Understanding the Relationship Between Pharmacists' Implicit and Explicit Bias and Perceptions
of Pharmacist Services Among Arab and Black Individuals

by

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AUTHOR'S DECLARATION

I hereby declare that I am the sole author of this thesis. This is a true copy of the thesis, including any required final revisions, as accepted by my examiners.

I understand that my thesis may be made electronically available to the public.

ABSTRACT

Background. Recent studies suggest that Health Care Professionals' (HCPs) unconscious bias about race contributes to health care disparities. The objective of this research was to estimate unconscious racial bias among pharmacists in order to understand its relationship with Black and Arab individuals' perceptions and experience of pharmacist services and their interaction with pharmacists in Ontario.

Methods. Multi-method research combining both quantitative and qualitative methods was employed. A secure, web-based survey was administered to Ontario community pharmacists. The survey included two Implicit Association Tests (IATs) to assess unconscious preferences and direct questions regarding community pharmacists' explicit attitude to race. In a qualitative study using purposive sampling, face-to-face semi-structured interviews with 27 Black and Arab individuals were conducted to explore their interactions with pharmacists and their opinions, perceptions, attitudes, and experiences about community pharmacist services.

Results. A total of 407 community pharmacists (40% male, mean age 47, 57% white) completed the survey. Evidence of race/ethnicity bias toward Black and Arab individuals was evident, as determined by both explicit and implicit measures. Moderate to high levels of implicit pro-white bias were found among Ontario community pharmacists on average. Explicit pro-white bias was less evident, but apparent for measures of racial/ethnic preference and, relative warmth (amount of warmth felt toward Black/Arab individuals subtracted from the amount of warmth felt toward whites). In addition, implicit bias appeared to be associated with pharmacist characteristics such as age, racial/ethnic background, years as a pharmacist, years as a licensed pharmacist in Canada practice location, and place of birth, and explicit preferences had a weak positive correlation. The qualitative data revealed that most Black and Arab individuals felt comfortable interacting

and seeking advice from their pharmacists. However, some Black and Arab participants experienced discrimination from community pharmacists. The data also provided information about some personal and systemic issues encountered by Black and Arab individuals when they interacted with community pharmacist.

Conclusions. Race and ethnicity bias exists among most Ontario community pharmacists and may be associated with Black and Arab individuals' perceptions of pharmacist services and their interaction with pharmacists. Future work needs to employ more rigorous approaches to explore whether, and under what conditions, community pharmacists' implicit bias about race/ethnicity affect the quality of their services toward visible minority individuals, including Black and Arab people. Interventions to reduce bias may need to be comprehensive so that they can ultimately influence an individual's implicit and explicit biases in all measured areas.

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DEDICATION

To my wife, Rawiyah, who has been an endless source of support and encouragement during the

challenges of graduate school and life. To my daughters Leen, Solaf and Sarah, I hope that my

achievement will be an inspiration to you as you reach your full potential and calling in life. I do.

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appreciation to my loving parents, Mohammed and Sarah, whose words of encouragement and

push for tenacity ring in my ears.

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"I really appreciate this study happening, that like it looks into these things. Because it exists everywhere in every sense, I guess. So, a little bit of education, not about just, "Oh, you should see humanity as all equal." Maybe just learning the reality of the things they actually go through, that can be enough in teaching people to be less racist, I believe." (Interview 4)

CHAPTER ONE

INTRODUCTION

1.1 Introduction

> *"Of all the forms of inequality, injustice in health care is the most shocking*
>
> *and inhumane."*

These often-invoked words are attributed to the famous human rights leader, Dr. Martin Luther

King, Jr., in a speech to the Medical Committee for Human Rights in 1966.[1] It is clear that Dr.

King was speaking on the constant health care disparities that disproportionately affected

members of social groups such as racial and ethnic minorities, which he saw as a "thermometer

of disparity and oppression." It has been over 50 years since his speech, yet these health care

differences persist, and in some cases, have worsened.

The concern for race and ethnicity differences in health and health care has attracted much

attention from researchers, health practitioners, academics, and policymakers since the Institute

of Medicine (IOM) released a landmark report entitled *Unequal Treatment: Confronting Racial*

and Ethnic Disparities in Health Care in 2003.[2] Over the past decades, a rich literature base from

a wide range of disciplinary views has emerged with respect to different aspects of this issue.[3]

Several studies reported that although there have been dramatic improvements in access to

crucial life-saving products and services, differences based on race and ethnicity continue in

terms of access to health care received, illness occurrence and prevalence, life expectancy, and

mortality between whites and people of color.[2,4,5] For instance, Black individuals' mortality rates

are about 20% higher than those of white individuals, leading to a four-year lower life

expectancy.[5] This disparity is at the same level as it was in 1950. Differences in death rates also

increased over this period of time among Black males.[6] Furthermore, members of racial and

ethnic groups suffer an uneven burden of diseases and chronic conditions, with worse outcomes

than those for white individuals. The literature revealed that Black patients are treated differently

than white patients when it comes to cardiovascular diagnosis and treatment.[7] there were

disparities in whether they received appropriate care concerning cancer therapies,[8] and they were

less likely to receive optimal care when they were infected with AIDS.[9]

Political, sociocultural, economic, and environmental processes that impact health directly and

systemic differences in the opportunity groups have to achieve optimal health contribute to

unfair and avoidable differences in patient health outcomes that are above and beyond biological

factors.[10] Nevertheless, even when the former factors are controlled, and access to health care

services is the same, racial and ethnic health care inequalities remain. The IOM stated that Black

individuals were more likely than white individuals to die from diseases such as strokes and

cancer even after adjusting for gender, age, insurance coverage, education level, and the severity

of the sickness.[2]

The IOM also reported that contributors to these inequalities in health care are multifactorial and

are composed of patients, health care providers, and health care system factors.[2] Of these, health

care provider factors might be the most amenable to change and the most important for strategies

and intervention. Studies on physicians found a strong relationship between physicians'

unconscious or implicit bias and disparities in health services or communication.[11-13] It is

possible that this bias can be directly addressed through better awareness and training.[11]

Therefore, HCP's attitudes and behavior are a target area for researchers and scientists trying to

understand and eliminate disparities in health care.

Although previous research has concentrated on student surgeons, physicians, and nurses[14-18], the level and the influence of implicit and explicit biases among pharmacists as frontline HCPs remains poorly understood. To that end, this research examined pharmacists' implicit and explicit bias regarding both Black and Arab individuals in order to understand the relationship between the presence or absence of such bias and Black and Arab individuals' perceptions of and experience with pharmacist services in Ontario.

1.2 Background to the Study

Over the last two decades, health care disparities among racial and ethnic minority groups have been well documented and persistent in societies with racially diverse populations across, settings, diagnoses, treatments, and dimensions of technical quality.[2,19-22] The IOM confirmed that inequalities in health care delivery have been a longstanding challenge affecting some population groups and resulting in lower-quality health care and experiencing poorer overall health status and outcomes based on their racial and ethnic identities.[2] The Centers for Disease Control and Prevention (CDC) in the United States reported that racial and ethnic minorities face differences in access to health care, the quality of care received, and health outcomes.[23]

Compared to white patients, racial and ethnic minority patients encounter more barriers to accessing care, which includes preventive services, acute disease treatment, and chronic condition management.[19] Research by Allison et al.[24] revealed that Black patients are less likely to receive thrombolytic treatment for myocardial infections compared to white patients. Penner and colleagues[25] also found that Black women are less likely to develop breast cancer than white women, but the difference in death rate is far higher than the difference in incidence.

Patients from racial and ethnic minority groups are also generally less satisfied with the quality of their clinical interactions with HCPs. For instance, Street et al.[26] discovered that Black

patients who interacted with non-Black physicians had communication problems that might lower the quality of care for these patients. Another study demonstrated that patient-physician communication during medical visits differed between Black compared to white patients; the physicians were more verbally dominant and less engaged in patient-centered communication with Black patients.[27] Work by Siminoff et al.[28] indicated that white patients had many more chances to express their conditions in almost every verbal and non-verbal communication with physicians than their racial and ethnic counterparts. These differences may result in a less adequate decision-making process and health outcomes for patients who are members of racial or ethnic minorities. In the same vein, Doescher and his colleagues[29] found that minority patients reported less positive perceptions of physicians than white patients.

In addition to disparities in quality of health care, minority patients encounter significant differences in terms of overall incidence of disease, morbidity, death rate, and health status. Black individuals are more likely to die of cardiovascular conditions than white individuals.[19] Black females are more likely to be diagnosed with advanced-stage breast cancer than white females and have a higher rate of death.[30] Moreover, numerous differences in health conditions and risk behaviors exist among racial and ethnic minorities, including asthma, alcohol consumption, tobacco smoking, hyperglycemia, early childbearing, high blood pressure, low birth weight, obesity, periodontitis, preterm births, and infectious conditions.[19,30] Finally, members of racial and ethnic minority groups were more likely to describe their health condition as fair or poor and claimed more days of feeling sick in the past month compared with white individuals.[30]

These health care disparities not only impact people or certain social groups; they also affect overall health status and health care costs. A recent analysis estimated that racial and ethnic

inequalities cost the American health care system nearly $93 billion in excess health care costs and $42 billion in lost productivity annually, as well as economic losses due to premature death[31] Therefore, reduction of these inequalities and their linked excess morbidity and death rate is the main objective of, efforts in this area by the US Department of Health and Human Services.[32]

For the present purposes, bias is defined as a negative evaluation of one group and its members relative to another. Such an evaluation can be expressed directly (e.g., I like white more than Black people) or more indirectly (e.g., negative nonverbal behavior). Direct or explicit bias also differs from indirect or implicit bias in terms of the underlying process. Explicit bias requires that the person is aware of their evaluation, being certain of that their evaluation is correct in some way.[33-35] Therefore, explicit bias is measured by asking people to self-report their prejudice. Such measures show that explicit bias toward members of racial and ethnic minority groups has declined significantly over the past 50 years and is now considered unacceptable in general society.[36]

Implicit bias, on the contrary, seems to be more prevalent and consistent. It is automatically activated in an unintentional and even unaware manner.[35,37,38] Operating quickly and unknowingly through situational cues (e.g., a person's skin color, gender, or accent), implicit bias can exert its influence on perception, memory, and behavior.[35,37,39,40] Therefore, implicit bias cannot be measured with self-report survey questions. Instead, this type of bias is measured by how quickly people respond to minority-related words or images.[41,42]

Various psychological tests purport to measure implicit bias; the Implicit Association Test (IAT) is by far the most widely used.[42] The IAT tests the well-established finding that stronger mental associations between two concepts (e.g., Black or white faces) and evaluations (e.g., good or bad) produce faster responses when the concepts and evaluations are paired. Thus, if the test

takers already have positive associations with certain concepts, the task of connecting those concepts to positive evaluations is easier and quicker, and vice versa. Because people must respond to these pairings within milliseconds, the IAT measures responses that usually cannot be intentionally or consciously controlled.[38]

Several studies have reported that physicians with unconscious bias may exhibit negative behavior and poor communication with a minority patient.[35,37,39,43] According to recent reports, physicians who hold racial and ethnic bias paid less attention to patients' needs and dominated talk with minority patients during routine visits.[44-46] In addition to decreasing the minority patient's comfort, such physicians' actions may obstruct the flow of information, resulting in medical visit communication problems and reducing the patient's understanding of and resolution to follow medical recommendations.[47-50] Minority patients have also reported reduced trust in their biased physicians, fewer respectful therapeutic plans, and less satisfaction with their care.[44]

As frontline members of the health care team, pharmacists play a critical role in the patient experience, since their position gives them intimate, hands-on knowledge of their patients.[51,52] Pharmacists are accessibly located in many communities across the country and are frequently the first point of contact Canadians have with the health care system; dispensing and providing health information for 600 million prescriptions a year.[53,54] According to a national survey of Canadians on their perceptions and attitudes toward pharmacists[55], 89% of participants indicated they generally visit the same pharmacy, and 51% said that they go to a pharmacy at least once a month.

Given the importance of the pharmacist's role and the paucity of what is currently known about pharmacists' behavior toward and interactions with racial and ethnic minority groups, this

research attempts to explore the role that pharmacists play in propagating and mitigating disparities in health care. More precisely, it assesses the presence of implicit bias within a group of community pharmacists in Ontario and its relationship with Black and Arab individuals' perceptions of and experience with pharmacist services.

Previous research has identified pharmacists or the "pharmacy system" as a significant dimension within the health care disparity issue.[51,56-58] For example, Morrison et al.[57] found that about 50% of random New York City pharmacies in predominantly non-white areas do not stock adequate drugs to treat patients with severe pain compared to pharmacies in mostly white areas, suggesting that racial and ethnic minority patients are at considerable risk for undertreatment of pain. Similarly, Green et al.[56] explored the sociodemographic determinants of opioid analgesic availability in Michigan pharmacies, and found that individuals living in visible minority areas have significantly less access to sufficient pain medications than those living in white areas. One study also demonstrated that adherence-related issues are considerably more common in non-English-speaking patients compared to English-speaking patients due to the unavailability of drug information in languages other than English in pharmacy settings.[51] Finally, a qualitative study conducted by Youmans and colleagues[58] identified that elderly Black Americans with chronic conditions were unaware of pharmacists' training and expertise, which may be mediated by suboptimal experiences with patient-pharmacist interactions and relationships.

1.3 Statement of the Problem

Although recent studies have shown that implicit and explicit ethnic/racial bias exists among physicians and nurses,[11,13,33,35,44,46,59-63] researchers have less often considered pharmacists' implicit biases and their impacts on patient health outcomes. The evidence from physicians and nurses also clearly suggests that most of the effect of implicit bias is observable through

provider-patient interaction and communication. This further underscore the need to understand unconscious bias among pharmacist populations, given the importance of patient-pharmacist communication when managing medications, monitoring a patient's health progress, answering a patient's drug and disease-related questions, and health promotion.[64-66]

Moreover, the majority of these studies have focused on bias against Black individuals and were conducted in the United States, which has a long history of fraught relations between Black people and the white majority and an entirely different health care system and work environment than Canada.[67] In addition, racial and ethnic bias in health care has not yet been measured for individuals other than Black and Latino individuals. Of specific concern in this respect is the lack of research on bias against Arab individuals, who constitute one of the fastest-growing visible minority groups in Canada,[68] and who also have experienced prejudice and discrimination, especially since the September 11th attacks.[69]

Recent studies have demonstrated the validity and reliability of using the IAT to measure bias toward racial and ethnic individuals.[70] It provides researchers with a technique for measuring bias; in this case, the potential bias that may exist among pharmacists related to their care of Black and Arab individuals. As previously described, the relationship between pharmacists and their patients is key to their health success. What happens if pharmacists have biased views about Black and Arab individuals? What if the pharmacists do not consciously know about those biases? What is the impact of such bias on Black and Arab's perceptions of and experiences with pharmacist services? These are substantial questions for pharmacists to ask as they strive to provide competent, respectful, and proper care to all patients regardless of their race, ethnic, gender, age, and religious background. To that end, this study will use the Implicit Association Test (IAT) to examine Ontario pharmacists' implicit and explicit preferences and their

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relationship to Black and Arab individuals' perceptions of pharmacist's services and their interaction with pharmacists.

1.4 Research Question and Objectives

The primary research question for this study is:

What is the relationship between community pharmacists' implicit and explicit bias and Black and Arab individuals' perceptions of pharmacist services and patient/client-pharmacist interaction?

The specific research objectives of this study are to:

1. Determine the presence of implicit (unconscious) and explicit (conscious, self-reported) biases toward Black and Arab individuals among Ontario community pharmacists.

2. Explore whether IAT scores can be predicted by pharmacists' characteristics

3. Examine the correlation between implicit and explicit bias

4. Describe Black and Arab patients' perceptions, opinions, and beliefs about Ontario community pharmacists and pharmacy services.

5. Understand Black and Arab individuals' experiences in communicating and interacting with Ontario pharmacists.

1.5 Rationale and Significance

According to Fleras[71], "the twenty-first century may well become defined by the movement of peoples from one country to another." Merali[72] added that "we have reached a time in global history that is marked by an unprecedented level of international migration." The 2016 Census of Canada estimated that one out of five in the Canadian population is foreign-born, representing (20.6%) of the total population, and "the percentage of people living in Canada who were born

elsewhere is expected to continue to grow."[73] With this expected growth, problems of prejudice, bias, discrimination, and racism need to be identified and addressed.

Researchers must determine the prevalence of biased behaviors and actions among HCPs and whether negative behaviors contribute to issues in patient-provider communication and relationship, quality of care, continuity of care, patient adherence to medications and recommendations, and patient health status in order to eliminate or minimize racial and ethnic health care disparities.[74] Although significant studies have been conducted on racial/ethnic bias in HCPs, no studies yet, to the best of my knowledge, have examined practicing pharmacists' bias about racial/ethnic minorities.

Pharmacists, as crucial members of a health care team, interact with patients from different backgrounds and are challenged to build increasingly complex clinical interactions targeting their expanding scope of practice. According to The Canadian Pharmacist Association (CPhA), the Canadian pharmacist's services and care have changed significantly over the past few years; they are now delivering a range of innovative services.[53] Specifically, they are allowed to renew and adapt prescriptions, provide chronic disease management and wellness programs, order and interrupt lab tests and immunization services, and perform comprehensive reviews of patients' medications.[53,75]

This research, therefore, would make a significant contribution to the body of knowledge by understanding the overall problem of health care disparities and their solutions, which requires close investigation of the topic in its full historical, social, and cultural contexts. Such assessment might lead to more targeted and thus more proper and effective strategies and interventions within and outside the health sector in order to achieve equitable access to health care for all Canadian populations.

It is my hope to share my findings with provincial governments, policymakers, researchers, and pharmacists to increase pharmacists' awareness and understanding of bias in order to reduce the effects of implicit bias in pharmacist care services, thereby closing the gaps in the quality of health care and building partnerships in patient-pharmacist communications and interactions.

1.6 Definition of Key Terms

For the purpose of this research, the following descriptions of terms were applied:

- *Health Disparities:* Health disparities are defined as "differences that occur by gender, race or ethnicity, education or income, disability, living in rural localities or sexual orientation."[32]

- *Health Care Disparities:* Health care disparities can be defined as the inequalities and/or gaps in health care and the quality of health care that exists when members of specific population groups do not benefit from the same health care services as other groups. It can usually be identified across different racial and ethnic groups. Such disparities can also include areas such as socioeconomic status, gender, mental health, sexual orientation, geographic location, and physical disability.[76]

- *Culture*: The IOM has defined culture as "the accumulated store of shared values, ideas (attitudes, beliefs, values, and norms), understandings, symbols, material products, and practices of a group of people."[2]

- *Bias:* Bias is defined as "an unfair evaluative, emotional, cognitive, or behavioral response toward another group in ways that devalue or disadvantage the other group and its members either directly or indirectly by valuing or privileging members of one's own group."[77]

- *Implicit Bias:* Implicit bias refers to social behavior or attitude that affects our understanding, actions, and decisions in an unconscious and automatic manner.[78]

- *Explicit Bias:* Explicit bias refers to social behaviors or stereotypes that affect our understanding, actions, and decisions in a conscious manner.[78]

- *Stereotypes:* Stereotypes are shared opinions about a group of people and can be seen as one of the many ways people simplify the difficult information that creates their social world.[77]

- *Prejudice:* Prejudice is "a negative (or less positive) evaluative or effective response, or both, to others in a given context based on their group membership."[77]

- *Racial Discrimination:* Racial discrimination refers to illegal action based on group membership in the form of verbal and nonverbal behaviors that lead to direct harm or failure to assist an individual or group.[77]

- *Race:* Race refers to superficial physical variances that a specific society considers substantial and treats them in a different way.[2]

- *Ethnicity:* Ethnicity refers to "a shared culture and way of life, especially as reflected in language, folkways, religious and other institutional forms, material culture such as clothing and food, and cultural products such as music, literature, and art."[2]

- *Visible Minority:* A visible minority is "persons, other than Aboriginal peoples, who are non-Caucasian in race or non-white in color," including both Canadian-born and foreign-born persons (immigrants). It is a Canadian term developed to further creativities related to equal prospects for all Canadian populations. The word visible indicates the difference in skin tone, and the word minority indicates numerical smallness. Categories in the visible minority population variable include Chinese, South Asian, Black, Filipino, Latin

American, Southeast Asian, Arab, West Asian, Korean, Japanese, visible minority, and multiple visible minorities.[79,80]

- ***Health Care providers (HCPs):*** HCPs are defined as medically qualified persons, such as physicians, dentists, pharmacists, and nurses, who are part of a health care team or a member of a public health services team.[81]

CHAPTER TWO

A REVIEW OF RELEVANT LITERATURE

2.1 Introduction

This chapter presents an overview of previous work on related topics that provide the necessary background for understanding a relationship between implicit and explicit bias and perceptions of pharmacist services among Arab and Black individuals. To achieve this, 12 areas of the literature will be reviewed: Racial and ethnic disparities (section 1), health disparities in Canada (section 2), the importance of the provider-patient relationship (section 3), health care disparities and provider behavior (section 4), racial bias and health disparities (section 5), the role of pharmacists in health care (section 6), patient/public perceptions, expectations and views of pharmacist services (section 7), health-related disparities in community pharmacy (section 8), reducing racial and ethnic bias among HCPs (section 9) implicit versus explicit racial bias (section 10), measure of implicit bias (section 11), and immigration and visible minority population in Canada (section 12).

2.2 Racial and Ethnic Health Disparities

Health disparities have gathered an increasing amount of attention from practitioners and health policymakers. As a complex and multi-factorial construct, difference in access to health care, treatment options pursued, and unequal outcomes achieved among members of various social groups has been well-recognized as a serious problem facing many health care systems in societies with fairly large and diverse ethnocultural populations, such as in the United States, the United Kingdom, and Canada.[21,82,83] These disparities emerge from a complex and interrelated set of a health system, health care professional, patient, and social and environmental factors.[76,84,85]

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Health care disparities are categorized as acceptable and unacceptable based on the source of the disparity. If disparities happen as a result of differences in clinical suitability or patient preferences, then the disparities are considered acceptable. Unacceptable health inequalities happen when individuals who have equal access to health care experiences are unequal in health care treatment and, hence, experience poorer health outcomes due to discrimination or the operation of the health care and legal systems.[2,86] Differences in care range from quality of routine examinations to disease treatment and management,[4] and have been shown occur among individuals with equivalent levels of insurance and socioeconomic status.[87]

Health disparities can be defined as the inequalities and/or gaps in health care and the quality of health care that exists when members of specific population groups do not benefit from the same health care services as other groups.[76] It can also be understood as population-specific disparities in the presence of disease, clinical outcomes, and rate of death[88] It has been shown that racial and ethnic aspects are main determinants of receipt of high-quality health care, whereas socioeconomic status, insurance coverage, or illness severity play a lesser role.[2] The IOM defines racial and ethnic disparities in health care as "racial or ethnic differences in the quality of health care that are not due to access-related factors or clinical needs, preferences, and appropriateness of intervention." [2] Research from the United States has shown that racial and ethnic disparities in health care are remarkably consistent among minority groups, including Asian Americans, African Americans, Native Americans and Hispanics more than 600 articles documenting racial or ethnic differences in health care published over the last few decades.[89]

The IOM report on health disparities presents irrefutable data from decades of peer-reviewed research assessing the quality of health care for various minority groups and concluded that,

overall, the United States, with one of the most advanced health care systems worldwide, had a system of care that was unequal and based on racial and ethnic bias. The report further documented that "racial and ethnic minorities experience a lower-quality of health services, and are less likely to receive even regular medical procedures than are white Americans" across a wide range of clinical services, illness areas, and clinical settings (e.g., emergency department, nursing homes, primary care); even when characteristics typically linked with disparities, such as insurance status, income, severity of conditions, and access-related factors, are controlled.[2]

However, having access to health care does not assure high-quality care. Members of minority groups such as racial and ethnic minorities often receive lower-quality care from under-resourced facilities and over-stretched health providers. Numerous studies reported that minority groups of all ages experience significant health disparities and are more likely to be untreated for a number of needs, including acute conditions, chronic disease management, mental health assessment, and other areas of care.[90,91] According to the 2015 US National Health care Quality and Disparities Report, Black and Hispanic patients were less likely than white patients to have a usual place to go for medical care. This may be further impacted by minorities' higher number of unemployed individuals and those working in low-paying jobs that include limited health insurance as part of the benefits package.[30] In addition, Black, Latino, American Indian, and Alaska Native patients received worse care than white patients for about 40% of quality measures.[92] Williams and Rucker [93] stated that Black groups continue to have elevated rates of morbidity and mortality for several diseases compared to white groups as a result of differences in health care. Petersen and colleagues[94] found that

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white individuals are more likely to receive thrombolytic treatment for myocardial infarction than Black individuals.

Regarding health status, the IOM report states that minority groups have higher morbidity and mortality compared to non-minority groups in general.[2] Several studies have reported that African Americans, Hispanics, American Indians/Alaska Natives, and Arabs experience a higher burden of chronic conditions, and the overall life expectancy for these persons was considerably lower than for white persons.[23,95-98] For instance, Black, Latino, and Native American patients have found to have rates of diabetes that far exceed those in white patients.[99-101] Younger Hispanic men have the highest prevalence of obesity compared to other groups.[102] Black people are more likely to die of cardiovascular conditions than white people.[103] Infant mortality occurs in Black people 1.5 to 3 times more than in other races or ethnicities.[104]

2.3 Health Disparities in Canada

For many Canadians, their free universal health care system is a point of national pride[105] The provision of the Canadian Health Act (CHA) of 1984 set out the primary objective of the health care policy: "to protect, promote and restore the physical and mental well-being of residents of Canada and to facilitate reasonable access to health services without financial or other barriers."[106] The CHA intended to assure equal access to health services and health care. Therefore, all patients from different backgrounds are entitled to a high quality of care that reflects knowledge of, awareness about, and respect for their similarities and differences. However, an increasing number of Canadian studies have indicated that disparities in the provision of health care and health outcomes exist among groups, including an individual's economic status, age, gender, geographic location, racial, ethnic, and sexual orientation.[105,107]

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Disparities in health and health care have been recognized across the social determinants of health, in the use of preventive services, and in the use of health care services, such as access to kidney dialysis and transplants, hip and knee arthroplasty, cardiac care, and stroke, cancer, or AIDS treatments.[108-113]

Economic status is a key factor influencing the rate of morbidity and mortality, Luo et al.[114] reported that women who are poor and have lower education levels have a high risk of negative health outcomes compared to other women. Booth et al.[115] demonstrated that diabetic patients living in remote areas in Ontario experience a high rate of developing an acute complication of diabetes. Another study found an increased risk of emergency hospital visits due to asthma complications among children of low-income families.[116] Within the low-income category, individuals identified as having a higher rate of experiencing poor health include elder individuals, the unemployed, welfare receivers, single women are supporting kids and members of social groups such as indigenous and immigrants.[117]

Differences in health care and health outcomes by gender have been observed as well. Fowler and colleagues[118] evaluated the pattern of care in the intensive care unit of 13 Ontario hospitals and found that women are less likely than men to be admitted to an Intensive Care Unit (ICU) and to receive select life-supporting treatments and had a greater risk of dying than men after serious diseases. Although heart disease is the number one killer of women, they are less likely to receive medical care from a cardiologist, or to be referred for other required treatments.[119]

Age is also a factor in health disparities; young individuals and the aged have distinct health concerns. Seniors were more likely to have one or more chronic health diseases such as hypertension, arthritis, and back issues than those aged younger.[120] The Canadian Institute for Health Information (CIHI) reported that elderly patients with multiple chronic conditions taking

a high number of prescription drugs were at a greater risk of experiencing side effects requiring medical attention; however, half of them experienced poor quality of care.[121]

Health disparities between First Nations or Aboriginal populations and other Canadians also have been well documented. According to the Canadian Community Health Survey (CCHS),[122] 83% of non-Aboriginal individuals have a regular medical doctor, compared with 44% of Aboriginal individuals. In fact, most members of the First Nations, particularly Inuit, are served by a nursing station only, and accessing hospital care services can need extensive travel, which may affect negatively their health outcomes.[123]

Immigrants, newcomers, and refugees bring another dimension to health disparities. Lear et al.[124] found that immigrants and newcomers start with a lower risk of cardiovascular conditions; though, this risk increases in direct relationship to the length of residency in Canada, consequently, after twenty years, immigrants and newcomers are at increased risk of cardiovascular diseases compared with the Canadian born. Research by Lane and colleagues[125] found disparities in health among refugee and immigrant children in Canada. Refugee children are at risk of a high level of cholesterol, while immigrant children are more at risk of being overweight or obese, mainly if they are older and are from privileged backgrounds in low-middle-income countries.

In addition to the negative impact on health outcomes and health care, it is estimated that more than 14% ($6.2 billion) of Canadian health care spending on acute care in-patient hospitalizations, prescription drugs, and doctor consultations per year as a result of health disparities.[126]

However, reliable health-related research on members of racial and ethnic minority groups is relatively rare in Canada.[127,128] Khan and his colleagues[82] reported on health and health care disparities between First Nations or Aboriginal individuals and other Canadian populations; yet, there seems to be a lack of health information about other racial or visible minority groups. Several studies added that much of what we know about Canadian visible minorities' health comes from studies conducted on immigrants and newcomers, many of whom are identified themselves as a member of visible minority populations. Nonetheless, not all visible minority individuals are immigrants.[129-132]

Canadian-born visible minority individuals differ from foreign-born visible minority individuals in several ways, including official linguistic proficiency, social and cultural background, and familiarity with Canadian society and foundations.[82] Therefore, questions such as "Do visible minority Canadians experience any difference in accessing and receiving health care in comparison with white Canadians?" is difficult for researchers, health practitioners, and policymakers to answer. One of the explanations for the lack of such research on visible minority populations and health is that Canadian care registry data do not regularly record race or ethnicity statistics.[133,134] Therefore, such a knowledge gap needs to be addressed to ensure that all Canadian individuals have equal access to health care and high standard quality of care.

2.4 The Importance of the Patient-Provider Relationship

Health providers are considered the cornerstone of the health care system, and it is essential for them to have vast knowledge and skills. Patient-centered care, which defined as delivering care that is respectful of and responsive to individual patients' preferences, wants, and values while making sure that patient standards guide all clinical decisions is one of six significant aspects of high-quality health care,[135] and providers must be able to involve patients in a

cooperative partnership. Effective communication and functional relationships between providers and their patients have been well-recognized as a desired and vital part of health care delivery and significant for providing high-quality health care.[136,137] It is regarded as a fiduciary relationship in which mutual trust, respect, and confidence are significant.[138] Without such a relationship, it is difficult for patients to develop an appropriate treatment strategy to help them manage and control their conditions, especially for patients with chronic diseases.[139] Gorski[140] defined therapeutic relationships as "the central interpersonal milieu in which patients are diagnosed, given treatment recommendations, and referred for appropriate tests, procedures, or care by consultants in the health care system." Many studies have demonstrated that having good patient-provider encounters and relationships has a positive impact on a number of patient health outcomes, including health functional and emotional status,[141] patients' adherence to medications, and medical advice,[107,142] patient and provider satisfaction,[143] and reducing medical malpractice risk.[144,145] Roter and colleagues[146] found that good patient-provider interaction is associated with improved emotional and physical health, higher symptom resolution, and improved control of chronic conditions. In terms of compliance with therapeutic regimens, it has been shown that physicians' attitude toward their patients, their skill to stimulate and respect the patients' worries, the delivery of useful medical advice, and the demonstration of understanding and the improvement of patient trust are the essential causes of enhancing patients' medication adherence.[147,148] Patient dissatisfaction with health care services is a significant problem in medical practice, and it can result in disputes against physicians by patients and unnecessary health care spending. Utilizing techniques to improve patient satisfaction with care is of interest to both the health service system and providers. To this end, the provider-patient relationship may have a

significant role to play.[149] A review of 17 studies found that training HCPs in patient-centered collaborative care has shown a positive effect on patient satisfaction with care.[150] In another study that investigated the outpatient division of a teaching hospital, Grembwski[151] reported that primary care providers' satisfaction with their professional life was connected to greater patient trust and confidence. In terms of reducing malpractice risk, Hickson et al.[152] found that communication is a significant factor linked to malpractice claims filed by families against physicians following parental injuries.

