

Migration Motives and Integration Experiences of Iranian Dental Graduates in Canada

**Evaluating the Migration Motives and Post-Migration Experiences
of Iranian Dental Graduates Who Migrate to Ontario, Canada**

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Lay Abstract

This case study used in-depth interviews to study Iranian dentists who migrate to Canada. The main goal was to identify factors that impact full integration into Canadian society. Barriers to determining the equivalency of their qualifications was the predominant obstacle which put financial and emotional stress on applicants and their families. The system may have been set up in a way that systematically disadvantages foreign-trained dentists. In order to ensure maximal use of these oral healthcare professionals in Canada, it is necessary to facilitate the integration process through enhancing support networks and making available examination preparation courses.

Abstract

Many healthcare professionals from lower-income countries seek to improve their circumstances by immigrating to higher-income countries. However, successfully integrating into these different socio-cultural environments can be a challenge and, as a result, the skills these individuals bring may be underutilized. While substantial research around immigration experiences of physicians and nurses appear in the literature, little is known about the experiences of dentists. This study explored the migration motives and post-migration experiences of Iranian dentists living and working in Ontario, Canada. The intention was to identify potential barriers and facilitators of their integration in order to identify practical solutions to improve their experiences.

Following a qualitative approach, eleven personal interviews were conducted through the Zoom platform. A semi-structured interview guide consisting of two main areas of migration motivation and post-migration integration was used. Interviews were conducted in English and thematically analyzed through Dedoose software.

Socio-political and economic issues, including poor governance, political repression, currency devaluation, and incompatible social ethos were the main reasons behind Iranian dentists migrating to Canada. Canada's multicultural friendly environment, along with peace and stability, were reported as the major pull factors of migration. However, participants experienced significant challenges, especially in terms of integrating into Canadian society and the process of having the equivalency of their dental education evaluated. These barriers were categorized into two main themes, including "socio-cultural" and "institutional" problems. Language barriers, tough and stressful equivalency examinations, and lack of familiarity with the Canadian dental system were

key issues. However, ethnic networks, family supports, and examination preparation courses were identified as mitigating factors that facilitated a more positive migration experience.

Findings reveal that Iranian dentists and their families are stressed both financially and emotionally, mainly throughout the dental qualifications equivalency process; many applicants are unsuccessful in having their qualifications recognized or at least in a reasonable time period. The skills they bring are therefore not benefiting either themselves or Canada. Meanwhile, it appears that a systematic and institutionalized bias against foreign-trained dentists, including Iranian dentists, makes the process even more difficult. Regulatory college and board examinations may intentionally or unintentionally serve to limit foreign-trained dentists' access to practicing for several reasons including racial attitudes or saving jobs for Canadian trained dentists.

Several recommendations to improve the situation are identified. The National Dental Examining Board of Canada (NDEB) needs to revise its strategy by enhancing information about the equivalency and licensing process while providing information about mental health supports and financial aids for international applicants. Shadowing program opportunities and general orientation courses for international dentists could help International Dental Graduates' (IDGs) to learn about dental system and practice dentistry in Canada.

Keywords: Dentists, Immigration, Licensure, Integration, Canada, Iran.

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List of Abbreviations and Symbols

ACJ- Assessment of Clinical Judgment

ACS- Assessment of Clinical Skills

AFK- Assessment of Fundamental knowledge

GTA- Great Toronto Area

HICs- High Income Countries

IDGs- International Dental Graduates

IOM- International Organization for Migration

IRCC- Immigration Refugees and Citizenship Canada

LMICs- Low Middle Income Countries

NDEB- National Dental Examining Board of Canada

OECD- Organization for Economic Co-operation and Development

UN- United Nation

UOT- University of Toronto

WHO- World Health Organization

Declaration of Academic Achievement

The following is a declaration that the content of this research in this document has been completed by Sara Hajian, recognizing the valuable support of her thesis supervisor Dr. Glen Randall and supervisory committee Dr. Victor Satzewich.

Chapter 1: Introduction

1.1 Overview

In recent decades, international immigration has dramatically increased. The International Organization for Migration (IOM) defines international migration as “The movement of persons away from their place of usual residence and across an international border to a country of which they are not nationals” (IOM, 2021). According to a United Nations (UN) report, 281 million people migrated from their country of origin in 2020, which was 60 million more than the number of immigrants in 2010 (UN, 2020). Voluntary migration could be prompted by finding jobs, economic opportunities, family reunions, or seeking education (UN, 2021), while forced displacements are mostly in response to the adverse consequences of conflicts, terrorism, global warming, and natural disasters (UN, 2021).

Many highly skilled workers, including healthcare professionals, migrate from Low- and Middle-Income Countries (LMICs) to High-Income Countries (HICs) to gain more professional and educational opportunities (Aluttis, Bishaw, & Frank, 2014). The World Health Organization (WHO) estimates a global shortfall of 18 million health care workers by 2030 which worsens by their migration (Aluttis et al., 2014). Despite potential economic growth and knowledge transfer, this could magnify health human resource imbalances and rising health inequities among countries (Balasubramanian, Brennan, Spencer, & Short, 2016a).

In the United States (U.S.), the United Kingdom (U.K.), Canada, and Australia, about 25% of physicians are International Medical Graduates (IMGs) come from LMICs (Zurn, Dal Poz, Stilwell, & Adams, 2004). However, knowledge, skills, and valuable experiences of foreign trained health care workers can be wasted in HICs, if they cannot successfully integrate into the health system of the destination country (Lofters, Slater, Fumakia, & Thulien, 2014). Some international dental graduates who were not successful in equivalency exams may get involved in

non-clinical domains such as research or management (Balasubramanian, Brennan, Spencer, & Short, 2014). According to the IOM definition, integration is: “The two-way process of mutual adaptation between migrants and the societies in which they live, whereby migrants are incorporated into the social, economic, cultural and political life of the receiving community” (IOM, 2021). Thus, integration is essential for these immigrant healthcare professionals to meet their full career potential in their new homes.

Understanding the migration motives and experiences of foreign trained healthcare workers, including dentists, would benefit both source and destination countries to identify their human resources' potential needs and challenges, while improving their workforce planning strategies for the optimum use of their knowledge and skills (Balasubramanian, Brennan, et al., 2016a). From the UN's 17 Sustainable Development Goals (SDGs), 11 of them refer to migration to address the main principle of the 2030 Agenda for Sustainable Development of “leave no one behind” (UN, 2021). Goal ten, target 7 directly focuses on facilitating safe responsible migration of people through well-managed policies and improving immigrants' social and professional status in destination countries (UN, 2021).

In a similar vein, WHO introduced the “Global Code of Practice on the International Recruitment of Health Personnel” in 2008 (Siyam & Dal Poz, 2014). This code emphasizes voluntary multi-lateral collaboration at the global level in order to provide a positive work environment and professional career aspirations for professional healthcare workers while enhancing supervision on migration research and data gathering (Dayrit et al., 2008).

1.2 Purpose of the study

Information on the experience and wellbeing of immigrant dentists in destination countries remains limited compared to other health care professionals in the field of medicine or nursing (Balasubramanian et al., 2015). In order to achieve a comprehensive understanding of appropriate strategies regarding the global oral health workforce and sustainable oral health systems, multiple country specific studies will be required (Balasubramanian, Brennan, Spencer, Watkins, & Short, 2015).

As an Iranian dentist with a personal interest in the migration motives of my peers, I would like to explore their own interpretation of their life stories after migration through subjective personal interviews. The results would be helpful for dental professionals in LMICs to make a conscious decision regarding their migration intentions and future careers. Policy makers in destination countries could also identify international dentists' challenges and improve their integration. Thus, through this study we aim to contribute to the knowledge of migration studies with a specific focus on Iranian oral health professionals migrating to Canada.

Chapter 2: Background

2.1 Statement of the problem

In recent years, there has been a significant increase in the global migration of health personnel, including dental professionals, who look for better opportunities and quality of life in more affluent countries (Balasubramanian, Brennan, et al., 2016a). While there is substantial research about the migration of physicians and nurses there is little information around dentists. About 69% of the global dentists provide dental care services to only 27% of the world population which highlights the shortfall and misdistribution of dental professionals around the globe (Glick, Williams, Ben Yahya, et al., 2021). Resource poor countries are suffering from the loss of highly qualified human resources while facing problems in providing accessible, affordable, and equitable oral healthcare for their communities (Balasubramanian, Brennan, et al., 2016a). Whereas there is an intensive competition between industrialized nations to absorb highly skilled workers and use their creativity and skills to boost their economies (Sector, 2008).

