11*

Participants had a lot of recommendations that included ways to better their experiences in their neighborhood. There was a common understanding that there was not enough knowledge translation in communities in terms of air pollution, climate change, and climate change preparedness and specifically knowledge about air pollution within their neighborhoods. This perception from participants can relate to the broader conversation on knowledge production. All

the participants in this study were black women, and it's already clear that there is a gap in knowledge about the experiences of Black women (Hill Collins, 2000; Coleman et al., 2022; United Nations Humans Right's Council, 2017). This could relate to participants feelings that they also can't access information to combat on their distinctive experiences navigating air pollution.

For instance, participant 18 showcases the lack of race-based data collection for Black communities in Toronto. She explains that gathering data from Black communities in Toronto will aid communities in mobilizing. These insights from participant 18 can relate to knowledge production in Canada. For example, Hill Collins (2000) explains that due to colonialism, slavery, and segregation, Black women's histories transnationally have been told through a perspective of non-Black scholars and researchers. Therefore, this has contributed to making the discourse on Black women's histories in academia distorted and lacking substance. Furthermore, this has led to scholars making a knowledge claim that doesn't align with the existing held beliefs of Black women, then they have the risk to be discredited (Hill Collins, 2000).

> *"The municipal government just doesn't care. I don't know how you make city care unless people rally and get upset. And I don't think we have a lot of like race-based data in Canada. I know in America they have more race-based data. We can't do anything because we don't have the data explaining the numbers of people dealing with issues related to health that correlate to where they live." – Participant 18*

Again, another participant explains the lack of information in her community. Participant 14 explains that there isn't enough information about air pollution being translated in her neighborhood.

> *"To have more information. I feel like we're all constantly put in the dark. We don't really know a lot that's going on about the air quality in our area. I know it has to be bad because of all the construction and stuff, but it's not something that we ever learn about. So, I think it's just resources and just any type of*

> *information. Something that I would like to implement for people is how to properly access health care." Participant 14*

There was further understanding among participants that there was not enough green space within neighborhoods to combat the amount of pollution in their communities, indicating that participants had an understanding of air pollution and how it affects their daily lives. Some participants had an understanding of how green spaces can affect air quality in their neighborhood. For instance, participant 8 explains the importance of green spaces in urban environments and how green spaces can impact air quality. In addition, she contrasts green spaces when she was growing up compared to her as an adult and says there is a noticeable difference. This participant relates ideas of not having green spaces to also needing more education in her neighborhoods about creating green spaces, navigating air pollution, and the healthcare system. The participants also explain the importance of community-based work in order to address concerns of neighborhoods.

> *"There's tons of commercial spaces, condo spaces. We don't have as many green spaces as we did, the way that I experienced growing up. Education programs around how you can access your family doctor. And being taught that you should go, even if you might not think it's super serious. You know you deserve that care, because people fall into the idea, we have to just be that 'strong black woman trope' and take it all on. But that does have a really large impact on our on our health. Let's see more targeted programming like that. I love to see more black doctors, black educators talking about how to give the space to do this community-based work. You have the same bodies, but we're not actually all going through the same experiences. I think that we do need more like black people within like health spaces, whether it's on the educational side or the clinician side" – Participant 8*

Participants that lived in NIA neighborhoods explained the need for more information on conservation in their communities, they believed this would aid in knowledge translation about air pollution in their communities. For instance, participant 9 lives in an NIA neighborhood and emphasises the importance of workshops on conservation in her neighborhood:

> *"Workshops to build knowledge on conservation in our neighborhoods. All these things would help overcome a lot of challenges." – Participant 9*

Participant 6 lives in the Lawrence heights community, which is a Toronto community housing neighborhood. She elaborates on the lack of information given to her community. The participant showcases the linkages between air pollution and respiratory diseases while also explaining the lack of information given to her community about air pollution and respiratory diseases. The participant says that there needs to be more knowledge translation in low-income communities about the linkages between socio-economic status and air pollution. The participant continues to divulge her beliefs that her community gets information that isn't really useful and that there should be better effort done by researchers to translate information in communities being researched. Finally, she suggests applications that specifically have information geared towards lower socio-economic populations that explain the connection between air pollution and socio-economic status.