Indeed, positive patient–provider interaction is significant and has multiple benefits on several aspects of health outcomes, which include patient satisfaction and adherence. However, ethnic and racial minority groups seem to be at a disadvantage in this dimension of health care.[144,153-156,156-158] In addition to cultural and linguistic barriers, there have been persistent concerns that providers' attitudes and behavior also contribute to this issue.[2,159]

2.5 Health Care Disparities and Provider Behavior

HCP attitudes and behavior are a target area for scientists and researchers trying to understand and minimize disparities in health care, which commonly occur through race and ethnicity dimensions.[2] Although explicit discriminatory behavior in the multicultural countries may have declined in recent decades,[160] implicit discrimination and institutional bias are persistent by subtle, overt thoughts and feelings that may affect HCPs' behavior and treatment choices.[161-163] Consequently, health care settings used predominantly by racial and ethnic minorities are characterized by longer wait times for examinations, overcrowding, and less continuity of care,[164] or physicians and other HCPs may devote more time with white patients than with other racial and ethnic patients.[44] Furthermore, HCPs may vary in the extent to which they cooperate with patients in systematic though non-deliberate approaches. For

example, Oliver and colleagues[165] found family physicians believed that white patients were more medically cooperative than Black patients.

Unconscious biases may be expressed in several ways: approaching patients with a demeaning behavior (e.g., in facial expression, posture, body language, gesture, and voice tone) that make the patient uncomfortable and cautious to engage in truthful dialogue, failing to use interpreters when required, doing more or less thorough diagnosis and examination work, recommending various treatment decisions for patients based on assumptions and expectations about their adherence to intensive treatment, and granting different privileges, such as permitting some families to visit their patients after hours while limiting visitation for other families.[15,29,47,148,166,167]

HCPs may exhibit positive or negative behaviors toward different minority groups. Negative behaviors toward certain social groups such as racial and ethnic or personal demographic groups frequently exist at the margins of consciousness and are hardly accessible to persons. Researchers and scientists in the social psychology field have therefore described discriminatory behaviors or bias as either conscious (explicit) and unconscious (implicit).[74,168]

As widespread condemnation of explicit discriminatory comments made by politicians and other public officials explains, overt or "old-fashioned" racial and ethnic bias is not socially acceptable. This is especially true in the health care professions, which regularly reject overt racial and ethnic bias in any form. Epstein[169] stated that many HCPs have argued that explicit prejudice and bias are relatively rare among individuals who choose to work in health care. The IOM[2] noted that it is more likely that the vast majority of health care providers deliver high-quality care to all patients with respect and courtesy. However, it seems that they may still provide medical services influenced by unconscious bias, and stereotyping is persistent.

Greenwald et al.[38] found that the majority of American populations hold an implicit bias against Black individuals. These biases can be associated with a long history of racial and ethnic discrimination, and certain racial and ethnic groups are often portrayed negatively in culture and mass media, along with generalized responses to specific undesirable personal experiences and reactions.

Previous studies have measured ethnic and racial bias among HCPs, all using IAT. They found strong evidence that HCPs had an unconscious bias about a race to varying degrees, whereas conscious bias was low to nonexistent.[11,44,61,170-173] Green et al.[11] measured internal and emergency medicine physicians' implicit racial bias about race, finding that physicians hold strong unconscious bias favoring white patients over Black patients. The same study added that physicians covertly associate Black people with being "less cooperative" than white patients. A study of pediatricians found less implicit race bias compared with others in society and other physicians[46], where implicit bias is associated with white patients (versus Black patients) in terms of being "compliant." Sabin et al.[61] measured physicians' implicit bias as a whole using data from Harvard's Project Implicit© website, which allows people to take numerous versions of the IAT online. In general, the 2,535-website test-takers, who reported having a Doctor of Medicine (DM) degree, exhibited a pro-white bias. In addition, they found that the degree of implicit race bias varies by physicians' race, ethnicity, and gender. For instance, the implicit bias for either Black or white patients was neutral in Black providers and significant among providers of all other racial groups; meanwhile, women exhibited a less implicit race bias than men. Implicit preference for whites has also been found among medical students. Haider et al.[13] discovered that medical students exhibit unrecognized preference toward white and high-class people versus Black and low-class people. However, experienced HCPs are not immune to implicit bias. A study conducted

by Blair et al.[173] revealed that two-thirds of participating experienced physicians shown some implicit bias against minority patients, even as they refused explicit expressions of bias. Accordingly, although HCPs generally have relatively unprejudiced explicit behaviors toward racial and ethnic minorities and demonstrate a desire to provide equitable care, they are more likely to show significant unconscious biases against racial and ethnic minorities and interact with them less effective than with white patients, which may contribute to disparities in health care.[60, 174,175] Race and ethnicity are not the only areas where providers exhibit implicit bias. Studies have shown that implicit bias in other areas, including age, gender, body size, sexual orientation, mental illness, language accent, and socioeconomic status, may also be present.[18,176-185]

2.6 Racial Bias and Health Disparities

Holding that physicians and other HCPs have measurable implicit bias does not in itself prove that this bias affects the patient-provider interaction or changes the treatment patients receive. However, studies have examined the relationship between providers' racial/ethnic bias and particular types of health care outcomes, which may prolong disparities in health care.[2] These health care disparities were divided into three general paths described further below: patient-provider interaction, treatment decision-making, patient treatment and recommendation adherence, and patient health outcomes (Figure 1).

Figure 1. Paths in Which Providers Bias Can Cause Racial Disparities in Health Care
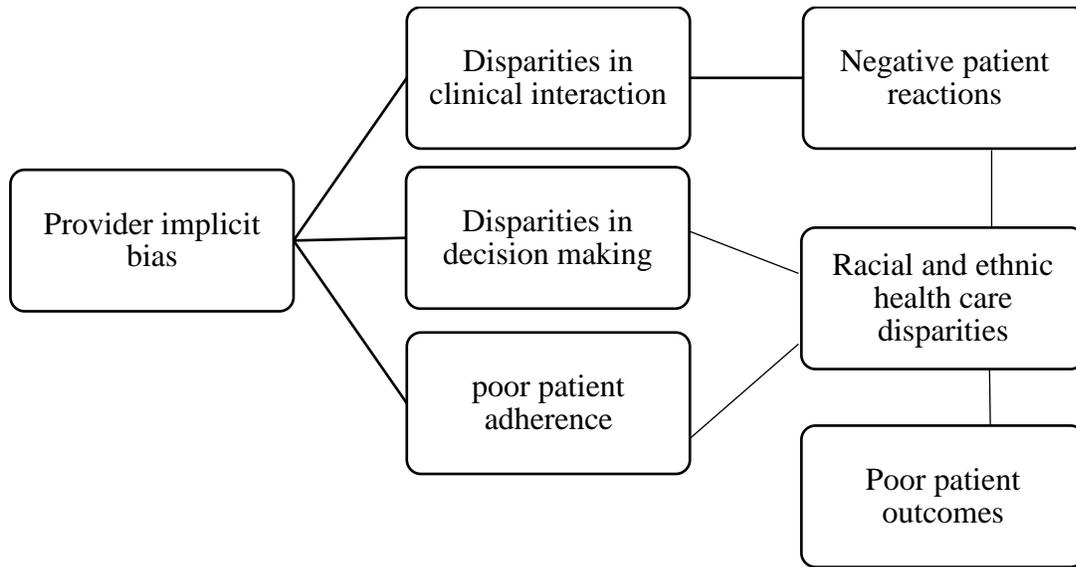
2.6.1 Patient-Provider Interactions

Cooper and colleagues[44] found that physicians' higher implicit pro-white bias on the IAT was associated with white patients feeling more respected by the physician. However, among Black patients, physicians' bias was negatively correlated with Black patients' perceptions of poorer communication, less respect form physicians, lower patient ratings of interpersonal care, and less willingness to recommend their physicians to someone else. Similarly, Penner et al.[63] discovered that Black patients have less positive reactions with providers who score relatively low in explicit and high in implicit bias, rating them as less warm, friendly, as well as lower scores by providers regarding their feeling of "being on the same team" with their Black patients. However, this study noted unexpected findings: A small number of non-Black physicians exhibited less implicit bias than physicians in other studies, based on a small and primarily minority physician sample that may not have been exposed to the same degree to socialization effects that produce implicit bias. Blair et al.[172] administered a telephone survey to almost 3000

patients and randomly selected from the patient panels of 134 physicians who had previously completed tests of explicit and implicit ethnic/racial bias. The authors found Black patients perceived poorer treatment in domains such as patient-centered care, patient satisfaction of care, treatment adherence, and patient-physician communication from physicians who exhibited implicit bias against Black individuals on the IAT as compared with a reference group of white patients. In another study, Dovidio et al.[35] investigated the impact of racial attitude on white and Black relations and found that the perception of the interaction between white physicians and Black patients was affected by the physician's implicit race bias, although explicit bias and stereotypes were absent. Such negative bias and stereotypes could create less favorable outcomes for Black than white individuals in ways that reduce adherence and create distrust, thereby contributing to inequalities in care.

Differences in the delivery of patient-provider clinical interactions are also associated with patients' racial and ethnic backgrounds. Johnson et al.[27] found differences in the content and tone of medical visit communication for Black and white patients; providers are more verbally dominant and involved in less patient-centered care communication with Black patients than with white patients. In a recent study of patient-physician communication during medical visits. Another study conducted by Hagiwara et al.[45] also found an association between implicit racial bias and verbal dominance by primary care providers during medical interaction with Black patients.

2.6.2 Treatment Decision-Making

Studies also support the relationship between unequal treatment decisions and providers' implicit bias.[186-189] These studies exist in two forms: research comparing treatment recommendations for patients who are equal except for social group information, and research directly examining

implicit and explicit bias and then defining the association between the degree of bias and providers' decision-making.[60] Researchers found that providers have more negative attitudes and stereotypes of Black patients than white ones, in relation to their general qualities (e.g., cleverness) and patient-relevant characteristics (e.g., amenableness).[190] Some evidence suggests that minority patients may receive different diagnoses and treatment because of their race and ethnicity. For instance, patients with an ethnic minority background receive fewer pain medications than white patients in an emergency room.[186,187]

Todd et al.[189] reported that non-Hispanic whites were as twice as likely as Hispanic patients with similar injuries to receive analgesia in the emergency department. In a follow-up study, researchers evaluated physicians' estimates of pain severity in Hispanic patients compared to non-Hispanic white patients; they found that physicians could accurately estimate pain severity regardless of ethnicity; however, they still provided fewer opioids to Hispanic patients with severe pain. Another study conducted by Calabrese et al.[191] found that after reading a medical case involving a Black versus white patient at risk of HIV, medical students indicated that the Black individuals would be more likely to engage in increased unprotected sex if prescribed a preventive drug, which, in turn, was linked with reduced willingness to prescribe a preventive drug to the patient.

Additionally, research has indicated that providers' unconscious bias may contribute to racial and ethnic differences in the care of patients with cardiovascular diseases, where Black patients are less likely than white patients to obtain appropriate therapeutic procedures.[11,24,94,192-194] For example, Sabin and Greenwald[46] discovered pediatricians' implicit attitudes about race affect treatment recommendations; they recommended the ideal management of pain after surgery at lower rates when responding to vignettes of Black patients as opposed to white patients. Green et

al.[11] tested that whether health providers show implicit racial bias and whether the magnitude of such bias predicts thrombolysis recommendations for Black and white individuals with acute coronary syndromes and found that implicit bias among internal medicine and emergency residents was linked with the different thrombosis treatment of minority patients that matches real-life health care differences

2.6.3 Patient Treatment Adherence and Patient Ratings of Care Received

The presence of pro-white bias among physicians has also been associated with poor adherence to treatment recommendations and under-exploitation of health care among minority group patients. Other researchers found that non-Black physicians are more likely to view Black and Latino patients as less trusted, less intelligent, more conflicting, and less likely to adhere to their medical recommendations compared to white patients.[195,196] Bogart et al.[197] demonstrated that physicians are less confident in patients of color to be adherent to medications in comparison with white patients.

Potentially, as a response to the previously noted barriers, racial and ethnic patients are more likely to believe that they would be the target of bias, racism, and discrimination.[198,199] A number of studies have reported that minority patients are more likely to think that health professionals judged them unjustly or treated them with disrespect based on race and ethnicity.[153,156,200-202] In addition, patients of color are less likely to trust the medical care system and more likely than white patients to notice they would have received better medical care if they belonged to white groups. Penner et al.[63] subsequently reported that perceived prejudice was significantly and negatively linked with patient health, interaction with health care professionals, and adherence. Benkert et al.[203] found that minority patients' perceptions of experience with bias were negatively linked with patients' satisfaction with care. Minority patients who perceived bias and/or

discrimination reported less adherence to physicians' recommendations and therapy, missing more medical appointments, postponing in acquiring medical care or prescriptions, and less use of some protective services that, in turn, led to lower satisfaction.[200,204-208] Blair and colleagues[173] found a consistent link between physicians' implicit bias and their non-white patients' evaluations of them: the stronger the physicians' implicit bias for white patients versus Black patients, the lower their Black patients rated them. Cooper et al.[44] revealed more consistent associations between physicians' implicit bias about race and poor ratings of care among Black patients.

2.6.4 Patient Health Outcomes

Few studies examined providers' implicit bias and health outcomes. A study of Spinal Cord Injury (SCI) patients found higher physicians' implicit bias as assessed by IAT was associated with SCI patient health outcomes. Psychosocial health outcomes, including social integration, self-reported health depression, and life satisfaction for Black and white patients, appeared to be negatively affected by the presence of provider bias in this sample.[16] However, physical health outcomes, including mobility, physical independence, and occupational functioning, appeared unaffected by the presence of bias. Another study conducted by Blair et al.[209] revealed that implicit bias among physicians did not affect their provision of care to their Black and Latinos patients, nor did it affect the patient's clinical outcomes.

2.7 The Role of Pharmacists in Health Care

Health care systems and associations find themselves confronting new challenges in keeping up with the increasing health care demands of the public.[210] Many of these challenges are related to improving the economic, humanistic, and clinical outcomes for patients with long-term diseases.[211,212] These demands have made health care stakeholders, including health practitioners, government, and policymakers, seek alternative approaches to enhance the

health care system and improve individual care. Therefore, health care services have been encouraged to be more effectively used, also encouraging all members of the health care team to require to reevaluate their roles and contributions.[213] Makowsky and colleagues[214] stated that better collaboration could minimize medical errors and enhance individual clinical outcomes by combining skills, expertise, and resources. Yarnall et al.[215] found that most physicians do not have sufficient time to deliver all of the preventive and chronic illnesses and acute care services to patients in their practice. In 2014, nearly 4.5 million Canadians aged 12 and older reported not having a regular physician, and two million reported difficulties in accessing routine or ongoing care.[216] Clarke[217] reported that between 2009-2013, approximately 43% of Canadians said they had difficulty getting an appointment with a family doctor, 51% said that they waited too long for an appointment, and about 17% said that they waited in the office too long to see a doctor. For at least some of these individuals and certain components of primary health care, non-physician health care professionals can provide solutions to the problem of time and may represent high-quality alternatives.

Community pharmacists, as vital members of health care teams, can play a crucial role in filling many of these gaps in health care provision, as they have the appropriate knowledge to achieve desired clinical effects and minimize adverse health events.[218] Paudyal and coworkers[219] reported that pharmacists were trained to help patients with minor ailments such as colds and influenza, hay fever, and many pains and troubles, resulting in saving doctors' time spent with minor conditions and enabling them to concentrate on patients with more complex health issues. This may lead to shortening emergency department waiting times, freeing up surgery times, and improved patient access to services.

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Over the last five decades, pharmacists' traditional role is expanding worldwide from a person who was mainly responsible for the preparation, dispensing, and supply of medications to a person who provides services and plays a greater role in providing health promotion and disease prevention.[220] Pharmacists also interact with other HCPs in recommending pharmacotherapy, drug treatment, and through education and research in complicated, highly expert practice settings.[75] Several studies provide excellent examples of pharmacists performing essential roles in community pharmacy settings; in addition to their roles in preparing, dispensing, and suppling medications, the pharmacist can play a significant role in medication therapy management, specifically educating and counselling patients on optimal medications use, modifying medications, monitoring of drug consumption, advising on symptoms of minor ailments, providing information about the appropriate use of drugs and potential side effects and interactions, encouraging adherence, identifying and preventing medication therapy issues, and providing health education with the goal of enhancing patient processes of care and clinical outcomes[221-223]

Pharmacists also have the most significant effect on patient adherence to drug therapy, as they are uniquely placed to identify patients who may not be taking their medications as prescribed; they can interfere at the point of medicine dispensing and supply by providing education and counseling.[220,224] Lee and colleagues[225] reported that pharmacists can increase medication adherence rates, medication persistence, and clinically meaningful reduction in certain diseases, resulting in improved patient clinical outcomes and reducing long-term costs. Another study conducted by Latif et al.[226] stated that during over-the-counter (OTC) consultations, pharmacists could recognize which medications a patient may not be taking, as well as possibly improper medications, helping to decrease waste and improve care. In

addition, pharmacists often provide advice on managing conditions without medications as first-line solutions, thus saving on the cost of buying unneeded OTC medicines.[227] Furthermore, pharmacist counseling can also reduce the frequency of physician visits and hospital admissions. Luder and colleagues[228] reported that patients who received medication therapy management from the pharmacist experienced significantly fewer readmissions than patients who received the usual care.

Despite the significant role of pharmacists and its positive impact on patient clinical outcomes, there is a lack of or low awareness of the full range of pharmacy services available and pharmacist roles. Smith et al[229] conducted focus groups with consumers to evaluate their current knowledge of pharmacist capacity to provide primary care drug management services and found that most customers viewed pharmacists in traditional supply and dispensing roles and were thus unfamiliar with the direct patient care duties of pharmacists as part of community-based health teams.

2.8 Patients/Publics Perceptions, Expectations and Views of Pharmacist Services

Pharmacists are consistently ranked among the most trusted health professionals. Ipsos Reid released the results of its latest "most-trusted professionals" survey in 2012; the survey shows that close to 8 in 10 participants gave pharmacists a high trust rating.[230] In addition, there is a large volume of published studies indicating a high level of satisfaction with services provided by community pharmacists. A systematic review conducted by Anderson et al.[231] found users of community pharmacies expressed a high level of satisfaction, and they were more interested in the availability of further information and advice from a pharmacist. Nau and colleagues[232] reported that patients who receive comprehensive care in pharmacy settings perceive their pharmacists to be of greater benefit and value to them. However, in their

systematic review, Hindi et al.[213] found that although most of the literature suggests that general public perspectives about community pharmacy services are positive, awareness of pharmacy services and pharmacists' roles beyond medication dispensing and supply remain poor.

2.8.1 Awareness and Use of Pharmacy Services

Lack or low public and patient's awareness of pharmacist services was a common finding in several studies. In a study that set out to determine the views of healthy adults on the role of community pharmacies, Krisa and Morecroft[233] found that there was a general lack of awareness of pharmacy capacity and role in providing services such as screening for cancers and other chronic conditions that designed to improve public health. Another study conducted by Born et al.[234] reported that there is a lack of awareness of pharmacy services, particularly drug therapy management, refill synchronization, and adherence packaging; therefore, pharmacists should be proactive in informing patients of the services offered at their pharmacy. Latif et al.[235] concluded that the pharmacy setting appeared to be described as a medicine supply and place for medications purchase as well as advice on minor ailments. Rodgers et al.[236] reported that when survey respondents were asked how often they used community pharmacies for particular purposes, a high proportion reported that they only used community pharmacies for obtaining prescriptions (85.1%) and the purchase of medicines (79.2%).

Lack of awareness was accompanied by lack of exposure to or low use of a number of pharmacists and pharmacy services. In a study comparing pharmacy consumers' experiences, Fakih et al.[237] found that only 24 out of 155 (15%) participants in England had experienced a pharmacy-based program for weight loss. Saramunee and colleagues[238] reported that

participants indicated that an influential factor in lack of awareness was pharmacy services not advertised. Ndiaye et al.[239] mentioned that although an increasing number of people were receiving influenza and pneumococcal vaccines in pharmacies, the number of vaccines delivered was modest. Furthermore, George et al.[240] interviewed participants who tried to lose weight, and only one participant preferred the pharmacy and pharmacist as their first choice for advice on weight management, while 28 participants selected the pharmacy as their least favored option. However, the majority of participants demonstrated a willingness to take advantage of the expanded services despite low initial awareness.[64] Another survey study found that most respondents were willing to be screened for cardiovascular disease in a pharmacy.[241]

2.8.2 Perceptions of Pharmacists

Public perceptions of pharmacists seemed to influence patients' preferences for pharmacy-led services. Krska et al.[233] found that a significant number of respondents indicated they would not use the pharmacy as a source of public health advice due to problems with respect to confidentiality, privacy, space, and busyness. In another study, Hobson et al.[242] reported that although participants acknowledged the expert medication knowledge of pharmacists and their accessibility, they preferred nurses over pharmacists due to the perception that pharmacists were "behind-the-counter" health care members. Wood and colleagues[243] conducted a pilot focus group interview to explore older individuals' opinions of current community pharmacy provision and found that older individuals perceived pharmacists' role to be limited to dispensing and minor conditions. Moreover, patients and the public were suspicious of pharmacists' commercial associations and financial motives. Bissell et al.[244] found commerce to be an important dimension shaping respondents' views of pharmacist

services. However, participants in one study conducted by Fitzgerald et al.[245] were supportive of pharmacists providing professional advice, referrals to other HCPs, and treatment recommendations.

2.8.3 Preferences for Physician versus Pharmacist Care

Patients and general public perceptions of the roles and standing of physicians affected their opinions of pharmacists and pharmacy services. Tinelli et al.[246] revealed that survey respondents stated that they wanted pharmacists to provide dispensing, medications review, and advice on medication; however, patients indicated a preference for seeing their physician to discuss their medications. Another study discovered that 49% of survey respondents preferred a physician, while 23% of them preferred pharmacists to discuss medication-related issues.[233] Regarding prescribing, Stewart et al.[247] reported that 65% of participants would prefer to see a doctor about prescribing consultations more than a pharmacist prescriber. In contrast, MacLure and colleagues[248] found that most of the survey respondents indicated a preference for pharmacists over physicians regarding medication advice and support for non-medical prescribers to engage more with the general public.

2.8.4 Facilitators of Pharmacy Care from the Patient's Perspective

Accessibility and availability were the most commonly mentioned advantages ascribed to pharmacy services. Tucker and Stewart[249] conducted interviews with patients presenting at pharmacies and found that one reason participants gave for consulting pharmacies was the non-appointment-based nature of community pharmacies. Another qualitative study demonstrated that one of the major benefits of advising pharmacists was the additional time allowed for consultations, which meant pharmacists had time to listen to any patient concerns about their medications and conditions.[250] Anderson et al.[251] reported that most participants in

a study selected access and convenience as the main reasons for using pharmacy services. Pharmacists' professionalism was also influential on patients' satisfaction. Baraitser et al.[252] reported that friendliness and excellent communication skills of the pharmacists and counter staff were important to most participants. Wood et al.[243] mentioned that good communication from the community pharmacy helped to improve the experience of patients and the general public. Furthermore, pharmacists' manners were perceived as the cornerstone of building a good patient-pharmacist relationship. Participants in a study described that as a result of their relationship with the pharmacist, they were more likely to be satisfied and honest with them during a discussion.[253] Stewart and colleagues[254] found that patients felt more comfortable having consultations with pharmacists in comparison to physicians. Other less commonly mentioned benefits in the studies were advice, referral and informal signposting,[255] quality of service,[256] and collaboration with other HCPs.[248]

2.8.5 Barriers Impacting Pharmacy Care from a Patient's Perspective

Participants in many studies raised several barriers to use pharmacist services. Fitzgerald et al.[245] demonstrated that there was a high level of a common accord of trust that pharmacists would discuss problems confidentially; however, they would be concerned over privacy in a community pharmacy. Other studies exposed specific displeasure of patients and members of the public with chain pharmacies in terms of privacy. It was apparent that service users were unaware of consultation rooms offered at pharmacies.[238,257] Dhital and colleagues[258] revealed that the study participants indicated that privacy remained a problem even when using private rooms. On the contrary, participants in a survey study exploring the views of the general public on non-medical prescribing were familiar and reassured by the presence of consultation rooms.[259]

In addition to the privacy issue, Tucker and Stewart[249] reported that access to patient medical records was an issue that hindered many patients from using pharmacist services. Finally, lack of continuity was also mentioned as a barrier in another study conducted by Saramunee et al.[238] suggesting that pharmacy services were not always conducted by the same person, which decreased patient-pharmacist relationships and confidentiality.

For minority patients, Bancroft et al.[260] detected that patients of certain social groups were statistically underrepresented among other patients accessing the support offered by community pharmacies such as medications use reviews, inhaler technique training, and smoking cessation guidance. Youmans et al.[58] conducted six sex-specific focus groups to understand Black patients' perception of the role the community pharmacist and their communication with pharmacists and found that Black patients identified several communication barriers included perceived lack of interest or knowledge by the pharmacist, time restraints, and an inability to recognize the pharmacist. The authors concluded that it appears that the role of the community pharmacist is not being entirely realized by these participants, which may negatively impact the patient-pharmacist relationship.

2.9 Health-Related Disparities in Pharmacy

A large and growing body of literature investigated the health care disparities in clinic settings such as a hospital, primary care center, outpatient clinic, or doctor's office.[2,24,261-265] However, it is found that pharmacists or the "pharmacy system" is a significant dimension of disparities in health and health care. In a 2015 review of the pharmacist practice and health-related disparities, Wenger and her colleagues[266] reviewed 93 peer-reviewed and 23 grey literature articles on pharmacy-specific research into health-related disparities; they concluded that although many pharmacists are engaging with a range of patients from different

backgrounds with respect, providing comprehensive care, and participating in informative conversations, there are still stigma, prejudice, and discrimination- evidence of challenging patterns significant to acceptable care. The majority of studies focused on three core concepts of health disparities in the pharmacy: Stigma and stereotype, bias, and general disparities.

2.9.1 Stigma and Stereotype

Several studies evaluated pharmacists' attitudes, knowledge, and perceptions toward certain groups such as patients who have a mental illness, use injection street drugs, or patients with HIV/AIDS; finding that pharmacists' discomfort or social distance or willingness to communicate with these groups can contribute to health care disparities through disdainful communication, unwilling engagement, or even refusal to provide service. A qualitative study by Mackridge and Scott[267] found many pharmacists expressing undesirable behaviors towards drug users, and some considered pharmacies as improper places for offering services to this group. Another Canadian study showed that people with mental illness experienced stigma from pharmacists, and this stigma was similar to experiences with other health care providers.[268] Similarly, Bell and colleagues[269] investigated pharmacy students' attitudes toward patients with mental illnesses such as severe depression and schizophrenia and found stigmatized attitudes toward patients with illness, and that many students perceive that such patients are "a danger to others," "unpredictable," and "difficult to talk to." Balfour et al.[270] noted that pharmacy students who had not received educational HIV training had high levels of HIV stigma.

Furthermore, some studies found that stigmas about certain marginalized groups can be linked with systematic deficits in pharmacists' knowledge about a condition and/or obligation to care for a patient. Ahmed and his colleagues[271] reported that pharmacy students showed low

willingness to help patients and low confidence in their education about people with HIV/AIDS as a result of lacking knowledge about HIV/AIDS and its treatment. Bell et al.[272] conducted an international comparison of pharmacy students' stigma towards people with schizophrenia and noted that they held a high level of stigmatizing attitudes against these patients; the authors concluded that pharmacy education might need to be better designed to address the determinants of stigma.

2.9.2 Bias

Research on bias is closely related to and frequently overlaps with that on stigma through attention to patterns of prejudice, stereotyping, or discrimination. It has mainly focused on pharmacists' negative perceptions and assumptions toward specific groups. Shoveller et al.[273] interviewed 52 women from diverse racial and ethnic groups and found that women received indirect and sometimes explicit stigmatizing messages from health providers when they needed emergency contraception. Another study conducted by Reich et al.[274] discovered that many pharmacists opposed having syringe exchange programs in their pharmacies and indicated a preference for selling syringes only to people who looked reasonable, such as diabetic patients. Pharmacist-patient relationships can be restricted by a pharmacist's lack of knowledge, or their misjudged expectations about patient needs and preferences. LaCivita et al.[275] examined the communication between patients and pharmacists about prescription and OTC drugs and found discussing the use of prescription pain/arthritis medications with pharmacists differed among patients based on race and gender, with. Black patients having the lowest odds of discussing their medications with pharmacists compared to white men. White-Means et al.[276] measured implicit bias and cultural competency among pharmacy, nursing, and medical students in order to determine potential implications for health

disparities; they revealed that students' cultural competency scores were significantly higher for Black and Hispanic people in medicine and pharmacy students compared with whites. The IAT results indicated that those students hold preferences for white individuals over Black individuals and light skin over dark skin. However, Okoro and colleagues[277] discovered that third-year Doctor of Pharmacy (PharmD) students had low knowledge about health disparities and moderate skills in dealing with sociocultural issues and cross-cultural encounters, which may impact their attitudes and perceptions of certain social groups.

Discriminatory behaviors against marginalized populations also have appeared in several studies. Owusu-Daaku and Buanya-Mensah[278] indicated that pharmacists tended to report a more perceived discriminatory attitude toward people with HIV/AIDS, which may negatively affect patient health outcomes. Similar findings were demonstrated in Ubaka et al. [279] study, in which pharmacy students and pharmacists displayed a high level of discriminatory attitudes against people living with HIV/AIDS. Another study reported that although most HCPs, including pharmacists demonstrated adequate hepatitis C knowledge, some displayed intolerant attitudes toward individuals with hepatitis C.[280] Phokeo et al.[281] surveyed community pharmacists in Toronto to determine their attitudes toward and professional interactions with patients who used psychiatric drugs and those who used cardiovascular drugs; the sample of pharmacists reported feeling more uncomfortable discussing disease symptoms and drugs with patients who have psychiatric illness than with patients who have cardiovascular conditions. In addition, patients with mental disorders seemed to obtain fewer pharmacy services such as counselling on medications than patients with cardiovascular diseases.

2.9.3 General Disparities

Numerous studies have concentrated on deficits in pharmacists' awareness about societal-level level health disparities and their inexperience with certain social groups at risk for disparate health outcomes. In her major study, Crawford and colleagues[282] noted that pharmacy staff who worked in neighborhoods with a high percentage of minority individuals were less likely to express support of in-pharmacy vaccination; therefore, educational campaigns about the importance of vaccination access might be required among some pharmacy staff and minority community individuals. Additionally, there are gaps in pharmacists' services for rural or low-income populations, racial and/or ethnic individuals. Wang et al.[283] reported that there were racial disparities between white and Black individuals in receiving influenza vaccinations among both community pharmacy individuals and non-community pharmacy individuals. In the same vein, Warrick et al.[284] indicated that Black pharmacists were more willing to provide prostate cancer information than non-Black pharmacists since Black patients are at a disproportionately higher risk for development of prostate cancer; the authors concluded that race may play a significant role in disparities related to health promotion

Other studies examined the relationship between socio-economic status (SES), race, ethnicity, and access to pharmacies, medications, or services specifically in rural or poor urban areas. Amstislavski and colleagues[285] found that pharmacies in high-poverty communities had significantly higher odds of drugs being out of stock. As well, communities with higher poverty levels were more likely to be serviced by smaller independent pharmacies with less stock and short of operation, while middle- and low-poverty communities were more likely also to have the presence of larger chain pharmacies. XU and Rojas-Fernandez[286] reported

that older Latino patients were less likely to receive medication delivery, medication counseling medications, written medication information, or blood pressure monitoring services than white patients.

