

## LOW-INCOME BARRIERS AND FACILITATORS TO A CAREER IN MEDICINE

ASPIRING PHYSICIANS FROM LOW-INCOME BACKGROUNDS:  
EXPERIENCES OF BARRIERS AND FACILITATORS TO A CAREER IN  
MEDICINE

By CHANTÉ DE FREITAS, B.A. (HONS)

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## **Lay Abstract**

**GOALS:** This thesis describes an interview study aimed at understanding the experiences of aspiring physicians from low-income backgrounds (LIB) as they attempt to gain entry to medical school. Interviews were conducted with 15 participants at different stages of their undergraduate, master's, and non-medical professional education.

**CONTRIBUTIONS:** This study fills existing gaps in the literature by identifying the pre-admissions barriers and facilitators encountered by aspiring physicians from LIB. Participants experienced social, identity-related, economic, structural, and informational barriers to a career in medicine. Intrinsic facilitators included motivation, self-confidence, attitude, strategy, information seeking and sorting, and financial literacy and increasing income. Extrinsic facilitators were social, informational, financial, and institutional. This information will be useful to medical schools, supportive organizations and researchers interested in supporting underrepresented groups.

## **Abstract**

**INTRODUCTION:** Students from low-income backgrounds (LIB) have been underrepresented in Canadian medical schools for over fifty years. Despite our awareness of this problem, little is known about the experiences of aspiring physicians from LIB in Canada who are working towards medical school admission. As a result, we do not have insight into the barriers and facilitators that may be used to increase the representation of students from LIB in Canadian medical schools.

**METHODS:** This thesis describes a qualitative description interview study aimed at understanding the experiences of aspiring physicians from LIB as they attempt to gain entry to medical school. We conducted semi-structured interviews with 15 participants at different stages of their undergraduate, master's, and non-medical professional education.

**RESULTS:** We used the theories of intersectionality and identity capital as a theoretical framework for identifying barriers and facilitators to a career in medicine. Participants experienced social, identity-related, economic, structural, and informational barriers to a career in medicine. Intrinsic facilitators included motivation, self-confidence, attitude, strategy, information seeking and sorting, and financial literacy and increasing income. Extrinsic facilitators were social, informational, financial, and institutional in nature.

**CONCLUSION:** This study fills existing gaps in the literature by identifying the pre-admissions barriers and facilitators encountered by aspiring physicians from LIB. This information will be useful to medical schools, organizations, and researchers interested in supporting underrepresented groups. Given that medical students from LIB are more likely to serve underserved populations, this is relevant to Canadian medical schools' social accountability commitment to producing physicians that meet the health needs of marginalized and vulnerable patients.

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## List of Abbreviations

AAMC	Association of American Medical Colleges
LGBTQ	Lesbian, Gay, Bisexual, Transgender, and Queer
LIB	Low-income background
MCAT	Medical College Admission Test
MMI	Multiple Mini Interviews
OSAP	Ontario Student Assistance Program
OUAC	Ontario Universities' Application Centre
SES	Socioeconomic status

## **Declaration of Academic Achievement**

Chanté De Freitas, as student investigator, was primarily involved in the design, implementation, data collection, analysis, writing, and revision of this thesis.

Dr. Meredith Vanstone, as thesis supervisor, provided detailed feedback at each stage of the research and was involved in editing.

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## CHAPTER 1

### INTRODUCTION

Since at least the 1960s, it has been recognized that access to Medical School differs by social class (Fish, Farmer, & Nelson-Jones, 1968). A 1965 comment by Rosinski is quoted in Fish, Farmer & Nelson-Jones (1968) as follows: “the number of superior students from the lower social classes is not large because too many obstacles are placed before them in their search for a medical career” (p. 954). Despite awareness of this phenomenon, the problem of underrepresentation of students from low-income backgrounds in Canadian Medical Schools persists over 50 years later (Dhalla *et al.*, 2002).

This long-standing problem has important implications not just for individual applicants who may be systematically disadvantaged, but also for the broader Canadian society, who is invested in providing high quality health care to all patients. There is evidence that physicians from low-income backgrounds (LIB) are more likely to provide care to underserved populations than physicians from higher income backgrounds, especially when the low-income background of the physician is considered alongside their race (Black, Hispanic) and/or sex (female) (Cantor, Miles, Baker, & Barker, 1996). This is relevant to Canadian medical education given the commitment to social accountability by Canadian Medical Schools to produce physicians that meet the health needs of marginalized and vulnerable patients (AFMC, 2010; Health Canada, 2001).

Through this research project, I examine the barriers and facilitators that aspiring physicians from LIB meet before and during the process of applying to Medical School.

The process of entering Medical School, known as the pre-med process, commonly begins several years before admission to Medical School. At least as early as the eleventh grade, students form perceptions about their ability to pursue a career as a physician (Cassidy, Foster, Moody, Turner, & Tejpar, 2013).

Scholars have written extensively about the class inequalities that exist in, and are replicated by, the Canadian education system (Brownell *et al.*, 2004; Drolet, 2005; James & Turner, 2017). These inequalities appear before students’ entry into the school system and persist in every level of education, including those in which students begin and live out their pre-med journeys: high school and university (Brownell *et al.*, 2004; Drolet, 2005; James & Turner, 2017). This suggests that students from LIB may face unique obstacles in their pre-med trajectory. It is important to consider that further variation in the pre-med experience may occur

among students from these backgrounds due to intersections between income and other social factors such as race, gender, and individual and family citizenship status (Monrouxe, 2015; Tsouroufli, Rees, Monrouxe, & Sundaram, 2011; Verdonk & Abma, 2013).

## **Background**

I observed three themes in the literature on aspiring physicians from LIB: admissions statistics, selection tools and tests, and aspirant experiences. The last theme, aspirant experiences, is the most developed theme in the literature. Taken together with studies examining experiences of students from LIB in Medical School, there is a reasonably well-developed literature on the barriers and facilitators aspiring physicians from low-income backgrounds face when applying for and completing Medical School. As a whole, this complete body of literature on higher education provides insight into some of the inequalities in Medical School admissions that are faced by aspiring physicians from LIB.

## **Admissions Statistics**

Steven, Dowell, Jackson, and Guthrie (Steven, Dowell, Jackson, & Guthrie, 2016) describe a “social gradient” (p. 4) of Medical School applicants and those who receive offers. In this gradient, applicants from less affluent backgrounds were less likely to apply and gain admission than their wealthier counterparts (Steven *et al.*, 2016). The literature on the socioeconomic backgrounds of applicants supports this conclusion and includes evidence on both applicants from high and low-income background. From these studies, we know that applicants from lower socioeconomic backgrounds experience lower academic achievement (Powis, James, & Ferguson, 2007), do not apply to Medical School in large numbers relative to their wealthier peers (Alexander, Fahey Palma, Nicholson, & Cleland, 2017; Ferguson, James, Yates, & Lawrence, 2012; Griffin & Hu, 2015) and therefore have a smaller presence in the applicant pool (Gallagher, Niven, Donaldson, & Wilson, 2017; Leduc, Rioux, Gagnon, Bourdy, & Dennis, 2017; Powis *et al.*, 2007). They are thus less likely to gain an interview invitation (Laurence, Turnbull, Briggs, & Robinson, 2010), and have lower odds of Medical School acceptance (Gallagher *et al.*, 2017; Mathers, Sitch, & Parry, 2016b). Given these inequities and the recognition that it is important to have a physician population that reflects the diversity of the patient population, scholars have recognized that there is a need for Medical Schools to attract a wider range of applicants (Ferguson *et al.*, 2012; Gallagher *et al.*, 2017; Taylor, Green, & Spruce, 2015) and that interventions aimed at doing so should occur early in the student trajectory (Ferguson *et al.*, 2012).

## **Selection Tools and Tests**

There is a limited body of research that goes beyond applicant and admission statistics to paint a portrait of what the pre-med process might look like for students from LIB at the level of selection tools and tests. Research about applicants' Medical School interview outcomes are mixed, with some authors finding no difference in multiple mini interview (MMI) scores based on income (Reiter *et al.*, 2012) or educational background (i.e. public or private) (Taylor *et al.*, 2015) and others finding that applicants from LIB are disadvantaged by this test (Henderson *et al.*, 2017; Jerant *et al.*, 2015) and that those from higher income backgrounds are advantaged (Leduc *et al.*, 2017).

However, it is recognized that Medical School interviews, while important, are one of several factors in selecting medical students. Other factors, such as grades and admissions test scores (Griffin & Hu, 2015; Mathers, Sitch, & Parry, 2016a; Reiter *et al.*, 2012) and relevant life experiences (Leduc *et al.*, 2017) are also considered, and in these considerations, students from LIB may be at a disadvantage (Leduc *et al.*, 2017; Mathers *et al.*, 2016a; Reiter *et al.*, 2012). This may be the result of fewer opportunities to acquire life experiences valued by Medical Schools (Leduc *et al.*, 2017), the potential for upstream disadvantage in academic performance for students from LIB (Reiter *et al.*, 2012), and fewer resources to access the potential benefits of standardized test preparation (Mathers *et al.*, 2016a).

## **Aspirant Experiences**

### ***Medical School Discourses***

There have been attempts to increase representation of students from low-income backgrounds. This is especially true in the United Kingdom where Widening Access/Widening Participation initiatives in Medical Schools are being used to increase the participation of students from LIB (Mathers, Sitch, Marsh, & Parry, 2011). In examining these attempts, Alexander *et al.* (Alexander, Fahey Palma, et al., 2017) concluded that Medical School websites portray the Widening Access student as a recipient of opportunity rather than someone who could bring gains to medicine through diversity. In the Canadian context, Razack and colleagues (Razack, Hodges, Steinert, & Maguire, 2015) found that Medical Schools value two forms of excellence—a meritocratic, academic form of excellence aligned with prestige (Razack, Maguire, Hodges, & Steinert, 2012) and a service to society form of excellence aligned with social accountability, which is the obligation of Medical Schools to address the health concerns of those they have a mandate to serve (Health Canada, 2001). The dominance of academic excellence creates a tension with the notions of equity and increased diversity in Medical School admissions (Alexander & Cleland, 2018; Razack *et al.*, 2015). As a result, the academic excellence discourse also has tension with the concept of social accountability

(Razack *et al.*, 2015) because this concept is viewed as a solution to problems of representation (Razack, Lessard, Hodges, Maguire, & Steinert, 2014). Although the Canadian medical education context recognizes that diverse applicants are beneficial to medicine by increasing justice in health care delivery, discourses around diversity and equity do not directly include students from low-income backgrounds (Razack *et al.*, 2012). Additionally, these discourses do not discuss exclusion of some groups as a historical reality; rather, exclusion is approached as a recently discovered phenomenon (Razack *et al.*, 2014).

These discourses, both in the United Kingdom and Canada, may actually serve to hinder efforts to correct inequalities (Alexander, Fahey Palma, *et al.*, 2017; Razack *et al.*, 2015; Razack *et al.*, 2014; Razack *et al.*, 2012) as the discourses themselves can be considered an act of exclusion in the way they obscure some sources of inequality in medicine.

### ***Barriers and Facilitators***

Research on aspiring physicians from LIB has identified several barriers and facilitators to a career in medicine. It should be noted that most of these studies are qualitative and therefore speak to specific contexts of the participants. It is important to consider the transferability of these findings to the Canadian context, but regardless of international differences they provide useful insight into what students from low-income and low socioeconomic status backgrounds experience as they work towards Medical School admission.

### **Barriers**

From this body of literature, I identify five types of barriers faced by students from LIB in gaining admission to Medical School: social, identity-related, economic, structural, and informational.

**Social barriers** to admission include teachers' and guidance counsellors' lack of confidence in students' ability to succeed (McHarg, Mattick, & Knight, 2007; Southgate, Kelly, & Symonds, 2015). Social barriers limit the support available to students from LIB as they make their way to Medical School. I conceive of Medical School admission as the result of a collective effort by applicants and those who have supported her/him along the way. As a result, I view social barriers as problematic in that they cause some students from LIB to have less support in navigating the complex and difficult process of gaining admission to Medical School.

**Identity-related barriers** include a sense that Medical School is "culturally alien" (Greenhalgh, Seyan, & Boynton, 2004), p. 1) and not part of the typical working-class experience (Mathers & Parry, 2009); the idea that university is for certain



types of people (Greenhalgh *et al.*, 2004; Mathers & Parry, 2009); underestimating one's chances of getting into and completing Medical School (Greenhalgh *et al.*, 2004); and not feeling capable of entering and withstanding the medical profession (Grafton-Clarke, Biggs, & Garner, 2018). From this, I infer that the implications of identity-related barriers are that students from LIB may simply self-select out of a Medical career and that those who pursue the profession may have to do the additional work of managing their identities in an already work-heavy process.

**Economic barriers** include perceiving the cost of Medical School as a barrier to medical education (Alexander & Cleland, 2018; Cassidy *et al.*, 2013; Greenhalgh *et al.*, 2004). Economic barriers also include the cost of Medical School application and admission, such as volunteering and extracurriculars, admission tests, travel to open houses and interviews, and Medical School debt (Grafton-Clarke *et al.*, 2018; Stephenson & Stephenson, 2010). These barriers may interfere with or delay the ability of students from LIB to become competitive applicants by limiting their ability to accumulate life experiences that are valued or perceived to be valued by Medical Schools. Economic barriers may also limit access to the application and interview process itself.

**Structural barriers** include limited access to high-performing academic high schools that can prepare students from LIB to pursue a career in Medicine (Mathers & Parry, 2009; Southgate *et al.*, 2015), limited access to relevant work and healthcare experience (Robb, Dunkley, Boynton, & Greenhalgh, 2007; Southgate *et al.*, 2015); and a sense of being disadvantaged relative to students from more affluent backgrounds (Greenhalgh *et al.*, 2004; Nicholson & Cleland, 2017). Other structural barriers relate to the nature of Medical School itself, such as the high levels of competition, the possible need for admitted students to move away from home, and the length of the medical training programs (Grafton-Clarke *et al.*, 2018). Overall, structural barriers may work to disadvantage students from LIB long before they begin to work towards or even think about a career in medicine. From this, I take the view that structural factors enable a situation in which students have different starting points from the very beginning of the pre-med process. These starting points are both the products and purveyors of inequality and are often the result of factors beyond students' control. I take the view that in the pre-med process, some students, such as those from LIB, may find themselves having to "catch up" to their more advantaged peers.

**Informational barriers** include a lack of information about Medical School admissions processes (Grafton-Clarke *et al.*, 2018; Robb *et al.*, 2007; Southgate *et al.*, 2015), unclear ideas about the steps to take to pursue a medical career (Greenhalgh *et al.*, 2004; Robb *et al.*, 2007), misperceptions about the grades

required to gain admission to Medical School; incorrect ideas about life as a medical student; feeling that available sources of advice are inadequate; limited understanding of tuition repayment and the availability of scholarships and bursaries; restricted understanding of careers in healthcare (Grafton-Clarke *et al.*, 2018); and the limited ability of parents without post-secondary experience to advise their children about Medical School (Mathers & Parry, 2009; Robb *et al.*, 2007). Informational barriers may make it more difficult for students from LIB to navigate the pre-med and Medical School admissions processes because the “map” they develop of the path to medicine may be inaccurate or non-existent. Informational barriers may also result in perceptions held by students from LIB of their limited ability to overcome obstacles. Some students may not be aware of key resources to help them on their journey toward Medical School.

### **Facilitators**

Students from LIB who are interested in Medicine are not solely at a disadvantage: they also have facilitators in gaining access to a medical career. These facilitators stand in contrast to the barriers to Medicine in that they are largely personal in nature. Facilitators mentioned in the literature are either intrinsic to the individual or extrinsic.

**Intrinsic facilitators** among students from LIB include a desire for higher education; confidence in their ability to become a Physician (Robb *et al.*, 2007; Southgate *et al.*, 2015); confidence in their intellectual and academic abilities (Gore, Patfield, Holmes, & Smith, 2018; Southgate *et al.*, 2015); a commitment to working hard to achieve their goals (Southgate *et al.*, 2015); a desire to learn more about the medical profession (Greenhalgh *et al.*, 2004; Nicholson & Cleland, 2017); familial and life experiences such as immigration that create a strong desire for social mobility through education; demonstrated ability to perform highly in academics; demonstrated ability to select a supportive and motivated peer group; resilience (Robb *et al.*, 2007); and perceived ability to become a physician (Gore *et al.*, 2018). In addition, some traits, such as coming from a non-English background, being female, possessing a large degree of cultural capital, and being in the early grades of secondary school are predictors of medical aspirations in primary and secondary students (Gore *et al.*, 2018).

**Extrinsic facilitators** include the support of teachers in some cases (Robb *et al.*, 2007) and encouragement from parents (Mathers & Parry, 2009; McHarg *et al.*, 2007; Robb *et al.*, 2007). Teachers helped to instill academic confidence in students (Robb *et al.*, 2007) and parents encouraged them in their studies (Mathers & Parry, 2009; Robb *et al.*, 2007). Mothers had a particularly strong influence on students (McHarg *et al.*, 2007; Robb *et al.*, 2007) and students from immigrant

backgrounds derived additional motivation for pursuing medicine from their parents' loss of social status after immigrating (Robb et al., 2007).