> *"I feel like even something as simple as putting out pamphlets. I mean, they give us pamphlets all the time for things that are not really related to what we actually need. Information that's not really relevant to us in the community. But imagine if there was like, a simple pamphlet that was just going around and telling us what our air quality was like. You know, that way we were aware of what is the conditions that we're living in. So many people don't know the conditions that they're living in, and then many like you know, 5-6 years down the line, they go to the hospital one day and they find out they have this very debilitating disease. And it was all related to air quality. So, I feel like there's a massive gap in, like, education and even if it can't be pamphlet, because maybe that's not environmentally friendly. Would be great to like to have an app. Like to test the air quality that of the neighborhood that you're in. I feel like that kind of information would be so useful" – Participant 6*

Theme 4: The Way Air Pollution Intersects with Other Social Determinants of Health

Accessing Employment to Leave Environmentally Hazardous Spaces

There was a constant mentioning of lack of employment in Neighborhood improvement areas. The reason why this is mentioned is because this contributes to the overall experiences navigating air pollution in regard to Black women in Toronto. Employment alongside other social determinants of health impact the agency Black women have to leave environmentally hazardous spaces they reside in. Participants mentioned that alongside anti-black racism in healthcare, seeking employment in order to better their outcomes were a cause for concern in their neighborhoods. Black Canadians face the highest unemployment rates in Canada. However, Black Canadians are more likely than other populations in Canada to hold a post-secondary or college degree (Statistics Canada, 2021). This could mean although Black people in Canada have the training in order to get hired, they still suffer the highest rates of unemployment (Statistics Canada, 2021). There are a multitude of reasons why Black Canadians have the highest rates of unemployment, however, there is a clear gap that needs to be addressed. In the literature review section it demonstrates that capitalism is contingent on racial hierarchies, if this is the paradigm, subsequently this elucidates that Black people not being able to access the capital to change their geographic location, would demonstrate that environmental racism is manifesting in Toronto neighborhoods.

For example, participant 15 elaborates on how socio-economic status plays a role in the agency to move geographical locations, when there is an environmental detriment. These insights further the concept that Black women navigating air pollution in Toronto, is distinctive. The experiences participant 15 mentions are similar to the experience's other participants in this study mention, that TCH residents elaborate on. This is similar to how racial capitalism can explain how environmental racism is deeply ingrained with land value; which means when Black people occupy a geographical location, that land becomes of lesser value (Waldron, 2018;

Pulido, 2016), which then allows for municipal governments, alongside developers to put less capital investment into those same spaces, which then leads to an environmentally degraded space that is occupied by racialized people.

> *"We don't just have the mobility to just move to a less polluted or better air quality space even if we had that information. Knowing how to address it is an immediate concern, beyond just knowing about it. I believe there's also barriers to black women and the employment sector because of their race. I think that comes up in, like microaggressions, how they experience other people in the workplace, how comfortable they are, what sort of conversations are happening around them. And then I also think about black women navigating the education system and facing racism in those spaces as well" – Participant 15*

Barriers faced by Participants

Almost every participant mentioned that people in their neighborhoods had difficulty accessing employment, even though they had training and education. The participants equated the difficulty of accessing employment as to why they could not move to a different geographical space. There was an understanding among participants that employment was difficult to find and that there were many barriers that contributed to this process such as being a first generation Canadian, racism, knowledge on seeking employment, and difficulty building connections because the negative stereotypes associated with their neighborhoods. Furthermore, there was a constant mentioning of lack of employment in the NIAs. This contributes to the overall experiences of Black women as they navigate air pollution in Toronto. Employment alongside other social determinants of health impact the agency Black women have to leave the environmentally hazardous spaces they reside in. Participants mentioned that alongside anti-black racism in healthcare accessing employment opportunities in order to better their outcomes, was a cause for concern in their neighborhoods. Every participant mentioned the difficulty of

accessing employment opportunities, however, every participant over the age of 22 years old had a degree, diploma, or certification in their field of study.