The literature revealed service gaps related to language or health literacy supports as well. Bradshaw et al.[287] indicated that half of the pharmacies responded in Milwaukee County never or only sometimes can provide non–English-language prescription labels or information packets, and the majority of them sometimes can verbally communicate in non-English languages. In addition, most pharmacies are dissatisfied with their communication with individuals who have limited English proficiency. XU and Rojas-Fernandez[286] reported that deficiency in English among elderly patients was significantly related to disparities in reported access to pharmacy services in West Texas. Praska et al.[288] conducted a survey with community pharmacists to identify whether pharmacists provide proper assistance to patients with limited literacy skills and found many they were surprised and unsure what to do if a patient said they weren't literate. These findings were supported by Young et al.[289], who found that Spanish-speaking people may experience inequalities in the level of care received from pharmacists.

Although the existent literature on the relationship between pharmacist practice and differences in health care has considered a range of patient groups, there are still underrepresented and/or missing voices. Additionally, as pharmacy researchers, practicing pharmacists, and health policy experts pursue knowledge significant to allowing and supporting fair and impartial practice, there is value in extending the scope of this scholarship to include attention to patients'/ clients' and pharmacists' diversities, to study how different processes function, and discover the influence of implicit as well as explicit bias. Wenger et

al.[266] stated that implicit or unconscious bias has received limited attention in research examining disparity-related dynamics in pharmacist practice. Therefore, the current research attempted to examine the racial/ethnic implicit and explicit bias among community pharmacists in Ontario.

2.10 Reducing Racial and Ethnic Bias Among HCPs

Attention to racial and ethnic disparities in health care has increased among practitioners and health policy experts. However, there is little agreement on what can or should be done to eliminate or reduce these disparities. It is well known that racial and ethnic health care disparities have multiple contributing factors; therefore, effective interventions must address numerous approaches, including interventions concentrated on HCPs, patients, and their interaction, and structural interventions to address health care system. Programs, policies, and procedures that address the multiple sources of bias and discrimination against members of a social group such as racial and ethnic minorities can therefore help to eliminate or reduce disparities in health care. The following sections review promising interventions showing meaningful, credible positive health or behavioral consequences, and policy, environment, or economic influences based on evidence from published or unpublished evaluation research or experimental evaluations.[44,87]

2.10.1 Provider-Focused Approaches.

To enhance the quality of health care provided to a diverse population, it is crucial to develop and implement training that teaches HCPs about the pervasiveness of racial and ethnic inequalities in health and assist them to create effective and long-term strategies to deliver high-quality care to underserved culturally diverse populations.[290,291] The IOM report on health care disparities[2] had sensitized students and HCPs to past and current inequalities and

had a substantial effect on health schools' (e.g., medical, nursing, and pharmacy) educational programs. In a systematic review of health care provider educational intervention, Beach and her colleagues[292] reported that cultural competence training demonstrates promise as a good strategy for enhancing the knowledge, attitudes, and skills of HCPs. One outcome was introducing more courses and training on racial and ethnic health inequalities into the curriculum of many medical and health schools. One study by Vela et al.[293] evaluated an elective health disparities course; they found that the minority of first-year medical students' factual knowledge about health disparities and abilities to address disparities issues improved after the course. Monteith et al.[294] reported that making individuals aware of unfair treatment in the health professions can motivate efforts to decrease personal manifestations of bias.

Nevertheless, offering only coursework and training is not sufficient to reduce racial and ethnic disparities. Sequist et al.[295] found that cultural competency training for physicians, while useful in raising physician awareness, may not be enough to have a measurable effect on disparities in Black patient outcomes. There are several reasons have been identified why educational programs are not enough to minimize differences in health. First, diversity evaluation and training that target managerial bias, such as anti-bias education training programs, have only limited effect unless they have strong institutional support. Kalev et al.[296] reported that affirmative action plans, and committees and taskforces, leaders, and departments focused on diversity are the greatest efficient means of combating bias. Second, even when HCPs are aware of disparities in health care among racial and ethnic minorities, they may not know how their personal views and actions contribute to these inequalities.[87] As mentioned, HCPs are often unaware of unconscious bias and its impacts. Implicit bias lies below the surface, but may still unintentionally affect behavior and attitude, such as

perceptions about patients or decisions about patient management.[297] These behaviors often present as discomfort and hesitancy with Black patients rather than hostility. Third, even when HCPs are aware of implicit personal bias, efforts concentrated on eliminating this bias may have only limited achievement. Lai et al.[298] stated that stereotypes and implicit biases are habits of mind learned over time through repeated personal experiences and cultural socialization; as such, they are highly resistant to change. Individuals sometimes can apply conscious control to evaluate their judgments about others in order to mitigate bias impacts, but it needs continuous concentrated effort.

Furthermore, individuals frequently exhibit a strong reaction against external attempts to modify how they think. Plant and Devine[299] reported that external pressure to reduce bias should have paradoxical effects. Therefore, instruction and information about racial injustices in public context would seem insufficient to minimize HCPs' unconscious bias and its influence. Efforts to reduce racial and ethnic bias should develop specific interventions to limit the impact of HCPs implicit bias when interacting with minority patients. In addition, these interventions should avoid imposing "politically correct" program but instead appeal to providers desire to deliver the best possible health services to all patients.[87,300] Issues in interracial clinical interactions reflect misunderstandings and misjudging that usually happen when members of different social groups interact. Therefore, solving this issue can come from the relevant literature on how to limit the influence of intergroup bias in social relationships.[5,301]

One key recommendation to reduce bias in HCPs judgment, behavior, and decision-making is to encourage HCPs to promote the cognitive strategy of individuation, that is, to focus on the individual's own attributes rather than mainly as a representative of his or her group (e.g.,

ethnic).[302] However, Penner et al.[87] noted that cognitive strategy of individuation is complicated in a medical context because health providers learn about the diagnostic value of considering differences in base rates of medical disorders and diseases that occur among different people. Another recommendation is to encourage HCPs to engage in patient-centered communication. Saha et al.[303] reported that patient-centeredness and cultural competence primarily aim to balance quality, and to minimize disparities by particularly enhancing care for racial and ethnic minorities and other disadvantaged populations.

In their conclusion, Burgess and her co-workers[302] provided a conceptual framework based on evidence for interventions to combat unconscious bias among HCPs, drawing upon theory and research in social cognitive psychology. These strategies and skills include 1) improve internal motivation to reduce bias by using strategies that lead individuals to recognize their implicit bias include exercises where they are assisted to compare what they would do and what they should do in a diversity of intergroup conditions, ; 2) enhance the psychological basis of preference by helping physicians understand that racial prejudice is a normal aspect of human cognition; 3) improve providers' confidence in their ability to effectively interact with socially unlike individuals by direct contact with members of other groups; 4) improve emotional regulation skills by reducing stress and negative emotions which may make health providers more vigilant about when their interactions with patients are likely to be biased.; and 5) enhance the ability to build partnerships with patients by finding common ground aspect of the patient-centered approach to care

2.10.2 Patient-Focused Approaches.

In addition to direct attempts to change HCPs' behavior and attitudes, interventions may also aim to make patients less vulnerable to the impacts of bias. Most members of racial and ethnic

minority groups have reported experiencing bias and discrimination in health care settings[261] Racial and ethnic minorities react differently in response to bias and discrimination, some of which can interfere with their relationship with health providers. Aronson et al.[304] reported that the past experiences of racial and ethnic patients with bias and discrimination may lead them to, experience stereotype threat, which refers to the people are to be risk pf confirming negative stereotype about their social group, in clinical interactions. Schmader and colleagues[305] found that stereotype threat may lead racial and ethnic patients to ineffectively communicate vital information to physicians or fail to understand and remember the content of vital conversations. Van Ryn et al.[190] stated that Black patients might be concerned about approving negative unconscious stereotypes and beliefs of Black patients as unintelligent and not self-controlled, which may be held by their health providers. Under stereotype threat, racial and ethnic minority patients may be unwilling to interact with health providers, leading to missed medical appointments and the delaying of needed or preventive medical care.[304,306] Such a discomfort can also compromise the health provider's abilities to make an appropriate treatment decision, appearing to confirm the patient's fear of being evaluated according to a negative stereotype and beliefs.[87,305]

Interventions and strategies to reduce stereotype threat and strengthen a persons' self-integrity include removing cues that trigger worries about stereotypes,[307] increasing the visibility and representation of members from racial and ethnic minority groups,[308] helping patients manage feelings of stress and threat,[309] and promoting a growth mindset about intelligence.[310]

2.10.3 Physician-Patient Relations Interventions.

Dovidio et al. stated that health providers' implicit and explicit bias and minority patients' experience with distrust, bias, and discrimination, within the health care system influence quality

of health care.[261] Addressing the effects of each of these reasons independently has the potential to minimize racial and ethnic health care disparities; thus, interventions and specific strategies to improve the quality of the social exchange between HCPs and patients may be particularly beneficial.[87]

Furthermore, effective and efficient communication with a patient requires transmitting technical information about diagnosis, prognosis, and details of their illness along with effective relational communication. Effective relational communication requires the HCPs to build a positive therapeutic alliance with the patient, which should increase patient collaboration and trust. Pinto et al.[311] investigated the relationship between communication factors such as interaction, styles, verbal factors or non-verbal factors and concepts of the therapeutic alliance such as agreement, understanding, and effective bond; they found that patient-centered care strategies such as listening to what patients have to say and asking them questions with a focus on emotional issues might provide one path to strengthen alliance building with the patient.

2.10.4 Health System-Focused Approaches.

In addition to interventions targeting individual-level factors, health system interventions targeting discrimination, access to care, and quality of care are also important to minimize racial and ethnic disparities in health care.[312] Mador[313] reported that health systems vary in their recognition of social and health disparities and the extent to which actions are taken to enhance fairer health outcomes and access to services. Globally, several different strategies and interventions techniques have been published, emphasizing the importance of addressing health disparities through a coordinated health system response. One way to successfully implement equity-related initiatives through a health system is by collecting and analyzing data based on patient race or ethnicity and other characteristics related to disparities in health care (e.g., low

SES, level of education). Analyses would move racial diagnosis and treatment disparities from an idea that happens "elsewhere" to an immediate administrative issue within a specific organization. Such feedback frequently stimulates modifications within organizations, which could ultimately minimize racial health care disparities.[87]

In New Zealand, the Ministry of Health developed and implemented a national health strategy to minimize disparities among the New Zealander population, with a specific focus on the racial, ethnic, and low-income groups in the population. This framework for action recognized the need for all levels of government to work cooperatively on the social, economic, and cultural factors that affect health, in addition to the provision of more established health and disability services.[314] Another intervention that represented a coordinated system-focused approach is the UK Health Inequalities Intervention Toolkit (UK-HIIT) which provides local-level data to help in identifying where targeted health care and services may best address noticeable health disparities.[315]

2.11 Implicit versus Explicit Racial and Ethnic Bias

Central to social psychology lies the study of attitudes and stereotypes. Dovidio and Gaertner[316]reported that bias is a similar process in that it includes how one views one's group compared to other groups. Bias is a cognitive experience, although an experience that may be influenced by the social environment of people. However, it cannot be studied directly, and most investigation on bias concentrates on evaluating certain behaviors (e.g., replies in interviews, reaction times, closeness to another individual) that are thought to result from a fundamental cognitive bias.

Devine[317] confirmed two types of bias from a race perspective that result from stereotypes, including conscious (explicit) and unconscious (implicit) bias. Conscious bias is overt and a bias

that we are largely aware of and can control. It requires the individual to be aware of the

evaluation, believes that evaluation to be correct in some ways, and have the time and motivation

to act on it in the current condition. The term "control" is used here to show that individuals can

influence or direct their beliefs or feelings. For example, the words we speak, the food we eat,

the roads we take home, and the opinions we have are all recognized behaviors because we can

modify or influence them.[318] Explicit bias is more simply altered by forces such as intergroup

contact,[319] education,[320] and motivation.[321]

Conscious bias has typically been measured using self-report methods such as open and close-

ended questionnaires or Likert-type scales, including the Modern Racism Scale (MRS)[322]and the

Symbolic Racism Scale (SRS).[323] Banaji and Heiphetz[324] noted that self-report measures are

beneficial in that they can provide the investigator with the individual's perception of his or her

friendly attitudes. Self-report measures assess an individual's perception that the individual is

both aware of and willing to report. Nevertheless, they reported three issues with self-report

measures: (1) individuals are not always comfortable expressing opinions that are undesirable

and unacceptable in general society (such as those that may be seen as racially prejudiced), (2)

many biases individuals express seem to be ones that individuals are briefly "trying out," and (3)

individuals cannot perhaps state opinions and the bias of which they are unaware. Because of

these problems, investigators have increasingly trusted implicit views.[317,325,326] In addition, the

literature indicates that no or weak relationship exists between implicit bias and self-reported

egalitarian attitudes.[327,328]

Unconscious (implicit) bias indirectly operates in subtler ways. It develops early in life from the

repeated strengthening of social stereotypes and conducts in an unintentional and even

unconscious manner. Such bias does not need the perceiver to approve it or dedicate attention to

its expression.[38,316,317,321,325,327,328] According to Wilson et al.[329], implicit bias has three different aspects: (1) the person is largely unaware of his or her bias, (2) it is stimulated automatically, and (3) it may influence behavior. Therefore, an implicit bias, although it occurs outside of awareness, may still influence behaviors. For instance, consistent with the dual-process models of beliefs, investigators have found that some individuals who indicate equal opinions may still evidence racial bias on measures designed to assess implicit bias[37,42] and may still subtly discriminate against other racial groups.[330] Cunningham et al.[331] found that IAT results showed high implicit preferences for ingroups (people identify as being a member) over outgroups (people do not identify); however, explicit measures showed significantly less preferential difference.

2.12 Measures of Implicit Bias

Response latency measurements for social and personality psychology are the most widely utilized methods of implicit bias.[332] Such measures are described as "processes that are uncontrolled, unintentional, autonomous, goal independent, purely stimulus-driven, unconscious, efficient, or fast."[333] The response latency measures rest on two principles: (1) exposure to one stimulus influences the responses to a related stimulus, and (2) the response to a stimulus will be slower when it covers conflicting thoughts.[333] In particular, the time it takes a respondent to connect stimuli and classifications discloses something meaningful about how classifications and characteristics are evaluated.[334] As discussed next, these principles extend to the most widely used implicit bias approach: The Implicit Association Test (IAT).[42,335]

2.5.1 Implicit Association Test (IAT)

The computer based IAT, first introduced in 1998, is now utilized broadly to assess bias that may not be consciously documented. More than 300 studies have employed various versions of the

IAT, and data from 5 million tests have been collected from

www.implicit.harvard.edu.[37,38,42,162,163] The IAT measures the time it takes respondents to match

representatives of certain social classes (e.g., age, sex, and ethnic) to specific attributes (e.g.,

good, bad, cooperative, and stubborn). The IAT operationalizes unconscious bias by

hypothesizing that subjects will match a group representative to an attribute more quickly if they

connect these factors in their minds, regardless of their awareness of this connection. Subjects

are normally conscious that they are making these connections but are not able to manage them

given the fast response times and design of the test.

The IAT is a seven-task format.[42] In the first task, subjects categorize examples of two

contrasting ideas into the categories using response keys, such as white persons (left key) and

Black persons (right key). In task two, subjects repeat the format for task one, but here they

distinguish between good and bad categories. In task three, the previous two tasks are combined,

and subjects press a designated left computer key when any item in the category of white persons

or good appears on the screen and a selected right key when any category of Black persons or

bad appears on the screen (usually abbreviated by white persons + good or Black persons + bad

pairing). Task four repeats the procedure of task three with more repetitions of the names, words,

or images. Task five repeats the procedure of task two but reversing the positions of the two

categories. Task six repeats task three while reversing the pairing of category-attribute

combinations. Task seven is the same as task four with more repetitions of the names, words, or

images. These seven tasks are typically balanced to compensate for any order effects.

The response times between tasks are then averaged to produce an overall degree of implicit

bias. It is estimated that stronger category-attribute relationships are reflected by faster and more

accurate performances while weaker relationships by slower and less accurate performances. The

implicit association score is the variance, in milliseconds, of the average time it takes to respond

to the stimuli offered. As mentioned, this is called response latency. Hypothetically, this

response latency provides a measure of how strongly the subject links the category and attribute.

If the average pairing of the white people category and the useful attribute creates faster

responses overall than the pairing of Black people and good, even when response keys are

reversed, the conclusion is that the relative strength of the association between white people and

good is greater than Black people and good. Thus, it is determined that there is an implicit

preference for white people over Black people.

The IAT is a general method, or format, for measuring implicit bias. As such, investigators have

developed several variations based on their research objectives. For instance, the IAT has

measured and compared an implicit preference for male and female, young and old, and thin

people and fat people, among others.[334] In the current research, two IATs were used to measure

implicit preferences for Black vs white people (known as Race IAT) and Arabs vs. whites people

(known as Arab IAT).

Other different experimental tests assess the presence of implicit attitudes, including evaluating

the priming task frequently used in studies on eating and attitude toward food,[336] a semantic

priming task used to indicate favorable toward groups,[337] the Extrinsic Affective Simon Task

(EAST) which has been used in the study of attitudes of individuals who have specific phobias

and/or anxiety,[338] the Go/No go Association Task (GNAT) which has been used with people who

have been diagnosed with acute phobias to measure fear relations in addition to studies on

stereotypes and prejudice,[339] and the Affect Misattribution Procedure (AMP) which has been

used to understand attitude toward political candidates and has proven beneficial in guessing

voting behavior.[340,341]

2.13 Immigration and Visible Minority Population in Canada

2.13.1 Immigration to Canada

Canada has a long history of immigration, and it is one of the most ethnically diverse countries in the world, with a global reputation for supporting ethnocultural diversity in its population through notable federal policies and programs like the 1971 Multiculturalism Policy of Canada. The preamble of the Act declares that,

> *"Whereas the Constitution of Canada provides that every individual is equal before and under the law and has the right to the equal protection and benefit of the law without discrimination and that everyone has the freedom of conscience, religion, thought, belief, opinion, expression, peaceful assembly and association and guarantees those rights and freedoms equally……"*[342]

Waves of immigrants from different nationalities and their children have contributed their talents and hard work to Canada's success. In 2016, nearly 7.5 million Canadians reported being foreign-born individuals who came to Canada through the immigration process, representing more than one in 5 individuals in Canada, the highest proportion among the G8 countries.[343] Between 2011 and 2016, around 1,212,075 foreign-born people immigrated and permanently settled in Canada. These recent immigrants made up 21.9% of the total population in Canada. Statistics Canada projects that proportion could reach between 25% and 30% by 2036. Asia, including the Middle East, remains Canada's largest source of foreign-born persons at 61.8%, though the share of immigration from Africa (13.4%), Caribbean, Central, and South America increased slightly. Europe, which once dominant in this category at 61.6% in 1971, ranked third at 11.6 %.

2.13.2 Canadian Visible Minority

A visible minority is defined by the Employment Equity Act as "persons, other than aboriginal peoples, who are non-Caucasian in race or non-white in colour." The visible minority population consists primarily of the following groups: South Asian, Chinese, Black, Filipino, Latin American, Arab, Southeast Asian, West Asian, Korean, and Japanese.[344] Over the last several decades, Canada has experienced a remarkable increase in its visible minority population. In fact, the most recent demographic estimates by the 2016 Canada statistics report that approximately 7.7 million (22.3%) of the Canadian population identified themselves as a member of a visible minority group. If current trends continue, the visible minority population would continue growing and could represent between 31.2% and 35.9% of the entire Canadian population by 2036.[73] Furthermore, metropolitan areas like Vancouver and Toronto are estimated to become "majority-minority," cities with three out of five individuals being visible minorities.[79,345]

2.13.2.1 Black Canadians

According to the 2016 census, 1,198,540 persons identified themselves as Black, representing 15.6% of the visible minority population and 3.5% of the entire Canadian population. The top ancestral roots among Black individuals were Africa (45.8%), Caribbean and Bermuda (45%), elsewhere in the Americas (4.7%), Europe (3.1%), and Asia and Oceania (0.6%)These ancestries were reported by Black individuals either alone or with other ancestries.[73,346,347] In Ontario, Black people were the third-largest minority group, accounting for 16.2% of its visible minorities.[348]

Unlike the case in the United States, where the term "African American" is common, the majority of Black Canadians are of the Caribbean and elsewhere in America origin.[349] Fabb[67] identified that the majority of Black people in the United States were brought directly as slaves

from Africa and so preferred to be called African Americans to keep their connection to their home country and heritage alive. In contrast, Black people in Canada have a much more varied history, and very few Black Canadians were brought directly from Africa. Consequently, some prefer to utilize the term "Afro-Caribbean Canadians." Bias and racism toward Black people traditionally comprise beliefs about Black people's intelligence, ambition, morality, and other stereotyped characteristics, besides support for isolation and acts of open discrimination. A study by Mastro et al.[350] on racial bias in the United States showed that whites hold persistent racial prejudice about Black Americans, describing them as violent and aggressive. Although studies have documented bias against Black persons living in the United States, bias toward Black person living in Canada has not been extensively studied. While Canada has similarities to the United States, differences in the ethnicities and history of Black groups in each country may impact the generalizability of US data to the Canadian setting.[67,351]

2.13.2.2 Arab Canadians

In 2016, 523,235 persons in Canada identified themselves as being of Arab origin or having emigrated from one of the Arabic-speaking countries, 470,965 Canadians reported Arabic as their native language, and 661,750 Canadians reported full or partial origin from an Arabic-speaking country. These people represented 5.4% of the visible minority population and 1.5% of the entire Canadian population.[73,347,348] The information collected indicated that the Arab population in Canada constitutes one of the fastest-growing visible minority groups. Indeed, between 2011 and 2016, the number of Canadians identifying themselves as Arab rose by 29.9%.[352] Ontario was home to 210,435 Arabs, which represented 40.2% of Canada's Arab population.[68]

Arab Canadians are Canadians of Arab ethnic, cultural, and language origin who recognize themselves as Arab and trace their ancestral roots to any Arabic-speaking country. Lebanon is the homeland of a majority of Arab Canadians, followed by Morocco, Egypt, Syria, Iraq, Algeria, and Somalia.[68] The Arab world consists of 22 countries spanning from North Africa to the Arabian Gulf. The majority of Arab populations practice Islam; however, there are noticeable non-Muslim Arab minorities, including Christians, Jews, Druze, and non-religious individuals.[353,354] Based on the 2011 Canadian census, 55% of the Canadian Arabs stated belonging to the Muslim faith, and 34% stated belonging to the Christian faith.[348,355]

Arabs have been the target of unfavorable stereotypes in North America, particularly since the terrorist attacks on September 11, 2001.[356] Several studies have reported that American individuals generally hold more negative attitudes toward Arab-Muslims relative to other ethnic groups.[357-361] According to Loberg [362], about 43% of Americans admit to holding negative views against Muslims and about 39% holding prejudice against Arabs. However, in Canada, as in several Western countries, anti-Arab/Muslim feelings are not new. Helly[363] reported that Arab/Muslim communities in Canada were seen in a negative light and were presented as a danger to the nation and male and female equality even before the 9/11 attacks. The popular media who produced significant coverage of 9/11, Arabs, and terrorism have played a critical role in damaging the image individuals see on a regular basis.[364] A study was evaluating more than one hundred TV shows between 1975–1976 and 1983–1984 that featured Arab/Muslim characters found that the image of Muslims as violent was persistent in both Canada and the United States.[365] Therefore, it would be of value to explore whether attitudes of Canadian pharmacists toward Black and Arab patients resemble attitudes expressed by the general population toward members of these minorities.

CHAPTER THREE: RESEARCH DESIGN AND METHODOLOGY

3.1 Introduction

For the purpose of this research, two central studies were conducted, and the methodology used in each study is discussed separately. In study one, evaluating implicit and explicit bias among community pharmacists toward Black and Arab individuals, a quantitative approach was used. Ontario pharmacists were invited by email to participate in the Implicit Association Test (IAT) via a secure website to assess their biases toward Black and Arab individuals. In study two, evaluating Black and Arab individuals' perceptions of pharmacist services and of their interaction with pharmacists, data were collected using a qualitative approach.

3.2 Research Design

Brewer and Hunter[366] defined multi-method research as the practice of employing two or more different methods or approaches of research within the same study or research program rather than limiting the research to the use of a single method. Morse added that the multi-method approach is used in a research program when a series of designs are interconnected within a broad topic. In multiple method design, supplemental (second) project(s) may be created to evoke information that the first research cannot accomplish.[367]The main purpose of this research is to understand the relationship between community pharmacists' implicit and explicit bias and Black and Arab individuals' perceptions of pharmacist services and of their interactions with pharmacists. To this end, this work consists of a range of areas for investigation. This includes not only the pharmacists' biases, if they exist, about Black and Arab individuals, but also the relationship between this bias and individuals' perceptions of pharmacist services. Therefore, this study used a multi-method research approach combining both quantitative and qualitative methods.

The use of multiple methods, or multi-method design, represents research that involves two or

more research projects that are relatively complete on their own but are used together to form

vital components of one research program. The main feature of the multiple method approach is

validating data and findings by combining a range of data sources, approaches, or methods.

Therefore, each study is wholly designed and conducted to answer particular sub-questions or

objectives, and the results integrated together in the final reports. These studies can be performed

concurrently, to complement each other, or sequentially, to find a solution to problems

uncovered by the first study or to deliver a logical extension of the results of the first study. The

findings of each study are not usually dependent upon each other and, unlike mixed-method

study designs, qualitative and quantitative data are not combined with each other but rather are

utilized to inform a better theoretical understanding of the reality under study.[367] Collecting and

analyzing multi-research data can lead to conclusions that confirm or complement rather than

compete with each other, to provide a more comprehensive and valuable understanding of a

social phenomenon.[368]

3.3 Organization of the Study

This research has five key objectives. As shown in Table 1, two main studies were conducted to

address these objectives, and each study is based on a different research method and with

different individual steps and techniques.

Table 1: Research Aims, Hypotheses, Studies, and Methods

Aims	Hypotheses	Studies	Methods
To measure pharmacists' implicit and explicit biases toward Black and Arab individuals.	Ontario community pharmacists would implicitly prefer white individuals relative to Black and Arab individuals.	Evaluating community pharmacists' implicit and explicit biases toward Black and Arab individuals.	Cross-sectional descriptive survey approach (Quantitative study).
To explore whether IAT scores can be predicted by respondents' demographic variables.	Implicit bias IAT scores can be predicted based on certain pharmacists' characteristics.		
To examine the correlation between implicit and explicit bias.	Implicit bias would be correlated with explicit bias.		
To describe Black and Arab individuals' opinions, attitudes, and perceptions of pharmacists' roles and pharmacy services.		Black and Arab individuals' perceptions of pharmacist services.	Semi-structured interview approach (Qualitative study).
To understand the relationship between pharmacists' biases and Black and Arab individuals' perception of pharmacist services.			Combination of the findings of quantitative study and qualitative study.

3.4 Quantitative Study: Evaluating Community Pharmacists' Implicit and Explicit Bias Toward Black and Arab Individuals

3.4.1 Conceptual Overview

Human behavior is affected by both conscious and unconscious opinions and beliefs.[369] Implicit perspectives and actions are automatically stimulated without a person being conscious of underlying motivation. The Implicit Association Test (IAT) measures people's automatic evaluations by avoiding the conscious thought process. In contrast, measuring explicit perspectives depends on the individual's ability to self-report, usually in the form of an interview or questionnaire.[370] These concepts hold particular significance when the attitude being measured is bias. Bias is a socially constructed process that generates and sustains differential chances for racialized groups. Of particular concern in this study is how this bias affects the interaction between community pharmacists and their Black and Arab patients/clients.

3.4.2 Research Design

This study employed a quantitative, cross-sectional survey design. Quantitative research is "a formal, objective, systematic process for obtaining quantifiable information about the world; presented in numerical form and analysed through the use of statistics."[371]. Knapp[372] stated that quantitative research offers a much sounder and more reliable database, as it produces hard science comprising rigor, objectivity, and control. Polit and Hungle[373] reported that survey research is used to obtain data from populations as well as produce numerical data about the social world and describe aspects of people or social phenomena. Cross-sectional studies are usually used to look at the prevalence of something in a given population and emphasize one group at one point in time.[374] Surveying a study population using an online survey, has a number of advantages. Some of these potential advantages over paper-based surveys include lower costs,

shorter period of data collection, more adaptability in the design, a greater ability to administer complex instruments, a shorter data-processing time, lower error compared to manual data entry, survey development, and a high percentage of questions answered completely and accurately.[375]

The quantitative data collected include the two bias Implicit Association Tests (Bias-IAT), a demographic questionnaire, and explicit measures. The first specific aim, to measure the implicit biases of community pharmacists about Black and Arab individuals, was accomplished through the use of the Race (Black vs. white) and Arab (Arab vs. white) IATs. The IAT scores, which are how the Race and Arab IAT results are calculated and interpreted by the Project Implicit website, are the variables associated with this aim. The second aim, to explore whether Race and Arab IAT scores can be predicted by respondents' demographic variables such as age, gender, and practice location, was examined through the demographic survey. The third aim, to explore the association between Race and Arab IAT scores and consciously reported bias was as assessed by explicit measures.

3.4.3 Research Sample and Recruitment

The selection criteria for this study were that the participant must be a licensed community pharmacist in Ontario, read and write in English, provide implied consent, and complete all three study instruments. Due to limited time, costs, and resources, a non-probability convenience sampling technique was used to obtain the desired sample size of study participants. Convenience sampling is a type of non-probability sampling in which individuals are included in the research study because they occur in the right location at the right time. In other words, it is a group of people to whom the researcher has access.[376]

In 2017, approximately 11,000 community pharmacists were practicing in Ontario, Canada.[377] The power size revealed a sample size (n) of 372. Using a 95% confidence interval and a 5%

margin of error (typically, between 4% and 8% is acceptable),[378] a sample size (n) of at least 372 participants would be required. The IAT scores were the variable of interest.

All community pharmacists who agreed to share their contact information for research purposes with the Ontario College of Pharmacists (OCP) through the Ontario Pharmacy Evidence Network (OPEN) at the School of Pharmacy at the University of Waterloo received the same email invitation to participate in this study (see Appendix A).

3.4.4 Data Collection

The main web-based study was developed via Qualtrics[TM]. The IATs were developed in collaboration with Project Implicit and hosted on the Project Implicit website. Potential participants were contacted by email and invited to participate. When they chose to participate, they only needed to click on the link within the email or announcement to access the study tools. They received information from Project Implicit about the computer specifications necessary to complete the two IATs, and then saw a statement of informed consent, followed by a statement indicating that by proceeding further, they were considered as having provided implied consent for the study (see Appendix B). Next, they received the demographic questionnaire and the two IATs, followed by the explicit measures (Figure 2). The explicit measures were introduced after the IATs.