FDI World Dental Federation (FDI) vision 2030 emphasizes “delivering optimal oral health for all” and identifies challenges that oral health community will face in the near future (Glick et al., 2021). This report presents three pillars with supported strategies and goals to improve oral health and reduce the oral health inequalities around the globe (Glick et al., 2021). Pillar three is about “Building a resilient oral health workforce for sustainable development”, which targets health systems to use crisis management strategies so as to mitigate the consequences of dentists’ migration (Glick et al., 2021).

According to a World Bank report, Canada is among the top four countries that attract highly skilled workers (World Bank, 2016). In 2019, more than 50% of new immigrants working in Canada were highly educated with post-secondary graduate degree credentials (IRCC, 2021a).

Despite Canada's improved immigration policy towards attracting highly skilled healthcare workers, integration challenges remain (Covell, Neiterman, & Bourgeault, 2016). "Brain waste" turns into a common phenomenon among non-Canadian international medical graduates from LMICs in Ontario who could not successfully find a position in the field of medicine, and instead are forced to take "survival jobs" such as working as a taxi driver (Lofters et al., 2014).

Iran, as a lower-middle income country, has been faced with the problem of losing its educated workforce, including graduates of medical sciences (Asadi et al., 2018). Official statistics on the migration flow of Iranian healthcare workers is very limited. In 2009, Iran ranked as a top country among 91 LMICs in terms of migration rate of highly skilled and educated labour (Chaichian, 2011). Meanwhile, Iran with 0.87 % of the world's dentists is one of the main contributors of international oral healthcare professionals among Eastern Mediterranean countries (Balasubramanian, Brennan, et al., 2016a). Iranian dentists are also among the top ten countries of foreign trained dentists in the U.S. (Sweis & Guay, 2007).

In addition, Iran is among the top ten countries for having permanent residents in Canada during 2019, mainly through the Express Entry program which is for skilled workers (IRCC, 2021b). More than 34 thousand Iranian immigrants became Canadian permanent residents between 2015 and 2019 (IRCC, 2021b). Most of the Iranian community in Canada lives in the Greater Toronto Area (GTA) where newcomers typically also chose to locate (Gharakhlou & Langlois, 2006).

Since 2012, there is no resident Canadian Embassy in Iran and Iranians have no option but to travel to other neighboring countries such as Turkey to obtain their visas or for counseling services (Juneau, 2019). Iranian dental graduates also have to arrange for their university grades or dentistry diploma to be sent directly from their home country university to Canadian universities or institutions. Moreover, there is an extensive bureaucracy involved in sending any documents from

Iran to countries such as Canada, the U.S., and the U.K. due to the current political conflicts in Iran.

Despite all these challenges, countless Iranian dentists desire to leave their country. More than 50% of Iranian healthcare workers have an intention to migrate due to economic, socio-cultural, and structural issues in Iran (Asadi et al., 2018). After U.S. sanctions and a travel ban in 2017, other English speaking countries such as Canada became popular among Iranian highly skilled professionals as a destination country (Asadi et al., 2018).

In the following sections, general information is provided about the Iranian dentistry system, Canadian equivalency exams, and the Canadian work environment in order to better understand the study context.

2.2 Iranian Dental System

In Iran, dental education is based on the odontology model, which means dental students are admitted in dental schools directly through a national university entrance exam with no requirement for a general medical degree (Jadidfard & Yazdani, 2018). Only those who are successful in achieving top ranks in this competitive exam can apply for a dental school (Khami, Murtooma, Jafarian, Vehkalahti, & Virtanen, 2008). Dental education is almost free and funded through governmental resources (Pakshir, 2003). Dental programs are usually six years long in Iran (Jadidfard & Yazdani, 2018). Graduates of tuition-free programs are required to complete a national service program that usually lasts for about two years and could be in rural or low-resource areas of Iran (Jadidfard & Yazdani, 2018).

According to the current statistics on the number of dental universities in Iran, over 39 dental schools are operating with more than 1,500 dental graduates annually, compared to the 18 dental schools with only 750 annual graduates in 2003 (Afsahi, Haghdoost, Houshmand, Dehghani, & Amanpour, 2021; Pakshir, 2003). In 2019, there was one dentist for every 2,326 people in Iran, which is still far from the dentists-per-population rates in HICs such as Canada (Afsahi et al., 2021). The population-to-dentist ratio in Canada was 1,622 meaning that there is one dentist for every 1,622 people (CDA, 2022). In addition, due to maldistribution of dentists in Iran between urban and rural areas and their high concentration in metropolitan areas, rural populations are even more severely underserved with limited access to dental care services (Kiadaliri, Hosseinpour, Haghparast-Bidgoli, & Gerdtham, 2013).

2.3 Pathways to licensing IDGs in Canada

The National Dental Examining Board of Canada (NDEB) has been responsible for “developing” and “administering” a “fair, valid and reliable” examination for evaluating and certifying dentists in Canada since 1952 (NDEB, 2021). The NDEB Board has 12 members including agents from each provincial dental regulatory authority, the Commission on Dental Accreditation of Canada (CDAC), and a public representative (NDEB, 2021). In 2000, all foreign-trained dentists were required to complete at least a two-year qualifying program at one of the Canadian dental schools to be eligible for getting a license and to practice dentistry in Canada (Boorberg, Schönwetter, & Swain, 2009). Currently, all dental graduates of non-accredited dental programs, including Iranian dentists, were required to go through one of two pathways to determine the equivalency of their qualifications in order to obtain a dental license and be eligible to take the NDEB written exam and Objective Structured Clinic Examination (OSCE) (NDEB, 2021).

IDGs have to register and submit required documents through the NDEB website before being eligible for taking the exams (NDEB, 2021). All registered applicants must take the Assessment of Fundamental Knowledge (AFK) which focuses on their basic theoretical knowledge (NDEB, 2021). The AFK takes four hours to complete and includes 200 single answer multiple-choice questions (NDEB, 2021). If participants obtain an excellent score in the exam, they can apply to enter a degree completion program at one of the universities in Canada that has a dental program (NDEB, 2021). Otherwise, with a minimum re-scaled passing score of 75, they are also required to pass two clinical exams, including Assessment of Clinical Judgement (ACJ) and Assessment of Clinical Skills (ACS) (NDEB, 2021). The ACJ examines diagnostics, treatment planning, and radiographic interpretation skills with 120-150 single-answer and multi-answer multiple-choice type questions during a 5.5-hour period (NDEB, 2021). The ACS consists of 12 dental procedures on simulated patients during two days held in one of the administered Canadian faculties of dentistry (NDEB, 2021). Graduates of international specialty programs could go directly through the specialty equivalency process which consisted of two exams, including the Dental Specialty Core Knowledge Examination (DSCKE) and a Dental Specialty Assessment and Training Program (DSATP) (NDEB, 2021).

There is a registration deadline and a limited capacity of applicants for each exam. Applicants cannot obtain their dental license if they fail in the exams three times (NDEB, 2021). There is also limited admission entry for IDGs who follow the degree completion pathway in Canadian dental schools. There were ten dentistry universities in Canada in 2021, two of which are located in the Ontario province (CDA, 2022). The University of Toronto (UOT) accepted 24 applicants through the International Dentist Advanced Placement Program (IDAPP) in 2021 (UOT, 2021). Western University accepted 20 IDGs from 218 applicants through the Internationally Trained Dentists

(ITD) Program in 2019 (Western University, 2021). These programs are usually three years long and IDGs must have permanent residency or Canadian citizenship to be eligible for them.

Overall, fees for each participant passing all the exams directly will be around \$12,650 CAD plus the board exams fee (NDEB, 2021). Preparation training courses (which are voluntary and held by private institutions) charge a fee for a complete package for each exam that would be at least \$11,000 CAD while additional fees such as the cost of living, transportation and personal dental equipment for clinical exams should be added to these amounts. The IDAPP at UOT is a self-funded program and costs about \$114,000 CAD plus the fees for NDEB registration, the AFK exam, and the Board exams. (UOT, 2021).

According to the NDEB historical pass rates, the number of applicants has been increasing during the past decade while the pass rates, especially for the ACJ exam, has been decreasing (NDEB, 2021). The success rates for the AFK, ACJ, and ACS in 2019 were reported 45%, 37%, and 34%, respectively (NDEB, 2021). Not to mention that the COVID-19 pandemic in 2020, has dramatically influenced the equivalency process through border limitations, lock down policies and exam suspensions.