Participant 18 lives in the Black Creek (NIA) neighborhood, while also living in a Toronto Community Housing neighborhood (TCH), takes public transit, and has asthma. She explains the deteriorating infrastructure that TCH residents deal with. She explains her frustrations and that although, this experience is indoors, it still affects her overall experiences navigating air pollution in her neighborhood.

> *"Our bathroom vent had to be boarded up. One day black dust came through the vents and it was blowing through the vents. I had to put on a mask and clean it then cover it up. And I have to call them to fix it and they just come and look then do nothing. We just had to clean up everything ourselves and board it up on our own." - Participant 18*

Participants living within Toronto Community Housing neighborhoods highlighted issues of ventilation not working in their homes. There was mention that this also exacerbated symptoms of respiratory diseases they are dealing with. There was an understanding among Toronto Community Housing (TCH) participants that TCH would not fix ventilation issues. This aspect could be further explored in research on air quality in Toronto Community Housing complexes.

The Black Sense of Place

There was a deep awareness by the women in this study on potential maltreatment their bodies may face, which resulted in preparation for the ways they would be treated within the spaces they encountered, more specifically the range of *scales* they maneuver such as the neighborhood and at work, which required the women to constantly battle for power over their own bodies within the mentioned spaces. This awareness recognises that the Black sense of place is battling with the constant attempts of eradication (McKittrick, 2011). The women in this study

mentioned the ways racialism, including police surveillance, not being able to be advanced in organizations as an employee due to their race, and lack of representation in institutions that they are required to attend disturbed their daily lives. Participants made comparisons to where industrial facilities were placed around their neighborhoods while offering comparisons of how affluent neighborhoods were further away from major intersections and highways, while also making comparisons to the access of resources higher income neighborhoods benefit from; which further clarifies that the participants had a perception of the minimal capital flow in their neighborhoods with the correlation to their experiences with air pollution. Furthermore, *scales* are the range in which different kinds of *places* are as intimate as the body and as abstract and distinctive as a productive region (Smith, 1992), the participants mentioned how their bodies interacted with the material spaces but also the scales of unrevealed worry on their bodies and minds.

For instance, participant 6 makes the comparison between socio-economic status, race, and geographical location, compared to higher income locations in Toronto. She believes geographical location dictates her access to resources, and questions why her neighborhood has less access to certain resources.

> *"I do think it's very telling that the people who live in areas like ours are often people from a certain racial background and certain economic background. And I do think it's very telling that you know, the powers that be, don't have that same cause of concern for people who look like me as they would for, say, areas like the bridal path, you know, for example or like even just over the fence, like beyond Lawrence Heights, right. Like you just hop on the fence over there and suddenly you're in, like, a nice suburban neighborhood"*
>
> *- Participant 6*

Participant 1 lives in a neighborhood improvement area, also in a Toronto Community Housing neighborhood, takes public transit, and has asthma. She believes the geographical

location of her neighborhood has stereotypes and affects the way she is treated in Toronto. Furthermore, she believes these stereotypes are why concerns of people from her neighborhood have no immediate action taken by the City of Toronto. She is showcasing that there are so many factors that affect her experiences with air pollution.

> *"I feel like because there's like, a huge stereotype around the neighborhood that I come from, people don't treat us the same as they do treat other neighborhoods. It takes longer for housing to help fix our houses and stuff like that. And I think it's just because we come from a neighborhood that has a predominant Black population and is a low-income area and it's also a part of Toronto Community Housing. I feel like no one takes our claims serious and then we are disregarded." Participant 1*

Furthermore, race and gender are the two prominent forms of oppression that the participants brought up consistently. Participants mentioned how their race, gender, economic status, and being first generation Canadian affected their experiences navigating work, school, transit, healthcare, and explaining how all these aspects intersect with their experiences with air pollution. For instance, participant 3 explains the experiences of being a first generation Canadian. She dives into the struggles she faces due to her socio-economic status.