Taken together, the barriers and facilitators to Medical School admissions faced by LIB students suggest that underrepresentation in Medical School is not solely a matter of deficit in personal ability or characteristics. Rather, it is also a product of several factors beyond students' control. However, to avoid adopting a deterministic or overly pessimistic view, it is important to recognize that students from LIB are not merely passive agents in an inequitable process. While some things, such as limited school resources, are beyond the individual's control, students are nevertheless able to have a degree of agency in the pre-med process. This agency includes working around barriers (Mathers & Parry, 2009), making and following through on facilitating life choices such as who to include in one's peer group (Robb *et al.*, 2007), and assessing and responding to one's perceived social distance from medicine by negotiating identity in the admissions process (Razack *et al.*, 2015).

### **Experiences in Medical School**

Research on students from LIB in Medical School reveals that these successful applicants continue to face challenges. These challenges are largely identity-related in that medical students experience a tension between the elite professional identity of Medical School and their own working-class backgrounds (Beagan, 2005; Brosnan *et al.*, 2016; Mathers & Parry, 2009; Southgate *et al.*, 2017).

Medical students from LIB describe social and economic differences between themselves and their peers that serve to highlight a sense of being different from other medical students (Beagan, 2005; Brosnan *et al.*, 2016; Southgate *et al.*, 2017) as well as community members they knew prior to Medical School (Beagan, 2005; Brosnan *et al.*, 2016; Mathers & Parry, 2009; Southgate *et al.*, 2017).

For example, being presented with stereotypical depictions of working class people as part of the "everyday classism" (Beagan, 2005, p. 782) of Medical School (Beagan, 2005) or working part-time during Medical School (Beagan, 2005; Brosnan *et al.*, 2016) served to distinguish medical students from LIB from their peers, sometimes to the point of difficulties forming social connections (Beagan, 2005; Brosnan *et al.*, 2016; Southgate *et al.*, 2017).

Distance between medical students from LIB and their community members could be seen in social rejection from social group members. For example, community members may assume that a medical student from a LIB has become a "snob" (Southgate *et al.*, 2017, p. 252).

Students from LIB who were also from marginalized cultural backgrounds expressed additional difficulty, such as the cultural ignorance of peers (Southgate *et al.*, 2017) and concerns about fitting into their communities after they experience the change in social status associated with becoming physicians (Brosnan *et al.*, 2016).

Ultimately, medical students from LIB were able to manage Medical School, finding that it was not as difficult as previously understood and communicated (Mathers & Parry, 2009). However, Medical School may come at the cost of extra work in order to navigate the unique challenges of being in Medical School and having an identity outside of its dominant middle and upper-class culture (Beagan, 2005).

The challenges faced by medical students from LIB seem to stem from the fact that the experiences and knowledge that they have are not typically valued by Medical Schools and are even devalued in this context (Beagan, 2005; Brosnan *et al.*, 2016). However, students recognized that their experiences would be valuable as clinicians, particularly in terms of understanding patients (Beagan, 2005; Brosnan *et al.*, 2016). This recognition served as a means of negotiating the "identity ambivalence" (Southgate *et al.*, 2017, p. 255) they faced in Medical School in a way that enabled them to maintain ties to their valued social origins (Brosnan *et al.*, 2016; Southgate *et al.*, 2017). Thus, medical students from LIB engaged in a "tactical incorporation" (Southgate *et al.*, 2017, p. 255) of both middle-class and working-class assets as they transitioned through Medical School (Southgate *et al.*, 2017).

### **Merit**

In approaching the topic of aspiring physicians from LIB, I take the view that there is an uneven playing field in Medical School admissions (De Freitas, Grierson, & Vanstone, 2019). These admissions processes are highly competitive and typically involve heavy emphasis on grades and standardized test performance. Extracurricular activities are also often considered. This process initially appears to be a meritocracy in which the highest performing students are "rewarded" with an admission offer. However, this presentation is problematic because it obscures the reality that not every applicant has the same access to opportunities to demonstrate or enhance their performance. For example, students who must work during the summer do not have the same opportunity to utilize these months for dedicated MCAT preparation as someone who does not have to work.

Furthermore, the "meritocratic" process of Medical School admissions is individualistic in that it considers the achievements of individual applicants. However, an applicant's "merit" and achievements extend beyond individuals to their social, economic, and political contexts, of which income is a part. In other

words, there are systemic forces outside the individual and beyond her/his control that influence an applicant's ability to perform.

The final outcome of this is that Medical School applicants from different income backgrounds face different obstacles. The backgrounds of some applicants make the journey into Medical School less difficult and for others, more.

Scholarly awareness of this deceptive meritocracy can be seen in discussions of inequality in the broader system of higher education.

Meritocracy is a system in which one's place in a social hierarchy is determined by one's own strengths and efforts (Alon & Tienda, 2007). In higher education, meritocracy creates systems of competition and an ideal of equal opportunity for all (Alon & Tienda, 2007). Implicit in meritocracy is an assumption that merit is measurable and has a definition upon which those in the meritocracy agree (Alon & Tienda, 2007). However, given that merit is defined by the interests of the dominant group in a system, not all stakeholders have a voice in the process of defining merit (Karabel, 1984). Furthermore, measures of merit may actually serve to undermine a meritocracy if they reflect inequality, a product of stratified social systems in the wider society (Alon & Tienda, 2007).

When it comes to higher education admissions, true meritocracy is not possible because of the way merit is measured (Alon & Tienda, 2007). A "shifting meritocracy" (Alon & Tienda, 2007, p. 489) in which schools have increasingly relied on test scores to determine applicants' merit for admissions purposes has resulted in less diversity in post-secondary institutions (Alon & Tienda, 2007). This is because individuals from marginalized racial groups and low-socioeconomic status backgrounds are more likely to attend underfunded, low-performing schools (Alon & Tienda, 2007). In other words, these students may not have the same access to the resources that facilitate high test-score performance. Thus, it is not necessarily the case that these students lack merit, rather, it is that their ability to accrue merit is inhibited by the systems of which they are a part: a social class system delineated by income inequality and inextricably intertwined with race such that the least wealthy members of society tend to come from the most marginalized racial groups.

Recognition of this fact has resulted in affirmative action, a controversial attempt to account for the differing life circumstances of individuals by creating an equitable admissions process in which students from disadvantaged backgrounds undergo an altered admissions process (Alon & Tienda, 2007). However, debates surrounding affirmative action have unearthed a tension between meritocracy and egalitarianism in which the individualism of merit is seen to undermine the equity

of affirmative action, and affirmative action is seen to undermine the principle of fairness underlying meritocracy (Augoustinos, Tuffin, & Every, 2005).

### **Study Rationale & Research Question**

The literature on students from LIB and Medical School is limited and there are several gaps. First, much of the existing research examines Medical Schools in the United Kingdom, with a small body of research from Australia. Both contexts are markedly different to Canada due to the fact that students may enter Medical School directly from high school in the United Kingdom and Australia (Ferguson *et al.*, 2012; Griffin & Hu, 2015). There is a striking scarcity of Canadian research on this topic, despite the fact that it is related to social accountability—a construct that many Canadian Medical Schools have adopted as a reason for increased diversity and equity (Razack *et al.*, 2015). Second, the perspective of aspiring physicians who are presently working towards Medical School admission is both limited and not fully representative. Existing research, though scarce, has generally focused on retrospective accounts of the obstacles overcome by students from LIB who have successfully entered Medical School (Brosnan *et al.*, 2016; Mathers & Parry, 2009; McHarg *et al.*, 2007; Southgate *et al.*, 2017), perceptions of medicine held by high school students (Cassidy *et al.*, 2013; Greenhalgh *et al.*, 2004), and on applicants who have been successful enough to proceed to the interview stage (Leduc *et al.*, 2017).

The cumulative effects of these gaps mean that we are missing the perspective of Canadian aspiring physicians from LIB who are in the process of working towards Medical School admission, including those students who are trying again after an unsuccessful Medical School application cycle or cycles. As a result of this knowledge gap, we do not know what differentiates successful and unsuccessful aspiring physicians from LIB, and therefore do not have insight into related barriers and facilitators that may be used to encourage more of these aspirants to successfully enter Medical School in a Canadian context.

To answer these questions, I propose the following research question:

*What barriers and facilitators do aspiring physicians from low-income backgrounds face as they work towards Medical School admission?*

## CHAPTER 2

### RESEARCH DESIGN & METHODOLOGY

#### Qualitative Description

Qualitative description is a qualitative research methodology that allows for the collection of rich qualitative data and generates descriptions of phenomena that reflect the lived experience (Sandelowski, 2000). I chose this methodology because it is flexible, requires analysis that stays close to the data, and is useful when little is known about an existing phenomenon (Sandelowski, 2000). I believed that this method would enable me to answer my research question and provide information to Medical Schools, supportive organizations and researchers that could assist them in developing resources, programs, and research projects that could be helpful to aspiring physicians from LIB.

In line with qualitative description's ability to draw from other methodologies (Sandelowski, 2000), I borrowed techniques from constructivist grounded theory, which is a qualitative research methodology that seeks to generate theory that is "grounded" in data (Charmaz, 2014).

#### Theoretical Basis

My research question is informed by Gorski's (Gorski, 2011) cautions about the presence of deficit ideology in education. Gorski (2011) defines deficit ideology as a way of thinking about social problems as being the result of "intellectual, moral, cultural, and behavioural deficiencies" (p. 154) inherent in marginalized groups of people and communities rather than the socio-political context in which we live. To avoid employing this ideology, I considered both the advantages and disadvantages possessed by participants in the pre-med process. I also considered participants' contexts by employing two theoretical lenses: identity capital and intersectionality.

#### Identity Capital

This project uses the theoretical approach of identity capital (Côté, 1996). According to this theory, social mobility is made possible in the Western world through identity capital, which is comprised of both tangible (sociological) resources, such as educational credentials and physical appearance, and intangible (psychological) resources, such as cognitive flexibility and critical thinking (Côté, 1996). These resources enable an individual to gain membership to the groups (like the medical profession) to which s/he aspires to join (Côté, 1996).

This theory takes the view that there are individuals in every society who develop strategies to attain optimal outcomes (Côté, 1996). In the Western world, identity is the result of individual effort and interaction with other people and it is through investing in oneself that enables an individual to play in “identity markets” (Côté, 1996, p. 425) that facilitate social mobility (Côté, 1996). Performance in identity markets, and therefore social mobility, is made possible through sociological and psychological resources as well as the individual’s network (Côté, 1996).

Identity capital is distinct from other similar forms of capital such as human capital and cultural capital in that it considers the unique opportunities, environments, and life courses in the current Western context (Côté, 1996). This context is marked by weakened social institutions, such as the university, and pervasive identity politics based on attributes like class, race, age, and gender (Côté, 1996). These factors limit the efficacy of tradition and “skill-oriented knowledge” (Côté, 1996, p. 8) that is emphasized by cultural capital and human capital respectively (Côté, 1996). Furthermore, identity capital is able to account for the constantly changing identities, goals, and social rules of the current Western context (Côté, 1996).

Identity capital takes the view that in the university context in particular, the acquisition of identity capital is possible for everyone, provided that discrimination is not faced (Côté, 1996). In the context of this project, this means that aspiring physicians from LIB should be able to acquire the resources they need to be competitive Medical School applicants unless they face inequality.

### **Intersectionality**

It is important to consider that variation in the pre-medical experience may occur due to interactions between income and other social identities such as race, gender, and individual and family citizenship status. To account for these interactions, I also employ an intersectional approach. This approach recognizes that various social identities interact to create distinct experiences (Crenshaw, 1989; Monrouxe, 2015; Tsouroufli *et al.*, 2011; Verdonk & Abma, 2013). It is important to note that the experience of those at the “intersection” (Crenshaw, 1989, p. 167) of multiple identities, such as a student from a LIB who is also racialized, is distinct from the experience of each of these identities taken separately (Crenshaw, 1989). Therefore, a racialized student from a LIB will not have the same experience as a student who is from the same race but is not from a LIB. Nor will a racialized student from LIB have the same experience as a student who is from a LIB but of a different race, although there may be some similarities in both scenarios (Crenshaw, 1989). This is particularly relevant to discussions about disadvantage because we often think about disadvantage as applying to a



single identity or category, such as low-income, when disadvantage can in fact be multifaceted (Crenshaw, 1989).

Intersectionality has the ultimate goal of inclusion (Crenshaw, 1989), and highlights the importance of recognizing and addressing the problems of the most disadvantaged so that everyone can have equitable access to resources in society (Crenshaw, 1989). I share this goal, and in the context of this project, I emphasize the importance of more equitable access to a career as a physician.

Intersectionality and identity capital are complementary theories that together make possible the recognition that some social identities facilitate or inhibit access to social mobility and the groups to which one aspires to join. These theories together enable us to see that acquiring identity capital is not a level playing field.

However, intersectionality and identity capital also have a tension. In intersectionality theory, factors outside the individual (one's social identities) significantly influence one's outcomes. By contrast, identity capital theory emphasizes individuals who create strategies based on personal resources and awareness in order to successfully navigate identity-based "arenas" (Coté, 1996, p. 424) as a means of achieving social mobility. As a result, the individual plays a significant role in one's own outcomes through the choices s/he makes. This balancing tension prevents me from viewing social identities as deterministic forces or thinking that all outcomes are the result of individual choice. Utilizing both theories enables me to recognize that individuals are active participants in their lives who are able to make some choices about social mobility, although these choices may be constrained or influenced by factors beyond their control.

## **Sampling & Recruitment**

### **Recruitment**

Participants were recruited through organizations aimed at supporting underrepresented groups in medicine, academic programs, professional networks, student clubs, and authorized posters placed on the McMaster campus. I specifically worked with the McMaster Black Aspiring Physicians student club (BAP-Mac), the McMaster Bachelor of Health Sciences program, and Community of Support to recruit participants.

Potential recruits were asked to indicate interest in the project by E-mail. Once they contacted the researcher, they were provided more information about the project and eligibility criteria (described below).

Recruits did not need to be McMaster University students to be eligible. Students at other Canadian universities and non-students in Canada were also welcome to participate in the study.

### **Sampling**

After a student expressed an interest in participating, I sent them a link to a Lime Survey (see [Appendix C: Recruitment Survey](#)) to determine their low-income status, medical career aspirations, and demographic characteristics. I used low-income status and medical career aspirations to determine study eligibility.

### ***Identifying Students from Low-income Backgrounds***

I used two indicators of low-income backgrounds.

The first indicator is the MacArthur Subjective Socioeconomic Scale. Socioeconomic status (SES) is the standing of an individual or group in society and is traditionally indicated by occupation and education, in addition to income (APA, n.d.). Users of the scale are provided with the image of a ten-rung ladder and are asked to mark which rung represents their position in society (Adler & Stewart, 2007). Thus, the scale provides participants with the opportunity to self-identify as being from a low-SES background.

The MacArthur Subjective SES Scale was modified to accommodate the research study. First, the wording of the scale was modified to reflect the Canadian context. Second, in order to focus on income, participants were not asked to consider education or occupation when ranking themselves. Third, participants were asked to consider the income of the household in which they grew up and not their current income as a university student. Finally, numbers were added to the rungs of the ladder for clearer use in the online recruitment survey.

The second indicator of low-income background is eligibility for free tuition under the Ontario Student Assistance Program (OSAP)<sup>1</sup>. Income thresholds have been set by OSAP as follows: dependent students less than four years out of high school are eligible for free tuition if their parental income is \$50,000 or below (Ontario, n.d.). Single, independent students out of high school for four or more years are eligible for free tuition if their own incomes are \$30,000 or less (Ontario, n.d.). However, as family size impacts the threshold, incomes may exceed these amounts (Ontario, n.d.).

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<sup>1</sup> This program was cancelled by the Ford Conservative Ontario government in early 2019. However, the program was in effect at the time of the study.

### ***Identifying Aspiring Physicians***

This study aimed to recruit university students interested in pursuing a career as a physician. To do so, the recruitment survey asked potential participants whether they have ever considered a career in Medicine and what they were currently doing to work towards this. Students who had not considered a career in Medicine were ineligible to participate in the study.

### ***Collecting Demographic Information***

The recruitment survey also asked participants to provide demographic information that was used during sampling (see Appendix C: Recruitment Survey). The survey asked students to identify:

- The university they attend, if applicable (participants could leave this field blank or write that they are not a student if they were not currently attending university)
- The program in which they are enrolled
- The environment in which they grew up (rural, urban, or suburban)
- Group identities
  - Race
  - Gender
  - Ability
- Age

I asked participants to provide demographic information at a later time if they did not provide it during the survey.

### ***Sampling Strategies***

I used a variety of sampling strategies in this study. I used snowball sampling throughout the recruitment and data collection stages. In this approach, participants connect the researcher to other knowledgeable people who can potentially participate in the study (Marshall, 1996).

I also recruited participants through convenience sampling, which targets the most accessible people (Marshall, 1996; Ritchie, Lewis, Nicholls, & Ormston, 2003).

Finally, I employed purposeful sampling. In this sampling approach, the researcher selects participants based on their ability to answer the research question (Marshall, 1996). For example, as I proceeded with data collection, I realized that I was missing the perspective of male participants and selected recruits from my sample accordingly. The information obtained from the demographic survey enabled us to determine who was available to participate, which in turn allowed us

to select for participants whose perspectives were either missing or something we wanted to explore further.

At the level of a Master's thesis, it is ideal but not required that sampling will continue until saturation, the point at which no new findings emerge (Charmaz, 2014).

I used the following inclusion and exclusion criteria during sampling:

### **Inclusion Criteria**

- Eligible for free tuition through OSAP OR
- Subjective income ranking below the fifth rung of the Macarthur Subjective SES Scale ladder AND
- Currently considering a career in medicine or has considered a career in medicine in the past AND

### **Exclusion Criteria**

- Ineligible for free tuition through OSAP AND
- Subjective SES at or above the fifth rung of the Macarthur Subjective SES Scale ladder OR
- Not currently considering a career in medicine and has not considered a career in medicine in the past OR

In addition, we conducted interviews in English only and only participants living in Canada were interviewed.