Figure 2. Flowchart Overview of Secure Online Survey Administrated to Study Pharmacists

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┌─────────────────┐      ┌─────────────┐      ┌──────────────┐
│   Pharmacists   │      │             │      │  Demographic │
│ access website to│ ──▶  │ Consent page│ ──▶  │ information   │
│  being the study │      │             │      │              │
└─────────────────┘      └─────────────┘      └──────────────┘
                                                      │
                                                      ▼
┌──────────────────────┐  ┌─────────────┐      ┌──────────────┐
│ Delinked from study  │  │             │      │  Computerized│
│ site and connected to│◀─│Explicit bias│ ◀─   │  Race IAT and│
│  webpage to get more │  │  measures   │      │  Arab IAT (In│
│     information       │  │             │      │ random order)│
└──────────────────────┘  └─────────────┘      └──────────────┘
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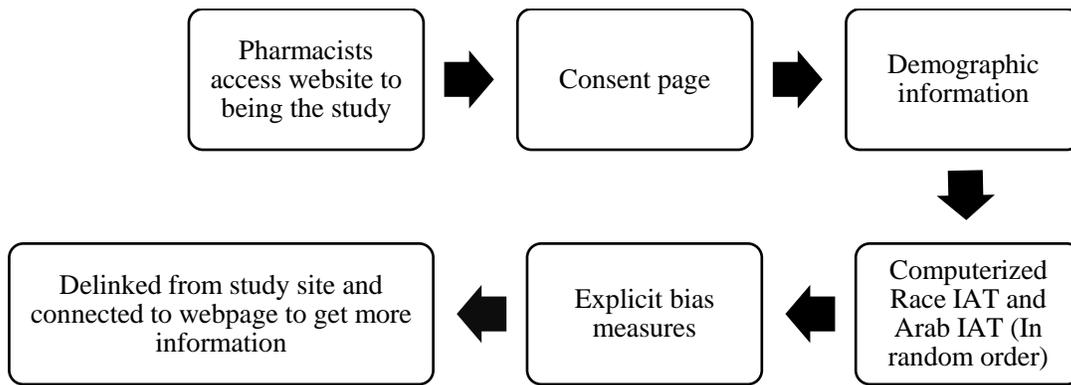
The researcher did not enroll the study participants. Rather, participants selected whether or not they wished to continue. All study information and instruments were available at one link. In addition to study information, the study participants were notified that at any time they could choose to discontinue the two implicit tests, demographic questionnaire, and explicit questions. All the tests were completed online through the web link provided by Project Implicit to the principal researcher (Mr. Fahad Alzahrani). The estimated time for completion of the two IATs and survey tools was 10–15 minutes. The email also contained contact information for the main researcher and his supervisor, for study participants with questions or concerns. A few participants had questions about the study and did email the principal researcher to have those questions answered. Other participants emailed the principal researcher and/or his supervisor to express that they were uncomfortable discussing this sensitive topic with others and would not like to participate. The study participants in advance were not informed of the study's purpose. It was introduced as *"An exploration of Ontario Pharmacists' Attitudes toward Certain Social Groups,"* in order to minimize social desirability bias based on pre-knowledge that the study was about issues of race and ethnicity. The decision to use deception was deemed appropriate in consultation with the University of Waterloo Research Ethics Committee.

The study link remained active and available for four months in order to provide ample time for participants to complete the test, or until a minimum of 372 participants had completed all 3 study tools. Three reminder emails were sent to all selected community pharmacists every three weeks after the initial email, to promote the maximum response rate. After a minimum of 372 community pharmacists had participated and completed the entire IAT survey link, the link to the test became inactive and was closed by Project Implicit, and the data were analyzed. Upon scoring the two IATs, Project Implicit forwarded a raw SPSS data file to the principal researcher, with a computed IAT score for every participant, as well as data from the demographic questionnaire and explicit direct questions. Statistical analyses other than the IAT score were completed by this researcher, with the use of IBM® SPSS 24.0.

3.4.5 Research Instruments

This study used the following three tools to measure and assess implicit and explicit bias among Ontario community pharmacists about Black and Arab individuals:

A. Demographic Tool. The demographic tool (see Appendix C) was created by the principal researcher and consists of 10 questions with either yes/no or multiple-choice options. The 10 demographic variables surveyed were a) age, b) gender, c) racial/ethnic background, d) place of birth, e) years as a pharmacist, f) years as a licensed pharmacist in Canada, g) highest level of education, h) practice location, i) first 3 digits of postal code, and j) Proportion of Patients per Day (out of 10) were Blacks or Arabs. These are treated as discrete items for descriptive aims. Content validity was established through a review of the survey by the academic supervisor and the members of the study advisory committee.

When creating the demographic tool, the questionnaire was modified or had questions deleted based on the literature on the health care process and social psychology and the background

66

knowledge of the academic supervisor and the advisory committee. Modifications included

adding the categories of gender, racial/ethnic background, and frequency of contact with Black

and Arab individuals. The content experts have published literature in the areas of pharmacy

practice, health care disparities, and social justice issues.

B. The Implicit Association Test (IAT). Two Implicit Association Tests (IATs) were

administered in this study: One to measure implicit bias toward Black individuals compared with

white individuals and another to measure implicit bias against Arab individuals compared with

white individuals. Participants were provided with the two IATs immediately after the

completion of the demographic questions through the same web link.

As described previously, the unconscious tendency for one group over another is derived from

reaction times across different blocks of trials. The first IAT, called Race IAT (Black vs. White

individuals), presents 10 images of Black or white individuals along with pleasant (e.g., joy,

love) and unpleasant (e.g., evil, destruction) words; the order of the pairings between the race

categories and the good or bad categories is randomized (see appendix D). The speed with which

a person pairs positive and negative words with either race/ethnicity shows his or her implicit

preferences. The second IAT is called Arab IAT (Arabs vs. whites) and presents names of Arab

or white individuals (e.g., Mohammed, Richard) along with pleasant and unpleasant words (e.g.,

happy, hated) (see Appendix D). All subjects completed the IATs in English. Possible scores

ranged from −2 to +2, with positive scores showing a slight, moderate, or strong bias toward

white individuals; negative scores showing a slight, moderate, or strong bias toward Black or

Arab individuals; and zero indicating no bias or preference.

C. Explicit bias measure. Explicit scores were obtained through five measures asking about

feelings toward Black, Arab, and white individuals (see Appendix E). Answers to Question 1,

"Which statement best describes you?" were scaled from 1 to 7, with "1" being *I strongly prefer white individuals to Black individuals,* "4" being *neutral*, and "7" being *I strongly prefer Black individuals to white individuals*. Question 2 was "Which statement best describes you?" and answers were scaled from 1 to 7, with "1" being *I strongly prefer white individuals to Arab individuals,* "4" *being neutral*, and "7" being *I strongly prefer Arab individuals to white individuals*.

Questions 3, 4, and 5 were thermometer scales asking, "Please rate how warm or cold you feel toward white individuals," "Please rate how warm or cold you feel toward Black individuals," and "Please rate how warm or cold you feel toward Arab individuals." On this scale, 10 was *very warm*, *0* was *very cold*, and 5 was *neutral*.

All explicit measures employed are widely used and have been established as reliable and precise ways to assess feelings and attitudes toward members of different social groups.[11,17,38,46,172,173,379,380]

3.4.6 IAT Validity and Reliability

The IAT has been validated and used in hundreds of studies with diverse populations across a wide array of disciplines, including psychology, sociology, health, education, political science, and market research, and has demonstrated good psychometric properties. The IAT also has greater documented reliability and validity than other implicit measures.[38,381] Banaji[369] noted that the IAT has shown acceptable internal consistency, which is relatively rare for latency-based measures; they added that the self-esteem IAT had a split-half internal consistency of r=0.69, in comparison to r values of 0.05 to 0.28 for other latency-based measures. The reliability of IAT was also documented through a test-retest correlation of r = 0.78 over a two-week period.[382]

In addition to its reliability, the validity of the IAT has been documented by several studies. Nosek and his colleagues[163] noted accumulated evidence about IAT constructs and about its predictive validity in measuring individual variances and suggested that it thrives as a research tool and will continue to do so. Another study used the IAT on 158 samples and concluded that it was reliably and variably related to explicit behavior, and that explicit behavior explained the reason for the relationship between the IAT and social knowledge.[383]

3.4.7 Ethics and Human Relations

As the surveys assess pharmacists' views toward members of social groups, the statements may be sensitive for some participants, who may experience discomfort in responding to questions about social justice issues. However, the study participants were told that if they experienced any distress while completing the questionnaire, they were free to skip any question that they did not wish to answer or that made them feel uncomfortable.

Furthermore, if study participants wished to discuss their reactions or concerns further, they were encouraged to contact the main researcher or his academic supervisor. The study participants also were aware that their participation in this study involved minimal risk (no more than one might experience in daily life) and that the cost of this study was limited to the time involved in completing it. While it was likely that the study participants would not necessarily receive any direct benefits from participating in this study, they might find it personally rewarding to be contributing information that would benefit the scientific research community by helping researchers increase their understanding of pharmacists' views of certain social groups. The study participants realized that their participation was voluntary, and they could answer only those questions to which they were comfortable responding. The study participants might

withdraw from the study for any reason, at any time, without explanation, and without any sort of penalty.

Additionally, the study pharmacists were aware that they had the right to withdraw data from the study until the data from all participants had been entered into a database, analyzed, and included in the final report.

As they were contacted via email, participants had ultimate control over their participation. The informed consent was the first page of the survey email. Participants implied consent by clicking "next" and beginning the survey. All the study participants had an electronic copy of the consent document.

Confidentiality and anonymity were guaranteed. All the data would be summarized, and no individual could be identified from these summarized results. Furthermore, as an anonymous survey, the researchers had no way of identifying or contacting the study participants, and the website was programmed to collect only responses and not information that could potentially identify participants (such as machine identifiers). The study data would be managed and protected by Project Implicit, which uses the same secure hypertext transfer protocol (HTTPS) as banks and other commercial websites use to transfer credit card information in an encrypted format. This provides strong security for data transfers to and from the website.

Research data were associated with an anonymous user number and stored separately from email addresses.

Email addresses were never connected directly to any of the research data, ensuring the privacy of individual data. The data, with no personal identifiers, collected from this study would be kept on a password-protected computer database in a controlled-access area of The University of Waterloo As well, the data would be electronically archived after completion of the study and

maintained for five years; after this period, when all data and materials are no longer required, they would be destroyed beyond recovery. This study has been reviewed by and received ethics clearance through the University of Waterloo Research Ethics Committee (ORE # 22430).

3.4.8 Statistical Analysis

Following data collection, Project Implicit forwarded the IAT scores and other data for all respondents to the research investigator. Data were analyzed using the Statistical Package of Social Sciences (SPSS), version 24.0. Descriptive statistics using mean and standard deviation for continuous variables (e.g., age) and percentage for categorical variables (e.g., racial/ethnic background) were reported to summarize the demographic data.

Inferential statistics were mainly calculated to generalize the study results from a sample to the whole population of interest.[384] They were performed to determine the existence of bias among community pharmacists, the relationship between the two IAT scores and demographic variables, and correlations between IAT scores and explicit measures.
A 2-sided $p < 0.05$ was considered statistically significant.

3.4.8.1 Checking for Normality and Outliers

In statistical analysis, all parametric (e.g., T-test, ANOVA, regression) tests assume a particular set of characteristics apply to the data, also known as assumptions. Violation of these assumptions modifies the conclusions of the research and the clarity of the study findings. Thus, all research, whether for a journal article, thesis, or dissertation, must follow these assumptions for accurate interpretation.[385] Therefore, all statistical tests were examined for normality and significant outliers. Outliers were detected that were more than 1.5 box-lengths from the edge of the box in a boxplot. However, an inspection of their values did not reveal them to be extreme

and they were kept in the analysis. In addition, all statistical tests were conducted with and without outliers. Then, the results were compared and decided whether the two results differ sufficiently for dissimilar conclusions to be drawn from the data. If the conclusions are essentially the same (e.g., both outcome in a statistically significant result, confidence intervals are not noticeably different), the outliers were kept in the data. Furthermore, all parametric tests were normally distributed, as assessed by visual inspection of a normal Q-Q plot and histogram.

3.4.8.2 IAT (or D) Scores Analysis

It was theorized based on findings from prior studies that respondents would have an easier time associating white faces with good.[11,386,387] The time it took to respond to the face/name was the measurement of interest by pressing the associated key (response-latency).[370,388] Inquisit (2005, millisecond.com) software is used by Project Implicit to run the test, measure response time, and calculate IAT scores. These scores were continuous variables and stated as D scores, described below.

The IAT effect is calculated from response-latency (measured in milliseconds) in steps 3, 4, 6, and 7[162] of the IATs. Steps 1, 2, and 5 are training steps and are not counted in data analysis. The IAT score consists of calculating the difference in means in response latency between the two categorizing conditions, divided by the standard deviation (SD) of all latencies for both classifying tasks. Any IAT scores over 0 show the existence of implicit bias against Black and Arab individuals. Tables 2 shows the guidelines utilized to interpret IAT scores for this research study: The D score is related to Cohen's d variant, in which 0.2 indicates a small effect, 0.5 indicates a medium effect, and 0.8 indicates a large size. The Project Implicit modified the terms to reflect small, moderate, or strong bias. The Project Implicit then calculated a mean IAT score for all study participants and a D score for each person.[162]

Table 2. IAT Scores According to the Project Implicit Ratings Guide

IAT Scores Black/Arab vs people. white people	Interpretation
≤ −0.65	Strong preference for faces/names of Black/Arab persons over faces/names of white persons.
> −0.65 and ≤ −0.35	Moderate preference for faces/names of Black/Arab persons over faces/names of white persons.
> −0.35 and ≤ −0.15	Slight preference for faces/names of Black/Arab persons over faces/names of white persons.
> −0.15 and < 0.15	Little to no preference between faces/names of Black/Arab persons and faces/names of white persons
≥0.15 and < 0.35	Slight preference for faces/names of white persons over faces/names of Black/Arab persons.
≥0.35 and <0.65	Moderate preference for faces/names of white persons over faces/names of Black/Arab persons.
≥ 0.65	Strong preference for faces/names of white persons over faces/names of Black/Arab persons.

3.4.8.3 Explicit Bias

Explicit bias was calculated by the frequencies of responses on the Black and Arab preference scales. These scales were measured on a scale of 1 to 7, with a median response of 4. Responses from 5 to 7 were considered biased. The feeling thermometer scale used an 11-point measurement and a median of 5 represented neutrality. Explicit bias on a feeling thermometer was calculated as the amount of warmth felt toward Black/Arab individuals subtracted from the amount of warmth felt toward whites. The difference between feeling thermometer scores for whites and Black/Arab individuals > 0 was considered pro-white bias. A difference of 0 was no bias, and a difference of < 0 was pro-Black/Arab bias.

3.4.8.4 Aims of Quantitative Study

Aim 1. To Measure the implicit bias of Ontario community pharmacists toward Black and Arab individuals, as assessed by Race and Arab IATs. One-sample t-tests were performed to determine whether the Race and Arab IAT scores were significantly different from zero, confidence intervals were used to gain insight into the interpretation of significance values, and Cohen's d was calculated to obtain the standardized effect size for the interpreted magnitude of implicit bias. The Cohen's d, the effect size, was calculated using the online calculator available on the Social Science Statistics website (https://www.socscistatistics.com/effectsize). It can be interpreted as follows: d of 0.2 = small effect; d of 0.5 = medium effect; and d of 0.8 = large effect.[389]

Aim 2. To assess the relationship between community pharmacists' characteristics and implicit bias, as assessed by Race and Arab IATs. First, Pearson correlations for continuous variables, an analysis of variance (ANOVA) for categorical variables, and a two-sample t-test for binary variables were performed separately to determine whether there were significant differences between community pharmacists' demographic backgrounds and their implicit bias scores, as assessed by both Race and Arab IATs. Second, multiple linear regression was used to explore whether any demographic variables can predict Race and Arab IATs scores.

Aim 3. To calculate the correlation between explicit and implicit biases. In order to correlate Race and Arab IATs with explicit measures (Race and Arab preference scales and feeling temperature scales), both implicit scores and explicit scores needed to be standardized by range, so that both measures (IATs and explicit) had the same −1 to +1 range, with 0 in the middle.[162] Correlation coefficients (r) between IAT scores and explicit measures was performed in two ways. First, the correlation between the seven preference groups in the IATs with the same

preference groups in explicit measures was calculated, and a Spearman rank correlation

coefficient was calculated for both Race and Arab IAT scores. Second, a composite measure of

explicit bias was formed by merging results from the thermometer scales for Black and White

individuals (or Arab and White individuals) and the seven-point explicit preference scale. By

subtraction, the two thermometer items were combined into a thermometer difference score. The

Likert measure and the thermometer difference measures were then combined into an overall

explicit measure by standardizing each and averaging the two resulting scores.[162]

3.5 Qualitative Study: Black and Arab Individuals' Perceptions of Pharmacist Services

3.5.1 Research Design

In order to understand Black and Arab individual's perceptions of pharmacist services, a qualitative study was performed. Qualitative research is used to better understand people's experiences through the discovery of attitudes, views, principles, and experiences.[390] Polit and Beck[391] stated that qualitative research is more in-depth and holistic than quantitative, generating rich material on which to base a piece of research. Hancock[392] mentioned that qualitative study is exploratory research that can assist in answering the questions "what," "why," and "how."

Within the qualitative design, four different methods exist, all of which share the common objective of understanding a specific incident from the viewpoints of participants' experiences. These methods include ethnography, case studies, phenomenology, and grounded theory; each carries its own separate methodological framework.[376] Qualitative descriptive analysis is believed to be the most appropriate method for learning about the experiences and perceptions of the target population from their own opinions and accurate accounting of the phenomena and events surrounding the existence of the phenomena.

It is indicated that the qualitative descriptive approach presents a complete summary of an event in everyday terms.[393,394] Burns et al.[395] reported that the qualitative descriptive approach seeks to describe the critical findings in a rigorous way that is free from alteration and bias, and the facts of the incident are presented utilizing everyday language. Therefore, the qualitative descriptive approach has been chosen for this study for several reasons. First, it offers a rich description of the experiences and perceptions of Black and Arab individuals with pharmacist services and their interaction with pharmacists; second, it grounds participant's experiences and opinions within the context of a specified event—using pharmacists services in a pharmacy setting, and; third, it

determines the elements of a Black and Arab participant's intra- and inter-personal experience which cannot be quantified by a questionnaire.[396-398] According to Johnson and Christensen,[399] there are nine steps to help researchers structure their qualitative research (Figure 3).