2.4 The practice of dentistry in Canada

IDGs are required to hold Canadian permanent resident or citizenship status in order to practice dentistry in Canada. Currently, IDGs are eligible to apply for Express Entry immigration under the Federal Skilled Worker Program (FSWP), and the Provincial Nominee Program (PNP) which is available only in the province of Quebec (IRCC, 2021b). After licensing, applicants should acquire provincial licensure in order to practice dentistry in Canadian provinces. The Royal

College of Dental Surgeons of Ontario (RCDSO) is the regulatory body for dentists in the province of Ontario which is responsible for issuing work certificates for dentists in Ontario (RCDSO, 2021). Applicants also need to complete the RCDSO's Jurisprudence and Ethics course, demonstrate their English skills, and provide proof of no criminal offenses (RCDSO, 2021).

Dentists are largely self-employed (87%) working in the private sector, with the low unemployment rate of 0.9% in 2018 (Canadian Occupational Projection System (COPS), 2017). Ontario hosts the largest number of dentists in Canada, with 8,912 registered dentists in 2013 (Statista, 2017). The average annual income for dentists in Canada is estimated to be around C\$117,471 (Pay Scale, 2021). In Ontario, the free dental care through Ontario Health Insurance Plan (OHIP) is limited to in-hospital oral surgery and a few limited situations such as correcting a fractured jaw, otherwise, funding is either provided through private insurance or out-of-pocket by the patient. In limited circumstances, funding may be available for individuals with disabilities, and low-income families, funded by the government of Ontario (Government of Ontario, 2021).

It is noteworthy to mention that there is no official “ready to practice” program available for IDGs in Canada. If a foreign trained dentist wants to work while studying for their equivalency exams, they can apply for relevant jobs such as a dental assistant, a front desk position at dental offices, or a research position in academic institutions.

2.5 Justification for this study

Oral healthcare professionals serve the oral health need of populations throughout their life course, and it is important to identify their migration challenges and motivations for developing a successful oral health workforce plan and ensuring sustainability of oral health systems.

To date, there are limited scholarly publications on the migration motives and post-migration experience of foreign trained dentists in different countries. International dentists who have migrated to Canada may have different experiences and challenges than those who migrate to other countries. Moreover, dental professionals' migration experiences could be different from other healthcare professionals since they mostly practice in private sectors, have shorter years of education, and high dependency on dental materials and equipment. Studying their migration experiences will identify potential gaps and may improve their integration which is directly entangled with quality of dental care they are going to provide in destination countries.

As an Iranian dentist with a personal interest in the migration motives and experiences of my peers, I would like to investigate their own interpretation of their life stories after migration. Iranian dental graduates are among a large category of skilled worker migrants in Canada. They serve the large Persian language community in Canada who mainly look for a same language speaking providers (Dastjerdi, 2012). The results also could help IDGs from LMICs to better navigate the process of migration to Canada and understand their situation after migration.

Chapter 3: Review of literature

A structured literature search was employed to address the study's question:

What are the migration motives and post-migration experiences of Iranian dental graduates who migrate to Ontario, Canada?

This review helped us understanding what is already known about IDGs' migration, and facilitated the design of our interview guide.

3.1 Search strategy

Based on our research question, studies that were written in English and examined factors influencing the migration of dentists from Low- and Middle-Income Countries (LMICs), and their post migration experiences in High-Income Countries (HICs) were included. We considered original articles, both quantitative and qualitative, review articles, and letters to editors to enrich our data. We also hand-searched the initially identified studies' references (reference-chaining) to include further potentially relevant articles. Articles that investigated the mobilization of healthcare workers within Europe were excluded since their participants did not necessarily come from LMICs or need to get licensed in order to work. In addition, we used the Preferred Reporting Items for Systematic Reviews and Meta-Analysis (PRISMA) 2009 guidelines, which are considered to be the gold standard for systematic reviews, to organize our research strategy (Moher, Liberati, Tetzlaff, Altman, & Group, 2009).

Medical Subject Headings (MeSH) including “Dentists”, “Emigration”, “Immigration”, and “Licensure”, along with non-MeSH terms such as “Foreign-trained”, “Dental graduates”, “Healthcare workers”, “Oral health professionals”, “International dental workforce”,

“Integration”, and “Cultural adaptation” were used as our search terms. The Boolean operators such as “AND” and “OR” were used to combine these key terms. We searched through various databases including PubMed (National Library of Medicine), Web of Science, Scopus and relevant journals such as “Bio-Med Central journal of Human Resource for Health” and “Journal of International Migration and Integration”. The time frame selected included articles published between January 2000 to 2021.

3.2 Search results

After removing duplicates from an initial 1617 articles identified, 134 documents remained for further investigation. Studies that were not written in English, or did not include healthcare workers as their study participants were excluded. We also removed studies that did not investigate foreign-trained dentists or their migration from LMICs to HICs. Studies that reported international dentists' migration consequences, policy recommendations, or distribution or flows were also excluded. After reviewing and screening abstracts and methods, 43 studies met the inclusion criteria. Full texts of these remaining studies were assessed in detail regarding our research question, and resulted in the final 12 articles that met all inclusion criteria.

The selected articles were analyzed and categorized under different headings in terms of their thematic association and overarching research question. The main results were categorized by the research team through various on-line meetings, and were summarized below in four themes.

3.2.1 International dentists' migration motives

Several scholarly publications investigated health professionals' migration from LMICs. Socio-political, economic and professional factors such as poor income, devaluation of national currency, insecurity, political instability, poor work environment and lack of educational and professional

opportunities were reported as the main push factors of health professionals' migration (Astor et al., 2005; Castro-Palaganas et al., 2017; Hossain, Shah, Shah, & Lateef, 2016; Kizito et al., 2015; Oberoi & Lin, 2006; Sheikh, Naqvi, Sheikh, Naqvi, & Bandukda, 2012; Syed, Khimani, Andrades, Ali, & Paul, 2008).

The main reasons for IDGs migrating to New Zealand were better lifestyle and quality of life, safety, better education for their children, greater income potential, and workplace infrastructure for practicing high-quality dentistry (Ayers, Thomson, Al-Hassiny, Rich, & Newton, 2008). Pakistani dental graduates were also looking for better training opportunities, higher income, better workplace environment, and job satisfaction in destination countries (Firdous, Naqvi, & Akhter, 2019). However, racism, getting used to the new culture, and high level of job competition in recipient countries were considered challenging and sometime unfavorable (Balasubramanian, Brennan, Spencer, & Short, 2016b; Firdous et al., 2019).

The origins of international dentists' problems in Australia were collected through their life-stories to capture details about participants' early life experience, career choice, student and professional life as well as their socio-political situations (Balasubramanian, Brennan, Spencer, & Short, 2014). Being high achievers while the professional opportunities were limited were the main reasons for IDGs' migration from LMICs (Balasubramanian, Brennan, Spencer, & Short, 2014). Moreover, the influence of family and close friends, or a history of travel to Australia, motivated their decision and location of migration (Balasubramanian, Brennan, Spencer, & Short, 2014).

The migration drivers of South African skilled health workers, including physicians, nurses and dentists, were divided into two sections as follows: 1) living conditions, including corruption, safety and the future of children, and 2) working conditions, including lack of support from the government, poor work infrastructure and poor personal security at work (Labonte et al., 2015). In

a similar study, financial factors including poor income and high costs of living were identified as the key push factors for migration of skilled healthcare workers (mainly physicians, dentists, pharmacists and nurses) in India (Walton-Roberts et al., 2017). They considered improvements in training national healthcare workers in destination countries as decreasing their career progression opportunities (Walton-Roberts et al., 2017).

3.2.2 International dentists' licensing process

The pathways for graduates of medical sciences from non-accredited schools to obtain source country licenses were typically reported as causing stress due to the content of exams, lack of a peer support network, and financial costs (Ayers et al., 2008; Hollett, Hann, & Bradbury, 2008; Lofters et al., 2014; McGrath, Wong, & Holewa, 2011; Graham T McMahon, 2004; Neiterman, Bourgeault, & Covell, 2017; Price et al., 2018).

Personal interviews with IDGs from 22 different countries migrating to Australia reported stressful and tough examinations and the time, costs, and finances invested during the process of licensing (Balasubramanian, Brennan, Spencer, Watkins, & Short, 2014). In addition, the importance of support systems for improving information about the exams, examination evaluation criteria, the availability of affordable training courses, and efficient counselling services after the examinations were emphasized (Ayers et al., 2008; Balasubramanian, Brennan, Spencer, Watkins, et al., 2014).