The inclusion and exclusion criteria evolved throughout the study. We initially required participants to be students but later recognized that this criterion excluded those taking a break from school or those who continued to pursue medicine after entering the work force. We also changed our Criteria to include participants across Canada since restricting participants to Ontario limited the number of participants we could interview and restricted our ability to learn about other Canadian contexts.

## **Data Collection & Analysis**

### **Data Collection**

Data was collected through semi-structured interviews. Semi-structured interviewing is a qualitative method in which interview questions stem from both an interview guide and topics of interest that arise during the interview. From a grounded theory perspective, semi-structured interviews are valuable because they enable the researcher to explore her/his own research questions and interests whilst also learning about participants' experiences and the meaning they attribute to them (Charmaz, 2014).

I conducted interviews in-person or over the phone, at the participant's convenience. I interviewed all participants once, and each interview typically lasted one hour.

Study participants were at various points in their journey towards Medical School at the time of their interview. This enabled me to gain insight into their experience of different parts of the pre-med process.

### **Data Analysis**

Interviews were recorded and transcribed. Interview transcripts were analyzed through qualitative coding with the assistance of two research assistants. Rebecca Klimo (RK) and Rya Buckley (RB).

RK assisted in coding for barriers and facilitators. RB assisted in coding for economic barriers, sources of information, and writing memos. Both assistants also helped with flagging identifying information in transcripts that would be removed later.

Coding is the labelling of segments of data in order to categorize, summarize, and account for the segments (Charmaz, 2014). We used MAXQDA, Microsoft Word, and pen and paper to code the data.

Memos are informal analytic notes written during data collection and analysis that assist in identifying gaps in knowledge, developing ideas, and understanding relationships in the data (Charmaz, 2014). RK and I used Memos as a means of analyzing data and wrote memos when we noticed patterns in the data during coding. In addition, I used memos to make notes about my methodology, keep track of useful references, track my writing progress, and define my codes. We shared some of our memos via a shared Dropbox.

I incorporated the themes I identified in the literature (see Barriers and Facilitators) as a framework for analysis and we used this framework to code interview transcripts. I also included race, gender, and other identities into the framework. Emerging themes I saw in the data, such as experiences of low-income, were also accommodated by the analytical framework.

Once I coded interviews for the barriers and facilitators I observed in the literature, I examined each code for common themes. I created unique codes for each of these subthemes and coded accordingly. I placed emerging themes that were not yet well-defined in a code called "other," so that I could examine them later. I created an "other" code for each of the core barriers and facilitators.

The analytic framework I used was as follows:

## Barriers

- Social
- Identity-related
- Economic
- Structural
- Informational
- Other Barriers

## Facilitators

- Intrinsic
  - Motivation
  - Seeking & Sorting Information
  - Strategy
  - Attitude
  - Self-Confidence
  - Financial Literacy
  - Other Intrinsic
- Extrinsic
  - Social
  - Informational
  - Financial
  - Institutional/Organizational
  - Faith
  - Other Extrinsic
- Other Facilitators

## Experiences

- Experiences of Low-Income
- Experiences of Pre-Med
- Other Experiences

## Identity

- Race/Ethnicity
- Gender
- Culture
- Ability
- Other Identity

## Other

I further refined this framework by looking for common themes within codes and I used these themes to create additional codes.

Throughout the coding process, I routinely compared data and codes with each other, which permitted new understandings of participants' worlds, words, and experiences. This approach is referred to as constant comparison (Charmaz, 2014). The findings from data analysis were used as a guide for more targeted sampling strategies and were also used to adjust the interview guide (Charmaz, 2014).

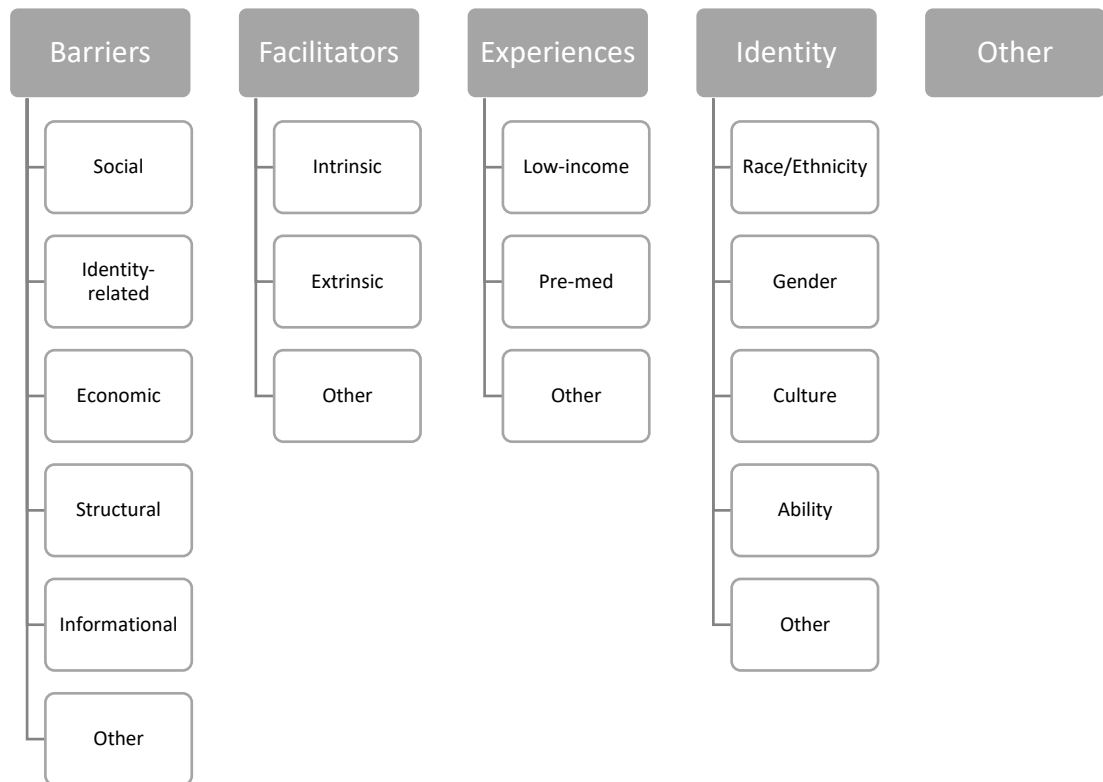


Figure 1. The analytic framework used in data analysis.



Figure 2. Detailed view of the intrinsic and extrinsic facilitators categories used in the analytical framework.

### Rigour

I borrow from Grounded Theory to define rigour. Grounded theory dictates that in order for a project to make a scholarly contribution, relevant literature must be carefully studied, both within and outside the research project's study discipline (Charmaz, 2014). The literature review presented in this thesis reflects a study of relevant research within the discipline of medical education admissions. References to deficit ideology, identity capital, and intersectionality reflect a study of relevant literature outside medical education admissions.



This study also strived to meet the four required criteria of credibility, originality, resonance, and usefulness within the constraints of a Master's thesis (Charmaz, 2014).

### **Credibility**

In order for a grounded theory study to be credible, the research project must achieve familiarity with the topic; gather data that is sufficient for supporting research claims; consider the range, number and depth of interviews in the data; make systematic comparisons between interviews and categories; cover a range of interviews; have strong connections between data and argument and analysis; and provide sufficient evidence for a reader to independently assess and agree with the research project's claims (Charmaz, 2014). I achieved this by conducting a literature review, adjusting the interview guide and sampling strategies to best answer the research question, employing constant comparison when coding, deliberately seeking variation in interview participants, turning common themes in the data into codes, and including quotes in the results.

### **Originality**

An original study must have categories that offer new insights; an analysis that provides a new way of looking at the data; social and theoretical significance; and an impact on current ideas and practices (Charmaz, 2014). I achieved this by addressing a gap in the literature, using the theoretical frameworks of identity capital and intersectionality, and engaging stakeholders (e.g. participants, Medical School administrators) in knowledge translation activities such as presentations and workshops.

### **Resonance**

Resonance requires that the research project represents, through categories, the richness of the experience being studied; examines meanings that are normally assumed and not questioned; connects individual experiences with larger collectives or institutions when appropriate; makes sense to participants and those in similar situations; and provides participants and those in similar situations with deeper insights into their circumstances (Charmaz, 2014). I achieved this by coding for common themes, using a theoretical framework to view the data, staying close to participants' reported experiences through description, working with research assistants who could offer the perspectives of a medical and undergraduate student respectively, and being mindful of the possibility that participants and other aspiring physicians from LIB would read the published study.

### **Usefulness**

A useful study offers interpretations that can be used in everyday life; suggests and examines generic processes (if they are present); has the ability to lead to

further research; contributes to knowledge; and contributes to the improvement of the world (Charmaz, 2014). I achieved this by including opportunities for future research in the discussion and helping to close a gap in the literature.

## **Positionality Statement**

As someone who aspired to become a physician as an undergraduate student, this topic was of interest to me. While I do not come from a LIB, I am from another underrepresented group in medicine as a Black person. While I pursued medicine, I was aware of both my financial privilege and the hurdles I faced as a person of colour from an underrepresented group. This shaped my interest in the topic and my desire to shed light on the challenges that other people faced in pursuing a career in medicine. As a Black woman who often reads about the difficulties faced by her community, I wanted to make sure that I did not focus only on barriers in approaching this topic. I know first-hand that this focus can leave people with the feeling that their strengths are ignored and that they are defined and stereotyped by their problems. This also drove my decision to choose identity capital as part of my theoretical framework. I wanted to highlight the fact that people do in fact have a degree of autonomy in their day-to-day lives, although the choices & opportunities available to them might be influenced or constrained by their identities. My own lived experience as a person with several identities, some undervalued and some privileged, also led me to take an intersectional approach to this topic.

The research assistants involved in this project also brought their own valuable perspectives to this research. As a LGBTQ medical student from a rural background whose parents did not receive an undergraduate education, RK has insight into the process of applying to Medical School and gaining admission whilst navigating multiple identities. As an undergraduate student, RB has insight into the current undergraduate experience. This is significant because many of our participants were pursuing undergraduate education at the time of their interviews.

## CHAPTER 3

### RESULTS

#### Experiences of Low Income

Most participants ranked themselves at the high end of the low-income rungs of the ladder (rungs 1 to 4), at or near rung 4. However, participants reported different experiences of coming from a low-income background. At the time of interview, these experiences tended to fit one or more of four profiles:

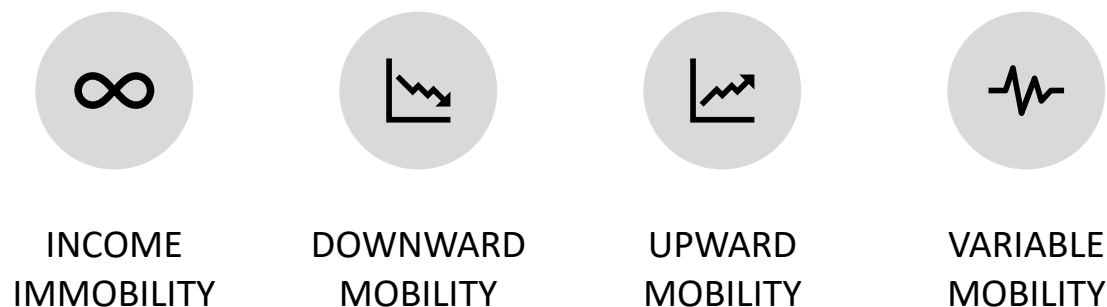


Figure 3. Experience profiles of participants from low-income backgrounds.

1. **Income Immobility:** the participant and/or their parent(s) have not had much change in their economic situation throughout the participant's life. One example of this includes a participant who was raised by a single mother who worked multiple jobs to support her children. Four participants fit this profile.
2. **Downward Mobility:** the participant was in a higher income bracket before a life-changing event like immigration or the loss of a parent. One example of this is a participant who experienced a decrease in the financial resources available to them after their mother died. Two participants fit this profile.
3. **Upward Mobility:** the participant's economic situation improved over time, such as a participant who entered the work force full-time after graduating from university. Two participants fit this profile.
4. **Variable Mobility:** the participant's economic situation fluctuated over time, such as a participant who immigrated to Canada with their parents, experienced downwards mobility, and then eventually experienced upward mobility when their father acquired a better job. Seven participants fit this profile.

It is important to note that these profiles are not fixed and participants can experience a different type of mobility based on their continuing life experiences.

Most of the participants in our sample were immigrants or children of immigrants and several participants in this group fit the variable mobility profile. In addition, some participants reported that they received financial help from their parents. Receiving this kind of assistance from parents with savings suggests a certain degree of financial privilege and literacy, which are not possessed by all parents. Some participants were themselves financially literate and/or privileged, reporting an ability to save for Medical School admissions-related activities, such as the MCAT or Medical School applications.

In general, however, almost all participants expressed concerns about money in a variety of areas, including their ability to support themselves, their parents' ability to support their family, and/or participants' own ability to support their families. In line with this, most participants expressed a need to work during the summer, the school year, or both.

### **Pre-Medical Progress**

Participants were at different stages in their journey towards Medical School. These stages include focusing on their grades, completing extracurriculars and other activities; learning about medicine, Medical School, and admissions; preparing to write or rewrite the MCAT; determining which Medical Schools to apply to; and applying to or starting graduate school as a continuation of their pre-medical journeys. Some participants had already applied to Medical School at least once. One participant was invited to a Medical School interview, placed on an admission waiting list, and ultimately admitted. The Medical School interview and admission took place after the participant's interview for this study.

### **Participants**

I report participants' demographic, income, and academic information in aggregate to protect their identity.

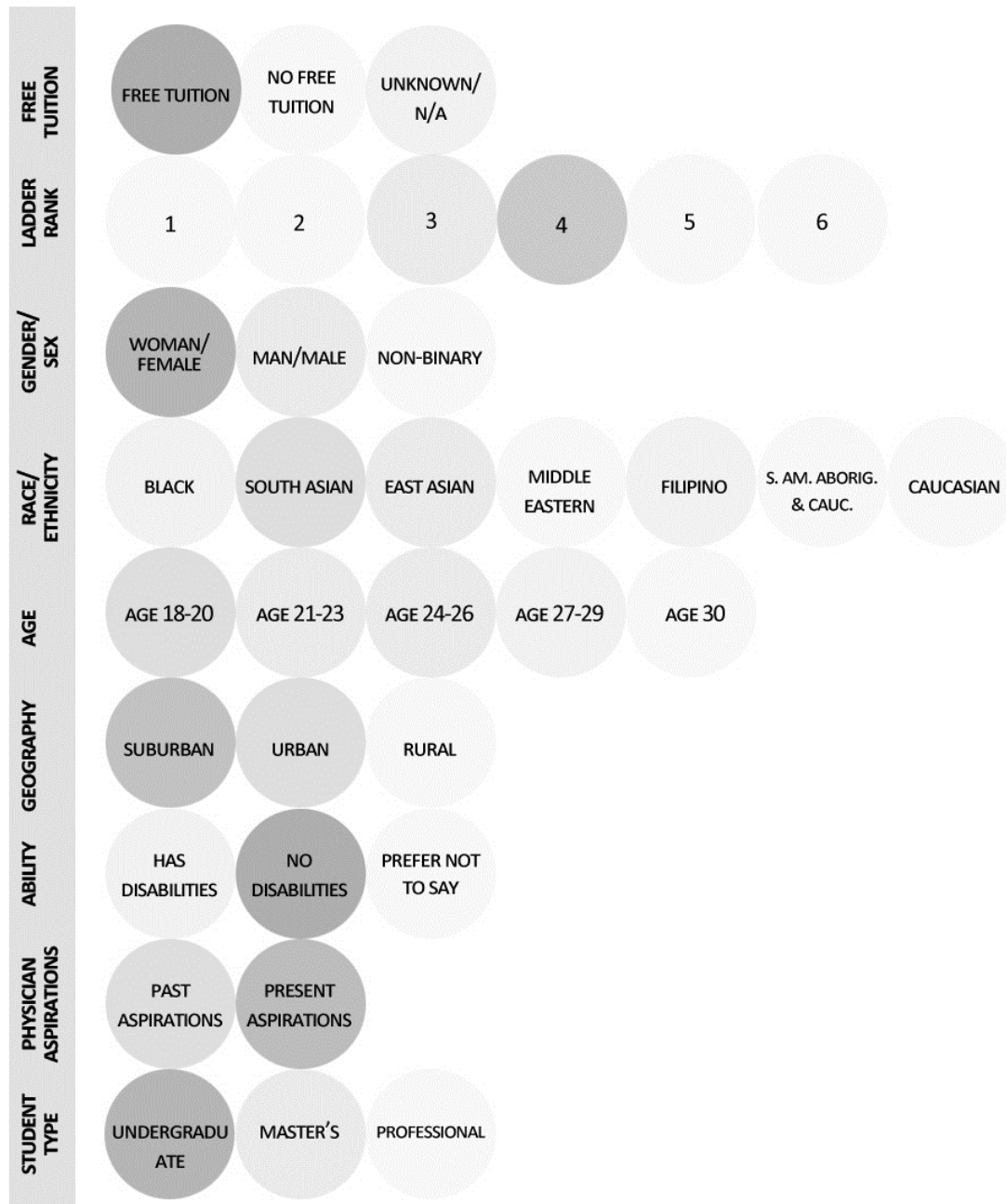


Figure 4. Participant characteristics by frequency. The darker characteristics are more common while the lighter characteristics are less common.