Figure 3. A qualitative Research Process

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┌──────────────┐    ┌──────────────┐    ┌──────────────┐    ┌──────────────┐
│    Define    │ ➤  │  Determine   │ ➤  │   Develop    │ ➤  │   Identify   │
│ objectives and│    │research design│    │   research   │    │  potential   │
│   problems   │    │              │    │  instrument  │    │participant and│
│              │    │              │    │              │    │ contact them │
└──────────────┘    └──────────────┘    └──────────────┘    └──────────────┘
                                                                    ⬇
┌──────────────┐    ┌──────────────┐    ┌──────────────┐    ┌──────────────┐
│   Validate   │ ⬅  │   Generate   │ ⬅  │ Analyze data │ ⬅  │ Collect data │
│   findings   │    │   findings   │    │              │    │              │
└──────────────┘    └──────────────┘    └──────────────┘    └──────────────┘
       ⬇
┌──────────────┐
│Report results│
└──────────────┘
```
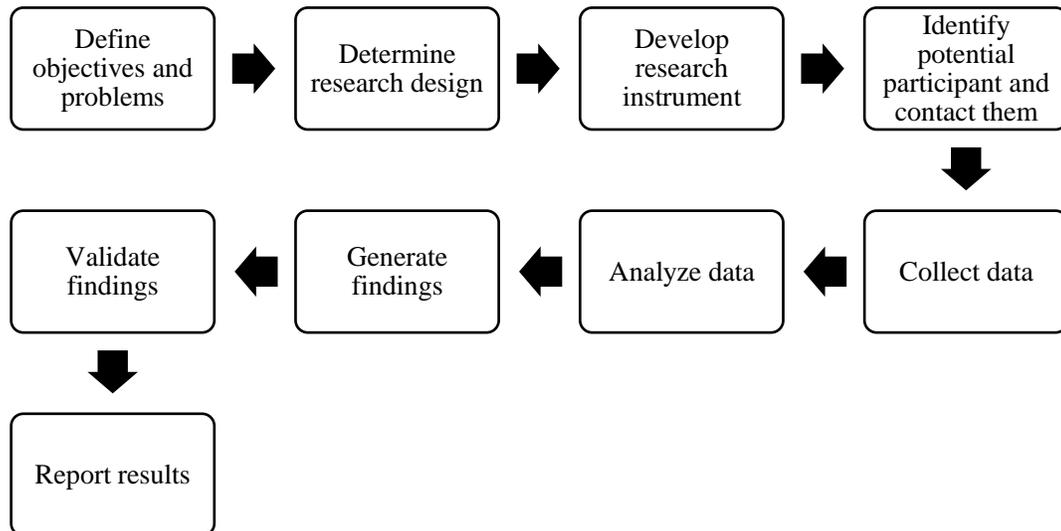
3.5.2 Research Sample and Recruitment

3.5.2.1 Sampling Technique

For the purpose of this study, a purposive (also known as selective) sampling technique was used. This technique is a type of non-probability sample that happens when "elements selected for the sample are chosen by the judgment of the researchers who believe that they can obtain a representative sample by using a sound judgment, which will result in saving time and money"[393] In addition to the purposive sampling technique, the snowball sampling technique was performed where a person was interviewed, then asked whether to identify other subjects who might be interested in the study. The saturation point of the data determined the sample size for this study. Recruitment would stop when the information collected from a suitable variable sample became repetitive across respondents, and the investigator found no new information during

interviews.[376,400] Eligibility requirements for participation were as follows: all participants must be 18 years of age or older; self-identify as Black or Arab; be comfortable speaking and reading English; and have used pharmacist services within the past three years (this period of time was deemed reasonable as people are able to recall negative or positive experiences from recent and distant memory and is a common time period for recall from other similar studies). In addition, the qualitative interview questions were developed to understand the overall Black and Arab individual experiences with pharmacist services and did not focus on a recall and analysis of a specific incident or event. All the inclusion criteria were derived from the previously reported research.[172, 402]

3.5.2.2 Target Population

The qualitative study is broadly set within the Region of Waterloo (Waterloo, Kitchener, Cambridge, and Stratford). The population of interest in this study was Black and Arab individuals. According to the most recent Canadian census, there were 627,715 Black individuals (who comprised 57% of the entire Black Canadian population) and 210,435 Arab individuals (who comprised 39.9% of the total Arab Canadian population) living in Ontario.[73,346,348] However, there is no registry to tell us how many of these Black and Arab individuals live in the region of Waterloo.

3.5.2.3 Recruitment Methods

Study participants were recruited via three different processes: posters (see Appendix F) distributed to various service agencies with their permission (e.g., churches, mosques, community centres). Furthermore, the researchers' personal contacts were used to forward the recruitment material to relevant parties on the researcher's behalf. Study participants had initial contact with the principal investigator, who provided interested participants with study

information before conducting the interview. Finally, for those identified through snowball sampling, the researcher contacted them directly. All study participants were recruited through researchers' personal contacts, except for two who responded to the study recruitment flyer.

3.5.3 Data Collection

One-on-one, face-to-face, semi-structured interviews were selected to obtain information from Black and Arab individuals. This type of interview is a meeting in which the researcher does not strictly follow a formalized list of questions. He/she will ask more open-ended queries, allowing for a discussion with the study participant rather than a straightforward question and answer format.[391] The interviews were audio-recorded with permission from all study participants. The length of each interview varied from 12 to 29 minutes. If responses required further explanation or clarification, follow-up interviews would occur. In this study, only one-off interviews were conducted.

According to Graneheim,[401] interview guides ensure that all participants receive the same questions. However, no validated interview guides exist to describe Black and Arab individuals' experiences with pharmacist services. Therefore, this study included the creation of a specific semi-structured interview guide (see Appendix G). The interview guide contained a list of topics and open- and close-ended questions derived from the literature, published interview guidelines, and themes explored in previous research.[58,64,402-404] These questions were balanced, impartial, sensitive, and clear. Probing questions were also used to clarify the answers further, thus providing the required information about the topics while responding to the research questions. The same interview guide was used with all participants,
contained four sections: Each part included between three and six questions, with several probes. Demographic questions were developed to identify Black and Arab individuals' characteristics,

including age, gender, racial/ethnic background, place of birth, language preference, and years living in Canada. The second component identified the participants' perceptions and expectations of pharmacist services. The third component explored the communication between participants and pharmacists. The last section of the study interview guide consisted of questions to identify Black and Arab individuals' ideas and recommendations for improving pharmacist services. The semi-structured interview guide was revised and approved by the academic supervisor and the advisory committee members before data collection in order to support face validity.

A pilot interview was conducted with one Black individual by the principal researcher after receiving ethics approval, s to ensure that the created questions would be consistent with the research objectives and that the research questions were obviously worded and drew out an appropriate range of answers, as well as identifying and resolving as many potential issues or challenges as possible.[405] This pilot participant identified no concerns and felt the interview questions were meaningful. Consequently, no changes were made to the interview question content and verbal selection, and the first interview data were included as part of the study's data analysis.

The same researcher interviewed all participants. The interviews were recorded utilizing a digital recording device and transcribed later into written form for data analysis. Researcher notes were taken during the interviews to enhance the understanding of Black and Arab individuals' perception of pharmacist services and supplement the audio recordings.

Immediately after each interview, the researcher also wrote reflection reports. The interviews were conducted over six months (November 2017–May 2018). All interviews were conducted at a time and place of the Black and Arab individuals' convenience, in a comfortable setting free of any possible disruptions and noise, including participants' places of work, homes, neighborhood

cafes, and the researcher's office at the University of Waterloo School of Pharmacy. In

appreciation for their time, $15 gift cards were offered for participation in this study.

Interviews started with general topics (e.g., weather, traffic), in an effort to establish a rapport

between Black and Arab participants and the researcher. Although the interview guide was used

with all participants, they were encouraged to talk freely about their experiences, providing as

much description as they wanted. Adaptable conversation and chances to move away from the

guide were permitted if required; few prompts were necessary. At the beginning of each

interview, demographic characteristics were collected.

Saturation points play an essential role in selecting the right number of qualitative research

participants. The point in the research process when no further information is discovered in data

analysis is known as data saturation.[406] This qualitative study included 27 Black and Arab

individuals to maximize data obtained from respondents. Interviewing 27 Black and Arab

individuals in the research study ensured that data saturation occurred, and that information was

robust and comprehensive. Although data saturation in this study occurred after eighteen

interviews, the remaining interviews had already been scheduled when saturation was reached

and were thus included in the data analysis.

3.5.4 Data Management

Post-interview activities included listening to each recorded interview to verify audibility and

completeness and searching for any gaps or follow-up queries that might be used if Black and

Arab individuals were re-contacted in the future[407] Once all interviews were completed, they

were transcribed verbatim into written form by a professional transcriptionist. Only two

interviews were transcribed by the researcher, due to participants having answered the interview

questions in both English and Arabic. Each interview transcript was checked against the audio

recording, and most transcription errors and omissions were corrected.

3.5.5 Data Analysis

The data collected for review and analysis in this qualitative study were Black and Arab

individual interviews, researcher notes, and demographic characteristics. As with all data in

qualitative approaches, descriptive data analysis includes procedures such as coding,

categorizing, and making sense of the event's vital meanings. Black and Arab participant's data

were not presented separately for several reasons. First, most of the study participants identified

themselves as Arabs, and only 4 out of 27 participants identified themselves as Black

individuals. Second, seven of the study participants identified themselves as both Black and

Arab; therefore, it was difficult to categorize them as Arab or Black. Third, Black and Arab

individuals had almost the same perceptions of and experience with pharmacists' services. For

instance, some participants from both Black and Arab groups when asked if it would make a

difference in their interaction if the community pharmacist who served them was Black (for

Black participants) or Arab (for Arab participants), the majority said it would not. Lastly, the

data from the quantitative study showed that the study pharmacists held moderate to a strong bias

against both Black and Arab individuals, which suggests Black and Arab individuals may have

similar experiences when they interact with biased pharmacists.

All interview transcripts were entered into a computer using NVivo 12 software (QSR

International). Data analysis used the software system to determine text term frequency and

organize set relation percentages. According to Ozkan,[408] NVivo is a very beneficial database as

it allows researchers to organize and manage large data sets, perform complex searches, and

organize material. Once the qualitative researcher discovers themes, the software searches for

repetition. Researcher notes data were not coded; however, they were used to aid in partition and analysis.

One of the most common approaches for analyzing data from qualitative research is thematic analysis, whose essential outcomes include meanings, relationships, and contexts found in the data.[406] King[409] defined thematic analysis as "recurrent and distinctive features of participants' accounts, characterizing particular perceptions and/or experiences, which the researcher sees as relevant to the research question." A broadly inductive thematic analysis was performed in this research. The research purposes and objectives were kept in mind during analysis, which allowed for the development of themes inside these objectives. The inductive method looks at exploratory literature after analysis, so there is no pre-determined mental outline for the researcher.[410] This study followed Braun and Clarke's guide[410] for data analysis (Table 3.). This framework for thematic data analysis includes six phases.

Table 3. Phases of Thematic Analysis

Phase	Description of the process
1. Familiarizing yourself with your data	Transcribing data (if required), reading, and re-reading the data, noting down initial ideas and opinions.
2. creating initial codes	Coding interesting characteristics of the data in a systematic style across the entire data set, collating data relevant to each code.
3. Searching for themes	Collating codes into possible themes, collecting all data relevant to each possible theme.

4. Reviewing themes	Checking work in the themes about the coded extracts (Level 1) and the entire data set (Level 2), generating a thematic 'map' of the analysis.
5. Defining and naming themes	Conducting ongoing analysis to enhance the specifics of each theme and the overall story, the analysis says, generating rich definitions and names for each theme.
6. Producing the report	Selecting bright, compelling extract instances, conducting a final analysis of selected extracts, relating the analysis back to the research questions and previous literature, producing a scholarly report of the analysis. This is the final opportunity for analysis.

Adapted from Reference 222. Using Thematic Analysis in Psychology (2006, p. 35).

All participants' transcripts were read several times to become familiar with them. The open code was used to identify significant statements relating directly to the research aims and objectives. After that, the codes and key quotations were collected into themes that included broad ideas and topics stressed in the interviews and emphasized the most frequent experiences and opinions. The study findings were combined into a detailed and comprehensive description of Black and Arab individuals' perceptions of community pharmacist services. Inductive thematic analysis of the data was accomplished through collaboration and long discussion with the academic supervisor. Discussion and review of interviews produced agreement on four major themes recognized in all interviews and determined to be relevant for the objectives of this research. After that, the findings and conclusion were reviewed and discussed with an external

auditor experienced in qualitative research design. The auditor agreed to the coding, sub-themes, and themes created, with minor suggestions and recommendations.

3.5.6 Ethical Considerations

Prior to recruitment and following data collection, ethical approval for the research was obtained from the University of Waterloo Research Ethics Committee in November 2017 (ORE#22430). During the recruitment process, potential Black and Arab individuals were given the participant information sheet with an attached consent form (Appendix H). In this study, participants' confidentiality was a priority. To ensure it, each individual was assigned an identification code used on all documentation and transcripts relating to that participant. The identity of the study participants was protected using the identification code (Interview 1 for participant one, Interview 2 for participant two, etc.) and by eliminating any personal identifying details from quotations, such as workplace and city or town names. References to the names of individuals in the quotes have also been removed.

3.5.7 Trustworthiness

Trustworthiness is necessary to evaluate the value of a qualitative study. Lincoln and Guba[411]reported that in qualitative research, four measures exist for establishing trustworthiness: credibility, transferability, dependability, and confirmability.

Credibility

Credibility is described as the extent to which data collection, data analysis, and findings are accurate and trustworthy.[412] In this study, credibility was established by triangulation, whereby an audit of coding, themes, and sub-themes was performed to clarify whether another auditor would come to the same findings and general research conclusion.[413] In addition, a peer

debriefing assisted in minimizing researcher bias. The peer debriefing was carried out by the

academic supervisor. The academic supervisor provided the main researcher with suggestions

and feedback on activities, thoughts, and behaviors to minimize researcher bias and evaluate data

to determine that the conclusions were accurate.

Transferability

Transferability is the extent to which results, and context can be transferred and applied to other

groups of people, situations, or future research similar to external validity and generalizability.[414]

However, the decision regarding transferability depends on the users of the findings and not on

the researcher. [415] To meet this criterion in the study, a full, thick and rich description of time,

location, and Black and Arab individuals' answers was provided, including direct quotations that

accurately reflected the Black and Arab individuals' experiences with and perceptions of

pharmacist services and their interaction with pharmacists. Furthermore, characteristic

demographic data from interviewees were collected about age, gender, place of birth, language

preference when they interact with community pharmacists, and years living in Canada, which

assisted in providing a clearer picture of the study culture and can assist readers in defining

transferability.

Dependability

Dependability is related to the stability of the data and whether the study findings would likely

be replicated if another researcher used the same participants and study design.[414] In this study,

clear and in-depth explanations of the research processes, including data collection, analysis,

recommendations, and interpretations, were provided under the academic supervisor's review.

To this end, an audit trail was developed to improve the dependability of the research by tracking

and recording all decisions such that an external researcher could examine them to assess

whether the information collected is representative of the conclusion reached.[416] This research

was also evaluated by the advisory committee members and the academic supervisor to confirm

its dependability. In addition, dependability was enhanced by systematically following Braun

and Clarke's process to analyze the data.[410]

Conformability

Conformability is conserved by establishing that the respondents and not the researcher shape the

data and the interpretation of the study findings.[414] This involves methods used to limit bias in

the research.[417] There should be no biases or subjectivity in the research; all data must represent

the study participants' voice.[418] To assure conformability in this study, participant interviews

were transcribed verbatim, with researcher notes added. To further minimize bias, respondents'

responses were reported reflexively and objectively, and the academic supervisor reviewed and

double-checked the research process. In addition, the use of a detailed audit trail provided

transparency of the entire research process.

CHAPTER FOUR: RESEARCH FINDINGS

4.1 Quantitative Findings

The purpose of the quantitative study was to assess implicit and explicit bias toward both Black and Arab individuals among community pharmacists in Ontario. This quantitative section begins with a description of sample participants, followed by the results of IAT and explicit bias measures. The primary objective of this research was to examine the extent to which community pharmacists exhibit an implicit bias toward Black and Arab individuals. The secondary purpose was to identify community pharmacists' characteristics that predict implicit bias. The third objective was to measure the correlation between the level of implicit bias and explicit bias. Based on previous research in social psychology and health care, we hypothesized that Ontario community pharmacists would implicitly prefer white individuals relative to Black and Arab individuals, that implicit bias IAT scores can be predicted based on certain pharmacists' characteristics , and that implicit bias would be correlated with explicit bias.

4.1.1 Sample Description

A total of 5748 Ontario community pharmacists were invited to participate in this study, and 767 responded and completed some part of the study (13.3% response rate). A total of 357 out of 767 (46.6%) participants were able to complete the first study tool (demographic questions) but were unable to complete the other study tools (two IATs and explicit bias measures). Therefore, these respondents were not included in the study analysis. Three participants had too many errors for the IATs to be useful, and thus, no IAT scores were calculated for those participants. A total of 407 (7.1%) respondents have completed all three study tools (demographic questions, two IATs, and explicit direct questions), and this was the final sample used for analysis, even though some demographic and explicit answers were missing. The number of 407 community pharmacists

exceeded my expectation of being able to recruit 372 participants by 35 participants based on sample size calculation.

Personal and professional characteristics of the sample of community pharmacist are shown in Tables 4 and 5. The participants' characteristics showed good variability regarding age, gender, racial/ethnicity self-classification, level of education, practice location, experience as a pharmacist, and experience as a licensed pharmacist in Canada.

4.1.1.1 Personal Characteristics of the Pharmacists Sample

Of the study pharmacists, over half were women (56.1%) and 164 men (40.2%). The mean age of the participants was 46.9 (SD = 12.2) years, with 222 (54.6%) aged 45 years old and older. 227 (55.8%) participants were born in Canada. Of those participants indicating their race/ethnicity, 232 of the study pharmacists identified themselves as white/Caucasian (57%). The remaining participants self-identified as South Asian (13.8%), East Asian (12%), West Asian or Arab (11.4%), Black (1.5%), Latino (0.2%), Aboriginal (0.2%), and other (3.4%). Table 4 shows the complete personal characteristic of the participants.

Table 4. Personal Characteristics of the Study Pharmacist (N = 407)[a]

Characteristics	N (%)	Mean	SD
Age[b] (y)		46.9	12.2
≤ 25	3 (0.7)		
26-35	85 (20.9)		
36-45	97 (23.8)		
46-55	111 (27.3)		
≥ 56	111 (27.3)		
Gender			
Man	164 (40.2)		
Woman	228 (56.1)		
Other	1 (0.2)		
Place of Birth			
In Canada	227 (55.8)		

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Outside Canada	179 (44)
Race/ Ethnicity	
White	232 (57)
South Asian	56 (13.8)
East Asian	49 (12)
West Asian or Arab	46 (11.4)
Black	6 (1.5)
Latino	1 (0.2)
Aboriginal	1 (0.2)
Other	14 (3.4)

Note. [a]Percentages do not up to 100 because of missing values and rounding. [b]Age converted into ordinal groups. *Abbreviation.* N, number of participants; y, years; SD, standard deviation.

4.1.1.2 Professional Characteristics of the Study Pharmacists

Among all study pharmacists, 71.5% had a baccalaureate degree as their current level of education, and 14.6% held a PharmD degree. About 8.3% had a Master's degree, and 2.7% had completed a Ph.D degree. Additionally, 274 (68%) of them were practicing in a city, while 116 (29.5%) were practicing in a town or village. Overall, the community pharmacists had been licensed for an average of 19 years, and their experience as a pharmacist ranged from one year to 40 or more years.

Most of the study pharmacists (81.9%) stated that proportion of patients they had contact with on a typical day in their workplace who are Black, or Arab was 0 to 3, and 66 (16.8%) of them had contact with 4 to 7 Black or Arab individuals. Although most pharmacists had low professional contact with Black and Arab individuals on a typical day, this study attempts to examine the implicit and explicit bias against Black and Arab individuals in general and not only against patients or clients. Table 5 shows the complete professional characteristics of the participants.

Table 5. Professional Characteristics of the Study Pharmacists (N = 407)[a]

Characteristics	N (%)	Mean	SD
Highest Level of Education			
BSc (pharm)	290 (71.5)		
PharmD	60 (14.6)		
Masters	34 (8.3)		
Ph.D	11 (2.7)		
Other	10 (2.4)		
Practice Location[b]			
City	276 (68)		
Town	115 (28)		
Village	6 (1.5)		
Other	8 (2)		
Years as Pharmacist[c]		20.8	12.5
1-10	116 (28.5)		
11-20	76 (18.7)		
21-30	109 (26.8)		
31-40	105 (25.8)		
Years as Licensed Pharmacist in Canada[c]		19.16	12.6
	138 (33.9)		
1-10	75 (18.4)		
11-20	98 (24.6)		
21-30	88 (21.6)		
31-40			
Proportion of Patients per day (out of 10) who were Black or Arab		2	1.57
0-3	320 (81.9)		
4-7	66 (16.8)		
7-10	7 (1.8)		

Note. [a]Percentages do not up to 100 because of missing values and rounding. [b]"City" was defined as 100,00 people or more, "Town" was defined as 1000 to 99999 people, and "Village" was defined as less than 1000 people. [c]Years as a pharmacist and years as a licensed pharmacist in Canada converted into ordinal groups.
Abbreviation. N, number of participants; SD, standard deviation.

Generally speaking, the sample of this study is representative of the population of Ontario community pharmacists described by the Canadian Institute for Health Information (CIHI) data.[419] In 2017, there were about 16.103 registered pharmacists, 11.606 (69%) of them practicing in community pharmacies, 58% were female, and the average age was 44.8 years old. Most (90%) pharmacists were located in urban areas, while 7% were located in rural and remote

areas. The majority of pharmacists had a baccalaureate degree (92.0%) as their current level of education.

4.1.2. Implicit Bias of the Study Pharmacists

The 407 study participants' IATs scores are grouped according to the Project Implicit D score rating guide, and the number and percentage of D scores that correspond to each rating are displayed. Any D score greater than 0 indicates a preference for white individuals. A D score of 0.15 to 0.34 indicates slight bias, 0.35 to 0.65 indicates moderate bias, and 0.66 or greater indicates strong bias.[38]

As Table 6 and Figure 4 show, there was a wide range of implicit bias among the study pharmacists. The more frequent and stronger response was stronger preference for white individuals (i.e., bias against Black and Arab individuals). The Black: white IAT scores indicated that more than three quarters (75.6%) had IAT over zero, indicating that they had some implicit bias for white people over Black people. (28.7%) had "strong" implicit preference for white over Black images; 30.5% had "moderate" implicit preference for white people over Black people and about 16.5% had "slight" preference toward white people over Black people. There were small numbers who had a preference for Black individuals (9.1%) over white individuals, and 15.2% of the sample had little or no preference.

The bias in favor of whites over Arabs was slightly less pronounced: 71.5% had IAT scores that indicated implicit bias in the Arab vs. white version of IAT. Of these, 23.6% had a "strong" preference for white individuals, compared with Arab individuals; approximately 25.5% had "moderate" bias toward white over Arab names, and 22.4% had "slight" preference toward white people over Arab people. Only16.5% had little to no preference, while 12.0% had some preference for Arab people over white people.

Table 6. Race and Arab D Score Ratings for Study Pharmacists (N = 407)

Statement	Frequency (%)	
	Race IAT	Arab IAT
Strong preference for Black or Arab individuals (-0.66 or <)	2 (0.5)	5 (1.5)
Moderate preference for Black or Arab individuals (-0.36 to-0.65)	18 (4.4)	18 (4.4)
Slight preference for Black or Arab individuals (-016 to -0.35)	17 (4.2)	26 (4.2)
Little to no preference (-0.15 to 0.15)	62 (15.2)	68 (16.5)
Slight preference for white individuals (0.16 to 0.35)	67 (16.5)	91 (22.4)
Moderate preference for white individuals (0.36 to 0.65)	124 (30.5)	104 (25.6)
Strong preference for white individuals (0.66 or >)	117 (28.7)	96 (23.6)

Note. This table shows the grouped D scores according to Implicit D score rating guide. D scores range from -2 to +2. Negative scores indicate implicit bias (preference) for Black/Arab individuals, positive scores indicate implicit bias (preference) for white individuals.
Abbreviation. N, number of study pharmacist.

Figure 4. Distribution of Race and Arab IAT Scores in the Study Pharmacists (N= 407)
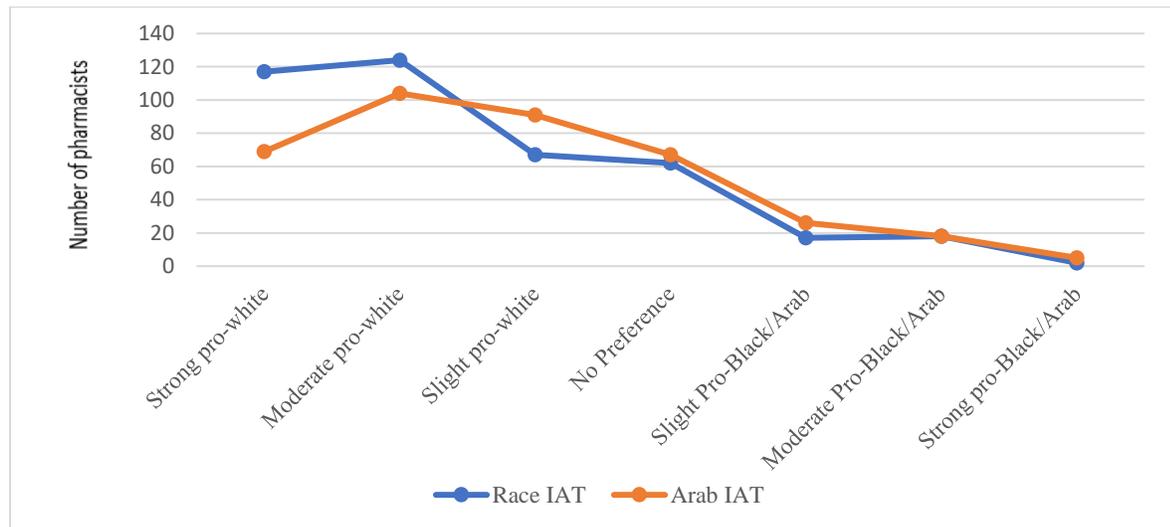
Note. This shows the number of participants with each category of IAT score (No, slight, moderate, and strong bias favoring white or Black/Arab) on the Race and Arab IAT.
Abbreviation. N, number of study pharmacist.

4.1.3 Explicit Bias of the Study Pharmacists

4.1.3.1 Race and Arab Preference Scales

As expected, in Table 7, the majority of study pharmacists indicated natural preference toward all white, Black and Arab groups. In a white-Black (Race) preference scale, 296 (72.2%) of participants indicated neutral preference toward both Black and white individuals. However, 63 (15.5%) of participants reported preference toward white individuals, and 18 (4.4%) reported moderately preference toward white individuals, while 11 (3%) of respondents indicated an explicitly preference toward Black individuals. The mean average was 4.24 ($SD = 0.64.$), indicating a slight preference for white people relative to Black people.

In the white-Arab (Arab) preference scale, the study pharmacists showed more explicitly preference toward white individuals over Arab individuals; 257 (63.15%) of study participants indicated neutral preference, 88 (21.6%) reported slight preference toward white people, and 19 (4.7%) reported moderate preference toward white people, whereas 13 (3.4%) reported some explicit preference toward Arab people. The mean average was 4.34 ($SD = 0.75.$), indicating a slight preference for white people relative to Arab people.

Table 7. Prevalence of Race and Arab Preference Scales.

Statement	Frequency (%)	
	Race Preference Scale (N = 390)	Arab Preference Scale (N = 380,)
Strongly prefer Black or Arab individuals to white individuals	1 (<1)	1 (<1)
Moderately prefer Black or Arab individuals to white individuals	1 (<1)	2 (<1)
Slightly prefer Black or Arab individuals to white individuals	9 (2.2)	10 (2.5)
Like Black or Arab individuals and white individuals equally	296 (72.7)	257 (63.1)

Slightly prefer white individuals to Black or Arab individuals	63 (15.5)	88 (21.6)
Moderately prefer white individuals to Black or Arab individuals	18 (4.4)	19 (4.7)
Strongly prefer white individuals to Black or Arab individuals	3 (<1)	3 (<1)

Note. This shows the frequencies of responses on the Black and Arab preference scales. These scales were measured on a scale of 1 to 7, with a median response of 4. Responses from 5 to 7 were considered biased toward white individuals over Black/Arab individuals.
Abbreviation. N, number of study pharmacist.

4.1.3.2 Feeling Thermometer Scales

Overall, the mean warmth score toward white people (7.03) was higher than toward Black people (6.97) and Arab people (6.69), although most pharmacists rated both groups equally. In the white-Black feeling thermometer scale, the majority of study pharmacists (80.6%) did not feel particularly warm or cold toward white people or Black people. However, 12.1% of participants felt warmer toward white people over Black people, while 7.3% reported some preference for Black people.

The results were a little bit different for white-Arab feeling thermometer scales. About 67.6% of the sample of pharmacists reported neither warm nor cold, and 26.6% of them felt warmer toward whites over Arabs, while 5.8% reported some preference for Arabs (Figure 5).

Figure 5. Pharmacists Feeling Thermometer toward White, Black and Arab Individuals
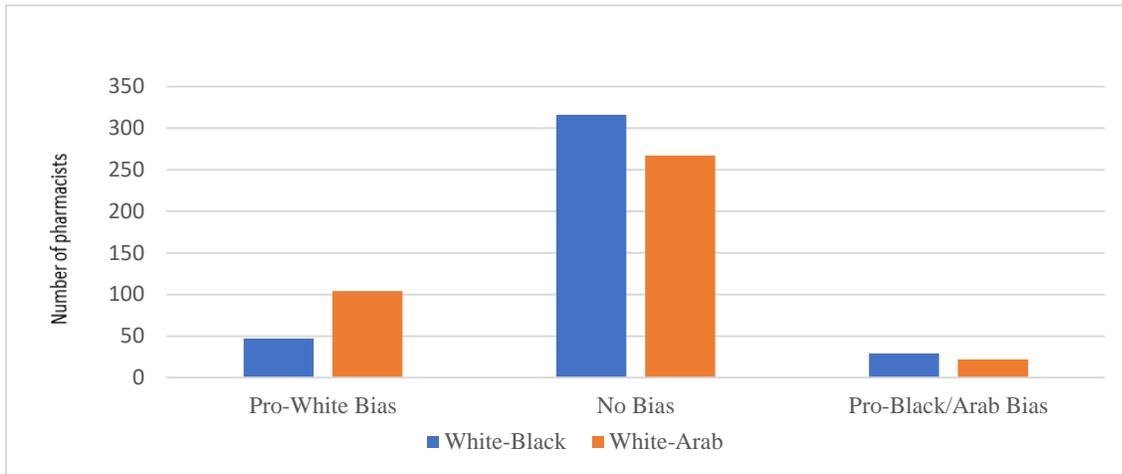
Note. This shows the difference scores between feeling toward white individuals (-) feelings toward Black/Arab individuals (> 0 was considered pro-white bias. A difference of 0 was no bias, and a difference < 0 was pro-Black/Arab bias.).

4.1.4 The Existence of Implicit and Explicit Bias Among Ontario Community Pharmacists

The first hypothesis to be tested in this study was whether Ontario community pharmacists would implicitly prefer white individuals relative to Black and Arab individuals. A one-sample t-test was performed (Table 8) to obtain the mean D score and determine its significant difference from zero. As hypothesized, the 407 community pharmacists used in the analysis showed a mean D score of 0.41 (*SD* = 0.40, Cohen's d = 1) for Race IAT and D score of 0.35 (*SD* = 0.41, Cohen's d = 0.8) for Arab IAT. Both were significantly (p<0.05) higher than the neutral D score of zero, which confirmed the hypothesis that community pharmacists hold preference for white individuals and represents a bias against Black and Arab individuals. The D scores ranged from -0.7 to 1.33 and -0.93 to 1.4 out of a possible range of -2.0 to 2.0, respectively.

The mean D scores of 0.41and 0.35 are within the range described by the Project Implicit D score rating guide as corresponding to a moderate to strong preference for white individuals in Race IAT and a moderate preference for white individuals in Arab IAT, which means there is a

considerable negative implicit bias towards Black and Arab individuals among the sampled

pharmacists.

Table 8. One-Sample T-Test Result for the Race and Arab Implicit Bias Test: Test Value = 0

Attitude	Race				Arab			
	N	Mean	Effect-size[a]	P Value	N	Mean	Effect-size[a]	P Value
Implicit	407	0.41	1	<0.05	407	0.35	0.8	<0.05

Note. D-scores for participants who completed the race and Arab IAT. Positive scores represent a pro-white (relative to Black or Arab) bias. Significant results indicate D scores that are significantly different from the no-bias midpoint of 0. $p < .05$. [a]Effective size, interpreted as follows: d of 0.2 = small effect; d of 0.5 = medium effect; and d of 0.8 = large effect.
Abbreviation. N, total pharmacists for whom we have both Race and Arab D scores.

4.1.5 Association Between Implicit Bias and Community Pharmacists' Characteristics

With a determination of the existence of implicit and explicit biases against Black and Arab

individuals among Ontario community pharmacists, the second hypothesis to be tested was that

IAT scores could be predicted based on pharmacists' characteristics. First, Pearson correlation,

ANOVA, and a dependent t-test were conducted separately to determine whether there were

significant differences between participants' characteristics and implicit bias as assessed with

Race and Arab IATs. Table 9 summarizes the results of demographic criteria and IAT analysis to

determine whether there was a statistically significant difference between community

pharmacists' characteristics and Race and Arab IATs.

The results presented in Table 9 shows that four significant factors of age, self-identified

race/ethnicity, years as a pharmacist, and years as a licensed pharmacist in Canada are associated

with Race IAT scores and six factors of age, self-identified race/ethnicity, place of birth, practice

location, years as a pharmacist, and years as a licensed pharmacist in Canada are associated with

Arab IAT scores.

On average, the oldest demographic group, 56 years of age or older, had the highest mean Race

and Arab IAT scores: ($M = 0.49$; $SD = 0.39$) and ($M = 0.41$; $SD = 0.37$), respectively. A bivariate

correlation revealed statistically significant differences between pharmacist age and Race and Arab IAT scores.

The average D score for female pharmacists was slightly lower ($M = 0.40$; $SD = 0.4$) and ($M = 0.312$; $SD = 0.36$), respectively, than the average D score for male pharmacists ($M = 0.41$; $SD = 0.4$) and ($M = 0.34$; $SD = 0.34$), respectively. However, the independent sample t-test on gender revealed no statistically significant differences between the groups.

Immigrant community pharmacists had lower average D scores ($M = 0.39$; $SD = 0.4$) and (0.31; $SD = 0.43$), respectively, than Canada-born pharmacists ($M = 0.42$; $SD = 0.39$) and ($M = 0.38$; $SD = 0.38$). Though, this difference was not statistically significant in the Race D score and was statistically significant in the Arab D score.

In Race IAT, East Asian and white pharmacists had higher average D scores than other race and ethnicity groups ($M = 0.45$; $SD = 0.36$) and ($M = 0.44$; $SD = 0.36$), respectively. However, in Arab IAT, Black and white pharmacists held a strong preference toward white individuals ($M = 0.63$; $SD = 0.42$) and ($M = 0.42$; $SD = 0.37$), respectively. An ANOVA test exposed statistically significant differences in Race and Arab D scores between the different self-identified race and ethnicity groups.

Community pharmacists, who held Ph.D degree, showed less bias toward Black and Arab individuals ($M = 0.27$; $SD = 0.44$) and ($M = 0.17$; $SD = 0.53$), respectively. Nevertheless, there were no statistically significant differences in Race and Arab D scores between the highest levels of education groups.

Regarding practice location, pharmacists who practice in villages showed less bias than other categories toward Black people in Race IAT ($M = 0.31$; $SD = 0.45$). However, pharmacists who

practice in towns, as compared to pharmacists who practice in cities or villages, held a stronger

bias against Arab individuals in Arab IAT ($M = 0.43$; $SD = 0.46$). An ANOVA test indicates a

statistically significant relationship between practice location and Arab D score.

Furthermore, this study found that more experienced pharmacists held a strong preference

toward white people ($M = 0.49$; $SD = 0.4$) and ($M = 0.43$; $SD = 0.38$), respectively. The

experienced licensed pharmacists in Canada showed the same result ($M = 0.5$; $SD = 0.4$) and ($M

= 0.44$; $SD = 0.38$), respectively. The relationship between Race and Arab D scores and the

experienced pharmacists and the experienced licensed pharmacists were statistically significant.

Finally, the Race and Arab average D scores for pharmacists who had few contacts with Black

and Arab individuals on a typical day were higher ($M = 0.4$; $SD = 0.39$) and ($M = 0.35$; $SD =

0.41$), respectively, compared to other numbers of Black and Arab individual groups. However,

these differences were not statistically significant.

Table 9. Pharmacist Characteristics and Bivariate Associations with IAT Scores

	IAT score, mean (SD)	
Variables	Race	Arab
Age[a]		
≤ 25	0.37 (0.49)	0.43 (0.22)
26-35	0.29 (0.45)	0.32 (0.42)
36-45	0.36 (0.38)	0.25 (0.41)
46-55	0.46 (0.34)	0.39 (0.43)
≥ 56	0.49 (0.39)	0.40 (0.37)
P-value	0.00*	0.00*
Gender		
Male	0.41 (0.4)	0.34 (0.43)
Female	0.40 (0.4)	0.36 (0.4)
P-value	0.78	0.66
Place of Birth		
In Canada	0.42 (0.39)	0.38 (0.38)
Outside Canada	0.39 (0.4)	0.30 (0.43)
P-value	0.5	0.04*
Race/Ethnicity		
White	0.44 (0.36)	0.42 (0.37)

Black	-0.30 (0.28)	0.63 (0.42)
East Asian	0.45 (0.45)	0.33 (0.47)
South Asian	0.35 (0.43)	0.22 (0.38)
West Asian or Arab	0.34 (0.4)	0.14 (0.41)
P-value	0.02*	0.05*
Highest Level of Education		
BSc (pharm)	0.41 (0.39)	0.38 (0.38)
PharmD	0.41 (0.39)	0.27 (0.42)
Master	0.37 (0.43)	0.25 (0.47)
Ph.D	0.27 (0.44)	0.18 (0.53)
P-value	0.8	0.14
Practice Location[b]		
City	0.41 (0.4)	0.31 (0.4)
Town	0.40 (0.37)	0.43 (0.4)
Village	0.30 (0.45)	0.43(0.46)
P-value	0.82	0.04*
Years as a Pharmacist		
1-10	0.33 (0.44)	0.33 (0.42)
11-20	0.34 (0.36)	0.22 (0.39)
21-30	0.46 (0.35)	0.38 (0.41)
31-40	0.49 (0.4)	0.43 (0.38)
P-value	0.005	0.005
Years as a Licensed Pharmacist in Canada		
1-10	0.31 (0.44)	0.31 (0.42)
11-20	0.38 (0.36)	0.23 (0.39)
21-30	0.47 (0.35)	0.41 (0.4)
31-40	0.51 (0.40)	0.44 (0.39)
P-value	0.005*	0.005*
Proportion of Patients per Day (out of 10) who were Black or Arab		
0-3	0.40 (0.39)	0.35 (0.41)
4-6	0.43 (0.43)	0.34 (0.38)
7-10	0.17 (0.17)	0.26 (0.51)
P-value	0.26	0.85

Note. [a]Age converted into ordinal group. [b]"City" was defined as 100,00 people or more, "Town" was defined as 1000 to 99999 people, and "Village" was defined as less than 1000 people. * indicate significant at p≤0.05 and used in regression models.

The four demographic factors (age, self-identified race/ethnicity background, years as a

pharmacist and years as a licensed pharmacist in Canada) were found to be significantly

associated with Race D scores and the six demographic factors (age, self-identified

race/ethnicity, place of birth, practice location, years as a pharmacist, and years as a licensed

pharmacist in Canada) were found to be significantly associated with Arab D scores are qualified for entry into the regression models.

The nature of the relationship between the determinants of pharmacists' demographic and Race and Arab D scores was investigated using the Pearson correlation coefficient. Preliminary analysis was performed to assure no violation of the assumptions. The correlation matrix shows that the pair-wise correlation coefficient between years as licensed pharmacist in Canada and years as a pharmacist exceeded 0.7, suggesting that the data has a severe multicollinearity problem. Therefore, years as a pharmacist variable was dropped from the regression model to address this issue.

Table 10 shows the relative effects of community pharmacists' demographic variables on Race. Multiple regression model is significant ($F_{(7,391)} = 5.17$, $p < 0.005$) which means the overall model of age, self-identified racial/ethnic, and year as a licensed pharmacist in Canada statistically significant predicted Race scores

The adjusted R^2 is 0.068. This means that pharmacist characteristics explain 6.2% of the variation in Race scores. According to the regression results presented in Tables 10, two demographic factors are significantly related to Race IAT, age and self-identified race/ethnicity (Black pharmacists) variables.

Table 11 shows the relative effects of community pharmacists' demographic variables on Arab IATs. Multiple regression model is significant ($F_{(11,386)} = 3.40$, $p < 0.005$), which means the overall model of age, place of birth, practice location, self-identified racial/ethnic, and year as a licensed pharmacist in Canada statistically significant predicted Arab IAT scores.