In a review of the licensing challenges of foreign-trained dentists in the U.S., the advantages and disadvantages of recruiting IDGs in destination countries were investigated (Kellesarian, 2018). On one hand, they could improve the diversity of the dental workforce and access to care, especially for underrepresented communities (Kellesarian, 2018). On the other hand, patient safety directly relates to IDGs competency, knowledge and skills which highlights the importance of the licensing process (Kellesarian, 2018). From nine articles found for the licensing process in the

U.S., limitation in admission process, tuition costs, applying for the US visa or residency, and cultural differences were reported as the main challenges faced by IDGs (Kellesarian, 2018).

3.2.3 International dentists' work experience in host countries

International healthcare workers contribute to the health and wellbeing of the people in recipient countries, however, they face several challenges, mainly with regards to language barriers and communication, culture related issues, teamwork challenges, and lack some professional skills, especially in understanding their patients and negotiating treatment plans with them (Hall, Keely, Dojeji, Byszewski, & Marks, 2004; G. T. McMahon, 2004). IMGs and IDGs in the U.K. experienced less of a knowledge gap compared to nurses which may have been due to the rigorous examination process they would have taken as non-EU doctors (Davda, Gallagher, & Radford, 2018). However, the lengthy registration process was considered as the main obstacle for the doctors to get employed, while communication difficulties made work more challenging (Davda et al., 2018).

IDGs in New Zealand mentioned hesitancy to employ overseas-trained dentists due to unfamiliarity with their background and culture (Ayers et al., 2008). In addition, there were concerns about learning paperwork, third-party claims, and patients' rights which suggested a need for a mentoring program before practicing (Ayers et al., 2008).

Job satisfaction assessment among immigrant dentists in Australia through a 12-item global scale indicated a high level of overall job satisfaction around practicing dentistry in Australia (Madhan Balasubramanian et al., 2016). Although foreign trained dentists from LMICs, including Iran, were least satisfied with area and type of practice because they were mostly located in remote and disadvantage areas with limited social activities and professional opportunities (Madhan Balasubramanian et al., 2016). Moreover, there was less demand for younger immigrant dentists

which indicates the significant role of support to improve their skills in understanding the host country's culture and dental workplace (Madhan Balasubramanian et al., 2016).

In a discriminant analysis between IDGs and local dentists in Australia, there was no difference found regarding productivity measures which could be translated in the successful integration of immigrant dentists to the Australian oral health system (Balasubramanian, Spencer, Sohn, & Brennan, 2021). Foreign-trained dentists from non-accredited schools were predominantly female dentists, practicing in the public sector, and working in underserved areas compared to their local counterparts (Balasubramanian et al., 2021).

3.2.4 International dentists' post-migration experience

The integration barriers and facilitators of international healthcare professionals, including dentists who migrated to the U.K., revealed that adaptation programs, support networks, cultural awareness, and personal perspectives were significant factors in their integration (Davda et al., 2018). In comparison with nurses, physicians and dentists had more control over their workplaces, which resulted in less individual discrimination rather than institutional discrimination (Davda et al., 2018).

Investigating the cultural adaptation process of IDGs who mainly came from LMICs to Australia revealed that their initial problems with understanding the Australian accent and slangs affected their communication in different ways (M. Balasubramanian, D. S. Brennan, et al., 2016b). In addition, finding religious and spiritual support was sometimes challenging (M. Balasubramanian, D. S. Brennan, et al., 2016b). The authors explained a super theme as a continuum entitled “Newness-Struggle-Success” which presents the process of adaptation for immigrant dentists in Australia (M. Balasubramanian, D. S. Brennan, et al., 2016b). In other words, being new to socio-

cultural experiences while struggling to understand it may lead to a success in integrating and receiving support from the community (M. Balasubramanian, D. S. Brennan, et al., 2016b).

In a Life Story Experiences (LSE) scale developed through a qualitative-quantitative study of migrant dentists in Australia, two scales including “settlement concerns” and “appreciation towards Australian way of life” were used to assess migrant dentists’ post migration experiences (M. Balasubramanian, A. J. Spencer, et al., 2016). The settlement experience brought out negative attitudes mainly due to the dental qualification process, professional issues and cultural barriers (M. Balasubramanian, A. J. Spencer, et al., 2016). In contrast, appreciation towards the Australian way of life was positively identified along with quality of life, culture and safety in Australian society (M. Balasubramanian, A. J. Spencer, et al., 2016). Migrants from LMICs had greater issues during their settlement process compared to migrants migrating from affluent countries (M. Balasubramanian, A. J. Spencer, et al., 2016).

3.3 Summary of the review

In summary, higher income, better working environment, and better quality of life due to better economic situations in HICs pulled oral healthcare professionals into the idea of migration. However, migrant dentists were mostly pushed by lack of professional and training opportunities, poor quality of life, and political conflicts in their home countries while being concerned about their families and futures of their children. Following migration, they faced several challenges in host countries including communication difficulties, cultural differences, and finding a job.

This review draws on limited publications investigating migrant dentists’ experiences, compared to international medical and nursing graduates. There is lack of data on IDGs’ migration experiences in Canada while it is one of the popular host countries among OECD nations for

foreign-trained highly skilled immigrants. There is also very little knowledge about Iranian immigrant dentists and their migration intentions.

Thus, through this study, we contributed to expanding available literature by focusing on the migration motives and potential challenges that Iranian dental graduates faced through their migration to Canada. This will help IDGs to better understand the reality of the certification process, employment, and help them to practically plan for their career pathways and professional development. Moreover, their experiences could determine more detailed information about how they deal with integration barriers and examination challenges which could help in identifying necessary training, support services, and the need for improving fairness in the assessment processes.

Chapter 4: Methods and Materials

4.1 Philosophical Orientation

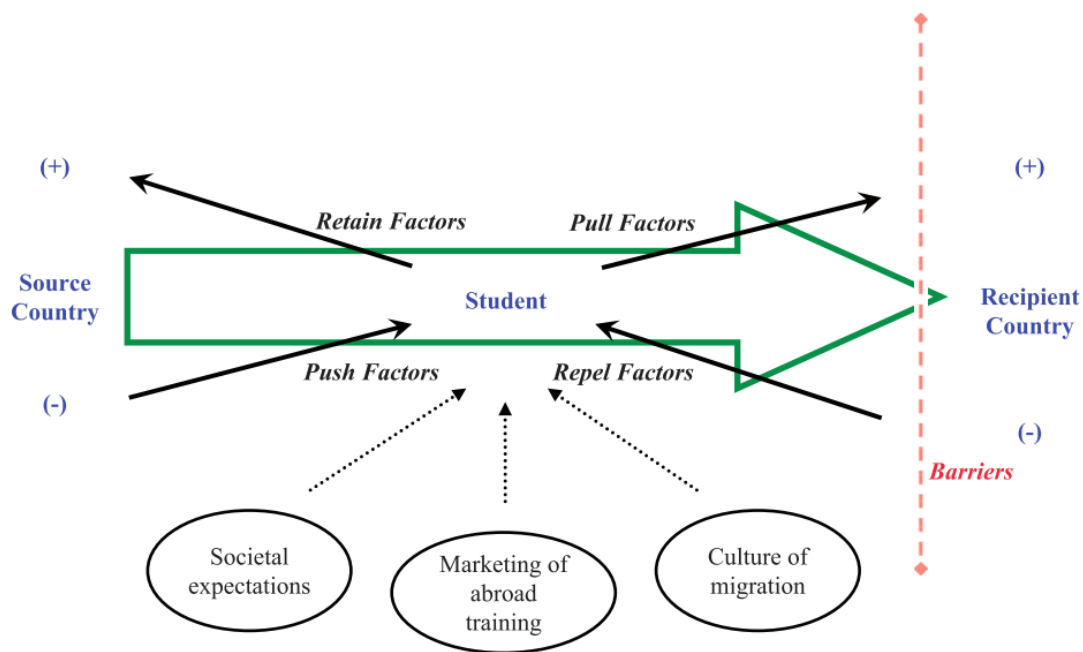
A constructivism approach was considered to be appropriate to investigate migration as a multifactorial phenomenon, hidden in different intangible social, political, economic, and personal constructions which affect migration intentions and experiences of individuals (Cohen, Kahn, & Steeves, 2000). To be more specific, the migration motives and experiences could be understood through the participants' interpretation and socially constructed meanings through a face-to-face in-depth interview (Cohen et al., 2000). Therefore, participants are actively involved in the research by making their experiences, beliefs, and attitudes meaningful issues that do not exist independently (Cohen et al., 2000). The epistemology hidden in the idea of what gives the physical world meaning are these mutual understandings that are built subjectively between people when they engage with the objective physical world (Green & Thorogood, 2018).