## Demographics

Table 1. Gender/sex of participants.

Woman/Female	Man/Male	Non-Binary
11	3	1

**Table 2. Race of participants.**

Black	South Asian	East Asian	Middle Eastern	Filipino	South American Aboriginal & Caucasian	Caucasian
2	5	3	1	2	1	1

**Table 3. Age of participants.**

18	19	21	22	23	24	26	28	30
2	3	1	2	1	2	1	2	1

**Table 4. Geography of participants when growing up.**

Suburban	Urban	Rural
9	5	1

**Table 5. Participants with disabilities.**

Has Disabilities	No Disabilities	Prefer Not to Answer
2*	12	1

\*all disabilities are related to mental health

## Medical Aspirations

**Table 6. Physician aspirations of participants.**

Past Aspirations	Present Aspirations
5	10

## Income Profile

**Table 7. Eligibility of participants for free tuition under the Ontario Student Assistance Program (OSAP).**

Eligible	Ineligible	Not Applicable	Unsure
12	1	1	1

**Table 8. Participant's self-reported MacArthur ladder rank.**

1 <sup>st</sup>	2 <sup>nd</sup>	3 <sup>rd</sup>	4 <sup>th</sup>	5 <sup>th</sup>	6 <sup>th</sup>
1	1	3	8	1	1

## Academic Profile

*Table 9. Type of student.*

Undergraduate	Master's	Professional
11	3	1

*Table 10. Current program of participants at all post-secondary levels.*

Kinesiology	Life Sciences	Nursing	Public Health	Social Sciences	Health Sciences	Other
1	5	2	1	1	3	2

*Table 11. Program year of participants in undergraduate education.*

Year 1	Year 2	Year 3	Year 4	Year 5
4	2	1	3	1

*Table 12. Program year of participants in master's and professional programs.*

Year 1	Year 2
2	2

## Overview

In this results section, I report the barriers to a career in medicine, starting with social barriers. I then detail identity-related barriers, economic barriers, structural barriers, and informational barriers. After this, I describe intrinsic and extrinsic facilitators to a career in medicine.

### Barriers to a Career in Medicine

The literature on aspiring physicians from LIB revealed five barriers to a career in medicine: social, identity-related, economic, structural, and informational.

#### Social Barriers

Social barriers limit the support available to aspiring physicians from LIB as they work towards Medical School admission. They create a situation in which some aspiring physicians from LIB have less support in navigating the complex and difficult process of Medical School admissions.

One commonly mentioned social barrier was having fewer connections than wealthier peers. For participants, this translated into challenges in getting relevant clinical opportunities, not having guidance during the pre-med process, not

knowing how Medical School applications work, and not being aware of what is required to gain admission. For example, P15 describes their perception that social connections are required to gain access to resume-building experiences such as research opportunities.

*P15: ... but it feels so nepotistic-based at times. You hear about these people that even get interviews for Med, and they're the people who have been doing research since high school. How did you get that? Tell me. How did you get that? And so, it's things like that.*

*CD: So, you think there's a connection.*

*P15: It's connections, which I've had absolutely none. I've been making my own since first year.*

Social barriers can also relate to culture. For example, some participants reported that they experienced a cultural clash between their own cultures and the social aspects of getting into Medical School. Some participants perceived this cultural clash as influencing their ability to make useful connections in the medical field.

*... In my culture, we prefer people who are more quieter and can get a job done. ... So I do talk to doctors about how they got into Medical School, but I didn't try to go bother to be online to try to access their network. I felt like it was not appropriate. (P1)*

For others, the cultural clash affected their ability to focus solely on gaining Medical School admission:

*... because here in North America it's very like people focus on the individual, if you're not getting somewhere it's on you, you do what you have to do for yourself to get somewhere. Whereas my background, my family and other people I know from the same background or a similar type of culture where you're not just doing something for yourself, you're thinking about other people and how it's going to affect them. ... as I went to university, there were a lot of people who weren't at the same kind of lifestyle who only had to worry about what they were doing to go from point A to point B and not their parents or anyone else. That's part of where the tension came from, being a student from two different environments. (P9)*

Another social barrier was a lack of social support stemming from participant perceptions that their aspirations or ideas were disparate from those of their peers and family to the point where they felt uncomfortable seeking support from those people.

*[My parents and I], we didn't really talk. Like, I would say we're not very honest with each other. I don't tell them what's my progress so far. We don't discuss how I see myself in five or ten years, or what I really want to do for my life. Because I feel like every time we talk, even though I've tried to correct the misconceptions [about getting into Medical School] ... I told them, hey, I saw this webinar on*



*Queens University Medical School web site, they're still trying to really reiterate the same misconceptions they got from friends or family doctors of things they thought would help me. Those things would actually not help me so I just give up. (P1)*

### **Identity-related Barriers**

In the literature, identity-related barriers arise when aspiring physicians feel that medicine and/or Medical School is not a good fit for them because of their social class.

In our data, some participants reported feeling different from their wealthier peers as a result of these peers' experience with financial privilege, such as attending private school and not needing to work.

*... it can be very discouraging when you see that your peers are getting access to opportunities or your peers have things to add to their application because of the fact that they grew up... or because of the fact that they come from a higher socio-economic position. When those kids actually get into medicine, then it can be even more discouraging. Reflecting anecdotally on who I know that actually got into med school, many of them were... they came from families that were incredibly wealthy. They went to private schools like University of Toronto Schools, which is a private high school in Toronto, or De La Salle, another private high school in Toronto. These students, these peers, were not attending poorly-funded public schools as I was in Priority Neighborhoods. (P11)*

Participants acknowledged that they were often unable to identify themselves socially with those who gained admission to Medical School.

*... the whole student body that ends up going to these programs, it's a lot of people who I can't identify with. And it's like, you spend so much time with these people, they're going to be not only your colleagues at med school, but they're going to be your colleagues for the rest of your life, and you have to know how to navigate all that elitist shit. (P10)*

Some of the other identity-related barriers reported by participants included recognizing that their wealthier peers were able to focus solely on their studies, having awareness that the people who get into Medical School tend to come from wealthy backgrounds, and acknowledging that wealthier peers had advantages through connections and earlier involvement in pre-med activities.

*I just know, for example, one of my friends, she was already, because her dad is a doctor and her brother also is interested in medicine, so she already knew even before coming to [university], she started doing research. So, even at my high school here in [my city] a girl that her dad is a doctor, so she was able to through*

*him start some sort of, I forget what it was but it had to do with some sort of medication, medicating people in Guyana. And so, seeing all that, and other people from private schools knowing people that are in Medical School or knowing people that they're related to like the Medical Schools, I felt like, I guess when you start with a privileged background, it makes it easier. And that has just made me think, what does that mean for me? (P13)*

Other identity-related barriers related to race and disability. For example, one participant noted the additional challenge of being a Black student in a predominantly White environment.

*Constantly doubting yourself and feeling othered in these White spaces is an additional barrier that ... I guess that doesn't have to do with class, but that as a Black person, you feel. (P3)*

Another participant felt that Medical School would not be a good fit for her low-income background and experience with mental illness, recognizing that as a member of these marginalized groups, she may face extra stress:

*... just the barriers you encounter when all your fellow classmates are really well off and don't have the same level of stress. And I think there are a lot of negative attitudes towards people who experience mental illness. (P6)*

### **Economic Barriers**

Economic barriers are those created by financial obstacles in the pre-med process. These barriers may interfere with or delay the ability of students from LIB to become competitive applicants or even apply.

Finances were a recurring barrier for participants and they reported economic barriers in several areas of their lives.

Many participants expressed concerns about paying Medical School tuition in addition to large debt burdens from their undergraduate programs.

*... [My parents] always told me that if within my second year I decided this is not for me or for some reason, in the general umbrella of I've failed, there's nothing I can take out of this time that I've already spent or the resources I've already spent. The freefall would be really deep, because I've taken so many loans, I've taken so many sacrifices to get to this point. ... It's probably unlikely in general that people find a med school close to where they live, so I'll most likely live out of home, and that in itself is a big jump as well. Applications. Then, even coming [to my university]. ... when my parents asked me if [my university] was the one and I told them, yes, they really specified the fact that if I'm saying, yes, I'm saying yes to the entire trip, because there's no going back from where I go. While I don't*

*think it's stopping me, I guess there's a little bit of fear that's in there, of, if I don't study hard enough then there's a big freefall of the things I have to deal with. Versus if I went to nursing or something. (P8)*

Most participants discussed the high financial cost of Medical School, particularly in relation to the cost of applications and/or the MCAT. Participants saw the cost of the MCAT (including travel to MCAT test locations) as well as that of preparation materials and courses as a barrier. Some participants limited the number of schools they applied to due to the cost of applications.

*Yeah. \$350.00 USD. What? How much is that Canadian? That doesn't cover my materials. That doesn't cover if I want a prep course, which I feel like is almost mandatory at this point because of the way it gets you into that rhythm and that routine. I literally had to tell my dad, who is retired on CPP months ago, I was like, Dad, I think I might want to write my MCAT this summer. And he was like, okay, what do we have to do? And I'm like, we have to save a lot of money on the side, just so you know. And especially because of all the lost money I will lose from not working full-time. All of that combined, it almost just doesn't make me want to do it at all. (P15)*

Several participants noted that they needed to work to support themselves financially and they recognized that this created disadvantages such as making it more difficult to achieve high grades or maintain a full course load, being unable to focus solely on their studies, and being unable to afford the lost income associated with volunteering.

*So, just not being able to ask your parents for help financially was hard. So, I took on another job. I usually work two jobs. I think this is the first time I'm not. Usually I work at [a store] and [a pharmacy] at the same time. I think in second year I worked [in the student residences], so they are the people on res who sign you in at like 2:00 a.m. or whatever. So, that was really tough though because I came home every day at like 3:30, and I was like, okay, it's 3:30 a.m. I have a class in the morning. .... So, yeah, my GPA plummeted a lot because of that. (P7)*

These participants generally worked in the summer and/or the school year, which created a situation in which they needed to make trade-offs on where they spent their time: work, school, extracurriculars, MCAT preparation, and other opportunities like research.

*... So I'm heavily involved in volunteering, debate club, involved in research activities, all types of events, just trying to look like a well-rounded candidate, and also try to do well academically. On the other hand, I also need to support myself, so, yeah, sometimes these kind of things conflict. Sometimes it's like, oh, like,*

*should I study for my upcoming test or should I take on a work shift that can help me earn more money. So sometimes it's hard to choose. (P4)*

The need to make money caused some participants to forego professional and personal development opportunities like getting involved in research. While these opportunities may have been helpful to them in Medical School applications, they did not pay participants enough to meet their needs.

*Whenever I looked at what I wanted to do in the summer, I knew about research opportunity programmes around U of T but doing those programmes didn't make sense because they paid minimum wage and any other job in retail or fast food or even at a summer camp I worked at, I would still get more hours. ... Because they wouldn't stop my hours at 35 or 40, so I could work on weekends, I could work in the evenings. A lot of people from the same demographic as me, most of us were working one or two jobs every summer to earn money just to make up for the school year when we were just working part-time. I remember looking up those programmes and choosing not to do them because I knew it didn't make sense financially. (P9)*

Several participants also reported that they contributed financially to their families, which created an additional need for participants to work. This responsibility created other financial pressures, such as an inability to save for other costs such as the MCAT or a sense of urgency about working full-time in order to further help their families or free up their parent(s)'s resources to help younger siblings.

*... I have got a couple friends who are like, you're still going to school? You should be earning money and supporting your family like the rest of us are. ... People that I know who went to school, whether it's college or university or skilled trades and got a job immediately or decided to start working right after. That's frustrating, you want to start contributing, you want your parents to stop working as hard as they do. (P9)*

### **Structural Barriers**

Structural barriers arise from systemic problems in society that result in different opportunities for different people. These barriers create inequality and an unlevel playing field in which aspiring physicians from LIB may face more obstacles to a medical career than their more affluent peers.

Some participants expressed skepticism about what Medical Schools were truly looking for. One participant voiced her frustration that Medical Schools practiced admissions differently to what they expressed publicly, particularly when it came to how they prioritized academics relative to interpersonal skills.

*...you always think that [Medical Schools are] looking for someone who is very holistic, their academics are strong and also very well grounded, so you want to show all those things. But then when I looked at how they grade the application I realised, really what they're looking for is grades and the MCAT, those are the most important. You are not going to get your foot in the door without those. Also, sometimes it feels a bit prejudiced, I don't even know if prejudice is the right word, but it doesn't seem right to me that the academics come first, as a first step in the process. Especially when you can teach a person many things but it's much more difficult to teach a person how to be a good human and have good communication skills, those kinds of things, and teach them well. (P9)*

Another participant recognized that Medical Schools' definitions of well-roundedness can introduce a degree of bias in admissions practices that favours privileged applicants.

*I think [Medical Schools] are trying to make an effort to look more towards better representations from different communities, but I think they're largely still steeped in this whole culture of looking for a so-called well-rounded applicant who is defined based on criteria that has been set by people who in society have often been more privileged. ... There is what they explicitly state and then what, if you actually assess that and try to understand who these people are, you end up realizing that they fit into a certain demographic of the population. (P10)*

One rural participant acknowledged that living far from a city meant that he had a limited ability to access the kind of opportunities available in cities that would further his application, such as internships and student competitions.

*I think another thing is just the actual geography of where I am living. [My town] is a small town, and in order to go to another town within the [region], or to go to [a major city], I think the geography, the distance has been a barrier. In that if I want to pursue an opportunity, let's say ... I can't really think of anything, but extracurricular opportunities, then I would have to factor in the travel aspect of the extracurricular activity. (P14)*

Race and ethnicity were also a barrier. Some participants from underrepresented races and ethnicities in medicine, namely Black and Filipino participants, faced social barriers in the form of stereotypes and underrepresentation. For these participants, this created a sense of not feeling supported and/or needing to do extra work in their medical ambitions.

*... So, I felt like it was also, not an onus, but, a responsibility of me, as a Black woman in this space, to be doing those things. I know I'm a student as well, but, I*

*don't know, I felt like there was just this extra responsibility. I think it's called like taxation, like Black tax or something, like, placed on Black students here. (P3)*

*I think it definitely has, just being Black and female, I feel like people don't necessarily take me seriously. ... It's frustrating because I feel like people don't take me seriously or when people see me they don't think that I would even be interested in that line of work. (P12)*

*... when I went to tell people, even this past year, oh, I got into [a competitive pre-med program], they'd be like, oh, so you want to do nursing. I've always felt like is that because I'm a Filipino girl and you see a lot of girls from that ethnicity go into nursing? ... I wouldn't say it's extremely negative, but it wouldn't be so neutral since it also makes me think about, does that mean I shouldn't be pursuing medicine? Does that mean that I'm more suited for nursing? (P13)*

Several participants began thinking about a career in medicine at an early age, in some cases, before high school. However, some participants recognized that they and others were discouraged from pursuing a career in medicine at a young age due to their race.

*I know a teacher in Grade 8 when we were looking at potential careers, he knew I wanted to be a doctor and he said to me, oh, well maybe you should look for a backup plan. Or, the same teacher was also, immigrants are usually ... do low-paying jobs. He literally said that or something like that. ... And I think at my sister's Grade 8 graduation, the principal said, these are your future factory workers, garbage people. Literally, that's what he said. (P6)*

When stressors and difficulties, such as mental health problems, arose that negatively impacted other participants' ability to manage their pre-med journeys, they recognized that they needed support. However, these participants spoke about the challenges of accessing support services when multiple identities, such as race, ability, and being of a lower income background intersected.

*... The psychiatrist wanted me to see her mental health nurse weekly, so I did. And then, she said to me once, oh, I want to know, in some cultures, women are afraid to speak out. Is that something that you're experiencing? And I'm like, that's really hard for me. That was racist and really wrong to say. She was just saying that because I was a brown person. To have my parents viewed in that light or have that put upon me because of the way I look is really frustrating. (P6)*

*... Lower income folks tend to be more racialized. Lower income folks tend to have more health issues and things like that. There's the whole intersectional approach that a lot of support systems aren't aware of, especially when it comes to issues that aren't common, for instance, different abilities and things like that. So, I'm very apprehensive of going towards different support resources because of the lack of recognition of the more holistic approach. (P10)*

In addition, the structure of Medical School admissions posed inherent challenges to some participants. Meeting eligibility criteria such as prerequisite courses was a barrier for some participants due to the limited ability of electives in their prerequisite programs or the fact that several years had passed since they completed prerequisite courses. Some participants were restricted in the number of schools they were eligible to apply for as a result of eligibility requirements.

*In terms of prerequisite courses, I don't have the time or the finances to be able to retake courses or do any prerequisites, so I think that it's just going to preclude me from applying to certain schools such as McGill and such as the University of Ottawa and all of the schools in the States for which prerequisite courses are much more important. My plan is to just not apply to those, and this is very difficult for me, and focus on schools that don't have prereqs. (P11)*

Other Medical School eligibility requirements also created structural barriers for participants. These requirements included course load requirements, the fact that many Medical Schools do not consider the challenges faced by applicants from LIB, instructions to report activities from the high school years, and the difficulty of explaining their lived experience in a way that is valued by Medical Schools.