The adjusted R² is 0.062. this means that the pharmacist characteristics explain 6.2% of the variation in Arab scores. According to the regression results presented in 11, only self-identified race/ethnicity (South Asian and West Asian/Arab pharmacists) is significantly and negatively related to Arab IAT scores.

Table 10. Multivariate Regression between Pharmacists and Race IAT Scores (N = 399)

Variables	Unstandardized Coefficient		Standardized Coefficient	t- value	Sig.
	B	Std. Error	Beta		
Constant	0.16	0.11		1.1	0.29
Age	0.01	0.00	0.12	2.13	0.03*
Years as a licensed pharmacist in Canada	-0.01	0.00	-0.03	-0.30	0.76
Race/Ethnicity[a]					
Black	-0.63	0.16	-.19	-3.87	0.00*
East Asian	0.05	0.06	0.04	0.79	0.42
South Asian	-0.05	0.06	-0.05	-0.91	0.36
West Asian/Arab	-0.08	0.07	-0.06	-1.13	0.25
Other	-0.08	.11	-0.04	-0.78	0..43

N	R^2	Adj. R^2	F-statistic	P-value
399	0.085	0.07	5.17	0.005

Note. Whites are the reference group for race/ethnicity. All relationships were non-significant except age. Model adjusted for age, years as a licensed pharmacist in Canada, and race/ethnicity. * indicates significant at $p \leq 0.05$.

Table 11. Multivariate Regression between Pharmacists and Arab IAT Scores (N = 398)

Variables	Unstandardized Coefficient		Standardized Coefficient	t-value	Sig.
	B	Std. Error	Beta		
Intercept	0.40	0.12		3.45	0.00
Age	-0.02	0.04	-0.07	-0.61	0.53
Years as a licensed pharmacist in Canada	-0.04	0.04	0.12	1.09	0.27
Race/Ethnicity[a]					
Black	0.04	0.05	0.05	0.84	0.40
East Asian	-0.01	0.03	-0.01	-0.26	0.79
South Asian	-.04	0.01	-0.25	-3.86	0.00*
West Asian/Arab	0.00	0.01	0.00	0.12	0.90
Other	-0.04	0.02	-0.09	-1.8	0.06
Practice Location[b]					

Town	0.06	0.04	0.07	1.34	0.18
Village	0.10	0.16	0.03	0.62	0.53
Other	-0.26	0.15	-0.09	-1.78	0.07
Place of Birth	0.06	0.05	0.08	1.19	0.23
N	R^2	Adj. R^2	F-statistic	P-value	
398	0.088	0.062	3.403	0.005	

Note. [a]White category is the reference group for race/ethnicity. [b]City category is the reference group for practice location. All relationships were non-significant except age and South Asian. Model adjusted for age, years as a licensed pharmacist in Canada, race/ethnicity background, practice location, and place of birth. * indicates significant at $p \leq 0.05$.

4.1.6 Correlation between Implicit Bias and Explicit Bias

The final hypothesis to be tested was that differences exist between a pharmacist's level of explicitly reported bias and level of implicit bias as measured by the Race and Arab IATs. Spearman's rank-order correlation was performed with IATs and explicit measures. A weak positive association between Race IAT and the explicit race preference measure was identified, indicating that more implicit bias was related to more negative explicit bias. ($r_s(391) = 0.12$, p = 0.005) However, further information would be required to make such a statement. When the Race IAT scores were compared with the composite measure of explicit bias, the correlation coefficient was very close ($r_s(379) = 0.13$, p = 0.01). Please see Table 12 and Figure 6

For the Arab IAT, the Spearman's correlation coefficient revealed that there was a slight positive correlation between explicit and implicit preferences ($r_s(385) = 0.32$, p = 0.005). When the Arab IAT scores were compared with the composite measure of explicit bias, the correlation coefficient was almost the same ($r_s(377) = 0.27$, p = 0.005). The statistical significance of these implicit/explicit correlations showed that community pharmacists' self-reported level of bias toward Arab and Black individuals was significantly less than their actual bias, as measured by the Black and Arab IATs. Please see Table 12 and Figure 7

**Table 12**. Correlations between IAT Scores and Explicit Measures

Spearman's Rank Coefficient	N	r_s	P-value
Race IAT Race/ preference scale	391	0.123	0.01
Arab IAT Race/ preference scale	385	0.32	0.005

Note. Spearman's rank correlation coefficients comparing implicit and explicit preferences for both Race and Arab demonstrated statistically significant.
*Abbreviation*. r_s = Correlation coefficient; N, the number of study pharmacist.
Correlation is significant at the 0.05 level (2-tailed).

Figure 6. Implicit and Explicit Race Biases among Study Pharmacists
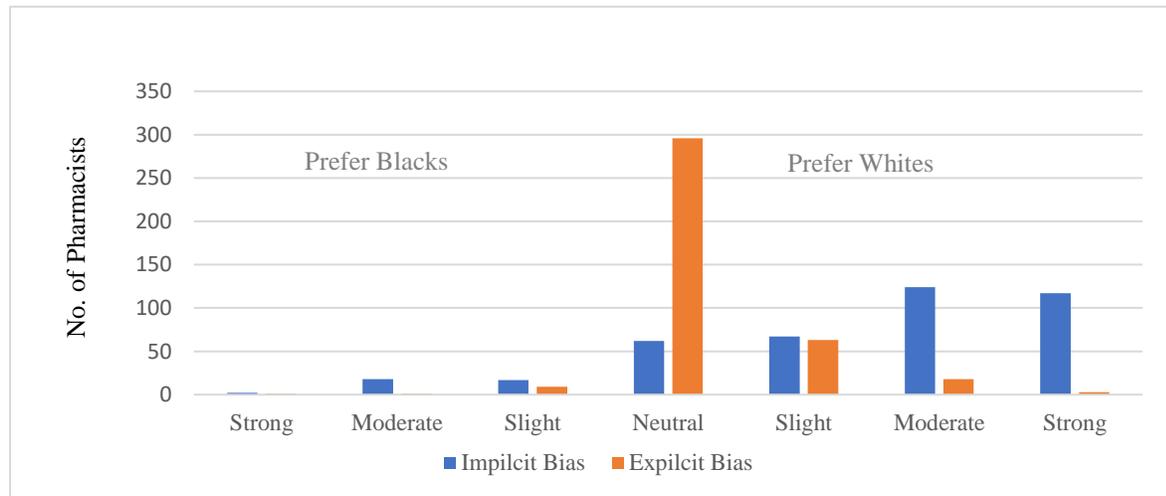
Note. For preference, a 7-point relative preference measure derived from Race Implicit Association Test (IAT) D scores from 391 pharmacists was used, with no preference in the Centre. Race explicit preferences reflect participants' direct response to a similar 7-point relative preference scale.

Figure 7. Implicit and Explicit Arab Biases among Study Pharmacists
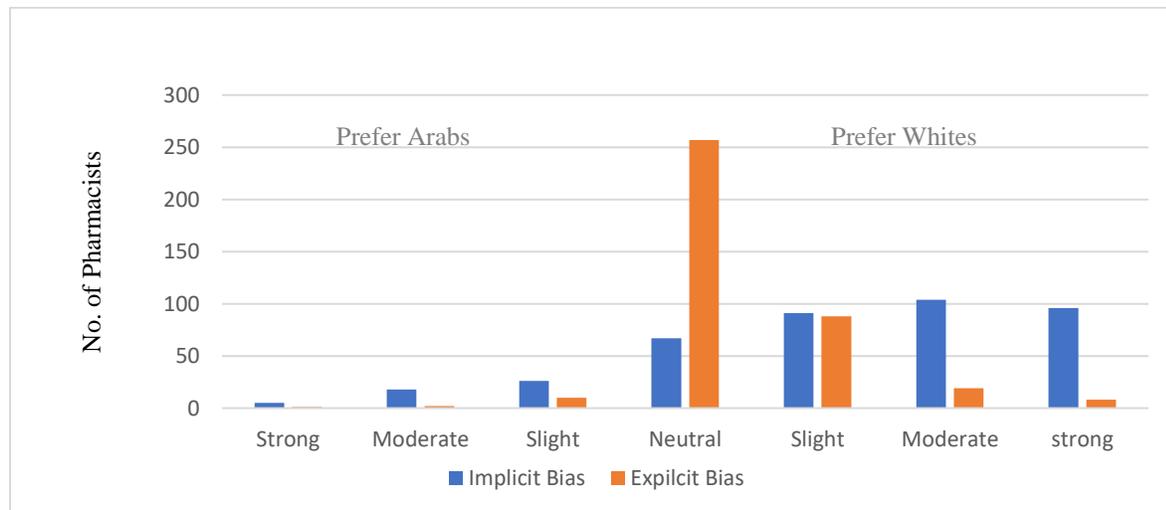
Note. For preference, a 7-point relative preference measure derived from Arab Implicit Association Test (IAT) D scores from 385 pharmacists was used, with no preference in the Centre. Arab explicit preferences reflect participants' direct response to a similar 7-point relative preference scale.

4.2 Qualitative Findings

This section focuses on the main four themes that emerged from participant interviews (Table 13), which emphasize the perceptions and experiences of Black and Arab individuals with community pharmacist services. From the 27 transcribed interviews, 636 significant statements were extracted reflecting Black and Arab individuals' opinions, beliefs, perceptions, and attitudes about pharmacist services and their interactions with pharmacists; 16 sub-themes were formed which were further merged into four main themes. In the following section, the results will be discussed thematically with common experiences gathered into themes and sub-themes

4.2.1 Demographic Characteristics.

Table 13. Demographic Characteristics of Study Participants (N=27)

Characteristic	No. of participants	% of Participants
Age		
18-25 years	2	7%
26-35 years	10	37%
36-45 years	4	15%
46-55 years	8	29%
56-65 years	2	7%
66-75 years	1	5%
Gender		
Female	7	26%
Male	20	74%
Race/Ethnicity Background		
Black	4	15%
Arab	16	58%
Both	7	27%
Born in Canada		
Yes	3	11%
No	24	89%
Language Preference		
English	19	70%
Arabic	4	15%
Both	4	15%
Years Lived in Canada		
1-6 years	2	7%
6-10 years	12	46%
10-20 years	8	29%

20+ years	3	11%
All my life	2	7%

As summarized in Table 11, 74% of the participants were male, (N = 20) and 26% were female (N = 7). the largest proportion of the participants was between 26-35 years old, representing 37% (N = 10) of the participants. Only one participant (4%) was between 66-75 years. There was an equal number of participants aged between 18-25 years and 56-65 years, each representing 7% of the sample (N = 2). About 59% (N = 16) of the participants identified themselves as Arab, while Black participants constituted 14% (N = 4) of the sample; 27% (N = 7) of study participants identified themselves as Black and Arab. The majority of the participants were born overseas (89%, N = 24). The participants were asked to indicate what language they feel most comfortable using when talking to a pharmacist. English was the most used language when speaking to a pharmacist, indicated by 70% (N = 19) of participants However, about 15% (N = 4) indicated Arabic and 4% (N = 4) had no preference since they spoke both English and Arabic. The largest proportion of participants had been living in Canada between 6-10 years, representing 44.4% (N = 12) of the sample.

4.2.2 Qualitative Themes and Sub-themes

Although Black and Arab individuals in this study talked more in general terms about their overall perceptions of and experiences with pharmacist services rather than specifically about pharmacist-patient/client relationship, four overarching themes were identified based on their experiences: 1) patient/client's use of community pharmacy services 2) patient/client cognizance of pharmacist's services 3) good pharmacist-patient/ client interaction, and 4) communication barriers. These four themes are not mutually exclusive. Black and Arab participants often shared both positive and negative experiences related to these themes. When the experience was positive (e.g., informative communication), study participants were more likely to be satisfied

with pharmacist services in general. Each theme represented an overarching topic that included

several sub-themes which are shown in Table 14. Each theme and sub-theme will be described

and discussed with direct quotations from the participants' interviews used to highlight and

support them.

Table 14. Emergent Themes and Sub-themes

Theme	Sub-theme
Patient/client's use of a community pharmacy	Frequency of visiting a community pharmacy
	Factors influencing the choice of a pharmacy
	Common reasons for visiting a community pharmacy
	Desirable qualities in pharmacist services
Patient/client cognizance of pharmacist roles and services	Patient/client perceptions and expectations about community pharmacist
	Identifying a pharmacist
Good Pharmacist-Patient/ Client Interaction Communication barriers	Effective communication Lack of communication skills
	Failure by community pharmacist to answer some questions or entertain more questions
	Pharmacists' indifference, and lack of attention
	Rudeness and disrespectful
	Racial discrimination
	Lack of professional knowledge
	Language and accent barriers
	Patient/client-pharmacist race and ethnicity accordance
	Systematic issues

Theme One: Patient/Client's Use of a Community Pharmacy

Community pharmacies are widely used by Canadians, with more than 600 million prescriptions has been dispensed every year.[420] Patients with chronic diseases see their pharmacist seven times as often as they do their family physician.[421] In this study, all Black and Arab participants interviewed described their use of community pharmacist services. This includes questions related to the frequency of and common reasons for their visit to the pharmacy, the tendency to visit a particular pharmacy, and desirable qualities in pharmacist services.

Sub-theme: Frequency of Visiting a Community Pharmacy

According to Sauvageau et al.[422], approximately 55% of the Canadian population visit a community pharmacy every week. When the participants of this study were asked how often they visit a community pharmacy for any reason, the majority of them said that they visit a pharmacy at least once a month:

> *"Monthly I go [to a community pharmacy] couple times because I have kids, and here the weather, always the kids will be sick and always I will be in, a clinic in the pharmacies for normal sickness for the kids."* (Interview 9)

Sub-theme: Factors Influencing the Choice of a Pharmacy

One factor frequently mentioned by Black and Arab participants was convenient pharmacy location which included the proximity of a pharmacy to home, work, medical clinic, or hospital and the presence of a pharmacy in a shopping mall:

> *"Most likely, I go either to one that closes from my home, or the one that closes from the university, which is where I work."* (Interview 4)

El Hajj et al.[423] found that pharmacists' knowledge was considered as a critical factor by 66% of survey respondents. Likewise, the pharmacists' skills, knowledge and ability to answer any drug-

or disease-related questions were also frequently mentioned by many Black and Arab

participants as a reason for choosing a community pharmacy:

> *"But from a pharmacy standpoint, there's a pharmacist in Drug Basic [name of pharmacy]. He is a very knowledgeable person."* (Interview 8)

Despite the fact that the Arab and Black participants had health insurance, and all had some form

of prescription insurance, some participants were very concerned about the cost of medicine,

particularly for patients who did not have government benefits:

> *"...The [medication] cost. Because if you don't have a benefit [government support], the prescriptions can be, like, too much for you."* (Interview 16)

Therefore, Black and Arab participants were more likely to visit a pharmacy that offers a

competitive price on medications:

> *"I looked at the fees, maybe a pharmacy will charge you say, $12. Another one will charge you $7.99. For dispensing the medicine. So, you generally go and look into that factor."* (Interview 1)

Other relevant factors included providing a good range of products and services; convenient

community pharmacy working hours; parking availability; promotion on medications and

appearance of a pharmacy.

The participants also mentioned several factors influencing loyalty, as defined by frequent visits

to the same pharmacy. Dossa et al.[424] found that patients loyal to a single pharmacy were more

likely to have better quality indicators of medication use and condition management. One of

these factors was feeling comfortable interacting with a specific pharmacist:

> *"When I choose a pharmacist, I choose one that I feel comfortable talking with that person. So, when I choose that one, not because it's close to my house. Because I feel comfortable with that one. Because, when you say medications, it is some sort of ... something more private. So, I choose the one I can trust- and I feel safe to talk about my*

conditions, and even my children and my wife conditions in general." (Interview 16)

Additionally, a good and long-lasting relationship with a community pharmacist was identified

as a significant reason for choosing a particular community pharmacy:

> *"I usually go to the same pharmacy…I talk to him (pharmacist …and he knows me pretty good."* (Interview 7)

Sub-theme: Common Reasons for Visiting a Community Pharmacy

Black and Arab participants identified the main reasons for visiting a community pharmacy.

Most of them chose filling prescriptions and obtaining over-the-counter (OTC) medications as

the most common reason for visiting a pharmacy:

> *"They [pharmacies] have, prescription drugs-And I have to buy- And sometimes when I need to get something for my children, for my daughters-I'm not so sure which of the over-the-counter drugs I could get, so I go there to clarify…"* (Interview 2*)*

Several participants reported that they visited a pharmacy primarily to seek the pharmacist's

advice and to get general health information:

> *"If ever my daughter's sick, to pick something up, to get their [pharmacists] advice on what I should pick up."* (Interview 24)

Receiving easy and fast services are important advantages of using pharmacist services. A few

participants stated that they visited a community pharmacy in order to get quick service as going

to the emergency room would take much longer for minor conditions:

> *"It's [visiting a pharmacy] a lot quicker than going to the emergency room. If I have to go to the emergency room, it would take me two to three hours."* (Interview 14)

Sub-theme: Desirable Qualities in Pharmacists Services

The study participants identified several aspects of pharmacist services and considered essential

to the development of strategies to expand and advance community pharmacist services in

Canada. These included honesty and professionalism; willingness to offer advice and answer any

health-related questions; good communication skills; and understanding of people's concerns. A few participants made the following comments:

> *"...if a good pharmacist is talking to you, explaining to you, instead of just running away to make more medicine, to make more money, right? If he gives you like an extra minute with full attention, and try to explain to you, try to understand what you are talking..."* (Interview 5)

> *"I mean he [community pharmacist] has a good personality, attitude, behavior and easygoing."* (Interview 14)

> *"...And if they [community pharmacists] were not like in a good mood or like if they were like, in a cranky mood or whatever, they would ruin the whole entire thing for me because, I'm coming to them with not good conditions. So, I believe that they need to be more understandable."* (Interview 27)

> *"I know that regardless of what kind of health care providers it is, it's very important for them to be open and, just there, you know, and clear and respectful."* (Interview 17)

Black and Arab participants also suggested a wide range of strategies related to a community pharmacy in general in order to promote using pharmacist and pharmacy services. These strategies included filling a prescription online, having a family pharmacist, access to patients' records, having more 24-hour pharmacies, hiring more pharmacists in community pharmacies, minimizing wait times, having a private area for consultation, having pharmacists from different ages and genders available, having pharmacists who speak multiple language or having language translators, offering drug label and information in multiple languages, conducting more research on medications safety, pharmacy cleanliness, and signs/posters encouraging people to talk to the pharmacist regarding their needs or conditions.

Theme Two: Patient/Client Cognizance of Pharmacist Services

This theme concerned how pharmacists and their services are held within the mindset of Black and Arab participants, perceptions of and attitudes towards the community pharmacist's services in Ontario, and their expectations with these services. This kind of knowledge can help

pharmacists in meeting patients/clients' needs and improve the quality of their services and improving customer satisfaction.[425].

Sub-themes: Patient/Client Perceptions and Expectations about Community Pharmacist Roles and services

The study participants perceptions and expectations toward community pharmacists' services varied. Expectations about pharmacists as experts and professionals in matters related to medications were relatively high among Black and Arab participants. Williams stated that[426] there is a positive association with patient satisfaction if expectations are met during patient-provider interaction. One participant gave pharmacist representations; - a pharmacist is the one who filled their prescriptions; provided instructions for how to take their medications; made an occasional recommendation for OTC medications that could be helpful and consulted about the side-effects:

> *"Well, I expect them to point me to any dangers that I wouldn't know about by myself. Also, to guide me to especially when I'm taking something off the shelf, to let me know which medication would be better for my case. I expect them to give me advice."*
> (Interview 9)

Another participant believed that community pharmacists were the most knowledgeable health care professionals when it comes to medications and their use:

> *"My expectation is high. Cause I consider the pharmacist half a doctor. Well, this is very important, but lots of people don't realize how important is your pharmacist as it's, he actually knows how to make the medicine, you know, and he knows how the medicine works before the doctor. The Doctor just describes the medicine, he didn't know how the medicine, how it works. The medicine or how the medicine works, and he can guide you better. And he knows more about the natural ingredients compared the chemical ingredients."* (Interview 23)

Black and Arab participants said that pharmacists could offer clinical advice and OTC drugs for a range of minor diseases, such as coughs, colds, sore throats, tummy trouble and aches and pains.

> *"I also expect that when I have [a] specific question. For example, if I have flu or a cold for a long time, I feel like okay, let me go see my pharmacist."* (Interview 8)

Manasse et al.[427] reported that pharmacists are in a good position to help patients get better health care by referring them as needed to other kinds of health practitioners. In this study, some Black and Arab individuals also expected that community pharmacists would refer them to other HCPs if they required more help with certain issues:

> *"If they [pharmacists] can't [help me to answer my questions] then, direct me towards somebody who can like if something they can't help me with, maybe tell me "I feel it's best that you go to the emergency room, get it checked out professionally."'* (Interview 13)

However, very few participants had difficulty conveying what pharmacists could do to enhance patient experience with pharmacist services, this was, in part, because they perceived community pharmacists' role to be limited to providing information and dispensing medications. One participant reported the following:

> *"You [the community pharmacists] are not doctors. Give this [medication] one… Fill the prescription and that is it."* (Interview 26)

Finally, studies showed that patient and clients were suspicious of community pharmacist commercial affiliations and financial purposes.[244,248,428] This study also showed that a small number of participants commented that pharmacists were primarily businesspeople more concerned with making money than with health, stating:

> *"Some [community pharmacists] will have financially driven, and some [community pharmacists] are patient-driven. If you have a dispute with the doctor-And the doctor wants*

to increase the dosage-And you are not convinced- They [the community pharmacists] always side with the doctor because they sell more medicines." (Interview 8)

Sub-theme: Identifying the Pharmacist

In this sub-theme, study participants were asked whether they knew or identified their pharmacists in order to make sure that we were talking about a pharmacist and not other pharmacy staff. The majority of participants reported that when they entered a pharmacy, they were able to positively identify who a pharmacist was and discriminate between a pharmacist and other people working in a community pharmacy. One participant said that the pharmacist was the one who provided information about medicine:

> *"Yes, I know the pharmacist, ... generally, it's easy because the pharmacist, whenever you have medicine, the pharmacist will try to help you, to tell you how to take medicine, before food and after food."* (Interview 1)

Some participants stated that they knew their pharmacists because they frequently or always visited the same pharmacy and have a trusted pharmacist there:

> *"...that pharmacy I go for like every time, like fifteen minutes from my house. I don't know them [the pharmacist] but I know their faces because we used to deal with them for a while. 'Because I lived there either for eight years, nine years."* (Interview 16)

Other participants said that they identified the pharmacists by what they wore (white coat):

> *"I don't know their name [pharmacists], but I can tell that they're pharmacists by I guess the jacket that they wear? yeah, that usually says some sort of medical authority."* (Interview 17)

Nevertheless, a few participants had clear problems in identifying different professionals among pharmacy staff. They said that they saw several people behind the counter working, but they were not sure who the pharmacists were:

> *"I don't know the pharmacist to be honest with you because there are different, as you mentioned different people."* (Interview 26)

Theme Three: Good Pharmacist-Patient/ Client Interaction

The theme "Good pharmacist-patient/ client interaction" refers to the positive interactions between community pharmacists and Black/ Arab participants. Higginbottom[429] demonstrated that in a health care setting, productive interactions between HCPs and patients are crucial for a shared understanding of the feelings and signs experienced by patients as well as the objective of the health providers. Black and Arab participants reported mixed experiences regarding pharmacist services. These experiences revolved around pharmacist attitude and communication. When asked how the study participants feel when they interact with a community pharmacist, many of them indicated that they felt comfortable:

> *"I feel comfortable. Because you get the medicine and you get something to cure your sickness. And I will be happy because you[are] getting what you need."* (Interview 2)

Black and Arab participants also expressed satisfaction once they had established a long- term relationship with a community pharmacist, and all participants mentioned they had at least one positive experience with a community pharmacist. For instance, one participant indicated that community pharmacists were outstanding and treated them with warmth, dignity, and respect:

> *"She [a community pharmacist] was very nice with me and gave me a good recommendation about taking special medications for my situation (skin issue) she was very helpful, and she did not ask me to see a doctor. She tried to help me by saving my time, and she was very concerned about my condition at that time."* (Interview 27)

As mentioned before, quick service was an important factor that made many participants happy and satisfied with pharmacist services. One participant expressed his positive and enjoyable experience with community pharmacist services by having quick services for minor conditions:

> *"I've had pretty good experiences… If I need something quick, I go and deal with a pharmacist. It's very quick and easy."* (Interview 13)

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In addition, the participant of this study valued the effort that pharmacists made to assist them in saving money on their medications:

> "…They [community pharmacists] give you the medicines, for example, like that medicine is $300, we can't afford it…. They assist you to good [price] medicine. And if you can't afford that, they can assist you for, like, same medicine but like less, lower cost. Or they give you half of the medicine." (Interview 1)

Sub-theme: Effective Communication

The literature revealed that effective communication is particularly significant in the provision of pharmacy services because it can optimize the chance that the patient will make an informed decision, enhance the use of drugs properly by patients and ensure optimal therapeutic outcomes.[430,431] Hargie et al.[432] exposed some important skills for effective communication, including building rapport, clarifying, questioning, listening carefully, suggesting/counseling, confidence, revealing personal information, and persuasion. Considering the exposed skills, it is more likely to remark that many were emerged during the interviews and were deemed to be crucial for effective communication with the pharmacist. Most Black and Arab interviewees indicated that they were interested in knowing about and discussing medication directions, side effects, medication-food interactions, and medication-medication interactions. The study participants also would like to be kept current on generic and brand names medication uses, how they work, as well as medication prices. One participant said the following statement:

> "…it was a question about the difference between a generic and, commercialized type of allergy pills, and I think I also asked about Advil… I also asked about like the difference between the gel ones and just like really light kinds of questions. I guess also dosage for an Advil or something like that." (Interview 4)

Pharmacists are required to provide appropriate, clear, and relevant information to patients about their medications and conditions. Some participants of this study valued open honest

communication from a pharmacist and relied on the pharmacist to use simple language and clear

verbal communication:

> *"Well, you know, pharmacists have a certain kind of education--which is more focused on pharmacists and it is more technical, so I like the idea of simplifying things. So, when the pharmacists try to simplify terms, names, conditions, symptoms, whatever you want to discuss with them, so you consult with them and they try to simplify it for you, and this is where I had basically all my experience. I would say I never had an issue in understanding or breaking down things, because pharmacists try to speak in your, like, to go to your level."* (Interview 25)

Other participant reported that community pharmacists answer their questions, which made them

satisfied with the pharmacy services:

> *"I feel comfortable to ask him [community pharmacist] any question, I never had any problem with the people who are working in the pharmacy, always positive, always get my questions answered."* (Interview 22)

Finally, several study participants positively experienced other services provided by community

pharmacies such as home-delivery of prescriptions, being able to order prescriptions by phone or

online, and using technology.

Theme Four: Communication Barriers

Another theme that arose from this study was inadequate communication between community

pharmacists and the Black and Arab individuals. Flores et al.[433] reported that poor

communication between patient and pharmacist carries potential adverse clinical outcomes. The

participants of this study identified several barriers that prevented them from communicating

effectively with the community pharmacists.

Sub-theme: Lack of Communication Skills

It is well known that interpersonal communication skills are significant for community

pharmacists. Tietze[434] reported that poor communication between pharmacists and patients may

lead to an incorrect patient medication history and improper therapeutic decisions; may bring

patient confusion, unconcern, and medication nonadherence; and may lead to patients'

disappointment with the health care system. In this study, some study participants indicated that

their community pharmacists had poor commutation skills, which made them dissatisfied with

the pharmacist services:

> *"Unfortunately, some people have bad communication. When you have bad*
> *communication, you cannot talk with animals, not just for pharmacist for anything you*
> *want to do in Canada, it's all about the communication. But, what the pharmacist,*
> *because it's your medicine, and it's really crucial for you to know how your medicine*
> *work, so you have to ask more questions, especially if you [are] using more than one*
> *medicine. Like for me, I use multiple medicines. So, I need to know how this medicine*
> *works very well. Therefore, I have to ask more questions."* (Interview 21)

Another participant said the following statement:

> *"...But she [a pharmacist] told us, yeah this [filling a prescription] will take 20 minutes,*
> *will you sit down? And we sat down, waiting, waiting, waiting, until we felt, should go*
> *ask why she's making us wait…. She should have communicated that, in a proper way.*
> *She didn't let me know there was missing information until I asked, why did, because I've*
> *not waited that long for a drug. So, I felt, why did that, why do I have to wait this long?"*
> (Interview 2)

Poor listening was also connected with the community pharmacists as reported by a few study

participants. One participant said that his community pharmacists did not listen to him carefully:

> *"So, you might have some difficulty in communication. If you have a question you have to*
> *repeat it again and again… The only thing made them [community pharmacists] not*
> *having good communication."* (Interview 24)

Additionally, some participants were confused about the differences between brand and generic names. They described a lack of communication when pharmacist switched or altered medications. Therefore, participants expressed a desire for them or their physicians to be consulted first before filling their prescription.

> *"She [community pharmacist] changed the medicine without telling me, you know? I was disappointed."* (Interview 10)

Sub-theme: Failure by Community Pharmacist to Answer Some Questions or Entertain More Questions

The majority of the participants indicated that in general, the community pharmacists did not give them a chance to ask some questions about their conditions and/or medications. When asked why they thought community pharmacists behaved in this way, the Black and Arab participants stated that they suspected the community pharmacists feared the workload being bombarded by intrusive patients if they were generous in answering questions:

> *"I feel like it's a bit embarrassing and also that they [pharmacists] don't have time; that I should be asking in a hurry and I'm not able to communicate that well of what my concern is, and I've kind of done my own, like, research and so I'm like, getting it out there; they're kind of busy."* (Interview 5)

Patients with insufficient literacy and/or health literacy skills are the most likely to have problems in understanding proper medication use.[435] Other participants described how a pharmacist left her without providing enough information about her medications

> *"They [pharmacist] only give you your medications and leave you with not enough information about how to use your medication or other important information that related to it."* (Interview 4)

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Sub-theme: Pharmacist' Indifference, and Lack of Attention

Pharmacists who did not pay enough attention to the patients (or the public in general), were described as indifferent or inattentive. The participants perceived this as a kind of nonchalance or lack of motivation to listen carefully, as well as a lack of willingness to assist:

> *"I have been waiting 15 min to tell me that we don't have it[medication], or we [pharmacists] cannot give it to you, right? Most of the time, you stand there and you make sure you make some noise, so they know that you are there. And you wave, right. And then they come to you. So, it's good if like, "Hey I already saw you, I'm coming here. Just wait for me a minute. Give me a minute," right? This greeting, the initial greeting. It will save you lots of thoughts, right."* (Interview 14)

Sub-theme: Rudeness and Disrespectful

Pharmacist attitudes and behaviors were key communication issues that arose from many Black and Arab participants. Almost all Black and Arab participant agreed that persons' mannerisms played a significant role in developing rapport and good relationship. The attitudes and behaviors were felt to be more important for pharmacist than other HCPs:

> *"The pharmacist is very important for the life for everybody…. He [pharmacist] working in a public place and he met a different nation of people. Different color, different language, different tongue. And he has to be equal with anybody. He is facing a hundred different faces from people. Different manners-Different language. You [pharmacist] have to be patient. You have to be a public person before you be a pharmacist or before you be a doctor. You have to know."* (Interview 26)

Several participants described community pharmacists' disrespectful behavior or perceived lack of compassion:

> *"I met one of the pharmacists she was very angry, I am not sure why. Maybe her attitude like that and she was in a very tough way and rude way. She was talking to me. She said like, "What do you want? Yeah, this is the shelf, there is nothing we can do," and something like that. She was disrespectful. It was an upsetting situation for me."* (Interview 14)

Showing discomfort talking with a patient was mentioned by some participants:

"I have seen some pharmacists showing discomfort when I conduct this kind of conversation [When I'm asking about my medications and conditions] with them." (Interview 23)

Participants also recounted examples of rudeness and lack of respectful discourse. For instance, one participant reported how the community pharmacist refused to counsel him about the directions for the use of medications:

"I think two-and-a-half years ago- I went to a pharmacy to the University of Waterloo. And I give the pharmacist my prescriptions. So, he gave it to me... And then I learned from Canada that He [pharmacist] should tell me exactly how I can use those medications. And I ask him, and he said, "Do you speak English?" I said, "Yes, I speak English." He said, "You couldn't read?" I said, "Yeah, I can read. But I think you should tell me." He said, "No. I shouldn't. I got really intimidated. And I really got shocked. And I really had a very bad feeling, to be honest." (Interview 6)

Sub-themes: Racial Discrimination

The majority of Black and Arab participants stated no personal experiences or observations of discrimination in pharmacist services. Even some participants who reported negative experiences in pharmacist services did not believe that these were associated with racial discrimination. In addition, when asked if they felt that their race or ethnicity had an effect on how they were treated at the pharmacy, most of the study participants said, "No." One participant explained that Canada is a multicultural society and he often communicated with community pharmacists from different backgrounds:

"I think in Canada, honestly, I think it's very popular to have people from different ethnic groups, people from different backgrounds and still working together." (Interview 25)

However, A few participants said that some community pharmacist discriminated against them on the basis of their race, ethnicity, language accent, and religion. One participant shared the following:

"Yes, I feel that [her race or ethnicity had an effect on how I was treated at the pharmacy] because they [pharmacist] sometimes ignored me and made me wait for a long time even there was nobody there [at the pharmacy]. I do not know if that because I'm an Arab person, but what else could make him did something like that... Another example, I was talking to a pharmacist, but she did not respond to my questions. I was wondering why she did not answer my questions and I do not think because my language because she totally ignored me and did not say "could you repeat your question because I did not understand your question." (Interview 18)

According to Oxford University's Equality and Diversity Unit,[436] not making eye contact or avoiding speaking directly to individuals are examples of racism. In this study, one participant also perceived community pharmacist's lack of eye contact as a sign of racism and discrimination:

"No eye contacts. She [pharmacist] was very firm looking at me like a threat and I was actually disappointed... I know for sure she was maybe a racist because of my color, skin color or something like that." (Interview 14)

Another participant said that community pharmacists treated people differently based on their appearance, race, gender, or other demographic characteristics:

"There are some of them [community pharmacists]; they are not good with a customer. Why? Because the personality for the skin, for language, for even where you come from. Right? ...Clearly, they are racists.... They [community pharmacists] deal with you as unhuman being and even they don't focus on anyone like the White man or white woman check in- They leave you and they talk with them-Because they respect as the language and they are Canadian more than you. Because it's White and you are Black, or you are brown. I saw a couple of pharmacists had been changed from there [pharmacies] because they're acting as the racist people... I thought maybe they act with me just because I am Muslim and at the same time Black. And Black and Muslim." (Interview 2)

One participant reported that community pharmacists treated him differently compared to white individuals because they were afraid of white people making a complaint or taking legal action:

"They [pharmacists] approach other people based on what they concept them in mind. So. [look at] my face for a second, he- said, "That person, he will not go on to file a

claim." "And I don't feel comfortable with him. And I have to be tough with him." And I think he decided based on that. And really, he started, uh, approaching me very badly."
[Interview 6]

One participant recalled how a community pharmacist mistreated his friend's wife because of her religious background:

"I remember one of my friends, and he has his wife ...She's Muslim, and she's wearing hijab. She went to the pharmacy, and I would say that they mistreated her. Why? I don't know. Although she speaks English fluently, So I don't - So I don't think there is any language barrier. Maybe because of her religion, or the hijab, I don't know." (Interview 24)

Response to Discrimination and Misbehavior

The Black and Arab participants reported feeling hurt, saddened, and confused regarding pharmacist's rude and discriminatory behavior. They mentioned a range of responses to perceived discrimination. Although many participants acknowledged they felt a pharmacist's misbehavior was likely to compromise the quality of services they received, they did not necessarily associate such behaviors with racial discrimination. They interpreted these negative experiences in two ways. A small number of participants perceived their experience as a result of racial prejudice by a pharmacist; however, the majority believed their experience as a result of the general attitude and communication of that pharmacist. One participant said she had repeatedly encountered behavior which she believed was "not really racism, but it's just pharmacist were working in stressful conditions."

"I don't think so [pharmacist' negative attitude because of my race]. I think it's the busyness of the pharmacy, and how it's run when you're there- they [pharmacists] are Super busy." (Interview 20)

Of the six study participants reporting a prejudiced incident, two believed the incident significant enough to file a complaint to a higher authority, including filing a formal complaint:

"I told them [pharmacists], "Now I need to talk with your boss. Where is your manager? Where is your supervisor?... When I talked to the boss, she called him in the office, and she talked to him. I don't know what she said. And she came by herself and she deals with me and she gave me my medicine." (Interview 2)

Other participants did not take any action in response to rudeness and discrimination remarked. They responded by changing their community pharmacies:

"Actually, I left the pharmacy. I didn't actually hear anything [from pharmacist]. I went to another pharmacy." (Interview 14)

Some participants were surprised about their community pharmacist's misbehavior since they believed Canada to be one of the most multicultural societies:

"I didn't make any complaint no contact I was just surprised by I shocked by her [pharmacists] actually attitude to me, I said, "How? We are in Canada, you know." Why- why her attitude like that." (Interview 14)

Many Black and Arab participants also mentioned ways in which they felt "self-advocacy" was necessary in the Canadian system:

"...But you have to learn something here, in Canada, we are multicultural so if you something, if you feel this guy is not really a collaboration, I learned something, you have to take it personally. I used to take everything personally. What's wrong with this guy, why he's treating me so bad. So, I get angry." (Interview21)

Another participant added that patients in Canada had every right to ask about their medications and their questions should be answered:

"I learned that over time that here in Canada, I have the right to ask and they [pharmacists] have to explain it. Yeah. Because- because it's my responsibility" (Interview 6)

One participant reported that community pharmacists tried to treat him with respect just because they feared legal repercussions if they did not:

"In Canada, the good thing, the law is very strong on anybody. People, they're acting bad to the people, but they're worried about the law. They're scared to lose their job, to lose their, anything… And they scared from witness…" (Interview 26)

Sub-theme: Lack of Professional Knowledge

As reported before*,* adequate professional knowledge is essential to enhance patient/client for utilizing pharmacist services. A very small number of participants indicated that the poor community lack of pharmacist's knowledge to answer drug- and the disease-related question made them lose the trust not only in the pharmacists but also in the entire pharmacy:

I'm not sure if I can generalize this [the knowledge of pharmacist] or not, but, I just did not trust the pharmacy at all- the entire pharmacy." (Interview 23)

Sub-theme: Language and Accent Barriers

A review of the literature discloses consistent and substantial differences in patients' understanding of their diseases and adherence to the treatment plan when a language barrier is present. Results from these studies are in agreement with general research on provider-patient communication, which discoveries that communication is a key factor in patient compliance with the treatment.[437-439] Limited English proficiency can be a possible reason for the lack of understanding with the information provided by the pharmacist. Presence of an accent can be other possible reasons for ineffective communication between pharmacists, and many of the study participants. One participant made the following statement:

"When you are speaking a language, and they don't understand. Like when you are communicating, you think you are communicating but they, there is a lot of walls, they are saying something that's like- you are talking about different things." (Interview 2)

Additionally, some participants had difficulties to get, understand, and act upon uncomplicated health information as a result of its complex language and design. One participant felt that

community pharmacists spoke with them ambiguously and they did not ask if he understood or

not:

> *"They [community pharmacists] speak the English language. They don't care, what*
> *language you speak. How much you understand. You know what I mean? And they do not*
> *ask you if you understand them or not?"* (Interview 4)

Other participants were concerned that non-English speakers and newcomers, who would then

not be able to follow the community pharmacist's instruction about their medications and

conditions:

> *"If you a new person come in Canada who doesn't have the language and he's [you are]*
> *sick, you'd be like, you know, like I said, like hesitate to ask pharmacy [community*
> *pharmacist], what do you like? what is it? what do you call, what happened to him or*
> *what kind of medicine does he take? Cause that person doesn't know how to communicate*
> *the doctor, right?"* (Interview 1)

Sub-theme: Patient/Client-Pharmacist Race and Ethnicity Accordance

Research has discovered that patients/clients in racial and ethnic concordant relationships are

more likely to utilize necessary health services, are less likely to delay seeking care, and report a

larger volume of use of health services.[303,440] Patients/clients in racial concordant patient/client–

health provider relationships also state better satisfaction[440], and improved patient/client–health

provider communication.[22,59] When asked if it would make a difference in their interaction if the

community pharmacist who served them was Black or Arab, the majority said it would not:

> *"It doesn't [having Black or Arab pharmacist] matter as long as I have what I want. I*
> *have no problem."* (Interview 14)

Another participant added that having a pharmacist of the same race/ethnicity did not mean that

she would receive better services:

"It doesn't make [having a Black or an Arab pharmacist] any different for me. Because there is ... Black pharmacist, also acts in the bad way with the people. And there is Arab pharmacist act in the bad way." (Interview 2)

One participant stated that she did not know if it would make a difference because she had never seen a Black pharmacist at her community pharmacy; however, she said she would be more comfortable if she had a Black pharmacist working at her local pharmacy:

"I feel more comfortable but that does not mean that I would get a better experience with either female or Black, that I would get with a male of a different race. It doesn't mean that I am, it's just the way I feel, but the service I will get might differ. It might be a bad experience; it might be a good experience." (Interview 8)

Other participants affirmed that racial/ ethnic similarities improved patient-pharmacist interaction by contributing to a community pharmacist's ability to be more helpful and empathetic:

"Personally, doesn't make any difference for me, but I noticed that they [Arab pharmacist] care more when they are dealing with Arabs… They make sure that you're okay, that you need anything ...They will check, they care more. If it's from the same ethnicity." (Interview 24)

Rogers et al.[441] reported that people are more comfortable working within their own cultural frameworks because they know and appreciate its rules and symbols. Many study participants felt that seeing a community pharmacist who spoke their language and shared their culture was valuable to their self-confidence and the quality of care they received. One participant felt a shared background and language promoted good communication and mutual understanding:

"I think having an Arab pharmacist makes me more comfortable because we use the same language and we have the same culture. I also can ask any question and they can easily understand me but not only me, I believe other people feel the same way. I mean having someone speak with you in your native language make you more comfortable" (Interview 7)

Religion continues to be a significant element in the lives of many patients. One participant

found a community pharmacist who shared his religion was personally supportive:

> *"I prefer to be a Muslim [community pharmacist]. It doesn't matter. Black, White, red, it doesn't matter. I prefer it to be a Muslim. Because he will know, and he will see Allah before he sees you. But even if he's Arab, or Black."* (Interview 26)

Sub-theme: Systemic issues

In this sub-theme, some systemic issues were mentioned by the study participants, all of which

were concerns for patients and the public in general, and not solely challenges for Black and

Arab individuals. These concerns included lack of time to effectively communicate with the

community pharmacists and workload of the pharmacists, lack of prescriptive authority, and lack

of confidentiality and privacy. One participant felt that community pharmacists did not have time

to communicate with her:

> *"I always feel like they don't have the time to talk, like ... They- they're always like very, very busy."* (Interview19)

Another participant reported that community pharmacists did not give him enough time to

discuss and ask about his conditions and treatment:

> *"What I do feel though is a lot of times that they're [community pharmacists] rushing through it because they're that busy. So, they give information like I said, when you're when it's asked, but because they're trying to get to the next person, they don't really spend that time with you."* (Interview 20)

Community pharmacists' busyness caused many study participants to use the internet for medical

information rather than asking community pharmacists:

> *"I feel like it's a bit embarrassing and also that they [community pharmacists] don't have time; that I should be asking in a hurry and I'm not able to communicate that well of my- what my concern is, and I've kind of done my own, like, research and so I'm like getting it out there; they're kind of busy."* (Interview19)

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Several participants reported that the extreme workload made it difficult for community

pharmacists to communicate effectively with their patients:

> *"I'm not really happy with a service it's because they're [pharmacists] busy; they're up to their ears with, I don't know, prescriptions or something, and they're not really interested in like, meeting the service that I'm requesting right now, like asking a question. It's like, this pharmacist is doing a million other things, she's not really interested in doing this [answering questions] right now. It's not because of me; it's because she's busy. That's what I see it, that's how I see it."* (Interview 19)

It is worth mentioning that some participants reported that community pharmacists were always

required to work under time pressure, frequent interruptions, and stressful environments, all of

which increased the risk of behaving rudely:

> *"I learn how to just calm down, not take it so personally. Maybe he busy, maybe he had a bad day, maybe he's had a fight with the wife, you don't know. So, if you are not comfortable with the one pharmacist, you can just find another one. Easy."* (Interview 21)

Many of the Black and Arab's interviewed indicated that pharmacist services were hindered by

their inability to prescribe and lack of authority regarding treatment. one participant said that the

community pharmacists had nothing to do with him as they had limited ability to prescribe

medications. As a result, he preferred to contact a physician in the case of any drug-related

question or problem rather than going to a pharmacy:

> *"I don't [go to a pharmacy], because I know they're not going to give me the answer. Because it's better to get it off a doctor."* (Interview 25)

Lastly, Abraham et al.[442] mentioned that a private meeting area in a pharmacy would allow for

much greater interaction with the patient in a relaxed environment, unlike the busy counter. The

Black and Arab participants reported their concerns about confidentiality and lack of privacy at

the pharmacy counter as barriers to interacting effectively with the community pharmacists and

use their services. One participant indicated lack of privacy hindered his ability to speak freely:

> *"Because it's [the communication between pharmacist and me] more in a public setting-It's kind of different from a family doctor you could say that you got to ask questions in public that you may not want to answer in public. So, I guess its kind of you to know you get shy around… It would be better for more private stuff. If you're asking for Advil or something else, then no. But- [if I have a sensitive topic that I'd like to discuss with the pharmacists]."* (Interview13)

CHAPTER FIVE

DISCUSSION

5.1 Quantitative Discussion

5.1.1 Summary of Main Results and Comparison with Existing Literature

This study provided the first study to report the frequency and patterning of implicit and explicit bias/ethnic among community pharmacists, adding to the small pool of similar studies assessing health providers' bias toward racial and ethnic minorities.[14,16,74,185,443,444]

5.1.1.1 The Existence of Implicit and Explicit Racial/ Ethnic Bias Among Ontario Community Pharmacists

The primary objective of this study was to determine whether Ontario community pharmacists hold a negative bias against Black and Arab individuals. The results from the Race and Arab IATs showed that the majority of community pharmacists had significantly moderate to strong preference toward white individuals over Black and Arab individuals. These results align with international studies that find implicit bias favoring white individuals over Black individuals among HCPs.[14,16,17,74,444] More importantly, however, was the new finding of substantial implicit bias against Arabs, a target group that has been neglected in the health research on race and ethnicity bias.

The average mean Race and Arab D scores of implicit bias observed in this sample ($M = 0.41$; $SD = 0.41$) and ($M = 0.35$; $SD = 0.41$), respectively, was higher than what has been observed in the Project Implicit public site in 2016, which has documented a mean of Race and Arab/Muslim IAT scores ($N = 583989$; $M = 0.28$; $SD = 0.47$) and ($N = 62347$; $M = 0.01$; $SD = 0.44$), respectively.[445,446] However, it is unclear why community pharmacists in the current study showed moderate to stronger implicit racial bias than in the Project Implicit site. It could be due

to factors such as the area in which these community pharmacists' practice, or their lack of experience interacting with Black and Arab individuals. Given the small sample size of community pharmacists in the current study, one must proceed with caution in drawing conclusions about whether community pharmacists, in general, show more or less implicit bias than other populations. Regardless of the reason for the difference in D scores between the general population and community pharmacists, the quantitative findings found a substantial implicit bias held by community pharmacists against Black and Arab people, and this study is the first to document these implicit biases.

Although it is common practice to concentrate on the central tendencies of a group, it is significant not to lose sight of the differences among individuals. In this study, approximately 15.2% of the community pharmacists showed no implicit bias when considering Black individuals, and 16.5% showed no implicit bias when considering Arabs. These percentages were not insubstantial, and they suggested a somewhat different approach to the issue of health disparities. That is, instead of concentrating on what biased community pharmacists might be doing wrong, it might be more valuable to consider what this select group of community pharmacists is doing right. Do they have a technique that lets them work more successfully with Black and Arab individuals? Do Black and Arab individuals seek out these community pharmacists as a means to work within a system that otherwise seems biased? What lets these community pharmacists have attitudes that are both implicitly and explicitly equal? Can this attitude be taught to other HCPs?

Overall, most pharmacists did not report explicit bias in both preference and warmth scales. This is consistent with attitudes observed in studies of HCPs.[14,61,173,443] However, the findings show that positive explicit bias toward whites still exists among pharmacists. As discussed in the

literature review, explicit behaviors can often be unreliable when individuals are asked to report on socially sensitive topics. Thus, the negative explicit behaviors expressed by pharmacists completing this study demonstrate that having a discriminatory attitude toward minorities is not disapproved by society. Therefore, this study suggests that more needs to be done to bring awareness of negative opinions or stereotypes associated with racial and ethnic minorities.

5.1.1.2 Association Between Demographic Variables and IATs Scores

There appeared to be some relationship between pharmacist characteristics (age, racial/ethnic background, place of birth, practice location, years as a pharmacist, and years as a licensed pharmacist) and the level of implicit bias. These findings seem to be consistent with other research that found that sociodemographic characteristics of HCPs are correlated with implicit bias.[13,14,44,62,380,443]

This study found that older community pharmacists aged 40 years or older had a stronger positive implicit bias toward whites than younger community pharmacists. Sabin et al.[61] found a significant positive relationship between health provider age and implicit bias toward whites. There are several explanations of why older individuals tend to be more racially biased than younger individuals. One study demonstrated that aging corresponds with a stronger bias among older people because they have a reduced ability to inhibit biased associations that come to mind automatically.[447] Another explanation for age differences in bias and prejudice is that younger people grew up in a less tolerant era. According to this, people's knowledge and evaluation of racial/ethnic groups are shaped by the historical period in which they grew up. Because Black individuals were portrayed more negatively in the past, older individuals should have stronger racial/ethnic biased associations than younger individuals.[448-450] However, Gonsalkorale and colleagues[447] reported that older individuals seem to be prone to replying prejudicially, not

because they have more biased associations than younger individuals, but because they struggle more to suppress the associations that they make.

This study also found a difference in the strength of Arab IAT scores by place of birth. Foreign-born community pharmacists had less implicit bias compared to native community pharmacists. Sarrasin et al.[451] stated that perceiving national superiority may play a higher role in generating negative attitudes among natives. Kolbe and Crepaz[452] demonstrated that participants with an immigrant background may have had themselves or their families in mind as a reference point when responding to questions about preferences toward certain social groups.

In Race IAT, only Black pharmacists had a preference toward Black individuals over white individuals. However, they demonstrated the strongest preference toward white individuals over Arab individuals compared to any other racial and ethnic groups, as assessed in Arab IAT. In a study by Haider et al., Black medical students had mean D scores, suggesting slight to no implicit preference in the Race IAT.[13] Contrary to expectations, West Asian and Arab pharmacists had a preference toward whites over Arabs. There are several possible explanations for why individuals judge other members of the in-group negatively. Clark and Clark[160] reported that although individuals have a general tendency to show in-group preference, there are some cases in which this does not happen. One situation in which in-group preference is unlikely is when the members of the in-group are clearly inferior to other groups in a significant dimension. For instance, members of low-status groups show less in-group preference than members of high-status groups and may even display out-group preference, in which they admit that other groups are much better than they are. Another possible explanation for this is known as the Black sheep effect. In this case, a member of one's own group acts and behaves in a method that threatens the good image and

identity of the in-group.[453] Overall, white pharmacists had greater preference toward whites, as assessed in both Race and Arab IAT.

Surprisingly, pharmacists with professional experience hold more pro-white bias than pharmacists with little professional experience. My results are in contrast with the findings of a study conducted by Peris et al.,[454] which showed a positive implicit attitude among physicians toward patients with mental illness, which was significantly affected by the level of professional health training. This result can be explained by the fact that the effects of bias become more pronounced as HCPs progress through their health care training and careers.[74]

5.1.1.3 Correlation Between Implicit and Explicit Bias

The current study found that Race and Arab IAT scores and explicit measures were significantly positively related, which is inconsistent with several studies that have shown that these measures are not related. [13,14,171] However, the community pharmacists' self-reported level of bias toward Arab and Black individuals was lower than their actual bias as assessed in the IATs. Scores on the explicit measure fell largely near the midpoint, meaning that participants felt they had neutral or equal feelings toward white and Black (or Arab) individuals. These results propose that relying on explicit measures alone is insufficient because people may not be aware of their own bias, and for individuals who wish to appear equitable, social desirability may impact reporting. Dovidio et al.[39] noted that relying only on explicit measures provides information about how individuals believe they should feel but may still be in opposition to their behavior. As the data from the domain of racial and ethnic bias show, implicit bias may predict prejudiced behaviors more effectively than self-reporting.

Furthermore, this discrepancy validated the theory about the difference between implicit and explicit measures of bias. People were more likely to explicitly state lower levels of bias for two reasons:

(a) They may have wished to appear unbiased by reporting levels that were perceived as socially desirable, or (b) They may have been unable to identify a significant level of bias because they were unaware that biases existed.[455]

5.1.2 Strengths and Limitations of the Study

To my best knowledge, this is the first quantitative study to measure community pharmacists' explicit and implicit racial/ethnic bias. Furthermore, the participation rate was higher than for most previous health care provider research on implicit bias. Finally, I created new Arab and Black bias IATs using a standard IAT method design, which has the potential to benefit future research. However, a number of important limitations need to be considered. First, a cross-sectional design was used. Although cross-sectional designs are valuable in determining the prevalence of a condition within a given group, it was unknown whether pharmacists' racial/ethnic bias increased, decreased, or remained static over their practice experience. Therefore, longitudinal evidence would be needed to assess change over time.[456] A second limitation was the use of convenience sampling. Although convenience sampling may be highly achievable and effective, it can lead to the underrepresentation or overrepresentation of groups within a study sample, as well as high levels of sampling error. Therefore, it is difficult to assess whether bias findings for pharmacist population are representative of the population of interest, which raises inquiries about the generalizability of the outcomes. Therefore, Offredy and Vickers[376] reported that a random sampling technique would increase generalizability. A small and limited diverse study sample was a third limitation because it did allow for comparisons of

implicit and explicit bias between demographic characteristics. Therefore, it is important to

recruit a larger number of pharmacists than we were able to recruit in this study. Larger sample

size would have provided more critical data regarding the relationship between IAT scores and

demographic characteristics. In addition, statistical analysis results would have had more power

with larger sample size. A fourth limitation was the measurement of implicit bias. This study

used the IAT to measure implicit bias. While the IAT has exhibited good internal consistency,

the instruments' test-retest reliability has been criticized. The relatively low test-retest reliability

of the IAT raises doubts about whether the IAT measures stable implicit attitudes or if other non-

attitudinal factors impact performance.[74] A final limitation was the attrition rate as study

participants completed each study tool. One suggestion would be to amend the instructions to

include a phrase requesting that participants complete all three sections of the study

(demographic questions, two IATs, and explicit measures).

5.1.3 Areas for Future Research

This research provides several directions for future research. Despite the study's limitations, my

findings highlight the need for more research on the existence of implicit bias among

pharmacists toward members of certain social groups and the impact of such bias on patient

outcomes and well-being. It is also important to link more patients/clients to each pharmacist in

the sample, with each pharmacist being linked to both white and Black/Arab patients so that the

interactions between pharmacists' bias and patient race can be tested. This could be

accomplished by first enrolling pharmacists, then prospectively recruiting a minimum number of

individuals after they have received services from those enrolled pharmacists. Future studies

should also explore differences in Black and Arab individuals' perceptions of pharmacists who

exhibit higher or lower levels of implicit bias. Are there specific actions, behaviors, or statements

made in the community pharmacy setting by pharmacists with higher or lower levels of implicit

bias? Implicit bias appears to be a significant target for further research in health care; however,

methodological limitations need to be addressed in future research to more completely and

accurately understand how implicit bias influences care and services in a community pharmacy.

5.2 Qualitative Discussion

5.2.1 Summary of Main Findings and Comparison with Existing Literature

The purpose of this study was to understand Black and Arab participants' opinions, beliefs, perceptions, and attitudes toward community pharmacists' services in the Kitchener-Waterloo region. In addition, this qualitative study has discovered factors that can both simplify and hinder effective communication between pharmacists and Black/ Arab individuals in the community a pharmacy setting. The factor that is assisting effective communication between pharmacist and Black/Arab participants is good interaction which entails pharmacists treating patients/client with warmth, sympathy, and respect. In contrast, factors that prevent pharmacist-patient/client communication include lack of good communication skills, failure by community pharmacist to answer some questions or entertain more questions from Black and Arab individuals, language and accent barriers, pharmacist' indifference, and lack of attention, rudeness and disrespectful, and racial discrimination. Furthermore, the study has also revealed that how participants responded to racial discrimination and misbehavior, the importance of pharmacist-patient/client race-concordance, and systematic issues.

5.2.1.1 Patient/Client Use of a Community Pharmacy Services

This study has shown that the majority of the Black and Arab participants in the study visited the community pharmacy at least once a month. This clearly proves the accessibility and high rate of use of community pharmacies by Arab and Black individuals. Furthermore, frequency visiting a pharmacy and seeking advice from pharmacists means that participants trust in services provided by a pharmacist. These findings seem to be correlated well with the frequency of community pharmacy visits cited in research carried out in the United Kingdom, Malta, Qatar and Bosnia and Herzegovina.[423,457-459]

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As has been reported, in different parts of the world, the reasons why study participants choose a pharmacy have remained remarkably consistent over a decade of research. Pharmacy location, pharmacist knowledge, and good relationships with a pharmacist were the primary determinants in pharmacy selection in this study.[423,458,460-462] However, a study conducted in the US demonstrated the provision of pharmacy care was the major influential factor among patients followed by personal attention from pharmacists.[463] Knowledge of these factors can be helpful in pharmacy marketing and in advancing the implementation of full pharmacy care services in Canada. The findings also show that friendly pharmacist and good relationship with pharmacist are key factors of patient/client loyalty to a particular pharmacy. These results agree with the findings of other studies,[464,465] which found that customers' loyalty to a single pharmacy depends on pharmacists' skills, knowledge and their respectful communication with patient/client.

The main reasons study participants visited a community pharmacy were to purchase prescribed medications, over-the-counter medications, and para-pharmaceutical products (e.g., sunscreens, hair and skin care, baby care products). Similar reasons for visiting a community pharmacy are described and published in the literature review.[423,458,466,467] In addition, a significant number of participants visited a community pharmacy for advice and consultation. This finding is in agreement with a study conducted by pharmaceutical firm Sanofi which showed that Nearly two-thirds (65%) of survey participants indicated they chose to visit a pharmacist rather than a general practitioner for seeking advice pharmacist on minor ailments and getting general health information at least some of the time.[468]

It is important to mention that most Black and Arab participants desired communication skills, professional knowledge, honesty and competence, and understanding of patients/clients' as personal qualities of community pharmacists. These results are consistent with those of other

studies and suggest that communication skills are central skills that pharmacists should have.[423,469] Whether interacting with patients/clients or communicating with other HCPs, pharmacists use their communication skills every day.[470] Furthermore, a pharmacist should have enough medication knowledge and judgment and should be willing to address patients/clients' needs and concerns.

5.2.1.2 Patient/Client Cognizance of Pharmacist Services

Overall, the impression gained from the findings of the study interviews was that participants had high expectations and positive attitudes toward community pharmacists' services, which confirmed earlier studies from different countries.[213,423,425,458,467] In a systematic review conducted by Anderson et al.[231] found consumer usage of community pharmacies expressed a high level of satisfaction, and they were more interested in the availability of further information and advice from a pharmacist. Moreover, the majority of the study participants were familiar with the different roles and responsibilities of the community pharmacists. This finding is in agreement with Deborah et al.[64] findings, which found that patients demonstrated a good awareness of pharmacist roles and responsibilities in dispensing and counseling the patient about medications.

Regarding advice related to minor diseases, even Black and Arab participants showed trust in community pharmacists. Findings from an earlier study carried out in the UK demonstrated that people consider the community pharmacy as the most appropriate place for the treatment of minor health conditions.[471] In contrast to the previous studies.[233,245,246,254] My findings showed most of the study participants indicated that the community pharmacists were the first HCPs they would consult about medication-related issues, primarily because they had more knowledge about medications than other HCPs.

Nevertheless, for some study participants, there was no apparent acknowledgment of understanding of the potential role of the pharmacist as a member of the health care team. Low patients' awareness of pharmacist roles and services was a common finding in several studies.[233,237,240,241,469] Therefore, the considerable lack of awareness of pharmacist services and roles suggests that more could be done to improve the pharmacy setting as an attractive place for health-care delivery. With regard to promotional approaches, patients and general public in a Canadian study perceived word of mouth from pharmacy personnel as the most efficient way.[472] Furthermore, the public needs to be educated about the pharmacist's ability to provide informational and patient care services in order to decrease the workload of other health care providers and demand for hospital emergency visits.[473]

Some participants reported being unable to identify the community pharmacists in their workplace. Youmans et al.[58] suggested that community pharmacists should wear visible identification badges and orally introduce themselves to patients on a regular basis. Bawazir[467] added that community pharmacists should wear a white coat. Doing so is more likely to reflect professional images and emphasis on professional status.

5.2.1.3 Good Pharmacist- Patient/Client Interaction and Communication

The study identified pharmacists' good attitude and behavior by some HCPs in community pharmacies as one of the effective factors in the pharmacist-patient/client interaction. Several Black and Arab participants identifying specific pharmacists who treated them respectfully provided sufficient information and established rapport. Furthermore, this study has demonstrated that Black and Arab individuals who had good interactions at community pharmacies appreciated the pharmacist's services and were satisfied. They were even determined to visit the same community pharmacy for pharmacist services. Murad and colleagues[474] reported

two provider-patient interaction models, which vary by the level of patient engagement. The first model concentrates on the treatment of the illness with little attention given to the role of psychological or social effect. In the second model, the patient works with the pharmacist to optimize results of drug treatment. Therefore, the second model should be the focus for the pharmacist–patient relationship and is vital for humanized health care in a community pharmacy setting.

Additionally, my findings identify effective communication, trust, and respect as vital factors in the quality of pharmacist services for patients/clients. In research involving other health care professionals, interpersonal care procedures have been studied to understand differences in care better. In this context, good communication skills, respect, honesty, professionalism, understanding patients concerns, and participation in decision-making processes have been shown to be significant elements of health care quality and positive results.[475-478] There are many similarities from these findings to the patient-pharmacist interaction; however further study is necessary to document these interactions in the pharmacy care setting.

5.2.1.4 Communication Barriers

Communication barriers cause insufficient interaction between pharmacists and patients and might cause treatment failure. The findings of this study showed that lack of communication skills, failure by community pharmacists to take questions from patient/client, lack of attention, rudeness and disrespectful, racial discrimination, and language barriers are the major barriers between pharmacist and patients/clients for achieving effective communication at a community pharmacy. Wado et al.[479] found that patients with poor communication skills filed a complaint

that their drug was not able to enhance their disease more frequently than patients with good communication skills.

"lack of communication skills" between pharmacist and patient/client was the sub-theme referred to more frequently by the participants in this study. Generally speaking, Black and Arab individuals felt they received inadequate information about therapy from their pharmacists, mainly about drugs and their purpose. Some participants felt poor communication about drug and side effects may lead to negative health outcomes. Other Black and Arab participants described a lack of communication when pharmacists switched or altered medications. Therefore, pharmacists need proper training and education to advance appropriate communication skills, especially those involved in providing services to minority people.[480] Furthermore, some participants indicated that some community pharmacists had bad behavior and poorly communicated with them. Those Black and Arab participants described their lack of desire to use that community pharmacists again in the future. This finding is consistent with what has been found in the previous study that indicates that good provider-patient interaction is the foundation for patient satisfaction. The more patients/clients are satisfied, the more likely they will use health care services in the future, follow drug instructions, and adhere to all treatment regimens.[481]

Failure to answer Black and Arab participants' questions was also observed. Some participants reported that they sometimes failed to hold information from the community pharmacist due to low health literacy. Unfortunately, they reported that when they attempted to ask questions to improve their understandings about what was being discussed to them, some community pharmacists did not give them the chance to ask questions or seek an explanation. This inability

to effectively communicate broadens the information gap. It is significant for HCPs, including a pharmacist, to exercise empathy and provide information to all patients/clients regardless of their level of education or health knowledge. The findings of the current study are consistent with those of Ross-Kerr et al.[482], who disclosed that the knowledge gap between HCPs and patients was one of the obstacles in accessing health care services. To address this, community pharmacists should attempt to enhance patients' understanding of their own health requirements because there is a direct association between understanding and patient compliance. Training on how community pharmacists ought to communicate with all patients could help to address this problem.[483,484] In addition, it is the responsibility of the community pharmacists to offer patients clear and concise methods to understand information about their medications. Therefore, communication by HCPs has to be intended for the average or low health literate individual to understand and must be put in plain language.[483]

Another interesting finding in this study is that some pharmacists in community pharmacies disrespect Black and Arab participants by talking to them rudely, shouting at them, and ignoring them. This finding is in line with previous studies in Canada and other countries which found that some health care professionals are impolite, rude and shout at patients, which accordingly discourages patients from using health services at health facilities where skilled HCPs can assist them.[485-488] Such behavior is inadmissible; could result in serious complications. Previous research found a link between disrespectful behavior toward patients and adverse events, medical issues, compromises in patient safety, and even patient death.[487,488] Even though all study participants in this study appreciated the need for a Black and Arab individual to access pharmacist services at a community pharmacy, some participants reported that they would

consider seeking assistance online or from other HCPs if they thought that a pharmacist was busy or would not treat them with respect and dignity.[489]

When asked if the study participants had experienced discrimination or felt that they were treated differently on the basis of their race or ethnicity, the majority said "no": However, few experiences of racial and ethnic discrimination were identified. Some participants felt that their skin color affected their experience. They perceived negative behavior or less attention from pharmacists. Some participants felt that racism had not influenced their health care but acknowledged the probability of it influencing other people. This result echoes previous studies showing that discrimination because one's demographic characteristics contributed to health care disparities. [490-492] To modify the current status, there is an urgent necessity to remove any form of discrimination by community pharmacists so that they are able to communicate with their minority patients effectively. Frequent, supportive supervision of community pharmacists and offerings of refresher courses on communication skills could also greatly assist community pharmacist-patient communication.[493] Nunez-smith et al.[494] also suggest that developing a health care work environment that effectively supports diversity is as significant as employing diversity across the workforce. Creating productive methods to discuss race/ethnicity and race/ethnicity relations among co-workers in the pace of work is a crucial step towards generating a supportive environment for personnel and patients from all backgrounds.

Struggles with defining and interpreting behaviors as discrimination was also apparent among the study participants, some of whom stated reluctance to report unequivocally that they had experienced discrimination. The majority of this study's participants expressed willingness to attribute their negative experience with community pharmacists at least in part to systemic issues

such as pharmacist's busyness, workload and lack of time. This study produced results which corroborate the findings of a great deal of the previous work in the nursing field. A qualitative study conducted by McCabe,[495] found that all participants attributed the nurses' poor communication skills to them being "too busy." Another study reported that primary care physicians who were tasked with a heavier workload were linked to poor quality of communication with patients.[496]

Another barrier that mentioned by Black and Arab was lack of pharmacist's professional knowledge. Awad et al[469] Found that half of the survey respondents disagreed that the pharmacist was educated enough and always prepared to answer their queries. A possible explanation for this result maybe they had negative experiences in getting such information from pharmacists or may not know that the pharmacists are able to answer their medication-related questions. Therefore, Ontario's pharmacists should educate the public on their ability to provide medication informational services and should attempt to have better incorporation in Ontario's health care system.