> *"I was born and raised here; I am first generation because my parents are immigrants. It's not like you can save up on everything, you're helping out with your household. Especially, my mom is a single mom. So, it's like you're helping out with the households. You're not able to save as much as you hoped. And it's a different challenge. Because you're still helping out with your parents. As a first-generation person, like you're still kind of struggling. I was born and raised here, so it's not like I know any other reality. But it's different than maybe being a second generation and having maybe like some sort of like savings or some sort of financial security. Being a first generation Canadian and it's like it's a lot of things are still new and you're still allocating finances and still like navigating taxes, it's not like taxes are easy to understand. But like, maybe I guess financially, like thriving, you're still understanding that sort of in that sense of security and maybe just like looking into maybe investing in certain things that maybe a lot of other communities maybe already had as some like people that have been well established in Canada. Actually, because for me it's a different challenge because my parents are not from like a big, large like ethnic group. Where I don't have any cousins or any*

> *uncles or aunts here. So, it's like we didn't have anybody else to, like, learn from. So, you're learning everything from scratch, so it's a bit more difficult."*
>
> *- Participant 3*

Participant 4 furthers the discussion on the beliefs that their geographical location, race, and socioeconomic status dictates their experiences with air quality. Participant 4 lives in the Rustic Neighborhood (NIA) and a Toronto Community Housing neighborhood. She explains the location of where she lives and her frustration of dealing with air pollution, alongside Toronto community housing not taking her concerns seriously in terms of having working ventilation in the home, while also considering she lives near a major roadway. The participant is showcasing her difficulties navigating air quality by showcasing there are so many factors that affect her experiences with air pollution.

> *"Well, I think in general, like black women are like the most disproportionate like in society. A lot of them are in generally areas that either are overpopulated or in areas where people basically are not taking care of like the place, such as landlords are not adequately taking care of broken vents. Also, like overpopulation, like maybe the air quality in the home that affects the overall experiences with air quality for Black women."* - *Participant 4*

Participant 6 is another participant that lives in a TCH complex and furthers the conversation on how air pollution, while navigating poor ventilation in her home. She explains that alongside air pollution, the infrastructure deteriorating in the TCH home she lives in, affects her experiences with air pollution.

> *"The air fluctuates a lot in my house in the summertime. I find that it can get sometimes kind of humid. And it's just really, really congested. Then the summer, it's like ridiculously dry to the point like we have a lot of nosebleeds, and things of that nature. We would have to have a humidifier on again. I don't know if that's specifically air quality, but it is something that affects us indoors. Primarily because we don't have a very good heating system. Yeah, that also I think affects the balance of the House, like the heat will be on really high in one part of the House versus like it's not very distributed because the heater has an impact on air quality. That too is, I guess, being affected. It affects the whole air quality of the House." – Participant 6*

Participant 16 further elaborates that her experiences navigating air pollution include gentrification and police surveillance. She explains that alongside her experiences with air pollution that gentrification and police surveillance affect her experiences:

> *"As well, I think, like the gentrification in my neighborhood. And there's a lot of surveillance from police contribute to my experiences." – Participant 16*

Participant 8 shows an awareness of how commuters may have different experiences with air pollution, while also explaining that the pandemic brought to the forefront specific inequalities that were face but lower-income individuals. By doing this she is connecting the possible inequities that could be faced by lower-income individuals and air pollution in Toronto.

> *"I've had to work in person within the community. A lot black woman had to work in person, or don't have access to motor vehicles. I think we're also being exposed the most to it. I have the luxury to be able to work from home, but a lot of people don't. So, it's also like you know, who's actually outside breathing this?" – Participant 8*

Participants awareness of different institutional structures

Although participants had an understanding of air pollution, they made statements explaining that air pollution was one aspect of the difficulties they experienced in their neighborhoods. The participants made it clear, that in order to explain the difficulties navigating air pollution; the struggles accessing capital were vital to the conversation. These insights from the participants align with the way in which the flow of capital is contingent on racial hierarchies. Everything the participants mentioned, including the intimate experiences with the healthcare system or accessing employment can be concurrent toward the ways racialism and gender are the feature to all experiences in the spaces Black women navigate. For example, participant 14 notes that her experiences finding employment affect her overall experiences with air quality in her neighborhood. She explains that she finds it difficult to advance from entry level positions due to her race.