*And a lot of the Medical School application, they ask you to track back when you were 16 and what you were doing at that time, if there were any special achievements. I was like, when I was 16 I was trying to, you know, finish my courses. I was like, I was looking too late again. Because when I was 16 no one told me what I should be doing. ... So I was just so overblown by this whole thing about immigration and trying to fit into the environment, and trying get good grades, and trying to get friends. So it just wasn't a priority for me to looking into that. (P1)*

*...I have had several opportunities where I could have applied to medicine, but each of those times I've felt like I didn't have that access in a weird way. Sure, I could have applied, but I couldn't navigate the medical application process, not materialize wise but my language for instance, my vocabulary, my way of thinking about ethical issues. I've felt it. I have that lived experience. But to be able to vocalize it and to be able to articulate it in a way that is valid to the admissions process, to people who often don't identify with us, is something that is hard as fuck. The way that I have to sort of compose myself in a professional manner and sort of rip myself from my lived experiences as I go through this process is one that has also kept me from even approaching medicine as well. (P10)*

Finally, one participant had difficulty applying for MCAT fee assistance due to the difficulty she had in finding the option to report a single parent household. In this

way, the design of the applications that are used by participants can also act as a structural barrier.

*There's no option to not have a mom. There's no option for a single parent. I was like, you have a [MCAT] fee assistance thing here and you're assuming that everyone has two parents. And it was like, error, error, error, can't submit, you're missing fields. And if I put in the fields, it would skew my eligibility, because then it thought I had a mom. (P15)*

### **Informational Barriers**

Informational barriers arise from incorrect, inadequate, or missing information relevant to a career in medicine. Informational barriers can make it more difficult for aspiring physicians from LIB to effectively strategize towards a medical career.

One type of informational barrier in our data was related to financial information. Some participants expressed that they did not have (easy access to) information on the finances around Medical School, including how to pay for it. This was a source of stress for participants.

*Besides OSAP, I didn't know that if you need financial assistance, there are these things for you. One, I never really looked into it, and two, I never really heard stuff about it. It's only when I get onto the website and I notice, oh, there's this little tab that says if you need help with MCAT writing fees, then look into this, they're offering them. But other than that, I don't recall someone being like, throughout this MCAT process, you have to get these things. Oh, also, if you're applying, then here are some resources. I don't know. Do they assume that if you're going to write it, then you can pay for it? I hope not. But I don't recall it being presented for some reason. (P5)*

Other participants reported that they simply did not have important information about academics during certain stages of their education, including high school. This information was related to things like selecting and planning courses and the nature of helpful pre-medical university programs. Speaking about her lack of knowledge about the usefulness of specific pre-med program, one participant said:

*... So, basically their parents obviously knew about this and told them, yeah, you should apply. We know people who will help you out with your application and stuff. My parents didn't know a single thing. And also, I was under the impression that, oh, it's going to be a super hard program, super competitive when you get in. I shouldn't even do it because knowing myself as a person I won't be able to handle all the extra stress. And I come here in first year and everybody was like, what are you saying? It's literally paved for you to do well. It's not a difficult program. (P7)*



Similarly, some participants reported that they were previously unclear about some of the requirements for Medical School, such as what is most important to Medical Schools, the path to take to gain admission, or prerequisites. While these participants later acquired information on what was required, they missed opportunities to take certain courses or apply to helpful undergraduate programs as a result.

*... halfway through the [Medical School] application process I realized that, you know, there's no way, because I wasn't meeting all the program ... When I was doing my undergrad, I wasn't aware of those requirements for every program, so I didn't actually really try to meet those requirements when I went to do the undergrad. (P1)*

Some participants experienced informational barriers related to Medical School applications. These challenges included being unsure about how to approach a reference letter or essay, or not having a unified resource to learn about Medical School requirements and application instructions.

*It wasn't very much, I don't think I truly knew how to approach a reference letter the way I think is a better way. And even with the essays, how explicit some of the language needs to be for that, I'm not sure if that's make or break it. (P9)*

Misinformation was another informational barrier faced by some participants. Some participants received misinformation about requirements to get into Medical School or the cost of attending Medical School. While participants identified the inaccuracy of some of the information they received, misinformation which they or others in their lives treated as true shaped their perceptions about participants' ability to gain admission to or manage Medical School.

*Yeah, I did want to do medicine in the past. I actually shut it down very early in my university career because just knowing myself as a person and just with all the barriers around it, there's always that you have to have a 4.0, and I just knew I wasn't capable of that with every/thing going on. ... with my socioeconomic status, me having to work two jobs all the time, that a 4.0 just wasn't attainable. (P7)*

### **Facilitators to a Career in Medicine**

The literature on aspiring physicians from LIB identified two types of facilitators to a career in medicine: intrinsic and extrinsic.

#### **Intrinsic Facilitators**

Intrinsic facilitators relate to those facilitators that arise from the individual, and include motivation, self-confidence, attitude, strategy, seeking and sorting information, and financial literacy and increasing income.

### **Motivation**

Many participants first aspired to become physicians before university, and in some cases, before high school. Almost all participants articulated intrinsic motivations for medicine based on interest. These interests were varied and included interests in the body, science, and/or social justice.

*Well, I always knew I wanted to be a doctor. In elementary school, there would always be career fairs or 'do a project on a career that is interesting to you', and I would end up picking a doctor or a surgeon. I always knew the area I wanted to be in. And then, actually, I really solidified that when I had a growth on my neck. I had to get it surgically removed. Ever since that point, which was, I think, Grade 7, ever since then, I was 100% gung-ho. That is my dream, my aspiration. So, I've been working in school towards that. (P12)*

Several participants also expressed a desire to serve underserved communities as physicians.

*... Black people have poor outcomes, more health outcomes, there's under-representation of Black physicians, and I feel like Black physicians are better able to respond to Black health concerns. So, that motivated me to want to be a physician. I'm like, I'm needed. I'm here. I can do it. (P3)*

*And the real reason that lies at the core of what I want to do as a doctor is seeing my family fall through the gaping holes in the mental healthcare system and seeing how that persistently comes back to sort of affect me and the lives of the people I love so much. And the doctors I see out there who are working in the fields that affect us most are not doing an effective job in a large part. And I want to hopefully be part of some sort of change, yeah, working with a lot of more marginalized communities and other communities that represent the people I love and myself as well. (P10)*

In addition, several participants whose parents had immigrated to Canada reported a desire to give back to their parents in recognition of the sacrifices they made in coming to a new country. This desire served as a motivator for participants in becoming a physician.

*... I always had the feeling of, I have to give back to my parents. Coming from a different country, while it was a big shift for me and my brother, it felt like it was a shift for the better in terms of quality of life and education, but in terms of my parents, they really had to step down from where they were. Taking different jobs, seeing them struggle day-to-day, was kind of what made me want to go into medicine. (P8)*

### **Self-Confidence**

Several participants reported confidence in their ability to become a physician and recognized that they had strengths that could be valuable in medicine or Medical School admissions.

*I feel like I always persevere. I am a hard worker. I've always put in the effort to be empathetic and know how can I communicate with others in a way that makes them comfortable but also helps us to grow. And I've always loved learning. And I've always known that the medical journey is a long journey. It involves a lot of a life full of learning. And that's always been attractive to me. Where I think I stand? I think I have the capacity. I think it just depends on who I reach out to, I guess. (P13)*

### **Attitude**

Some participants expressed their ability to persist when faced with obstacles such as financial concerns, awareness of the relative privilege of their wealthier peers, and personal difficulties. This enabled them to work through and around some of the past and present barriers they faced to gaining admission to Medical School.

*I just try to get by every day. I figure, if I let the stress get to me ... Because, there are always things in life that you can change and things in life that you can't change. So, if something is pressuring you and you can change it, then you should change it. But, if you can't change it, then keep it in the back of your head ... It's like a boulder in the path, if you can't move it, just work around it. (P8)*

### **Strategy**

Nearly all participants had a relatively clear idea on what was required to get into Medical School, and they generally involved the same components: good grades, a strong MCAT score, relevant experience (including medical/clinical experience and research experience), and well-roundedness. Participants used this information to strategize towards a medical career and planned their programs, courses, extracurriculars, grades, and study plans accordingly. For example, one participant discussed her approach for getting high grades, which she based on her awareness of her own learning style:

*You would take courses that you would do well in. Courses that don't have an exam component, for me, I would do better in, because some people love studying for an exam and they were like, if there was a 100%, I would take that course because I would probably do really well in it. (P5)*

### **Seeking & Sorting Information**

Participants recognized when they had gaps in their knowledge about medicine, Medical School, and admissions and sought out information to fill those gaps.

*For me, I just again research online and keep reading what other people are doing. And also, I put in the effort to reach out to upper years. Because just knowing that I don't have those direct connections, I put in the effort to find them. (P13)*

Several participants also recognized that not all the information they received about Medical School was reliable. As a result of this, they filtered information accordingly and sought out more trusted sources. Some participants were particularly skeptical of the information that came from other aspiring physicians, recognizing that they too had gaps in their knowledge about Medical School.

*I guess [other aspiring pre-meds] just didn't know a lot about things that would be required for Medical School. Like, different universities have different course pre-requisites, and how some Medical Schools don't even have course pre-requisites. I feel like some of them were taking courses blindly and not necessarily tailoring their electives in a way that satisfies the requirements of as many schools as possible. So I had to kind of do that research myself, find out which Medical Schools needs what requirements. (P4)*

*I kind of just didn't want to be super stressed out, if that makes sense, because I saw everyone would talk, first year, especially, 'oh, I want to be a doctor, that means I have to do X, Y, Z', 'oh, I need to be published in my first or second year'. I just listened to that and I was like, okay, that is not what I want to do. I don't want to be super stressed, especially because university is also supposed to be something fun. It's not supposed to be something I'm stressing over severely. I took that and just wanted to get my own facts. That's why I signed up for a mentorship program. (P12)*

### **Financial Literacy & Increasing Income**

Finally, some participants demonstrated financial literacy which enabled them to save money and plan for Medical School related activities, such as the MCAT and Medical School applications. Several financially savvy participants also increased their incomes, deliberately seeking out higher-paying jobs or acquiring these jobs after graduation or during graduate school.

*I'm very financially savvy... I think part of it is if you grow up in a house with very little money, you're always taught how to be savvy. That's just something you grow up knowing, you are raised to do that, you're raised to always plan and know how much you're spending and not spending and that kind of thing. And you see the mistakes of people older than you or people a couple years older than you and you get an idea of what works and what doesn't. (P9)*

### **Extrinsic Facilitators**

Extrinsic facilitators relate to those facilitators that are located outside the individual, such as support from others. In our data, these facilitators generally fell into four categories: social, informational, financial, and institutional.

### **Social**

Social extrinsic facilitators arose from the relationships that participants had with others.

Several participants reported encouragement and support from family and family friends, friends, partners, or teachers in pursuing medicine. This encouragement sometimes drove them to do things like put more effort into school, pursue medicine as a career, or not worry about the costs of Medical School. Some participants noted that the support they received helped them relatively early on in life, before they came to university.

*.... I feel like I've been blessed, because I've always had people around me who believed in me. In high school, I really remember my physics teacher, he really made me love learning and he really ... I had him for grade ten physics and it was academic physics and I just wasn't paying attention in class. He could have just been like, okay, this is another Black girl who is just not caring about school or whatever, but ... He said he saw potential in me and knew I could achieve better marks in his class. So, just having that, that really ... He was an incredible teacher, a), and then him believing in my so much to call my mom outside of school and talk to her about my potential and me needing to be doing better, like, that really made me reorient myself. Like, okay, get your shit together, you can do this. (P3)*

Some participants, whose parents and/or relatives were physicians in their countries of origin or medical students, also had some exposure to medicine through their families. This provided participants with a sense of what Medical School and a career as a physician involved. In some cases, this also provided participants with motivation to become a doctor and a vision of their own potential.

*... I grew up in Canada, but I have cousins who grew up where my parents are from, [South Asia, Europe], and a lot of... not a lot, but several of those cousins who are women became physicians. Growing up, I considered them my role models and I would seem them sort of studying all the time when I visited them and telling me what they were doing and they seemed really excited about their career choice. Even when I was 10, 11 years old, they encouraged me to consider a career in medicine, so that was the first thing that planted the seed in my mind. (P11)*

A common social extrinsic facilitator was the connections participants made in university, particularly peers and friends. Participants met other aspiring physicians through their university experiences, including those further along in the premedical process, such as those who had applied to Medical School and those who were medical students. This provided social support and helped participants gain insight

into how Medical School and Medical School admissions worked. In this way, participants were able to overcome some of the structural and informational barriers they faced when they started their journey towards a medical career.

*I read a lot on current events I would say. I didn't do it for interviews, but then I realized I learned after because my friend, she's at med school now, so she told us ... I was asking her, oh, how did it go, how were your interviews. And I was surprised to even hear that a lot of the things they sometimes ask you is on current events, what are your opinions on them. And just knowing that I have an edge in that naturally because I already do all that, it's not like someone who is just doing it for med school or something. It's not performative. Just being naturally inclined to read about these things and talk about them, I think that helps a lot. (P7)*

Racial and cultural communities also acted as a social facilitator for some participants by encouraging them to pursue medicine through representation and/or valuing a career as a physician. In addition, some participants accessed their racial communities through events and organizations geared towards supporting underrepresented groups in medicine.

For example, one participant described the encouragement she received from her community due to the value it placed on medicine as a career:

*Also, my parents, I feel like ... I don't want to generalize, but I feel like in every community, everyone wants their child to be either a doctor, a lawyer, an engineer. Especially in, again, don't want to generalize, but in [my] community, being a doctor is really highly regarded. (P6)*

In addition, other participants spoke of the value of representation and role modelling:

*Looking at people who are in Medical School and what they look like, I think there's like an equal acceptance of males to females in Medical School. So, it's not like, for example, engineering, most of them are male. I think if that were the case, I would probably be deterred, because there are not a lot of people who look like me in there. So, being a female, no. Being of Asian ethnicity, I don't think so either, because I think there's a good representation of Asian ethnicities in Medical School. So, I've never felt that this is something that I can't pursue because there's no one that looks like me. (P5)*

*When I think of affirming space, my mind automatically draws back to the [Community of Support] conference, Ignite, where you're seeing people who look like you. It's inspiring. You feel like you're capable of doing what you're saying you're going to do. You feel like you're there for a reason and you can actually get*

*to where you want to go, because you see people who look like you. Whenever I'm in Black spaces, I feel affirmed. Especially, Black spaces that are academic. ... I guess the best way to describe the affirming feeling is that, yes, I can do this. It's reaffirmation that what I'm doing isn't pointless. I'm going to get to where I want to go, too. That I have the skills and the ability to do it, because I see people who look like me doing it as well.... It makes me feel like I can achieve that as well. And, that my pursuit in achieving that isn't futile, because there are people who look like me, despite the barriers they had to overcome, despite all the challenges and obstacles, there are people who look like me doing that. And, that's reaffirming. It's really reaffirming as a student who's trying to get to that place. So, it means a lot. It's a really impactful thing. (P3)*

One participant emphasized the importance of making connections, particularly as a Black student:

*P3: It's really social capital. I wouldn't have been able to do anything like [my academic work] if I didn't know [faculty member]. Even the opportunities I'm getting now, I feel really grateful. And, I know that it's not the experience of a lot of Black students at [my university] or even other universities, so I just feel super grateful. I can't reiterate the social capital thing, because it's so important in pursuing anything past the undergrad year level.*

*CD: Just for clarity, how would you define social capital?*

*P3: Just, people ... Oh gosh, this is difficult to define. I would say, human people, that occupy positions, that are able to give you opportunities. And, not only just give you opportunities, but also advise on how to navigate spaces.*

### **Informational**

Informational extrinsic facilitators enabled participants to learn more about Medical School and Medical School admissions. This helped participants develop ideas about what Medical Schools were looking for in applicants and strategize accordingly.

Participants reported a wide range of informational sources. Most participants reported that they went online to find information on what Medical Schools were looking for in applicants, financial assistance, Medical School requirements, Medical School application processes, the physician role, helpful academic programs, and relevant opportunities. Many participants visited Medical School websites to find information. Other online sources of information included Facebook, Reddit, their program's portal, the Association of American Medical Colleges (AAMC) website, online forums, the Ontario Universities' Application Centre (OUAC) website, a webinar offered by a Medical School, CanMEDS

competencies, and YouTube. Some participants also reported that they used ads and sites like Facebook to find out about pre-medical events, such as seminars and relevant opportunities.

*A lot of it was just through online searches and Googling. I think now the med school websites are pretty clear about what they want in applicants. ... A lot of them subscribe to this... The CanMEDS Competencies. That's sort of a go-to thing that I tend to look at to see if my experiences can speak to each of those seven domains. (P11)*

Several participants also received information about medicine, Medical School, and applications from offline sources. These sources included supportive organizations, including those geared towards supporting underrepresented groups in medicine (Community of Support and Altitude were mentioned by several participants); information sessions and seminars; a high school guidance counsellor; physicians and medical students who were relatives; connections made in university; mentors acquired through supportive organizations; colleagues at work; and other aspiring physicians, including those were further along in the pre-med process. Participants used these sources of information to work around informational barriers through action such as making use of publicly available information.

*... I've kind of directed my attention more to professors and seminars that have to do with Medical School. .... So that, kind of, was my starting point where I kind of had a general idea of what was going on. Because before that, not only did I not know a lot of things, I didn't even know what I did not know. So I wasn't aware of where to start. (P4)*

In addition, participants sought out informational connections in order to fill in gaps in their knowledge about Medical School. Connecting to people in medicine through undergraduate programs, graduate school, supportive organizations, and/or work enabled participants to gain insider knowledge relevant to Medical School that they did not previously possess.