This study has also exposed that limited linguistic proficiency is a huge barrier that inhibits pharmacist-patient communication. This is in accordance with the findings of a study that was conducted in Canada which found that one of the problems influencing health care provider-patient communication.[497] Higginbottom et al. reported that[498] a failure to address linguistic barriers can lead to misunderstandings; insufficient understanding of diagnoses and treatment; dissatisfaction with care; avoidable disease and death; differences in prescriptions. This issue might be hard to overcome since Canada is home to a diverse population. However, one study argued that using languages other than English could exacerbate regionalism and ethnic loyalties at the expense of national cohesion.[499] Where a community pharmacist does not speak the same

language as a patient/client, an interpreter and translator should be hired to bridge the communication gap. Several studies found that that professional interpreters positively impact non-English speaking patients' satisfaction, quality of care, and outcomes.[500,501] In the United States, the right to language access for non-English speaking patients has been created through a range of national and state-level legislation.[502] Thomas[503] suggested that translation is not just essential for the patient-health provider communication, but for all oral and written forms of communication in health care locations, including websites.

Studies with HCPs propose that patients, who have a race-concordant doctor are more satisfied with their interactions and report more participatory dialogue.[22,155] Cooper et al. found that Race-concordant visits are longer and characterized by more patient, positive affect.[155] While trust was an important aspect in our study, most Black and Arab participants reported that having a Black or Arab pharmacist would make no difference in the care they have received at the pharmacy. These findings match those observed in Youmans et al. qualitative study.[58] Only a small minority of Black participants currently had any experience with a Black community pharmacist. It is likely that efforts to diversify the health care workforce could improve patient-pharmacist interactions for minority patients. Cooper et al.[155] said that increasing racial and ethnic diversity among HCPs may be the most direct approach to improve health care experiences for members of racial and ethnic minority groups.

It is significant to acknowledge, as did several Black and Arab participants, that some community pharmacists may not themselves be discriminating against minority patients, but rather functioning as part of a system that may construct discriminatory barriers to communicate effectively with pharmacists and use their services. One such barrier is a shortage of community

pharmacists time with patients, which can lead to additional stress and work pressure that may impact a pharmacist's behavior. Several studies draw similar conclusions, stating that health care providers are more likely to fall back on stereotypes and implicit bias behaviors when they are tired and under stressful working conditions. They added that HCPs are often required to interact with patients and take decisions under the pressure of time, frequent interruptions, workload stress, and exhaustion working, all of which increase the risk counting on cognitive shortcuts, including racial/ethnic bias.[74,504-506]

Several study participants indicated other systematic issues such as lack of authority to prescribe medications as a barrier to use pharmacist services. Gidman and Cowley[428] found that a major concern amongst study patients was the inadequate nature of community pharmacy service provision. Particularly, the inability to prescribe medications, which made many of them expressed a strong preference for physician consultation. Several studies found that community pharmacists' ability to prescribe medications would create opportunities for people to improve using pharmacist services. In addition, potential benefits of expanded pharmacist prescribing have included: enhancement of patient care, enhanced access to the drug, optimization of the drug management and better resource utilization.[507-510]

Lastly, the lack of privacy and confidentiality in pharmacy is another barrier that prevented some participants from the consulting community pharmacists about their drug or disease-related questions. This finding underlines the significance of the community pharmacy having systems in place to make sure that patient/client information is protected and kept confidential. Another idea that could help patients feel secure would be for community pharmacies to have places where private discussions between patients and pharmacists could take place.

5.2.2 Strengths and Limitations of the Study

To my best knowledge, this is the first Canadian study to examine Black and Arab individuals'

experiences with pharmacist services through a qualitative assessment. An important strength of

the current study is that even though talking about negative events showed to be a hard and

sensitive topic, Black and Arab participants were willing to share painful, friendly, and personal

experiences with me. The study participants obviously felt safe to share their experiences with

me, and this has generated a rich set of data. Furthermore, there are many strengths attributed to

the methodological rigor of the research. Through the use of semi-structured interviews, I

provided a sample of 27 Black and Arab individuals with the opportunity to reflect on their

interactions with community pharmacists. The one-on-one interviews were conducted face-to-

face in a comfortable location chosen by the participants with no time constraints, so the study

participants were free to share as much information as they wanted. In general, the external

auditor agreed with the themes and sub-themes found by the researcher and drew the same

general conclusions.

As with other qualitative approaches, a descriptive qualitative approach is documented as having

some limitations, such as the ability to generalize the results, the researcher's bias, and time

limitations. Although the findings reported in this research provide a rich explanation of the

experiences of Black and Arab individuals in Ontario, they may not be generalizable to a broader

population of Black and Arab individuals.

Of the 27 Black and Arab individuals who participated, 20 were male and this may limit

transferability of findings to the broader population as females are underrepresented. A possible

explanation for recruiting low number of female participants is that there are social constraints

that limit their interaction with a male interviewer. A sample size of 27 may seem low, but in

qualitative design, the focus is on the value and richness of information gathered from participants[394] and that endeavor is not associated with the number of participants. It was also not possible to expand the study beyond southern Ontario due to financial and time constraints.

Another limitation that could influence this study is researcher bias. Although strong actions were taken to avoid confusing the data gathering and analysis, it is likely that some feature of the experiences of the researcher interrelated with the research procedure. Because I am an Arab and I hold opinions on this topic, it may be challenging to obscure certain biases and beliefs about this subject. Geographically, the study participants are from a metropolitan area in Ontario and their perceptions of pharmacists would likely vary from Black and Arab individuals living in rural areas. Furthermore, themes identified in this exploratory study should be confirmed in subsequent larger studies.

5.2.3 Future Considerations

A larger, pan-Canadian study is required to determine whether similar results would be seen across Canada. Furthermore, comparing information from Black and Arab individuals and community pharmacists in order to completely understand all sides of this complicated situation would have strengthened the findings. There is, therefore, a need to conduct another study that includes data from both patients and community pharmacists. Finally, since this study only focused on Black and Arab individuals, there is a need to conduct a large-scale research study involving all visible minority individual experiences with pharmacist services.

5.2.4 Concluding Comment

This research examined the experiences of Black and Arab individuals with pharmacists' experiences in southern Ontario. Little research has focused on Black and Arab individuals experience using community pharmacy services and their interactions with pharmacists. The

qualitative descriptive methodology reinforces this study. Four major themes formed the basis of the outcomes reported, from which 16 sub-themes emerged. The participants described their views, beliefs, perceptions, and attitudes about community pharmacist roles and pharmacy services; and explored their experiences of communicating with pharmacists.

Generally speaking, the participants indicated that they had positive perceptions of community pharmacists. They expressed high confidence and trust in community pharmacists and moderate expectations about their roles. The views on current community pharmacist services were positive. It is significant to point out that there is an apparent need to raise general population awareness about the knowledge, expertise, and role of community pharmacists, and to create areas with more privacy to promote pharmacist-patient communication.

Additionally, this study has identified some of the challenges affecting interpersonal communication between community pharmacists and Black and Arab individuals in Ontario. It is, therefore, significant for the community pharmacists to ensure that they are effectively communicating with Black and Arab individuals. Community pharmacists need to improve their communication skills in order to encourage as many Black and Arab individuals as possible to seek pharmacist services at a community pharmacy.

In this study, there were no experiences of direct and obvious racial and ethnic discrimination in the community pharmacy setting. However, few Black and Arab participants perceived negative behavior of pharmacist and pharmacy staff as the cause of racial prejudice. These negative experiences and observations suggest, that if present, racism may impact the way patients are communicated with by pharmacists. The type of discrimination seemed to be subtle, mainly revolving around the pharmacist attitude and communication.

Finally, it is hoped that community pharmacists will be motivated to promote more productive interactions with their patients. This is particularly critical when considering the sustainable development goals and Canadian health system efforts to reduce health care disparities among visible minorities.

CHAPTER SIX

GENERAL DISCUSSION, IMPLICATIONS, RECOMMENDATIONS AND

CONCLUSION

6.1 General Discussion

This research has a unique value for the study of health care disparities because it conducted

multi-method research combining both quantitative and qualitative methods. In a 2017

systematic review of implicit bias in health care professionals, FitzGerald and Hurst[444] found that

the most convincing studies were those combining an IAT study and a method to measure the

quality of treatment and patient-provider interaction in the actual world. Therefore, this research

attempted to answer two research questions. First, is there evidence of bias among community

pharmacists against Black and Arab individuals? Second, is there a relationship between such

bias among community pharmacists and Black and Arab individuals' perception of pharmacist

services and their interactions with pharmacists?

The quantitative results found evidence of moderate to substantial levels of bias against Black

and Arab individuals among community pharmacists. They were more likely to associate Black

and Arab individuals with negative words, compared with white individuals. Based on previous

studies, community pharmacist obvious biases to a similar degree as other HCPs and the general

population. In the qualitative findings, some Black and Arab individuals interviewed reported

that they had experienced racial discrimination when interacting with community pharmacists.

Additionally, the qualitative data document several types of interpersonal and systematic

discrimination encountered by Black and Arab individuals. The findings observed in both studies

mirror those of previous studies that have examined the association between providers' implicit

bias and patients' perception of and interaction with health providers, treatment decisions, and

patient satisfaction. These studies[11,44,45,45,63,172,173] discovered a significant relationship between a high level of implicit bias among health care professionals against minority patients in IAT scores and interaction that was negatively related by minority patients. However, the lack of identifying pharmacist information and the unavailability of primary pharmacy/pharmacist services utilized by Black and Arab individuals limit the ability to establish a causal relationship between my qualitative and quantitative studies. Therefore, it would be essential to conduct experimental research on whether implicit bias is a causal factor in Black and Arab individuals' outcomes. Is there a difference in Black and Arab individuals' perceptions of pharmacists who exhibit higher or lower levels of implicit bias? Are there specific actions, behaviors, or statements made in community pharmacy settings by pharmacists with higher or lower levels of implicit bias?

6.2 Research Implications

This research reveals that Ontario community pharmacists hold a significant implicit bias against Black and Arab individuals. This may be eye-opening or even disturbing to community pharmacists, who may claim to have a favorable explicit preference for Black and Arab individuals. The implications of this research can best be recognized from participation. These implications are compliance with law, the concept of justice, and inclusion.

Compliance with Law. Community pharmacists must strive to produce and foster an environment in which the human rights, independence, dignity, and diversity of all patients are respected and to prevent bias and discrimination when dealing with minority individuals.[511] Such bias and discrimination could lead to expensive legal action against pharmacists and their workplaces. Awareness of implicit bias toward Black and Arab individuals will allow community pharmacists to be more open to the needs of all patients, including Black and Arab

individuals. The degree of bias revealed in this research sheds light on the critical need for community pharmacists to focus carefully on treating all patients from different backgrounds in order to avoid potential legal issues.

The Concept of Justice. The outcomes of the examination of implicit and explicit bias present new challenges for community pharmacists who hold fairness and inclusivity to be core values. The Ontario Human Rights Code (the "Code")[511] recognizes the dignity and worth of all people in Ontario. The Code provides for "equal rights and opportunities, and freedom from discrimination. It applies to the areas of employment, housing, facilities and services (including education, health care, etc.), contracts, and membership in unions, trade or professional associations." This statement is an extreme order to avoid discrimination against any individual based on race, ethnicity, disability, religion, family status, sex, or gender identity. A majority of Ontario community pharmacists may overtly support the values expressed by the Code and yet implicitly work against it. The explicitly held ideal of a large environment in community pharmacy services may well be undermined by implicitly held biases. The prevention of bias and discrimination is crucial; however, it is only one piece of the overall problem. Open naming and discussion of bias and discrimination may well present a way toward more thoughtful and meaningful inclusion beyond mere compliance with the commandment, beyond queries of fairness.

Inclusion. Stigma is the consequence of making evaluations and holding beliefs about different groups and its members, and also minimizing the individual within those differences. Because community pharmacists hold biases against Black and Arab individuals, this group is stigmatized, set aside, and treated unfairly. This bias against Black and Arab individuals is not based on a sensibly considered reality, but rather upon unconscious or covert beliefs developed

early in life. Together with the general population, community pharmacists inherit the same broad cultural values and ideas from others. Community pharmacists may covertly imagine all patients who look "normal" are qualified to use community pharmacist services. However, because Black and Arab individuals look different from "normal" individuals, they may be stigmatized. Pharmacy students and practicing pharmacists with different racial and ethnic backgrounds add to the diversity, which is important in health care services, including pharmacy services, because greater diversity leads to a complete mirroring of the patient/client populations served. Furthermore, a push for more diversity among students pursuing pharmacy education, including Black and Arab individuals, forces community pharmacists to rethink their principles. The implicitly held bias revealed in this research points to chances denied and gifts and skills unutilized as a result of bias and discrimination. Community pharmacists must become aware of their implicit biases against Black and Arab individuals before any change can take place.[512]

6.3 Research Recommendations

According to a 2017 Abacus Data national survey,[513] community pharmacists are the most respected professionals in Canada. They are also the most accessible HCPs in many underserved areas across the country and are regularly the first point of contact of most Canadian individuals with the health care system. This study is expected to contribute to the body of knowledge related to community pharmacists' behavior and health care disparities among certain social groups. It is an important step in furthering our understanding of how pharmacists' implicit and explicit biases affect their interaction with Black and Arab individuals. Bringing awareness to a person's biases will likely help reduce discrimination.[514] Therefore, this research suggests that programs that address an individual's attitudes toward Black and Arab individuals be held within organizations. Greenwald and Banaji[297] suggest that if an individual is aware of their bias, this

bias may be expected and therefore, action might be taken to avoid it. This research also found that community pharmacists showed significant negative bias on both implicit and explicit measures against Black and Arab individuals, relative to white individuals. As several studies suggested, interventions directed at HCPs may be particularly productive if they address the subtle, often unintentional, basis of racial/ethnic bias. More precisely, research recommends that making HCPs aware of how implicit bias can influence the consequences of health encounters and sensitizing them to their potential for bias can help them "correct" for potential bias in the short term[298,302,515,516] and encourage them to engage in a self-regulatory process that can prevent even indirect expression of bias in the longer term.[87] For instance, a computer program such as the IAT could allow individuals to see if they hold a negative implicit bias against minority individuals. This awareness would make people conscious of their implicit bias, which could help prevent further discriminatory behavior toward Black and Arab individuals. Cooper and her colleagues[44,87] added intervention strategies to help HCPs develop cultural sensitivity, patient-centered communication, and partnership building in the patient-health care provider relationship. This will allow health care providers to decrease their reliance on social groups when clinically irrelevant. Interventions are an effective education method and have been shown to help change individuals' behavior. However, this is a short-term outcome.[517] To create the maximum effect, multiple intervention programs are required.[518] Furthermore, this result highlights the importance of using both implicit and explicit bias measures when investigating health providers' biases toward minorities. In contrast to the 2003 IOM report on "Unequal Treatment," many HCPs argued that explicit bias is relatively rare among individuals who select a career in health care.[2,518] Therefore, interventions for overt bias are often used to educate HCPs and health care decision-makers about their biases and the effects of their discrimination.[87]

Finally, there is an apparent need to raise general population awareness about the knowledge, expertise, and role of community pharmacists.

6.4 Conclusion

Community pharmacists, like everyone else, have varying attitudes toward members of racial/ethnic minorities. However, community pharmacists differ from others in terms of their professional role and code of conduct. My research showed clearly that negative bias exists toward Black and Arab, relative to white, individuals. The current study also found that community pharmacists' explicit and implicit racial/ethnic bias may negatively impact their interactions with Black and Arab individuals. This finding supports the conclusion of the IOM that health provider' biases may contribute to health care disparities.[2] However, this research cannot and does not suggest that implicit bias among Ontario community pharmacists is the largest or most significant factor leading to disparities in health care among Black and Arab individuals. Interpersonal bias in health care services is only one indicator of racial and ethnic discrimination in our culture; nevertheless, HCPs can serve as significant advocates for social justice[519] by encouraging open and honest discussions about the presence of bias in health care and upholding the complete removal of disparities in health care as a local, national, and worldwide priority.

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APPENDICES

APPENDIX A

E-mail Invitation Letter

Subject: An exploration of Ontario Pharmacists' Attitudes towards Certain Social Groups

Dear Pharmacist,

My name is Fahad Alzahrani and I am a doctoral student working under the supervision of Dr. Nancy Waite at the School of Pharmacy at University of Waterloo. Pharmacists interact with patients from diverse backgrounds and can greatly impact their care. You are invited to complete 15-20-minute anonymous survey about Ontario pharmacists' reactions toward members of certain social groups.

Your involvement in this study will include two parts: the first being a questionnaire and the second a simple computer-based task. asking you to classify words and pictures into different groups. We think you will find the process interesting and enlightening.

The survey is completely anonymous, meaning that your identity cannot be connected in any way to your survey answers, and it is voluntary, so you can opt out at any time.

By clicking the link below, you will find statements that inform you of your rights as a participant as well as technical specifications necessary to complete the tests. Once you review this information, you may proceed with the study.

https://app-prod-03.implicit.harvard.edu/implicit/Study?tid=-1

In order to for the questions to display properly, we strongly encourage you to complete this survey on a desktop or laptop computer

This study has been reviewed and received ethics clearance through a university of Waterloo Research Ethics Committee. Should you have any questions concerning the study, or have any problems accessing or completing it, please feel free to contact either Fahad Alzahrani at 519-573-4040 or f2alzahrani@uwaterloo.ca or Nancy Waite at 519 888-4485 or nmwaite@uwaterloo.ca.

Thank you for your participation.

Fahad Alzahrani, BSc (Pharm), MSc, PhD (S)
OPEN: Ontario Pharmacists Evidence Network
School of Pharmacy, University of Waterloo

APPENDIX B

Participant Information Letter and Consent Form

You are invited to participate in a research entitled" An exploration of Ontario Pharmacists' Attitudes towards Certain Social Groups"

The purpose of this study is to gain insight to how Ontario pharmacists view certain social groups. The main objective of this research is to increase our understanding about pharmacists' thoughts, and feelings, related to members of certain social groups. This study will build on and support the continuing inquiry into the health care challenges encountered by members of a social group such as racial or ethnic minorities. The need for this kind of information is especially important as pharmacists become even more involved in direct patient care. Please read this information carefully, and feel free to ask any questions you might have about the study.

If you decide to volunteer, you will be asked to complete an anonymous 15-20 minute online survey. This survey contains an on-line program that requires the ability to view the computer screen and distinguish between different pictures and words as quickly as you can. A few demographic questions as well about your reactions toward certain social groups are also included.

It is possible that you may experience some distress and discomfort by replying to questions about social justice issues. However, this should be temporary, and is unlikely to differ from emotions you experience in a classroom or community setting where sensitive subjects are being discussed. You may skip any questions that you do not wish to answer or that make you feel uncomfortable by leaving them blank. You may also discontinue participation at any time without penalty or repercussion if you feel uncomfortable completing the survey by not submitting your responses. At the end of the study, you will be directed to information pages on the Project Implicit website should you want more information about your reactions or concerns.

While it is likely that you will not necessarily receive any direct benefits from participating in this study, you may find it personally rewarding to be contributing information that will benefit the scientific research community by helping researchers increase their understanding of pharmacist's views toward certain social groups. The input you provide is greatly valuable to this research project.

Your participation is voluntary, and you can answer only those questions to which you are comfortable responding. You may withdraw from the study for any reason, at any time, without explanation and without any penalty. Additionally, if you choose to withdraw, any data that you have provided will be deleted from the research project and destroyed beyond recovery, at your request.

It is important for you to know that any information that you provide will be confidential. All of the data will be summarized, and no individual will be identifiable from these summarized results. Furthermore, as an anonymous survey the researchers have no way of identifying you or getting in touch with you and the website is programmed to collect responses alone and will not collect any information that could potentially identify you (such as machine identifiers). Study data will be managed and protected by Project Implicit.

The summarized data, with no personal identifiers will be maintained on a password-protected computer in a restricted access area of the university. As well, the data will be electronically archived after completion of the study and maintained for seven years. After this time period, when all data and materials are no longer required, they will be destroyed beyond recovery. Regarding the raw data, it will be stored on Project Implicit production servers indefinitely. However, the data will not be used or distributed to anyone other than the researcher for a given project.

This study has been reviewed and received ethics clearance through a University of Waterloo Research Ethics Committee (ORE#21646). If you have questions for the Committee contact the Chief Ethics Officer, Office of Research Ethics, at 1-519-888-4567 ext. 36005 or ore-ceo@uwaterloo.ca. For all other questions please contact Fahad Alzahrani at 519-573-4040 or f2alzahrani@uwaterloo.ca, or Nancy Waite at 519 888-4484 or nmwaite@uwaterloo.ca

Thank you for considering participation in this study.

With full knowledge of all foregoing, I agree, of my own free will, to participate in this study.

- o I agree to participate."
- o I do not wish to participate (please close your web browser now).

Demographic Questionnaire

What is your age?
Dropdown years

Which of the following best describe how you identify yourself? *Mark only one oval*
- Man
- Woman
- Would rather not to say
- Other (e.g. Transgender)

Which of the following best describes your background? *Mark only one oval.*
- White (for example, British, French, Italian, Ukrainian, Russian)
- Black (African, Caribbean, North American)
- Latin American, Central American, South American (for example, Mexican, Brazilian, Costa Rican, Guatemalan
- East Asian (for example, Chinese, Koran, Japanese)
- South Asian (for example, East Indian, Pakistani, Sri Lankan)
- West Asian or Arab (for example, Egyptian, Syrian, Iranian, Iraqi, Afghani)
- Aboriginal (First Nations, Inuit, Métis)
- Not sure
- Would rather not to say
- Other

Were you born in Canada?

- *Canada*
- *Outside Canada.*

How long have you been working as a pharmacist?
Dropdown years (0-40 or above)

How many years have you been licensed to practice as a pharmacist in Canada?
Dropdown years (0-40 or above)

What is your highest level of education? *Mark only one oval.*
- BSc (Pharm)
- PharmD
- Masters
- Ph.D
- Would rather not to say
- Other

What type of community do you practice in? *Mark only one oval.*
- City (100,000 people or more)

- Town (1,000 people to 99,999 people)
- Village (less than 1,000 people)
- I don't know
- Other

What are the first 3 digits of your Postal Code?..

For every 10 patients you are in contact with in your workplace, how many are Black or Arab?
Mark only one oval.

0   1   2   3   4   5   6   7   8   9   10

Race and Arab IATs Stimuli

Black Persons vs White Persons IAT Labels and Stimuli

Category Labels	Stimuli
<u>Target labels</u> Faces of Black persons Faces of white persons	
<u>Attribute labels</u> Positive Negative	 Happy, love, talented, wonderful, peaceful, honest, glorious, terrific killer, destructive, failure, evil, hated, terrible, nasty, awful

Arab Persons vs White Persons IAT Labels and Stimuli

Category Labels	Stimuli
<u>Target labels</u> Names of Arab persons Names of white persons	 Mohammed, Ali, Ahmed, Abdullah, Akbar, Amir, Hassan, Fatimah, Zenab, John, Dave, Bill, Paul, Donald, Richard, Kerry, Lisa, Emily, Sarah
<u>Attribute labels</u> Positive Negative	 Happy, love, talented, wonderful, peaceful, honest, glorious, terrific killer, destructive, failure, evil, hated, terrible, nasty, awful

APPENDIX E: Explicit Questionnaire

Which statement best describes you?
- I strongly prefer white individuals to Black individuals
- I moderately prefer white individuals to Black individuals
- I slightly prefer white individuals to Black individuals
- I like White individuals and Black individuals equally
- I slightly prefer Black individuals to white individuals
- I moderately prefer Black individuals to white individuals
- I strongly prefer Black individuals to white individuals

Which statement best describes you?
- I strongly prefer white individuals to Arab individuals
- I moderately prefer white individuals to Arab individuals
- I slightly prefer white individuals to Arab individuals
- I like White individuals and Arab individuals equally
- I slightly prefer Arab individuals to white individuals
- I moderately prefer Arab individuals to white individuals
- I strongly prefer Arab individuals to white individuals

Please rate how warm or cold you feel toward the Black individuals
(0 = coldest feelings, 5 = neutral, 10 = warmest feelings)

Very Cold   0 1 2 3 4 5 6 7 8 9 10   Very Warm

Please rate how warm or cold you feel toward the white individuals
(0 = coldest feelings, 5 = neutral, 10 = warmest feelings)

Very Cold   0 1 2 3 4 5 6 7 8 9 10   Very Warm

Please rate how warm or cold you feel toward the Arab individuals
(0 = coldest feelings, 5 = neutral, 10 = warmest feelings)

Very Cold   0 1 2 3 4 5 6 7 8 9 10   Very Warm

Interview Guide and Demographic Questions

Study: Black and Arab Patients' Experience with Pharmacist Services.

Time limit: Approximately 20-30 minutes.

<u>**Semi-directed interview guide**</u>
- Welcome and introduction
- Brief description of the purpose of study
- Guidance on questions and how to respond to them: Open dialogue, no judgement on what is said.
- Assurance on data management: anonymity/ confidentiality, data analysis and reporting.
- Written Consent
- Respondent shares demographic data
- Confirm for any additional queries before starting.

1- **Perceptions and Attitude toward Pharmacist's Services**
   a. How often do you go to a pharmacy? Is the pharmacy you use most often located near where they live or work? Why do you visit the pharmacy?
   b. When you go to the pharmacy, do you know who your pharmacist is? Do you know if you talk to pharmacist or to a pharmacy technician? Do you often talk with the same person?
   c. What do you expect that a pharmacist would do for you?
   d. If you have been to see a pharmacist since living in Canada, tell me about the first time you used pharmacist services.
      i. Overall, would you say it was a positive or a negative experience?
      ii. Do you feel that your race or ethnicity had an effect on how you are treated at the pharmacy? How? Can you give me an example or describe the situation? What happened? How did you feel? What did you think that pharmacist was thinking at that time?
      iii. If it was a negative experience, did you do anything about it (Change pharmacy, make a complaint?)
2- **Communication with Pharmacist**
   a. Tell me about how you feel when you interact with pharmacists.
      i. Do you think that having Black (for Black patients) or Arab (for Arab patients) pharmacists working in the pharmacy affects your opinion of how you communicate with the pharmacist?

b. Can you recall any times you have felt that a pharmacist misunderstood you or misjudged you? If so, please tell me about them.
  i. What do you think contributed to the pharmacist's misunderstanding?
c. Can you recall aby times that a pharmacist was particularly effective in communicating information to you?

3- Ways to Improve Pharmacist's Services
a. Does the way a pharmacist behaves towards you influences your decision to seek out pharmacist services when you need them?
  i. What makes it easier to use pharmacist services?
  ii. What makes it more difficult?
b. Are there any other aspects of the pharmacy care system you would like to mention that we haven't already discussed?

4- Demographic Information

1. Which category below includes your age?

☐18-25 years
☐26-35 years
☐36-45 years
☐46-55 years
☐56-65 years
☐66-75 years
☐76 years or more

2. What is your gender?

☐Female
☐Male
☐Other

3. Which of the following best describes your background??

☐Black
☐Arab
☐Both
☐Other (specify)……………………….

4 Were you born in Canada?

☐Yes, I was born in Canada
☐No, I was born outside of Canada
☐I don't know

5. What language do you feel most comfortable using when speaking to a pharmacist?

☐English
☐Other (Specify)………………………….
☐Both

6. How long have you been living in Canada?

☐Less than 1 year
☐1 year-3 years
☐3-6 years
☐6-10 years
☐10-20 years
☐20+ years
☐All my life

Thank you for participating in the study. If you happen to know anyone else who would be interested in participant in this study, we would appreciate it if you passed on this recruitment poster.

Qualitative Information Letter and Consent Form

Project: Black and Arab Patients' Experiences with Pharmacist Service

Study investigators: Mr. Fahad Alzahrani and Dr. Nancy Waite

<u>**INFORMATION LETTER**</u>

Date: September 15th, 2017

Dear Potential Participant:

We would like to invite you to participate in a study entitled "Black and Arab Patients' Experience with Pharmacist Services". This study is being conducted by Mr. Fahad Alzahrani as part of his PhD dissertation under the supervision of Dr. Nancy Waite in the School of Pharmacy at the University of Waterloo. Health disparities among minority patients are well documented and recognized as serious issues in the Canadian health care system. While a growing body of research examines the patient-doctor relationship and its influence on health disparities, few studies have examined pharmacists and their relationships to patients. The experiences of minority patients with respect to pharmacists is therefore an important and under-examined area in the literature on health care disparities and may provide insights into useful policy changes or training for pharmacists." The objective of the study is to explore Black and Arab patients' communication with pharmacists and their opinions, attitude and perceptions about pharmacist services provided in community pharmacies.

Procedures:

Participation in this study is voluntary. If you volunteer for this study, you will be asked to participate in a face-to-face interview with you and the researcher (Mr. Fahad Alzahrani). The interview will take place at a time and location of mutual convenience. The interview will take about 30-45 minutes of your time. With your permission, the interview will be audio-recorded to facilitate the collection of information and later transcribed for analysis. The interviewer will ask questions about your perspectives and experiences with pharmacist services. You will also be asked to provide demographic information (e.g. age; gender etc.).. Before the interview is over, you will be given a brief summary of key ideas presented during the interview to allow for any clarifications. Any information you provide pertaining to you as an individual participant is considered completely confidential. Your name will not appear in any thesis or report resulting from this study; however, anonymous quotations may be used. We will remove all information that could identify you from the data we have collected within six months and delete it permanently. You can withdraw your consent to participate and have your data destroyed by contacting us within this time period. After this time, it is not possible to withdraw your consent to participate as we have no way of knowing which responses are yours. Additionally, you will not be able to withdraw consent once papers and publications have been submitted to publishers.

Only those associated with this study will have access to these records which are secured by password protected. We will keep our study records for a minimum of seven years. All records are destroyed according to University of Waterloo policy."

Possible risks or discomfort: Because some of the questions pertain to social justice issues, if at any point during the interview you feel uncomfortable, you may decline to answer any question(s) you prefer not to answer by requesting to skip the question. You may also decide to end the interview session at any time, without penalty or loss of remuneration, by advising the researcher.

Possible benefits: Participation in this study may not provide any personal benefit to you. However, your views and experiences are extremely valuable in helping pharmacist researchers understand your perception and experience in pharmacist services.

Remuneration. In appreciation of your time, you will receive a $15 Tim Horton's gift card. The amount received is taxable. It is your responsibility to report this amount for income tax purposes.

Eligibility requirements for participation: All participants must be over 18 years of age; self-identify as Black or Arab; must have used pharmacy services within the past three years and feel comfortable speaking in English.

Ethics review and clearance. This study has been reviewed and received ethics clearance through a University of Waterloo Research Ethics Committee (ORE#22430). If you have questions for the Committee contact the Chief Ethics Officer, Office of Research Ethics, at 1-519-888-4567 ext. 36005 or ore-ceo@uwaterloo.ca.

For all other questions please contact Fahad Alzahrani at 519-888-4567 ext. 21371 or f2alzahrani@uwaterloo.ca, or Nancy Waite at 519 888-4484 or nmwaite@uwaterloo.ca

I very much look forward to speaking with you and thank you in advance for your assistance in this project.

Fahad Alzahrani, BPharm, Msc, Ph.D (C)
OPEN: Ontario Pharmacists Evidence Network
School of Pharmacy, University of Waterloo
f2alzahrani@uwaterloo.ca

CONSENT FORM

By signing this consent form, you are not waiving your legal rights or releasing the investigator(s) or involved institution from their legal and professional responsibilities.

I have read the information presented in the information letter about a study being conducted by Mr. Fahad Alzahrani under the supervision of. Dr. Nancy Waite from School of Pharmacy at University of Waterloo. I have had the opportunity to ask questions related to the study and have received satisfactory answers to my questions and any additional details.

I am aware that I have the option of allowing my interview to be audio-recorded to ensure an accurate recording of my responses, and that audio-recording will not begin until I have consented.

I am also aware that excerpts from the interview may be included in any reports and/or publications to come from this research, with the understanding that the quotations will be anonymous.

I was informed that I may withdraw my consent at any time without penalty by advising the researcher.

This study has been reviewed and received ethics clearance through a University of Waterloo Research Ethics Committee (ORE#22430). If you have questions for the Committee contact the Chief Ethics Officer, Office of Research Ethics, at 1-519-888-4567 ext. 36005 or ore-ceo@uwaterloo.ca.

For all other questions please contact Fahad Alzahrani at 519-888-4567 ext. 21371 or f2alzahrani@uwaterloo.ca, or Nancy Waite at 519 888-4485 or nmwaite@uwaterloo.ca

With full knowledge of all foregoing, I agree, of my own free will, to participate in this study.

☐YES ☐NO

I agree to have my interview audio-recorded.

☐YES ☐NO

I agree to the use of anonymous quotations in any report and/or publication that comes of this research.

☐YES ☐NO

Participant Name: _____ (Please print)

Participant Signature: _____

Date: _____