> *"I noticed a couple of barriers. I think it was something that everyone noticed. It was as though, like all the entry positions were occupied by people like who are from Toronto community housing, and mostly black people. But then the people advancing in the organization, and the people who are like in charge are not Black." – Participant 14*

Similarly, to participant 14, Participant 1 explains that systems of racism, have created spaces where she doesn't see Black women in positions of power. She believes this contributes to her experiences navigating air pollution in her neighborhood.

> *"In terms of employment, when it comes to advancing within like a workplace, every place that I've worked, I mainly see people in positions of power not looking like me. And so obviously that will make me feel as if I probably shouldn't even apply for these roles because I'm probably not going to get it. because." – Participant 1*

CHAPTER 6 CONCLUSION

Summary

The purpose of this thesis was to highlight the experiences of Black women regarding air pollution. Air pollution has adverse long-term and short-term health impacts on people (Toronto Public Health, 2004; Toronto Public Health, 2007; Ontario Public Health, 2014; Lin et al., 2005; Pinault et al, 2016; Elford & D. Adams, 2020; Zuurbier et al, 2010; Jerrett et al, 2007; Robichaud & Ménard, 2014). Air pollution can affect people's daily lives, though, this thesis argues that Black women experience the effects of air pollution differently due to the ways in which the body interacts with the city at different scales, plus the historical and contemporary implications that have shaped the Black woman's sense of place. Thus, this creates a unique experience in terms of navigating the effects of air pollution. These unique experiences that were documented in this thesis highlighted personal insights navigating air pollution which included their experiences with the health care system, employment, living in neighborhood improvement

areas, Toronto Community Housing neighborhoods, and other institutional organizations in Toronto. This thesis illustrated linkages between Black women, income inequality, and air pollution. Initially the thesis explained that it was proven that Black women in the United States already navigate social determinants of health differently than other populations due to the relic the transatlantic slave trade and colonialism has left behind. These historical implications have caused Black women to inherit intergenerational gendered racialized trauma that already predisposes them to chronic diseases. Furthermore, the understandings of the unique experiences Black women have navigating air pollution is further elaborated on in the literature review portion. In this section is was stated that the *scale* of the Black woman's *body* is in a constant state of battle over power, due to dealing with multiple social determinants such as intergenerational racialized gendered trauma, air pollution, and income inequality. The historical politics of reproduction, rape, abortion, and caring for the physical body, all while battling state control over the body in contemporary forms of resistance, creates for a unique experience navigating all spaces. This thesis found that Black women in Toronto were aware of the way's racism was ingrained within institutional structures such as healthcare. Further, the women that participated in this study showcased the understandings of the benefits of having more greenspaces in their communities, which can illustrate the understanding that greenspaces are a solution to air pollution in urban spaces. Another critical finding in this study explains that income inequality, lack of employment opportunities, and access to medical care in Toronto neighborhoods is something that exacerbates the experiences with air pollution. One of the main concerns with air pollution in urban spaces is the exposure to contracting respiratory diseases. This is a cause for concern because many participants mentioned the difficulty of getting a

diagnosis for their respiratory symptoms. Living in an urban environment near major roads and highways, while having respiratory symptoms and not receiving a diagnosis is hazardous.