*Yeah, this round of the application I had my master's supervisor and some friends who were in Medical School and I was able to ask some graduate students who were physicians more about the process, the social capitals there and I had more insight into the process. The first time I applied, I didn't know too many people and some of the physicians I might have done a course with didn't know too much about the process either, so I felt like I was in the dark. Back then, I would have just asked someone to write a reference letter for me and that would have been that. But now I wrote out specific things that I wanted my reference to write. ... And I had*



*a chance to speak to them about the letter, that kind of thing. So, that was something I didn't know, how a reference letter happened. (P9)*

One participant, who was the first in her family to attend university, noted that she found it helpful to have a friend in university who could provide her with advice on how to navigate her first year.

*... Like, the whole university just seemed so big, you don't know anybody, you don't know how anything works. Even registering for courses. I wouldn't have known how to do it unless I had a friend who was there. He was already at [university], so he was on the phone with me, helping me to choose my courses, because I didn't know. It was all so confusing. Someone who doesn't have family members or really good friends in university or who went to university, like, it's really difficult to know (P3)*

### **Financial**

Financial extrinsic facilitators allowed participants to work around or overcome some of the economic barriers they faced in gaining admission to Medical School.

Overall, there was not one single financial facilitator that participants exclusively relied on for help. Rather, participants utilized a combination of financial facilitators to assist them on their journey towards Medical School.

Financial aid was the facilitator most commonly reported by participants. Most participants discussed Ontario Student Assistance Program (OSAP) funding, which made attending school financially possible and enabled some participants to work less and focus more on their studies. In the case of free OSAP tuition, which was cancelled by the Ontario government in 2019, participants were also able to take on less student debt. This allowed participants to feel less burdened by the financial commitment of university. Scholarships and grants also proved to be helpful to participants.

*It just happened that there was a scholarship and that I got into [my program]. It just happened. God just provided that. That just happened. But if that hadn't happened, I'm not sure how I would have been able to afford it. I had that free tuition through OSAP. So, all I needed to do was pay for textbooks I think, and I did have some money from awards from school. So, I didn't think that much about how I'm going to fund my undergrad. (P13)*

In addition, some participants discussed applying for and receiving MCAT fee assistance, which allowed them to afford the cost of the MCAT. This is significant because if participants were unable to write the MCAT due to finances, they would not be eligible to apply to most Medical Schools in Canada.

*I mean in terms of finance I think I noticed nowadays they're offering financial assistance to write the MCAT, which is relieving because it's expensive and if you don't do well and you have to write it again, it's like \$400.00, and the study process is just so exhausting. (P5)*

Several participants received some financial support from their families. This support was sometimes direct, such as having family who could help with MCAT fees or receiving financial help with living expenses and tuition from relatives.

*... And then eventually [my grandfather] was just like, how do you pay for this? And I was like, OSAP, OSAP, OSAP, OSAP. And he's just like, but that is not free. And I'm like, yeah, you're right. And he's like, isn't that a problem? And I'm like, yeah, I'm going to come out with so much student debt, it's going to be so painful to look at. I literally avoid looking at the NSLSC thing. I don't want to see that. And he's like, oh, do you want help? And I was like, I don't know. And so he wrote me a cheque for \$1,000. (P15)*

Families also supported participants financially in an indirect manner, such as parents allowing participants to live at home or simply not pressuring them about money.

*I think I didn't have privileges, but my parents they don't put us in a position where we'd have to stress out about money. I guess that's what I'm trying to get at. They don't push that on us. They don't even want us to pursue jobs outside of school just to pay for school and stuff like that. ... they never told us we need to get a job or anything like that to fund your education, because they want you to focus on just studying and doing what you want to do, not doing something just because you need to raise money for it. (P13)*

Receiving direct financial support from parents, as well as discussions around parents' finances, suggests that some participants had parents who were both willing and able to support them in this way. In addition, one participant highlighted that some family dynamics, particularly those in immigrant families, created a situation in which a child's education was made a financial priority:

*... I think that there are some family dynamics that are inherent in immigrant families because parents who are immigrants come here and sacrifice a lot, they want to see their kids succeed. They want for there to be some kind of validation for their struggle and seeing their kids able to go to school and succeed in school is good validation for them. Whatever they need to do, they'll do. (P11)*

Entering the work force and/or graduate school was a significant facilitator for some participants, who faced less financial pressure as a result of being paid more, either

through full-time work or graduate school funding. Some participants recognized that income status had changed and that they no longer faced some of the financial challenges they had when they were in a lower income bracket.

*... a lot of non-traditional med school applicants from low income backgrounds may have "**aged out**" of poverty. What I mean by this is that just by virtue of growing up and entering the workforce, we may be fortunate enough to not be experiencing poverty at the present time and at the moment of application, but it doesn't mean that we didn't experience poverty in our **childhood/teens/early adulthood** (i.e. for a great deal of/most of our life), and that we did not experience a great deal of adverse childhood experiences and adverse experiences in adulthood as a result. And I think Medical Schools need to come up with a way to capture current **and past lived experience** of poverty in their applications somehow in order to ensure that physicians reflect the diverse socio-economic backgrounds of society and their patients. (P11, emphasis is participant's)*

One participant reported other means of financial support in the form of working siblings. For this participant, who was contributing financially to her family, siblings in the work force meant that she was able to work less and focus more on school while her siblings provided financial support to their family.

*... you have siblings and you realize maybe if we're all going to help each other, then one day they should be able to help you out. So, if you are planning to go to Medical School and that means you're not contributing as much, maybe they should... once my older sister started working, once she was done her degree and she finished her college diploma she started working. So, I felt a bit better, like, I'm going to give less of my share. ... And that's okay because someone else was going to pick up the slack for me. (P9)*

Another participant emphasized the importance of having financial support that recognizes a recipient's other financial commitments:

*Yeah, I think support would be really helpful, but for sure financial support would be huge. It would be phenomenal. But a financial support that not only recognizes the individual but the individual as part of a family, so some sort of resource that will allow me to also pitch in to allow my family to also make ends meet. (P10)*

### ***Institutional***

Several participants reported participation in programs, groups and activities that exposed them to the clinical environment, useful opportunities, and support, sometimes as early as high school. These programs, groups and activities included graduate school, health care-related clubs and activities, mentorship programs, high school co-ops, volunteer opportunities, academic programs geared towards

medicine, and specialized/supportive high school programs (e.g. International Baccalaureate).

These programs and activities provided benefits such as early exposure to medicine and/or the clinical environment which enabled participants to have access to mentors, see themselves in the field, and acquire experiences that they could list in their Medical School applications.

*... I was part of the specialist high school major, and one of the requirements is that you complete a co-op. .... My co-op supervisor, .... She was a nurse, but she was the nurse that trains the new nurses that were hired.... She would set up days where I would shadow doctors and charge nurses and just follow them around the hospital, just shadow them and see what they do and how they work on an every-day basis, which was really nice. (P12)*

Other benefits of these programs, groups, and activities included being connected to other aspiring physicians as well as medical students and physicians, encouragement in pursuing medicine as a career, and emotional support.

*I would also say being in [my program], I feel like that gives me an advantage since a lot of people ended up going into medicine. Also, there being a Medical School here in [my city], I feel like I'm able to have role models. So, that has made it easier since I'm able to reach out and ask, I have the ability to. (P13)*

Some of these experiences were offered specifically to aspiring physicians from underrepresented backgrounds, such as Black students and students from low socioeconomic backgrounds, and were described as participants as helpful.

*I think [learning what I needed to get into Medical School] came through gaining more social capital. ... it wasn't until I was able to talk to more professors, have friends who are applying and going and got into Medical School. The Community of Support was super helpful. Connecting with more students who were also wanting to go to Medical School and also connecting to med students and physicians who were helpful. So, gaining that capital that I didn't have when I entered [university]. (P3)*

Some participants received institutional support through their religion, acquiring attitudes which enabled them to persevere when faced with challenged in the pre-med process, including financial challenges.

*It includes like [my parents] made sure that we were raised in the church with our Christian values. So, it made me not value money that much and value relationships more than that. Yeah, I think pretty much growing up in the church*

*and them always emphasizing love to us never made me think about money when I was a child. (P13)*

*In regard to my faith and support I receive from my friends in the Christian fellowship, I think it's in the form of promises that we hold fast to, and that we encourage each other to hold fast to, pertaining to our faith. A lot of it has to do with the idea that we believe that our God has a plan for us, a plan that is good, and something that we might not be aware of in the current moment. To be able to reaffirm that as an individual, but also to be reminded of that, and do things to remind ourselves of that in a community, has really helped me. (P14)*

Importantly, some participants also reported that some Medical Schools' proximity to home and eligibility requirements, particularly in terms of prerequisites, MCAT and GPA criteria, made them likely to apply.

*So, I only applied to one because I knew my application probably wasn't too strong, but I still felt that applying to McMaster made sense because the cut off was fairly low and the application wasn't too intense. And they only required one section of the MCAT, so that was the first year I applied. (P9)*

## **Results Conclusion**

Participants faced both barriers and facilitators in pursuing Medical School admission. The barriers faced by aspiring physicians from LIB were varied and included social, informational, financial, and institutional facilitators.

Social barriers, which obstruct the support available to aspiring physicians from LIB, include having fewer connections than wealthier peers, cultural clashes between Medical School admissions and participants' own cultures, and feeling uncomfortable seeking support from others as a result of disparate aspirations or ideas about medicine.

Identity-related barriers create obstacles around fitting in with medical admissions and education. These barriers include feeling different to wealthier peers as a result of peers' financial privilege; feeling unable to identify socially with admitted applicants; the different experiences and advantages of wealthier peers, including the tendency of admitted Medical School applicants to come from these backgrounds; and the experience of being an outsider in school on the basis of race, income, and/or ability.

Economic barriers are the result of financial hurdles during the pre-med journey and can impede an aspiring physician's ability to apply to and/or be competitive for Medical School. Economic barriers include uncertainties about how to pay for Medical School; large debt burdens; the high cost of the MCAT and Medical School

applications; needing to work while in school, splitting time between work, school, and other pre-med related activities; and contributing financially to family.

Structural barriers reflect and replicate inequality in society and create different starting points for different people. They can also relate to the structure of Medical School admissions and applications. Structural barriers include discrepancies between what Medical Schools actually value in applicants and what they claim to value; fewer pre-med-related opportunities based on geography, underrepresentation, stereotypes, and discrimination based on race and ethnicity, and Medical School and MCAT fee assistance eligibility requirements that do not fit in with participants' life experience.

Informational barriers are the result of insufficient or incorrect information about Medical School. These barriers make it more difficult to develop useful strategies to gain admission and include limited knowledge of the finances around Medical School; inadequate information about academics at key stages in participants' education; being unclear about Medical School requirements; and misinformation about Medical School requirements and costs.

Participants also had access to several facilitators that were either intrinsic or extrinsic. Intrinsic facilitators related to the individual participant and included motivation, self-confidence, attitude, strategy, seeking and sorting information, and financial literacy and increasing income. Taken together, these facilitators enabled participants to develop compelling reasons to pursue medicine, persevere when faced with challenges, work around barriers, devise actionable plans to gain admission to Medical School, and pay for expensive medical applications and the MCAT.

Extrinsic facilitators related to factors outside the individual participant and included social facilitators, informational facilitators, financial facilitators, and institutional facilitators.

Social extrinsic facilitators provide support to participants through their relationships with others. These facilitators include encouragement from loved ones and teachers; access to opportunities and skills through people in participants' network; exposure to medicine through physician relatives; connection to peers and friends who can provide insight into Medical School admissions; and racial and cultural communities that provide support in the way of representation, encouragement, and role-modelling.

Financial extrinsic facilitators enable participants to work around some of the economic barriers they face. Participants relied on several different financial facilitators simultaneously and these included student loans, scholarships, MCAT

fee assistance, direct financial support from family, and indirect financial support from family such as living at home.

Finally, institutional extrinsic facilitators provide participants with structured opportunities to connect with people and experiences that may be helpful to them on their pre-med journeys. These facilitators provide early exposure to medicine and/or the clinical environment, the opportunity to meet other people who are pursuing medicine as a career or who have successfully done so, specialized programming for students from underrepresented racial and income backgrounds, and perseverance. Additionally, Medical Schools also provide institutional support to aspiring physicians from LIB through their physical proximity to participants' home and eligibility requirements.

Participants' backgrounds, identities, and life experiences signify that the experience of being an aspiring physician from a LIB varies from person to person. However, this study broadly indicates that participants experienced a wide variety of barriers and facilitators, demonstrating that aspiring physicians from LIB face barriers to a career in medicine in multiple areas of their lives. In addition, the array of facilitators in the study show that aspiring physicians from LIB actively try to work around or overcome the barriers they face. The facilitators that they employ in doing so reflect the different dimensions of their lives and identities and in this way enable them to address their unique life experiences while pursuing a career in medicine.

## CHAPTER 4

### DISCUSSION

#### Summary of Results

Participants' life experiences and identities highlighted that being from a low-income background is a varied, and not unified, experience. Participants' experiences tended to fall into four experience profiles: income immobility, downward mobility, upward mobility, and variable mobility. The barriers that participants faced in gaining Medical School admission generally fell into five categories which were identified from the literature on aspiring physicians from LIB: social, identity-related, economic, structural, and informational. Similarly, participants' facilitators to a career in medicine could be considered either intrinsic or extrinsic. Intrinsic facilitators included motivation, self-confidence, attitude, strategy, seeking and sorting information, and financial literacy and increasing income. Extrinsic facilitators included social, informational, financial, and institutional facilitators.

I will discuss these results as they relate to the theoretical lenses of identity capital and intersectionality theory. Following this, I will discuss the implications of this research for medical education and researchers.

#### Identity Capital

Identity capital states that people strategize their use of “tangible,” “sociological” (Côté, 1996, p. 426) resources such as education and “intangible,” “psychological” (Côté, 1996, p. 426) resources such as critical thinking to gain access to groups that they wish to join (Côté, 1996). This study identified the ways in which aspiring physicians from LIB leveraged their tangible and intangible resources to obtain the identity capital that would help them join the medical profession.

Identity capital theory also takes the stance that in university, acquiring identity capital should be possible for anyone as long as they do not face discrimination (Côté, 1996). However, the barriers presented in this thesis clearly highlight that students from LIB face unique challenges as a result of their financial background and other intersecting identities. These include challenges relating to limited social support and connections; difficulty identifying with the financially and socially privileged culture of pre-med and Medical School; financial obstacles; systemic inequalities relating to race, class and the structure of Medical School admissions; and inadequate or untimely information. These challenges are not faced by all aspiring physicians and hinder the ability of those from LIB to acquire the kind of identity capital that facilitates admission to Medical School. Therefore, identity



capital theory would suggest that aspiring physicians from LIB face discrimination in their journey toward Medical School, be it intended or unintended.

I employed identity capital to orient myself to the ways in which participants were able to make choices as individuals, even though they were constrained in some ways by their LIBs and other identities. I saw this most in the facilitators I identified in the study. For example, one use of intangible resources I saw in the data was the way in which participants deliberately strategized the steps they planned to take towards gaining admission to Medical School. They identified what Medical Schools were looking for: good grades, high MCAT scores, extracurriculars, and well-roundedness, and they actively took steps to become competitive applicants in these areas.

Participants also used critical thinking, another intangible resource, to help them gain access to medicine. Some participants spoke to me about the misinformation they identified as coming from peers or even a physician in one case. Beyond recognizing misinformation, they took steps to seek out sources of information they believed to be accurate, thereby filling in their knowledge gaps about medicine and Medical School admissions.

In terms of tangible resources, the connections that participants made in university to other Medical School applicants, physicians, medical students, and others also helped them on their journey by providing them with insider information that they otherwise would not have access to. This helped them in several ways, such as recognizing their own strengths in the context of Medical School admissions and having a better understanding of how to approach applications.

Identity capital also accounts for some of the barriers to a career in medicine that participants reported. Namely, access to the kind of tangible resources that are valued by Medical Schools is easier for wealthier aspiring physicians than those from LIBs. For example, wealthier aspirants may focus their energies solely on school to attain high grades, may already have useful connections in navigating their pre-med journeys, and may be able to afford MCAT preparation courses and materials which can assist them in getting higher scores.

Participants in this study used their intangible resources like critical thinking and self-assessment to strategize their acquisition of tangible resources. However, they must do more work in acquiring these resources than their wealthier peers because they do not begin their pre-med journeys with the same amount of valued tangible resources. While aspiring physicians from LIB possess tangible resources, the resources they have are not always deemed as meritorious by Medical Schools.

For example, a university degree is an intangible resource that is valued by many Medical Schools, but acquiring one part-time, even whilst working, is not.

In general, identity capital in the context of this study demonstrates that this group of aspiring physicians are very much active participants in the pre-med process, even though they also realized that they faced additional obstacles as a result of their LIBs and other identities, such as race, ethnicity, or ability.

### **Intersectionality**

Intersectionality theory recognizes that people have different identities, such as race and gender, and that these intersect to create unique experiences (Crenshaw, 1989). This theory takes the view that the experience of multiple identities is different to the experience of each of those identities separately (Crenshaw, 1989). For example, an aspiring physician of East Asian descent from a LIB would have a different experience to an East Asian aspiring physician from a middle-class background though their race is the same. Similarly, a South Asian aspiring physician from a LIB would also have a different experience, even though they are also from a LIB. However, there may be overlap in experiences when identities are shared.