An exploratory qualitative study allows for an in-depth investigation of personal life stories and experiences, and allows for the capturing of descriptive data from the perspective of participants (Creswell & Poth, 2016). A case study methodology used as a technique to interpret and understand the true meaning behind Iranian dentists' reasons for migrating and their lived experiences in Canada (Creswell & Poth, 2016). According to Yin, a case can be studied within a real-life situation through in depth investigations (Yin, 2014). By following this approach, in-depth details of each participant's experience were captured through personal interviews with the purpose of creating meaningful units via interpretive processes. In this way, we were able to understand why migration happens and what factors influences the post-migration experiences of IDGs in a specific recipient country.

4.2 Conceptual Frameworks

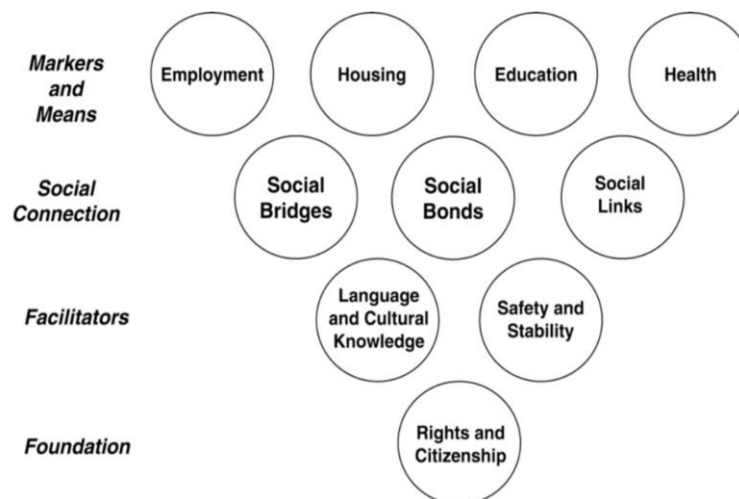
To understand the different aspects of the migration process, we used a conceptual framework that was previously developed through investigating the reasons behind Lebanese medical students' intention to migrate (Figure 1) (Akl, Maroun, Li, Grant, & Schünemann, 2012). This model suggests that the likelihood of an individual engaging in the migration process results from different factors, mainly push factors (factors driving individuals away from their home country) and pull factors (factors attracting them by a foreign country) (Akl et al., 2012). The factors inhibiting migration from countries of origin to countries of destination were termed “repel & retain” factors, which were classified into four individual, social, occupational and political categories (Akl et al., 2012). The inhibitive role of certain barriers such as financial problems, equivalency exams, and visa processes were also pointed out in this model (Akl et al., 2012).

Figure 4. 1 A conceptual model for medical students' decisions to migrate (Akl et al., 2012)



This model helped us understand different layers related to migration with regards to both source and destination countries. In addition, the integration conceptual framework, which is shown in Figure 2, identifies different aspects of immigrants' integration issues in the destination countries including social connection and rights, employment and language knowledge (Ager & Strang, 2008). These elements were considered during the development of the interview guide regarding the significant factors involved in the process of migration. The two frameworks were considered in developing the interview semi-structured questionnaire and in the thematic analysis of our data.

**Figure 4. 2 A conceptual framework defining core domains of Integration
(Ager & Strang, 2008)**



4.3 Research Questions

This study aimed to address the overarching question:

What are the migration motives and post-migration experiences of Iranian dental graduates who migrate to Ontario, Canada?

There were three sub-questions:

1. Why do Iranian dental graduates migrate? And why do they choose Canada?
2. How do Iranian dentists describe their migration experiences?
3. How could the system be improved for the benefit of international dental graduates in Canada and the Canadian public?

By answering these questions, we were able to identify the reasons for migration as well as the barriers and facilitators IDGs' face in attempting to integrate into the Canadian system.

4.4 Study Setting

In qualitative research the field is usually considered the real life setting where participants live (Green & Thorogood, 2018). Canada, with 35 percent foreign-born doctors, is among the highest of the Organization for Economic Co-operation and Development (OECD) nations to benefit from international migration of health professionals (Siyam & Dal Poz, 2014). The province of Ontario, with the most populated city of Toronto and major top-ranked universities, hosts a large number of highly skilled immigrants annually (El-Assal, 2020).

Iranian highly skilled workers mostly choose Canada as their destination for migration, particularly after the U.S. sanctions and a higher difficulty in obtaining visa approval (Azadi, Mirramezani, & Mesgaran, 2020). Most of the Iranian community lives in the greater Toronto area where newcomers typically also chose to locate (Gharakhlou & Langlois, 2006). Therefore, we decided to conduct our study in the province of Ontario to increase the probability of successfully recruiting participants using our purposive sampling approach.

Demographic data collected included age, gender, marital status, and years since immigration. We tried to choose a heterogeneous sample to make the study representative of this population.

4.5 Study Design and Method

We employed a qualitative exploratory research design following a holistic approach to collect different perspectives. Virtual face-to-face semi-structured interviews were conducted with a small group of Iranian dentists who migrated to the province of Ontario, Canada. A semi-structured questionnaire with open ended questions were modified from a previous study conducted in Australia in order to fully reflect the Ontario context (M. Balasubramanian, D. S. Brennan, et al., 2016b).

Interview questions focused on IDGs' reasons for immigration, the immigration process, social and cultural experiences, patterns of integration and adaptation, study or work life, the Ontario equivalency examinations, and the licensing process. Prior to the interviews, participants were informed of the main purpose of the research and the intention to find key reasons behind their decision to migrate and those related to their post-migration experiences. During the interview, participants were allowed to freely discuss and narrate their own experiences using their own words. Prompts were used sparingly to facilitate interviews on key issues of participants' experience.

Interviews were organised virtually following health precautions for the COVID-19 pandemic. Interviews were conducted using the Zoom platform, which is an externally hosted cloud-based service with special attention paid on keeping the privacy and confidentiality of participants. All

interviews were conducted by the Global Health Master student who was the main researcher of this thesis (Sara Hajian).

4.6 Study Population and Sampling Strategy

We recruited Iranian IDGs living or working in the province of Ontario, Canada. Participants met the following inclusion criteria to be considered in our recruitment strategy: 1) Migrating more than five years ago and living in the province of Ontario at the time of the interviews, 2) Graduated from one of the Iranian dental schools, 3) Involved in the process of Canadian dental equivalency exams, 4) Able to communicate and speak in the English language as a main study language. Participants who have an inability to speak English, following other pathways for getting licensed in Canada or were not attempting to obtain a license as a dentist in Canada were excluded.

The study population was selected based on a purposeful sampling strategy to find information-rich participants followed by a combination of convenience sampling and snowballing of the participants (Creswell & Poth, 2016). Initially, participants were identified by networking with the Iranian dental graduates in professional social networks (in WhatsApp and Telegram). By utilizing a maximum variation approach, we were able to collect enriched data based on different characteristics of the study participants including gender, age, and years of practice.

Literature demonstrates that a small sample size between 6 to 12 would be adequate to allow the researcher to collect various views and experiences in detail (Guest, Bunce, & Johnson, 2006). Evidence suggests that saturation is often achieved through the first twelve interviews (Guest et al., 2006). As to the nature of qualitative study and time limitation, choosing a small sample group

would be more feasible while the results should be tested in future research with larger samples and different regions in Canada, in which participants may present different viewpoints.

Recruitment social media posts for social networks were prepared to seek potential participants. The individuals who expressed interest to cooperate were contacted to provide more details about the study's purpose and to schedule a virtual appointment based on their choice of time.

4.7 Operational and Ethical Consideration

The ethical approval for the study was obtained from McMaster University Research Ethics Board (MREB #5313) prior to data collection. The written and verbal informed consent from each participant was also acquired before the interviews. In addition, information on the purpose of the study, and who can be contacted for any inquiries were included in the informed consent form. Ethical considerations were considered in keeping participants' confidentiality during storage, analysis, and publishing of the results (Green & Thorogood, 2018).

Participation in the study was voluntary and based on the full understanding of the consequences of participation. Participants were allowed to refuse to answer to any questions if they felt uncomfortable and could withdraw from the study at any time. In this case, they would have the ability to ask for the data collected from them to be destroyed.

Audio-recordings and all confidential data were kept anonymously during transcription and analysis. Codes and numerical systems were used instead of real names and all recordings were demolished after transcription. All confidential data collected for this study were stored on an encrypted, password-protected personal laptop. Only the research team who is involved in the

study can access these data. All data including electronic data or hard copies will be destroyed after five years.