Limitations

This thesis faced many limitations, which included the fact there was no quantitative data on air pollution and Black people in Toronto. This created difficulty in gathering information for the literature review portion of air pollution in Toronto. Even the data on respiratory diseases caused by air pollution in Toronto did not include any form of racialized data. This left room for more questions, such as, who did this affect the most? In a time where climate change is bringing to the forefront existing inequities that have gone unaddressed for long periods of time, it is vital to have race-based data for all environmental discourse. Knowledge production in Canada requires a certain type of rigour that incorporates settler colonialism, racial capitalism, and white supremacy in the conversations that surround environmental racism in Canada, more specifically at the city scale. The age demographic of the participants was youth; therefore, the way air pollution affects Black women in Toronto was limited to just a specific age demographic. There is still research to be done how air pollution affects Black women who are a part of the aging demographic, new mothers, and Black women with auto-immune diseases. Furthermore, the linkages of income inequality, location, and air pollution are clear in the literature review section. However, there was still a lack of race—based data on which demographics were most affected by this in Toronto. There was no air pollution data that specified racial or gender demographics. Lastly, the documentation of knowledge production has historically been catered to audiences of the elite-social class. Unfortunately, this has contributed to the lack of knowledge production on the experiences of Black women. A lot of the literature on air pollution mentioned socioeconomic status and the term ‘racialized’; however, this isn’t enough when it comes to

research on air pollution. Despite the large amount of information on 'visible minority' groups in Canada; there is a lack of race-based data focused on Black women (United Nations Humans Right's Council, 2017). Policies can only be created, when the connections to specific groups people and outcomes are documented by researchers.

Air pollution and Toronto Neighborhoods

Traffic-related air pollution was a focus for most participants because they resided near congested roads, highways, and major intersections. Participants that lived in Toronto Community Housing neighborhoods (TCH) were cross-referenced; and it was found that many participants lived in Neighborhood Improvement Areas alongside living in TCH neighborhoods, which are classified by the City of Toronto as neighborhoods that deal with the burden of numerous inequities. The neighbourhoods in question included marginalized groups, economic development, social development, participation in decisions making, physical surroundings which included green space and walkability, and healthy lives which included premature mortality and mental health. Living in a neighborhood improvement area was taken into consideration when finding participants. There needs to be further research on the linkages between income inequality, race, and air pollution in Toronto. I suggest this because the existing air pollution literature focuses on income inequality. If researchers put more effort on investigating race and proximity to pollution sources then it would aid in policy development. There are also policy suggestions that would aid Black women in their experiences with air pollution. First, based on the literature on income inequality (Hulchanski & Maaren, 2018; Duah Kessie et al., 2022), a policy that addresses the lack of employment opportunities for Black women would be a step in the right direction. Many participants mentioned the difficulty in gaining employment even though it wasn't a question that was asked and many of the

participants held degrees/diplomas. If the opportunity to do this research over again was posed, there would be more participants. The aim would be one-hundred participants and the questions would be slightly different. The questions that can be seen in Appendix A, did not include questions on job occupations and questions surrounding climate change though if these types of questions were included it would expand the outcome of the themes. There would be questions surrounding trauma experiences because of intergenerational racialized gendered trauma is considered to exacerbate experiences with environmental hazards in the United States. Furthermore, many of the participants voiced concerns on how employment could aid in changing their location and since geographical location and income status effect peoples proximity to air pollution then a policy addressing employment opportunities would be ideal. Furthermore, I would bridge the policy suggestion with environmental racism discourse because this research also involves location and proximity.

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Appendix A

Interview Questions:

1. Age:
2. Name of Neighborhood:
3. Racial and Ethnic Category:
4. Disability:
5. Are you aware of the Air Quality Health Index? Follow ups: Do you know where to find it? Does air quality impact your time outdoors?
6. Are you aware of air quality issues within Toronto? Can you describe your experiences with the air quality of where you live?
7. Based on your experiences, what are the significant challenges Black women tend to face in your community in regard to air pollution?
8. Have you ever had asthma? Or any other lung disease while living in your neighborhood?
9. Have you ever received any sort of information from your local community health centres (Unison health, Jane street Hub, YMCA, etc.) on air quality in your community?
10. How would you describe your experiences while accessing the health care system? Follow ups: Have you ever faced any barriers while trying to access health care for any breathing related health problems? Looking back, are there any supports or services you wished you received?
11. Have you ever experienced racism in your neighborhood that you feel affected your air quality?
12. What type of programs or resources were helpful in overcoming any sort of challenges with the air quality in your neighborhood?
13. What programs/resources would you recommend that would better the experiences of Black women in your neighborhood in regard to air quality?