In pursuing this research, I wanted to be careful that I did not ignore other identities like race and gender while I focused on income. Like income, these other identities impact the choices that are available to people and the life experiences that they have.

In addition to being from a low-income background, most of the participants in this study had other identities that might be associated with disadvantages in other areas of society such as women or non-binary genders, people of colour, and immigrants or children of immigrants. Some participants also experienced disability.

However, the interaction of these identities was complex. Few participants spoke about their gender alone as an obstacle to pursuing medicine, and one participant noted that she did not feel that her gender was a barrier because women were well-represented in medicine.

However, the experience of race/ethnicity and gender together created challenges for some participants. Interestingly, some participants used the barriers they faced as a result of this interaction as a means of driving them forward towards a career in medicine.

Some participants did not talk about race or ethnicity as a barrier, while others spoke about the additional challenges they posed in pursuing medicine. Within this

group of participants, some described race or ethnicity as a significant challenge for them while others described it as being less impactful.

Most participants from underrepresented groups (Black and Filipino) described race or ethnicity as a barrier. Both Black participants in this study described race as a barrier, while one of two Filipino participants described ethnicity as a barrier.

Many of the immigrants and children of immigrants in this study came from privileged and/or medical backgrounds. Their life experiences may shape what they think is possible for them, and this might be different for someone who has never experienced financial or class privilege, particularly when it comes to a prestigious profession like medicine (Southgate *et al.*, 2015).

Overall, intersectionality theory in the context of this project indicates that while there may be overlapping challenges, there is not a single, unified experience of coming from LIB. As a result, people in this group will have different obstacles and needs. I therefore emphasize that it is important to ask who we are targeting when we talk about aspiring physicians from LIB and what their experiences are. The answer will likely vary in some ways from population to population.

### **Implications for Medical Education**

My goal in pursuing this research was to provide information to Medical Schools, supportive organizations, and researchers that could prove useful in developing supports for aspiring physicians from LIB.

This thesis has several implications for medical education. To start, this thesis highlights that a single experience of low-income does not exist. The complexity of individual life experiences as well as the interaction of different identities with income means that it is important to research one's target population before developing solutions to help them. This echoes point one of Young's six-point framework for increasing diversity in medical education (Young *et al.*, 2017).

Second, the obstacles faced by students from LIB outlined in this thesis call the concept of meritocracy in medical education into question. While most can agree that it is not possible to create perfect requirements and measures of merit, these obstacles indicate that what Medical Schools value and how they measure it disadvantages some applicants and privileges others. For example, full course loads, clinical experience and expensive applications and standardized tests (including preparatory materials and courses) posed a barrier to some of the participants in this study. At the same time, the lower GPA cut-offs and limited reliance on the MCAT made other schools more accessible to some participants. It may be useful for Medical Schools to ask whether other experiences and

achievements, such as full-time work experience or the ability to balance school and work, can serve as proxies of merit. Other useful questions to ask would be whether these new proxies of merit will increase the representation of aspiring physicians from LIB, and if so, which subpopulation(s) of this group. Overall, it is important to consider the consequences, both intended and unintended, of admissions policies in medical education.

Medical Schools, researchers, and supportive organizations in various countries have implemented different policies, programs, and other solutions with the goal of increasing the representation of students from low-income and low-socioeconomic (SES) backgrounds. These include pre-application interventions, admissions-related initiatives, and support for students from LIB in Medical School.

Examples of pre-application interventions include pipeline programs (Bediako, McDermott, Bleich, & Colliver, 1996; Dalley *et al.*, 2009); short summer programs geared towards high school students (Greenhalgh *et al.*, 2006); collaborative longitudinal support programs (University of Toronto, n.d.); and affordable Medical School application preparatory courses (Ratneswaran, Mushtaq, & Steier, 2015).

Admissions-related initiatives have taken the form of admissions streams and special considerations for applicants from low-SES backgrounds (Curtis, Blundell, Platz, & Turner, 2014a; University of Saskatchewan, n.d.; University of Manitoba, n.d.); and calls from researchers to redefine merit in Medical School admissions (Alexander & Cleland, 2018) and increase the number of applicants from low-SES backgrounds (Garlick & Brown, 2008; McLachlan, 2005).

Support for students from LIB at the Medical School level include extended Medical School programs which target students from low-SES backgrounds and provide interpersonal, academic, and/or experiential support (Curtis, Blundell, Platz, & Turner, 2014b; Garlick & Brown, 2008); offering grants and bursaries to medical students and applicants (for example, McMaster University, n.d.; University of Calgary, 2018); emphasis on the importance of changing institutional culture within Medical Schools (Alexander, Cleland, & Nicholson, 2017); calls for research on the long-term impact of low SES on medical students and physicians (De Freitas, 2017); and frameworks for systematically increasing diversity in Medical Schools in a way that is relevant to the local context (Young *et al.*, 2017).

These solutions, along with this thesis, highlight that there are many different stages in and dimensions of aspiring physicians' lives in which interventions may take place. These include the periods before post-secondary, during post-secondary (including college, undergraduate, and graduate levels), during Medical School application, pre and post interview, Medical School admission, and beyond.

Evaluating different life and educational stages for intervention enables us to consider that disadvantage is a long process that starts years before the point of admission (or rejection) or even application. The barriers and facilitators outlined in this thesis offer a framework for identifying target areas in developing support for aspiring physicians from LIB. This information can be useful for both Medical Schools and supportive organizations interested in equity, diversity, and inclusion initiatives.

However, a 1965 paper by Rosinski indicates that while researchers have been thinking about solutions to the problem of underrepresentation for aspiring physicians from LIB for over 50 years at minimum (Rosinski, 1965), the problem of underrepresentation persists in Canada (Dhalla *et al.*, 2002; Young *et al.*, 2012). Many interventions during this time have focused on applicants, and I echo other researchers (Alexander & Cleland, 2018; Razack *et al.*, 2015; Southgate *et al.*, 2015) in saying that the culture of medical education itself and the way it defines merit likely needs to change.

I add to this that efforts to increase the representation of students from LIBs in medical education should also include financial assistance, including efforts to make aspiring physicians from these backgrounds aware of the financial aid available to them; how they may pay for Medical School; how to manage the large debt of a medical education; and how they might address other financial responsibilities, such as contributing to their families, whilst working towards or completing Medical School. It is important to remember that access to a medical career is not only a matter of being able to acquire enough merit to be admitted—it also requires the ability to pay. Rosinski's words, though over 50 years old, clearly highlight the importance of this matter: "With all the avenues open to college graduates it appears that medicine is left with two groups of students: (1) those who are devoted to medicine and willing to accept any and all financial hardships and (2) those who can afford a medical education." (Rosinski, 1965 , p. 96)

### **Implications for Research**

This thesis contributes to the existing literature on aspiring physicians from LIB by explicitly identifying and adding to barriers and facilitators to a career in medicine which are found in the existing body of research, showcasing the experience of aspiring physicians who have not yet been successful in gaining admission to Medical School, and providing information on the experience of aspiring physicians from LIB in the Canadian context.

This research also highlights several opportunities for future research. First, much of the research on this topic investigates aspiring physicians, while considerably less focuses on Medical Schools. Research into the culture and history of medical

education and institutions' role in the underrepresentation of aspiring physicians from LIB may provide a more complete picture of the contributing factors to this phenomenon and may highlight additional areas for targeted change.

Second, many of the participants in this study came from immigrant backgrounds which were relatively privileged. Research that focuses on less privileged immigrant and non-immigrant experiences may uncover different barriers and facilitators to a career in medicine for aspiring physicians from LIB.

Third, research on additionally underrepresented groups in medicine such as Black and Filipino aspiring physicians may identify some of the unique challenges faced by these groups. While some of our participants spoke about the obstacles they faced in this area, such as the concept of Black tax, the scope of this research and the number of participants from these groups did not facilitate a deeper exploration of this topic.

Fourth, research investigating misinformation or misperceptions about medicine, Medical School, and admissions may provide insight into other interventions that may be helpful to aspiring physicians from LIB.

Fifth, investigation into the way merit in Medical School admissions is perceived by aspiring physicians from low-income backgrounds might help us understand more deeply the decisions they make as they try to acquire merit. This may also assist us in understanding the similarities and differences that exist in the definitions of merit held by Medical Schools and aspiring physicians from LIB.

### **Strengths and Limitations**

The strengths of this research include the variation in participant demographics, variation in physician aspirations (i.e. past and present), and the fact that participants were university students working towards Medical School admission. Taken together, this research considers a wide variety of LIB and pre-med experiences, including those who were not able to gain admission to Medical School and those who stopped pursuing medicine. This, along with the focus on university students, fills a gap in the literature and provides insight into the varied and complex ways in which aspiring physicians can experience disadvantage during the pre-med process.

This thesis had a relatively small sample size of 15 participants. Furthermore, qualitative research is difficult to generalize. However, this sheds light on the importance of context, particularly in terms of diversity, and provides an opportunity for future quantitative research that may further explore the topic of the underrepresentation of students from LIB in Medical School. Finally, this research does not address aspiring physicians who are earlier on in their pre-med journeys,

although this and other research suggests that people form the “capacity to aspire” (Southgate *et al.*, 2015) to medicine prior to university (Cassidy *et al.*, 2013). This provides another opportunity for future research.

## **Conclusion**

Aspiring physicians from LIB have varied experiences of low-income due to their unique life experiences and identities. However, they face some common social, identity-related, economic, structural, and informational barriers as they work towards Medical School admission. In working around these barriers, they employ various intrinsic and extrinsic facilitators. Identity capital theory enables us to understand that aspiring physicians from LIB develop strategies as individuals to join the medical profession. Intersectionality theory reminds us that these strategies may be shaped by complex interactions between aspiring physicians’ financial, racial, gender, and (dis)abled identities. It is important for Medical Schools, supportive organizations, and researchers to understand the contexts of underrepresented aspiring physicians, consider the consequences of admissions policies for these groups, change the culture of medical education and its definition of merit, and provide relevant financial aid and information to aspiring physicians from LIB. The barriers and facilitators outlined in this thesis provide a framework for targeted initiatives to support this group.

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## Appendices

### Appendix A: Consent to Be Contacted for Future Research



#### CONSENT TO BE CONTACTED FOR FUTURE RESEARCH – INTERESTED PARTIES

##### Aspiring Physicians from Low-income Backgrounds: Experiences of Barriers and Facilitators to a Career in Medicine

###### Investigators:

**Supervising Principal Investigator:**

Dr. Meredith Vanstone, PhD  
Assistant Professor  
Department of Family Medicine  
McMaster Program for Education Research,  
Innovation & Theory  
McMaster University  
Hamilton, ON, Canada  
**(905) 525-9140 ext. 22113**  
Email: meredith.vanstone@mcmaster.ca

**Student Investigator:**

Chanté De Freitas, B.A. (Hons)  
MSc (Student)  
Health Science Education  
McMaster University  
Hamilton, ON, Canada  
**(905) 525-9140 ext. 22113**  
E-mail: premeds@mcmaster.ca

**Co-Investigator:**

Dr. Margo Mountjoy, MD, PhD  
Assistant Dean  
Waterloo Regional Campus  
Michael G. DeGroot School of Medicine  
McMaster University  
Hamilton, ON, Canada

**Co-Investigator:**

Dr. Juliet Daniel, PhD  
Professor  
Department of Biology  
McMaster University  
Hamilton, ON, Canada

###### Purpose of the Research Study

Students from underprivileged backgrounds are currently underrepresented in medical schools in Canada and abroad. We are conducting this thesis research to learn about what students from underprivileged backgrounds experience as they try to make their way into medical school.

The purpose of this research study is to gain insight into the strengths that students from underprivileged backgrounds possess as well as the barriers they might face as they try to gain admission into medical school.

In order to successfully gain medical school admission, students must first gain an accurate understanding of the way medical schools conceptualize merit in applicants and then they must move to achieve this. However, we do not know what students from underprivileged backgrounds understand about merit, how they come to understand merit, and how they come to achieve it. Answers to these questions may provide key insight into the ways in which students from underprivileged backgrounds may come to be underrepresented in medical school and how this problem may be rectified.

For the purposes of this research study, merit is defined as the qualities, traits, achievements, and profile that medical schools are believed to value in the admissions process and which can be demonstrated (or not) by applicants.

#### **What happens if I sign this form?**

If you sign this form, you are providing consent for a member of the research team to collect your name and contact information and put it in a database so that they can contact you about participation in this research study. You do not have to participate in this research study if you are contacted about it, you are simply agreeing to be contacted with more information.

#### **What happens if I don't sign this form?**

If you do not sign this form, you will not be contacted by the researchers about participating in this research study. This will have no impact on your educational or employment status at McMaster.

#### **Confidentiality**

We will keep the personal information you provide to us in this form on a password-protected file on a secure server. Once the research study has been completed, this file will be destroyed.

#### **Questions about the Research Study**

If you have questions or need more information about the research study itself, please contact Chanté De Freitas.

#### **Student Investigator:**

Chanté De Freitas  
Health Science Education  
McMaster University  
Hamilton, ON, Canada  
**(905) 525-9140 ext. 22113**  
E-mail: [premeds@mcmaster.ca](mailto:premeds@mcmaster.ca)

This research study has been reviewed by the Hamilton Integrated Research Ethics Board (HiREB). The HiREB is responsible for ensuring that participants are informed of the risks associated with the research, and that participants are free to decide if participation is right for them. If you have any questions about your rights as a research participant, please call the Office of the Chair, HiREB, at 905.521.2100 x 42013.

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**CONSENT**

Participant: I have read the preceding information thoroughly. I have had an opportunity to ask questions and all of my questions have been answered to my satisfaction. I agree to be contacted to participate in future research. I understand that I will receive a signed copy of this form.

\_\_\_\_\_  
Name of Participant (Printed)                      Signature                      Date

Person obtaining consent: I have discussed this consent to be contacted for future research in detail with the participant. I believe the participant understands what is involved in consenting to be contacted for future research.

\_\_\_\_\_  
Name and Role (Printed)                      Signature                      Date

Please indicate your preferred contact method.

*Phone:* \_\_\_\_\_

*Email:* \_\_\_\_\_

*Mailing address:* \_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

This research study has been reviewed by the Hamilton Integrated Research Ethics Board (HIREB). The HIREB is responsible for ensuring that participants are informed of the risks associated with the research, and that participants are free to decide if participation is right for them. If you have any questions about your rights as a research participant, please call the Office of the REB Chair, HIREB at 905.521.2100 x 42013



## Appendix B: Letter of Information & Consent Form



### LETTER OF INFORMATION / CONSENT – PARTICIPANTS

#### Aspiring Physicians from Underprivileged Backgrounds: Experiences of Barriers and Facilitators to a Career in Medicine

##### Investigators:

###### Supervising Principal Investigator:

Dr. Meredith Vanstone, PhD  
Assistant Professor  
Department of Family Medicine  
McMaster Program for Education Research,  
Innovation & Theory  
McMaster University  
Hamilton, ON, Canada  
**(905) 525-9140 ext. 22113**  
Email: [meredith.vanstone@mcmaster.ca](mailto:meredith.vanstone@mcmaster.ca)

###### Student Investigator:

Chanté De Freitas, B.A. (Hons)  
MSc (Student)  
Health Science Education  
McMaster University  
Hamilton, ON, Canada  
**(905) 525-9140 ext. 22113**  
E-mail: [premeds@mcmaster.ca](mailto:premeds@mcmaster.ca)

###### Co-Investigator:

Dr. Margo Mountjoy, MD, PhD  
Assistant Dean  
Waterloo Regional Campus  
Michael G. DeGroot School of Medicine  
McMaster University  
Hamilton, ON, Canada

###### Co-Investigator:

Dr. Juliet Daniel, PhD  
Professor  
Department of Biology  
McMaster University  
Hamilton, ON, Canada

##### Disclosure

Two co-investigators involved in the research study, Dr. Meredith Vanstone and Dr. Margo Mountjoy (thesis committee member) are involved in admissions at the McMaster Michael G. DeGroot School of Medicine. Dr. Mountjoy is the Assistant Dean at the Waterloo regional campus, but will not have access to any identifiable information about participants (e.g. your name, audio-tape of your interview etc.). Dr. Vanstone is a member of the Admissions committee, but does not make any decisions about individual applications. She will have access to raw transcripts and audio-files that may contain identifying information as part of her role as supervisor of this research.

##### Sponsor

This project is funded by the McMaster University Michael G. DeGroot School of Medicine.

##### Invitation to Participate

You are being invited to participate in this research study because you have identified yourself as being interested in becoming a physician and as coming from an underprivileged economic background. Your participation in this research study is voluntary and choosing not to participate will not have any negative consequences for you.

This research study is a student project being conducted by Chanté De Freitas for her Master's thesis in the Health Science Education program at McMaster University. The research study is being supervised by Dr. Meredith Vanstone. As members of the thesis committee, Dr. Margo Mountjoy and Dr. Juliet Daniel also play a role in the supervision of this research study.

### **Why is this research study being done?**

Students from underprivileged backgrounds (UPB) are currently underrepresented in medical schools in Canada and abroad. We are conducting this thesis research to learn about what students from UPB experience as they try to make their way into medical school.

The purpose of this research study is to gain insight into the strengths that students from UPB possess as well as the barriers they might face as they try to gain admission into medical school.

In order to successfully gain medical school admission, students must first gain an accurate understanding of the way medical schools conceptualize merit in applicants and then they must move to achieve this. However, we do not know what students from UPB understand about merit, how they come to understand merit, and how they work towards demonstrating it. Answers to these questions may provide key insight into the ways in which students from UPB may be underrepresented in medical school and how this problem may be rectified.