The interviewer obtained necessary skills about sensitive issues prior to conducting the interviews and prepared for any issues regarding painful reminiscences of previous experiences during migration. Participants were completely understanding and were willing to share experiences, thoughts and feelings about their migration intentions and settling down experiences. As the subject might be politically sensitive, it was important to build trust while keeping privacy to improve the honesty and contribution without fear. There was some informal discussion in Persian language (participants' home country language) to build up trust and comfort prior to initiating the formal interviews.

Several meetings with the research supervisor and the committee member were planned to share the study progress, brain-storming for next steps and ensuring that the project is on the right track. The project findings will be disseminated in high quality peer-reviewed publications or conferences.

4.8 Data Analysis

Each interview was conducted in about one hour, from June to September 2021. Following ethical considerations, each interview was recorded digitally and a verbatim transcription was completed for analysis. We enabled auto close caption through Zoom platform and saved all audio recordings in a password protected folder in a password protected personal laptop. The interviewer wrote field notes during and after interviews. Transcripts were sent to participants via email to re-check for

any potential revision. Data saturation was achieved after eleven interviews when no new themes emerged.

All data were imported to Dedoose software (Dedoose, 2021). Thematic analysis was used following Braun et. al. guideline to analyze the data in six steps to focus on shared meanings across the dataset (Braun, Clarke, Hayfield, & Terry, 2018). The credibility of the results were improved by peer debriefing during data analysis (Collingridge & Gantt, 2008). The initial themes related to the research questions were generated, reviewed and refined in order to achieve consensus about overarching themes and to ensure the validity of results.

Chapter 5: Results

5.1 Descriptive data

Iranian dentists who migrated to Canada more than five years and went through the NDEB equivalency process were interviewed between June and September 2021. Participants included seven females and four males, nine were between 30 to 40 years old and married. Six participants were IDGs’ couples and could provide information of their partners’ experience, as well. Seven participants qualified through direct licencing (exams) and two participants attended the degree completion program at University of Toronto (UOT). Three participants were still working towards completing the exams while one of them failed the ACS exam three times. One participant has started his specialty program at UOT at the time of the interview. All the participants were living in Ontario and two of them were working in their own dental offices (summarized in table 5.1).

Table 5. 1 Demographic characteristics of the participants

Participant	Age	Gender	Pathway to certification	NDEB certification
1	39	Female	Exams	Yes
2	38	Male	University program	Yes
3	40	Female	Exams	Yes
4	36	Male	Exams	Yes
5	54	Male	Exams	No
6	37	Female	Exams	Yes
7	51	Female	Exams	In Progress
8	35	Female	Exams	Yes
9	37	Male	Exams	In Progress
10	38	Female	University program	Yes
11	36	Female	Exams	Yes

5.2 Results/Analysis

After conducting eleven personal interviews through the *Zoom* platform, no significant new information or themes emerged. Two main areas including “migration motivations” and “integration barriers and facilitators” were analyzed thematically. Motivations were categorized under the two main themes of “home country push factors” and “destination country pull factors”. Home country push factors include “poor government and foreign policy”, “economic instability and poor financial security”, and “lack of social ethos and human rights”. Destination country pull factors were “better rules and regulations”, “cultural diversity and social support”, and “stability and peace”. Integration was divided into facilitators, including “emotional support” and “professional support”, as well as barriers, including the two main themes of “socio-cultural barriers” and “institutional barriers”. Socio-cultural barriers were identified as “communication difficulties”, “homesickness”, and “racism”. Institutional barriers of integration were categorized into “pre licensing”, “licencing”, and “post licencing” stages. Themes, sub-themes, and different codes are summarized in the following tables (5.2 and 5.3).

Table 5. 2 Factors influencing the migration decision of Iranian IDGs in Canada

Domains	Themes	Sub-Themes	Codes
Migration Motivations	Home Country Push Factors	Poor government and foreign policy	Poor domestic and foreign policy
			Lack of responsibility
			Corruption
		Economic instability and poor financial security	Poor income
			Poor security
		Lack of social ethos and human rights	Poor work ethics
			Poor social rights
			Ideological belief
	Destination Country Pull Factors	Better rules and regulations	Driving rules and on-time public transportation
			Work ethics, meritocracy, and patient management
		Cultural diversity and social support	Multicultural and migrant friendly environment
			No cultural shock
			Ethnic networks
		Stability and peace	Political stability
Economic stability			
Less concerns for the future			

Table 5. 3 Factors influencing the post-migration experience and integration of Iranian IDGs in Canada

Domains	Themes	Sub-Themes	Codes	
Integration Barriers	Socio-Cultural Barriers	Communication difficulties	Language barrier	
			Lock down policies	
		Homesickness	Having friends or family in Canada	
			Personality type, personal attitudes	
		Racism	University instructors	
			University admission criteria	
			Applying for a job	
		Institutional Barriers	Pre-licencing	Submitting documents
				Registration Process
	Lack information			
	Timing			
	Licencing		Content of exams and non-culturally sensitive questions	
			Subjective judgement	
			Costs of exams & lack of funds	
			Timing	
			Resources and references	
			Low passing rates & limitations on accessing the exams	
	Post-licencing		Office availability	
			Patient management skill	
			Lack of information about provincial licencing	
		Costs		
		No ready to practice program		

Integration Facilitators	Emotional Support	Ethnic networks	Navigating the settling down process
			Finding friends and being open-minded
		Family coordination	The role of woman and setting priorities for timing of the exams
			Family ties and financial supports
	Professional Support	Training courses	Private institutions for exams’ preparation
			Being mentored by local dentists or employed as a dental assistant
			Taking university courses or being involved in research activities
		Peer networks	Navigating the system
			Using the informal knowledge and experience about the equivalency & licensing process

5.2.1 Motivations

5.2.1.1 Home Country Experience

Factors influencing the migration decision of Iranian dentists participated in this study were mostly related to the socio-political and economic situation in Iran.

5.2.1.1.1 Poor Government and Foreign Policy

Participants mostly complained about the actions of government in domestic and foreign policy, which affects all aspects of life in Iran including social, economic, and professional conditions.

One respondent expressed concerned about his future and stated that: “I'm not very happy with the government and foreign affairs. I couldn't see any bright future for myself and my family.”

Another participant complained about dictatorship and corruption of the Iranian government, and considered it as the main reason for poor security, the negative economic situation, and the political climate. She continued: “Concerning about such issue, push me and my husband, to leave all of our great professional achievements and our hardworking efforts in our homeland to give our children a chance of living in a well-developed and democratic country.”

5.2.1.1.2 Economic Instability and Poor Financial Security

Participants perceived economic instability as being the result of sanctions and political issues, which affect peace, stability, and job security in Iran. Concerns about these issues made it difficult for them to plan for their future. One participant, who had her own dental office in Iran, complained about a lack of financial stability, mainly in buying dental materials and equipment. She stated that: “There is no stability in the price and availability of dental materials. While, there were no changes in the fees within a year, too many changes with the costs, and that would not match the production.”

Meanwhile, one participant was concerned about her safety and pointed out that poverty and its consequences in her community, influenced her way of living. She mentioned: “I always worried about thieves. I try to not carry a bag with myself. I often keep my cellphone in my inner packet. I heard about different kinds of robbery happened every day.”

5.2.1.1.3 Lack of Social Ethos and Human Rights

Social factors including social ethos, work ethics, and human rights were also among the reasons that pushed participants to leave their own country. Female participants complained about their social limitations and lack of equal opportunities in their community. A participant sadly pointed out in reference to her social life in Iran: “As a woman, I didn't have the liberty that I wanted. I didn't have it in terms of religious, in terms of politics, everything like that. Even in choosing my outfit!” some participants also cited irresponsibility and weak accountability in the system as examples of work ethic problems in Iran with this notion: “nobody cares!”

One participant spoke about ideological and religious beliefs after the revolution in Iran, which dominated every aspect of his life. He complained about the lack of meritocracy and noted that: “If you want to get a position, especially in the university or governmental institutions, you have to pretend to be in line with them (the regime) and be on their side. Your knowledge and skills are not matter much.” Similarly, one participant noted that: “There were no priority giving to professional or even ethical qualifications (in Iran).”

5.2.1.2 Destination Country Experience

Participants were satisfied with their decision to migrate to Canada. They have no intention to return to Iran, at least in the near future.

5.2.1.2.1 Better Rules and Regulations

Some participants pointed to the better rules and social expectations in Canada. They believed rules and regulations were better organized and more reasonable compared to Iran. For instance,

one participant spoke about different driving rules and mentioned that: “I did not feel very safe in Iran. People being crazy while driving and these made me very nervous. When I moved to Canada, first thing that caught my attention was how people drive safely.”