For the purposes of this research study, merit is defined as the qualities, traits, achievements, and profile that medical schools are believed to value in the admissions process and which can be demonstrated (or not) by applicants.

### **How many participants will be in this research study?**

Approximately 12-15 undergraduate and/or graduate students and/or non-students will participate in interviews for this research study.

### **What will happen to participants in this research study?**

Before and/or after you are selected as a participant, you will be asked to provide demographic information including the university you attend, the program you are enrolled in, your age, the kind of environment in which you grew up (rural, urban, suburban), and any group identities (race, gender, ability). You will also be asked to indicate whether you were eligible for free tuition under OSAP (Ontario Student Assistance Program). We will also ask you to complete a short exercise in which you rank your **perception** of your family income in relation to the broader Canadian society. You do not have to answer any questions you are uncomfortable answering. We will not ask you for specific information about your family's income, only for your perception of what income category you fit in. We will not ask you to provide a specific number or any documentation.

If you are selected for an interview, we will contact you to arrange a time and date for an interview. The interview will take place either on the phone or in-person, based on what is most convenient for you. It is possible that you will be asked to participate in more than one interview.

Each interview is expected to last about an hour but can be shorter or longer depending on how much you would like to say.

After you are interviewed, we will follow up with you by email or through a short phone interview around the time of medical school interviews and/or admission results.

Interviews will be recorded and handwritten notes will be taken, with your permission. We will ask you questions such as:

- What are you doing to help you get into medical school?
- What do you think medical schools are looking for?

After the interview, the audio files will be transcribed (typed) and at that time any information that could identify you (e.g. particular names or places) will be removed.

**Are there any risks?**

The risks involved in participating in this research study are minimal. You may find it stressful to talk about your social experiences and your experiences in trying to get into medical school.

You do not need to answer questions that you do not want to answer or that make you feel uncomfortable. If you are feeling overwhelmed, you can stop to take a break, skip a question, or end the interview.

**Are there any benefits?**

You may find it helpful to talk about your experiences in trying to gain admission to medical school. Beyond this, the research will not benefit you directly.

This research could help to increase support for students from UPB in medical school admissions processes as well as through the creation of initiatives such as pipeline programs. This support could be beneficial to society because increased numbers of physicians from UPB has been found to be good for patient care: for example, physicians from UPB backgrounds are more likely to provide care to underserved populations.

If you would like a summary of the research study's results, please indicate this in the appropriate space at the end of this consent form.

**Will I be paid to participate in this research study?**

You will be given a \$25 Amazon.ca gift card to participate in this research study.

**Will there be any costs to me in this research study?**

There may be small costs related to transportation, however, we will try to minimize this by meeting you at a mutually convenient location or conducting interviews over the phone. We will also use conferencing software so that there will be no costs related to phone minutes or long-distance charges.

**What will happen to my personal information?**

Every effort will be made to protect your confidentiality and privacy. We will not use your name in published results or any information that would allow you to be identified. However, we are often identifiable through the stories we tell. What you choose to disclose to us is left up to you.

Please note that your audio files may be sent to a professional transcription service based in the United States of America. The United States government and regulatory bodies are able to access data stored on any servers within their country.

We will keep your personal information, which includes your name, demographics, income-related information, and contact information on a password-protected file on a secure server. Interview transcripts will be de-identified, and we will use a code or pseudonym to refer to you. We will not use your real name.

Paper files and audio tapes will be kept in a locked cabinet in a locked institutional office. Electronic files will be password-protected and stored on a password-protected computer on a secure network.

Only Chanté De Freitas, Dr. Meredith Vanstone, and research assistants will have access to your personal information and de-identified research study data. Co-Investigators Dr. Margo Mountjoy and Dr. Juliet Daniel will not have access to identifiable data; they will not know the identities of study participants.

Once the research study has been completed, the data, without identifying information, will be kept for 3 years post-publication. After this period, the data will be destroyed.

### **Can participation end early?**

Your participation in this research study is voluntary and it is your choice to be part of the research study or not. If you decide to be part of the research study, you can decide to stop (withdraw), at any time, even after signing the consent form or part-way through the research study. If you decide to withdraw, there will be no consequences to you. Information provided up to the point where you withdraw will be kept unless you request that it be removed. You are not required to withdraw from the research study if you do not want to answer some of the research study questions. Your decision whether or not to be part of the research study will not affect your continuing access to services at McMaster University or your opportunity to be admitted to medical school here or anywhere else.

You will be informed of any new information that might influence your decision to continue in the research study.

If you would like to withdraw from the research study, simply let us know:

- If you change your mind about participating and would like to withdraw from the research study during an interview, tell the interviewer.
- If you have already completed an interview or would like to withdraw at any other time please contact Chanté De Freitas.

### **Student Investigator:**

Chanté De Freitas, B.A. (Hons)

MSc (Student)  
Health Science Education  
McMaster University  
Hamilton, ON, Canada  
**(905) 525-9140 ext. 22113**  
E-mail: premeds@mcmaster.ca

**If I have questions about this research study, who should I call?**

If you have questions or need more information about the study itself, please contact Chanté De Freitas or her supervisor, Dr. Meredith Vanstone.

**Student Investigator:**  
Chanté De Freitas, B.A. (Hons)  
MSc (Student)  
Health Science Education  
McMaster University  
Hamilton, ON, Canada  
**(905) 525-9140 ext. 22113**  
E-mail: premeds@mcmaster.ca

**Supervising Principal Investigator:**  
Dr. Meredith Vanstone, PhD  
Associate Professor  
Department of Family Medicine  
McMaster Program for Education Research,  
Innovation & Theory  
McMaster University  
Hamilton, ON, Canada  
**(905) 525-9140 ext. 22113**  
Email: meredith.vanstone@mcmaster.ca

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**CONSENT**

Participant: I have read the preceding information thoroughly. I have had an opportunity to ask questions and all of my questions have been answered to my satisfaction. I agree to participate in this study. I understand that I will receive a signed copy of this form.

---

Name of Participant (Printed)

---

Signature

---

Date

Person obtaining consent: I have discussed this study in detail with the participant. I believe the participant understands what is involved in this study.



## **Appendix C: Recruitment Survey DEMOGRAPHIC SURVEY**

### **Aspiring Physicians from Low-income Backgrounds: Experiences of Barriers and Facilitators to a Career in Medicine**

#### **Medical Career Aspirations**

1. Have you ever considered a career as a physician?

Yes

No

2. If yes, what are you currently doing to help you become a physician? For example, studying for the MCAT, trying to achieve competitive grades, attending information sessions, preparing applications, learning about medicine as a career, etc. Please note that you are not limited to these examples. \_\_\_\_\_

#### **Underprivileged Status**

3. Have you ever been eligible for free tuition through the Ontario Student Assistance Program (OSAP)?

Yes

No

*I don't know*

*This doesn't apply to me*

4. Think of this ladder as representing where people stand in Canada.

At the top of the ladder are the people who are the best off -- those who have the most money. At the bottom are the people who are the worst off -- those who have the least money. The higher up you are on this ladder, the closer you are to the people at the very top; the lower you are, the closer you are to the people at the very bottom.

Where would you place yourself on this ladder?

Please indicate which rung number you think reflects the household in which you grew up, relative to other people in Canada.

10  
9  
8  
7  
6  
5  
4  
3  
2  
1



### Demographic Information

5. List the university you currently attend.

\_\_\_\_\_

6.

a. What kind of student are you?

*Undergraduate*

*Master's*

*Doctoral*

*Professional (e.g. J.D., Nurse Practitioner, Occupational Therapy, etc)*

*Other (please specify) \_\_\_\_\_*

b. List the program in which you are currently enrolled.

\_\_\_\_\_

c. What year are you in? \_\_\_\_\_

d. List any other post-secondary programs you have attended, whether complete or incomplete. Leave this question blank if you did not attend any other programs. \_\_\_\_\_

7. What is your age? \_\_\_\_\_



8. What kind of environment did you grow up in?

*Rural*

*Urban*

*Suburban*

9. What is your race? If you prefer not to answer, leave this blank.

---

10. What is your gender? If you prefer not to answer, leave this blank.

---

11. Do you have any disabilities?

*Yes*

*No*

*Prefer not to answer*

12. If you answered “yes” to question 10, please briefly describe.

---

## **Appendix D: Email Script - First Contact with Recruits**

Hi,

Thanks for your interest in the research study!

Students from underprivileged backgrounds are currently underrepresented in medical schools in Canada and abroad and I'm trying to get a sense of why that might be. I'm conducting this research study to learn about what students from underprivileged backgrounds experience as they try to make their way into medical school.

The purpose of this research study is to gain insight into the strengths that students from underprivileged backgrounds possess as well as the barriers they might face as they try to gain admission into medical school.

I've attached a consent form that contains more information about the research study. Please read it over and see if the research study is something you're comfortable participating in.

If you would like to participate, please read through the consent and information letter and answer some demographic questions. You can do all of this at this survey link: [survey link].

If you have any further questions, please feel free to contact me.

Best regards,  
Chanté De Freitas, B.A. (Hons)  
MSc Candidate, Health Science Education, McMaster University  
premeds@mcmaster.ca

## Appendix E: Email Script - Recruitment Request – Academic Programs

**Email Subject Line:** Research Participant Opportunity: Research Study on Aspiring Physicians

Dear students,

Please see the attached recruitment document [attach social media flyer/recruitment poster] for a McMaster research study on students from low-income backgrounds who are interested in becoming physicians. This research study is being carried out as part of a master's thesis and is currently recruiting participants. Participants will receive a \$25 amazon.ca gift card for their time.

If you would like to participate, please read more about the research study and complete an eligibility survey here: [survey link]

If you have any questions, please contact Chanté De Freitas or Meredith Vanstone.

**Student Investigator:**

Chanté De Freitas, B.A. (Hons)

MSc (Student)

Health Science Education

McMaster University

Hamilton, ON, Canada

**(905) 525-9140 ext. 22113**

E-mail: [premeds@mcmaster.ca](mailto:premeds@mcmaster.ca)

**Supervising Principal Investigator:**

Dr. Meredith Vanstone, PhD

Assistant Professor

Department of Family Medicine

McMaster Program for Education  
Research, Innovation & Theory

McMaster University

Hamilton, ON, Canada

**(905) 525-9140 ext. 22113**

Email:

[meredith.vanstone@mcmaster.ca](mailto:meredith.vanstone@mcmaster.ca)

## **Appendix F: Email Script - Recruitment Request - Student Clubs**

**Subject:** McMaster Research Study - Aspiring Physicians from Low-income (Low-Income) Backgrounds

I'm a master's student in the Health Science Education Program and I am conducting a research study to learn about what students from underprivileged (low-income) backgrounds experience as they try to make their way into medical school.

The purpose of this research study is to gain insight into the strengths that students from underprivileged backgrounds possess and the barriers they face as they try to gain admission into medical school. Students from underprivileged backgrounds are currently underrepresented in medical schools in Canada and abroad and I'm trying to get a sense of why that might be.

I'm hoping that your group will be able to help me in recruiting participants for this research study. Are you able to circulate some recruitment material to your members? Here's a link to a consent form that contains more information about the research study: [survey link]. There's no need to sign it, but you're welcome to read it over and see if the research study is something you're comfortable alerting your members about.

If you're able to help, I've attached a social media flyer and poster that you could use.

If you have any further questions, please feel free to contact me.

Best regards,  
Chanté De Freitas, B.A. (Hons)  
MSc Candidate, Health Science Education, McMaster University  
premeds@mcmaster.ca

## **Appendix G: Email Script - Recruitment Request – Forum**

**Message Subject Line:** McMaster Research Study - Aspiring Physicians from Underprivileged (Low-Income) Backgrounds

I'm a master's student in the Health Science Education Program at McMaster University and I am conducting a research study to learn about what students from underprivileged (low-income) backgrounds experience as they try to make their way into medical school.

The purpose of this research study is to gain insight into the strengths that students from underprivileged backgrounds possess and the barriers they face as they try to gain admission into medical school. Students from underprivileged backgrounds are currently underrepresented in medical schools in Canada and abroad and I'm trying to get a sense of why that might be.

I'm hoping that your forum will be able to help me in recruiting participants for this research study. Am I able to post a request for research participants? I've attached a consent form that contains more information about the research study. There's no need to sign it, I'm including it for the purpose of providing you more information about my research study so you can determine if it is something you're comfortable with me posting.

If you have any further questions, please feel free to contact me.

Best regards,  
Chanté De Freitas, B.A. (Hons)  
MSc Candidate, Health Science Education, McMaster University  
premeds@mcmaster.ca

## **Appendix H: Recruitment Ad – Forum**

**Post Title:** Participants Needed: Interview Study on Experiences Getting Into Med School

FACULTY OF HEALTH SCIENCES, MCMASTER UNIVERSITY

***“Medical school is for rich people, it's not for people like me...”***

If you relate to this statement, we'd love to talk to you.

We're looking for volunteers to take part in a research study of people who are underrepresented in medicine.

We're looking for people who aren't in medical school yet but would like to be.

Your participation would involve at least one 60 minute interview, with optional follow up interviews. The interviews can be done over the phone, or in person if you live in the Hamilton/Toronto area.

You will be given a \$25 amazon.ca gift card for your participation.

For more information about this study, or to volunteer for this study, please contact:

Chanté De Freitas, B.A. (Hons)

MSc Candidate, Health Science Education  
at [premeds@mcmaster.ca](mailto:premeds@mcmaster.ca)

This study has been reviewed by, and received ethics clearance through the Hamilton Integrated Research Ethics Board (HiREB). Project number 4884

Appendix I: Recruitment Ad - Printed Poster

FACULTY OF HEALTH SCIENCES  
MCMASTER UNIVERSITY

**“Medical school is for rich people,  
it's not for people like me...”**



PARTICIPANTS NEEDED FOR  
INTERVIEW RESEARCH STUDY ABOUT BARRIERS TO A CAREER IN  
MEDICINE

If you relate to this statement, we'd love to talk to you.

We're looking for volunteers to take part in a research study of  
people who are underrepresented in medicine.

We're looking for people who aren't in medical school yet but would like  
to be.

Your participation would involve 1-2 confidential interviews,  
each lasting approximately 60 minutes. You will be given a **\$25  
amazon.ca gift card** for your participation.

For more information about this study, or to volunteer for this study,  
please contact:

Chanté De Freitas, B.A. (Hons)  
MSc Candidate, Health Science Education  
at [premeds@mcmaster.ca](mailto:premeds@mcmaster.ca)



**This study has been reviewed by, and received approval  
from the Hamilton Integrated Research Ethics Board (HiREB). Project number 4884**

## Appendix J: Recruitment Ad - Social Media Flyer

CAN YOU RELATE?

# MEDICAL SCHOOL IS FOR RICH PEOPLE, IT'S NOT FOR PEOPLE LIKE ME...

**Participants needed for interview research study about barriers to a career in medicine**

Students from underrepresented groups are wanted to participate in an interview about their path to medicine. You will receive a **\$25 amazon.ca gift card** for your participation.

## CONTACT

Chanté De Freitas, MSc (c)  
Health Science Education  
[premeds@mcmaster.ca](mailto:premeds@mcmaster.ca)

This study has been reviewed by, and received approval from the Hamilton Integrated Research Ethics Board (HiREB). Project number 4884



## **Appendix K: Interview Guide**

### **INTERVIEW GUIDE**

#### **Aspiring Physicians from Underprivileged Backgrounds: Experiences of Barriers and Facilitators to a Career in Medicine**

1. Can you tell me about your path so far to becoming a physician?
2. How has your identity or identities influenced your path to medicine?
3. What made you want to become a doctor? When did you decide that you wanted to be one?
4. How did you come to rank yourself on the ladder?
5. Have you faced any barriers in trying to get into medical school?
  - a. Have you faced any financial barriers?
  - b. Do your peers face the same barriers?
6. Are there people who haven't been supportive of your goal of becoming a physician?
  - a. How so?
  - b. How do you deal with them?
  - c. What impact does this have on you as you try to get into medical school?
7. We had the phrase "medical school is for rich people, it's not for people like me" on our recruitment posters. Is it something you related to?
  - a. Why?
8. Is it common for people to become doctors where you grew up?
  - a. What kind of expectations did people have about the kind of career you would pursue?
  - b. Was there an expectation for you to become a physician?
9. How did the people in your life react when you told them you wanted to be a doctor?
10. Can you tell me the steps you need to take in order to get into medical school?
11. Can you tell me what your understanding of the medical school admissions process is?
12. There are costs associated with trying to get into medical school, including things like the MCAT, volunteering, and travelling to interviews. How do you plan to pay for them?
13. How do you plan on paying for medical school?
14. Is there anything that is making your journey into medical school easier?
15. What keeps you motivated on this journey to get into medical school?
16. What steps are you taking to help you get into medical school?
  - a. Why are you doing these things?

- b. How did you learn about this?
  - c. How are you finding it?
17. Who are your biggest supporters?
- a. How are they supporting you?
  - b. What impact does this have on you as you try to get into medical school?
18. What do you think medical schools are looking for?
19. What kind of applicant do medical schools NOT want?
20. How well do you think you fit in with what medical schools are looking for?
21. If you could decide who gets into medical school what kind of applicants would you want?
- a. Why did you pick these?
  - b. How does this line up with what medical schools are currently looking for?
22. If you could decide who gets into medical school what kind of applicants would you not want?
- a. Why did you pick these?
  - b. How does this line up with what medical schools are currently looking for?