Work ethics and responsibility with specific attention to the skills and qualifications of employees were admired by most of the participants. One participant stated that: “I enjoy how right people are in a right place and doing a right thing. Everybody do their jobs well. Customers, patients, everyone has rights and need to be respected.”

5.2.1.2.2 Cultural Diversity and Social Support

Participants selected Canada as their destination due to the multi-cultural nature of the country and a great opportunity to migrate, study and work in an English-speaking country. Some of them pointed to Iranian networks in Canada and believed that having close family and friends facilitate different stages of their initial arrival. One participant mentioned that the diversity in Canada helped her experience no cultural shock while moving to Canada, and noted: “when patients figured out I am an Iranian dentist, I received blessing reactions from them. For example, (they were) telling me stories about their Persian friends or Persian foods they have experienced before”.

One participant emphasized how everyone's needs matter in Canada while comparing human rights between Canada and Iran. She mentioned: “Government is committed to providing the basic necessities for people regardless of their age, gender, religion, race and nationality.”

5.2.1.2.3 Peace and Stability

Participants were mostly satisfied with the stability, freedom of speech, and protection of human rights in Canada. Some commented on the high level of safety and law assurance that came with political stability, which in turn brings peace and hope to their lives. One participant emphasized that “Life is incredibly predictable in Canada. You feel safe and enjoy the social discipline. You can plan for your future.”

However, one respondent made a conservative comment and said: “I'm not saying that everything is perfect here (in Canada). But, you have definitely more trust in the government and their support. This is a huge peace of mind when you think that you are in a country that you are provided at least with a medium level of security, safety, and economic stability.”

5.2.2 Integration

In the second part of our interviews, we focused on the barriers and facilitators to integration in Canadian society. There were not only some general problems that all immigrants might face in a new country, but also some specific barriers that existed for Iranian IDGs, especially in relation to the qualification equivalency process and working in Canada.

5.2.2.1 Socio-Cultural Barriers

Sociocultural integration refers to the understanding of the dominant norms of the host communities, and the ability to interactively build friendship and involve in various local activities (King & Skeldon, 2010). Different socio-cultural issues affected the migration experience of

immigrant dentists in Canada. These issues were mostly related to language barriers, exposure to racism and discrimination, and experiencing homesickness.

5.2.2.1.1 Communication difficulties

All of the participants mentioned the language barrier as a main barrier to communicate and integrate, especially during the first months of migration. One interviewee pointed out the limitation of learning English in Iran and stated: “As Iranian, we don't get to speak English in our community or have proper English education in our home country.” One participant also considered language as the most important thing if someone wanted to integrate into a new society. She recommended: “If you want to be open to learning different cultures or new things in a new society, you need to improve your language skills.”

However, the COVID-19 pandemic and stay-at-home orders took away the opportunity of finding friends and participating in social activities, especially for newcomers. One participant mentioned: “It was very difficult for me to speak on the phone, to make an appointment or booking request for personal services. But, I was able to join a volunteer research activity and it was very useful for me until COVID happened.”

5.2.2.1.2 Homesickness

Most participants carried deep and warm memories through relationships with their friends and emphasized having strong family ties in Iran. One respondent stated: “In there (Iran), they talk in your own language and, you're raised there and strong bond with your homeland is always there. Being in your home, passing through alleys and streets where you see your relatives and family

members and old friends who remind you of your memories, make you feel calm. Here, I miss everything about there, even the stores where I used to go shopping.”

However, some noted that different personalities could affect a person's experience during migration. One participant mentioned that: “We both were under pressure at that time, my husband had to take his first exam two month after I delivered a baby. I could not breast feed well and sometime we argued even for small things. But, you need to be patience and flexible while knowing that all these difficulties will go away soon. For us it takes two and a half years.”

5.2.2.1.3 Racism

While some participants in this study experienced some sort of racism, others felt that the community was very supportive, and noted that they received kind reactions, especially at work from their patients. One participant experienced racism at a Canadian university, mainly from some of his instructors, and said: “I am bullied for being different and having a difficult name for them to pronounce. It is a systemic racism going on in Canada, I'm kind of used to it. Not I'm cool with it, but it is there, and I cannot do anything about it.”

One participant mentioned some racism related to the admission process in some Canadian dental schools. She stated that: “I heard, some dental schools are not accepting people with hijab.” Or, another female participant mentioned that: “When I wanted to apply for a job, I felt that sometimes I am not accepted or refused to be interviewed because of my Hijab.”

5.2.2.2 Institutional Barriers

Institutional barriers refer to rules and legal restrictions for example with regards to the recognition of foreign educational documents or employment in recipient countries (Constant, Kahanec, & Zimmermann, 2009). All the participants agreed that the examinations are necessary to verify IDGs' qualification and ensure patient safety in Canada, but noted that the exams are difficult and a source of stress. Institutional barriers were categorized into three sub-categories, pre-licencing, licencing and post-licencing stages, as follows:

5.2.2.2.1 Pre-licensing

The pre-licensing period includes challenges in submitting documents and registration process before taking the dental exams. Some of the participants complained about the registration process as they were not able to submit their documents on time and had to wait for a long period (sometimes a year) to take the first exam. This means not only a loss of money and time, but also more mental and emotional stress on them and their families. One participant spoke about his frustration and noted that: "Some of my documents had to be sent directly from my dental school, back in Iran. For some reasons, the officer decided to open the seal documents. So, the dental board declined those unsealed documents. The processing was unreasonably long and I missed a year to resubmit and register for the exam (AFK)."

Some participants were affected by the COVID-19 pandemic and lock downs, which delayed their registrations. As one of them lamented that: "During the pandemic, all exams were suspended, especially the ACS and resulted in more than one year or almost two-year suspension situation of all the applications."

The capacity of the clinical exams (ACS and ACJ) are limited and the seats filled up quickly. Although, the ACS exams are held in dental schools all over Canada, it is difficult to find a vacancy in a specific province. One respondent noted his challenges on checking the NDEB website every hour close to when the exam registration period opened to secure his position and noted that: “The NDEB provided details on how to register or when you can go for exams, but they are not giving you the exact date of registration. They are not usually sending emails, and they announced important news in their website.” Whereas, the registration process is very competitive, especially in major cities such as Toronto. One participant mentioned a same story about receiving the results of her exam and said: “Imagine that how stressful would be these months that you are waiting for the result, and there is no exact date for releasing it.”

With regards to the ways that the participants get information for the equivalency process, they agreed that the NDEB website only provide general information about the whole process of registration, different ways of licencing, and different exams without an ideal picture of the reality that they face. One participant explained that: “I started searching for the process when I was in Iran. I was going through the NDEB website, getting the information and then I got to the point that some aspects are not clear enough for me. Because the NDEB website is just a standard platform with very brief information. You cannot find different institutes for the classes or the training courses or the complexity of the process.” Therefore, they mostly relied on unofficial information from their friends or peers who went through a similar path.

In addition, the NDEB provided some resources for exam preparation, however, they were extensive and most participants felt that it was unreasonable for them to go through all of the material. One participant complained that: “You see a bunch of textbooks and papers in the

website that they are using for either AFK or ACJ. But, it takes years to finish them all and then still you don't know what kind of exam you're going through.”

Finally, costs of the exams, training courses, and living expenses put financial stress on participants and their families. At the same time, they pointed out the lack of funding support, as a result of low passing rates, mainly in clinical exams. Participants mostly had to cover their expenses by out-of-pocket payment which was a huge financial burden. One participant stated: “Many of my friends had problems passing the clinical exams, while it is a very expensive one. Besides, the professional line of credit from the governments or other organizations for the international dentists are limited.”

5.2.2.2.2 Licensing

Licensing includes the challenges and limitations during the equivalency evaluation process, mainly in terms of timing, costs, contents and formats. Some participants complained about the credentialing process in Canada referring to its mental stress and unfairness in Assessment of Clinical Judgment (ACJ). An unsuccessful participant spoke about these difficulties and declared: “It is very subjective and much depended on the examiner's opinion. Different dentists may have different opinion on a same case. There is no standardization. While, the passing rate is lower than a half. Even Canadian dental graduates could face a serious trouble in passing it.”

The questions asked in the exams are not culturally sensitive since most of the participants mentioned difficulties in understanding the Canadian dental system. One participant complained that the content of the exam was not totally compatible with modern dentistry and said: “This exam is kind of outdated. For example, if you are filling a composite resin, there's no Bevel and you

have to prepare it with a Butt joint to be accomplished.” Another participant suggested that increasing the time of ACS could help improve the quality of her work and said: “You don't watch your work just because you don't have time. If you have to keep the patient longer, you would do that to give the best quality to your work. When it comes to the exam. That's not given to you, which I think it's not fair.”

Some participants perceived changes in the format of ACJ as a purposeful policy towards earning more money from the IDGs licensing programs, at the expense of applicants. They believed that NDEB is a self-regulating entity but acts like a business. One respondent noted that: “They intentionally maintain the passing rate very low, while the cost of exams, especially the clinical ones are high. So, consider, how much money spend by each participant to register and pass these exams. They definitely have benefits on running these exams.”

5.2.2.2.3 Post-licensing

Post-licensing refers to the IDGs who are successful getting through the equivalency process and begin working as a dentist in Canada. Several challenges were identified, including office availability, costs, lack of a ready to practice program, and an overall understanding of the Canadian dental system. It is extremely difficult to become fully integrated with the practice of dentistry in the absence of actually working in the Canadian environment. Some participants who were not successful in getting their licence confirmed this, noted that: “You should have a job to be properly integrated.” However, challenges remain even for individuals who were successful in completing exam requirements.

The “patient management” skill was a common example of a workplace difference between Canada and Iran. One participant explained: “Iranian dentists are a bit weak in communication and the culture of talking to the patient. Everything is very friendly here. All rights are turning back to patients. You should be very careful on what you say and what you do for them”. One participant spoke about difficulties of working for kids while you do not have any idea to start conversation with them as your behaviour control strategy. She noted: “Those who come from different countries have different cultures. Especially, when it comes to dealing with the kids. You have to have an idea, such as the background of the kids, how they're being treated usually in that culture.”

One participant thought the NDEB process did not completely prepare IDGs for practicing dentistry in Canada and stated: “There's some parts that are not covered throughout the clinical exams. There are some parts that we have no education, like patient ethics, patient communications. You don't fit to the system until you have not worked with patients from different cultural backgrounds.” IDGs' main source of information is the NDEB website, which does not have information or useful links for finding opportunities to learn about the Canadian dental system. One participant mentioned that: “If you call IRCC (Immigration Refugees and Citizenship Canada) and tell them I am a dentist. So, can you send me any information or link to make it easier for me to find a job here? They have no information and they will direct you to the NDEB website again.”

One participant spoke about her challenges in navigating the NDEB website as she did not understand she still had to apply for provincial licencing in order to practice. She also mentioned: “I did not know about different insurances while I start working. It takes some months for me to understand how they works. I wish, I learned them in advance through NDEB examinations.”

Opening a dental office and finding a location was also considered difficult. One participant who has recently opened her own dental office and was looking for Iranian patients, stated that: “There is no force from government for dentists to start their work from small towns. But, it is very difficult to have your own dental office here in Toronto. Some dental corporations with lots of branches do not allow you to have a private successful dental office. You cannot compete with them.”

The Covid-19 pandemic also affected the dental profession. The high transmissibility of the virus through aerosols and splatters produced during dental procedures raise health concern for both dentists and dental patients. One respondent spoke about his concerns and noted: “I was having a little one. I didn't want to bring any germs or any viruses, to my home and expose my little one to that. I think everybody, both patients and dentists, has such kind of shared experience.” At the same time, patients' ability-to-pay according to the economic constraints and job loss decrease, which may affect their dental demands and dentists' income. One participant stated that: “Covid-19 pandemic affected a lot of people. They lose their jobs, they lose their insurance, and they wouldn't come to us.”

5.2.2.3 Integration Facilitators

Participants mentioned several emotional and professional coping strategies which facilitated their process of integration.

5.2.2.3.1 Emotional support

Receiving emotional support, mainly from family members, close friends, and Iranian community in Canada, was considered as a great facilitator in the process of integration. One participant stated: “When I moved to Canada, my fiancé was already in Canada. I had a very strong emotional support and solid source of information. He had almost the same path I had to go through for achieving my license.” Or another one appreciate chain migration and lamented that: “They (Iranian community) gave me some useful information about where to live, where to go, where to get my groceries, how to get for example my health card, or opening a bank account.”

Being open minded yet prepared for the new environment by joining social and peer networks were highly recommended. One participant thought being open-minded will help immigrants to better integrate in a new country and stated: “You're coming to a new country with different culture, different social rules, different political rules, and different maybe religious rules. So, you should be open and be welcoming to them. Put away your biases and try to enjoy different things and rules in a new context”.

Family coordination and setting priority over who goes for the exams and who apply for a job, for couples who were both going through the equivalency evaluation process, also helps families to manage their financial and emotional stress during migration. One male participant spoke about the role of his wife in supporting him and stated that: “We both are dentists but we decided to first I take the exams. My wife taking care of our children and continuously travel between Iran and Canada in order to work there and support our family.” Or, one female participant who got pregnant at the time of landing said: “I was not strong enough to go through the exams during pregnancy. At that time, my priority was my child, and then I thought about equivalency process. So, my husband took the exams first.”

Moreover, some participants mentioned financial supports from their families during the process of equivalency, reflected in one quote as: “Fortunately, we were fully supported financially by our family, but it was not like we were not stressed. We try to spend calculated.”

5.2.2.3.2 Professional support

Attending training courses in private institutions and studying their materials were perceived as necessary for being successful in exams. One successful participant emphasized: “When I went to preparation courses, at least they told me how the exams look like, or what kind of questions will be asked in the exams. They prepared me mentally to what I'm going through and help me to be familiar with the general picture of the exams.”

Most of the participants were satisfied with the Iranian dental universities and believed that they have an appropriate level of knowledge and training to work as a dentist in Canada. However, they agreed on providing an opportunity to IDGs to learn the Canadian dental system and patient management skills under the supervision of a skilled local dentist. One participant suggested that: “I think one of the best things that could help IDGs to integrate faster and easier, is to give an opportunity to them to do some shadowing. But, not many offices offer you such a thing. If you are lucky, you could find an assistant position or front desk position.”

One participant compared other professions with dentistry and pointed out that other professions have some form of practical experience of co-op training available to them. She noted that, “By these courses, they (international engineers) can go and experience different environments and they learn Canadian systems, gradually. Then, they can find jobs for themselves or they at least have a kind of idea in their mind that what they have to do.”

Attending social events and exposure to the English language was very helpful for some older participants. One of them noted that: “I took the course of English in college, it was very helpful for increasing my English proficiency both in writing and speaking, and I was able to make friends and familiar with other nationality pistol and pronunciation.”

Peer networks and contacting with Iranian IDGs who go through a same path helped most participants to collect useful information about navigating the process and exchanging information about the content of the exams. One participant emphasized the value of attending the preparation courses, especially the ones run by Iranian dentists and noted that: “You can find many Iranian internationally trained dentist that they are taking the course, if you go there you can find a lot of friends and they can help you to get through the process.” He also believed that these exams are designed for accessing general dentists' qualifications and need to be answered more generally, and said: “When you want to answer a question, don't go deep into details. Be relax. Be confidence and trust your knowledge.”

Chapter 6: Discussion

This qualitative study investigated the migration motives and post-migration experiences of Iranian dental graduates in Ontario, Canada. This research revealed that socio-political and economic factors, including lack of financial stability, corruption, and poor social rights, pushed Iranian dentists to leave their country. Meanwhile, better societal rules and regulations, the multicultural context, and the economic stability in Canada were most desirable. However, some Iranian dental graduates had experienced significant challenges with communication, the equivalency process for evaluating qualifications, and practicing within the job setting. They mostly relied on their ethnic and peer networks to navigate the Canadian system while experiencing emotional and financial stress, mainly at the time of arriving in Canada and during the NDEB examinations. Family and peer supports helped them better overcome their challenges and lead them towards the path of success.

Iranian dentists' intentions for migration were based largely on macro push factors, including political, social, and economic issues, in Iran. Participants believed that the Iranian government and its foreign policies lead to sanctions and the poor economic situation, which in turn has increased financial pressure on the Iranian people. Moreover, the Iranian governments' dominant ideological beliefs affect the social environment and makes it less desirable to remain in Iran, especially for educated individuals. Female participants pointed out the lack of equal rights and freedom in Iranian society while complaining about stigmatization and interference in their personal lives. These findings were consistent with several other studies as poor security, high level of corruption, lack of meritocracy, devaluation of national currency, lack of freedom, and low quality of social services were identified as major issues (Balasubramanian, Brennan, Spencer, & Short, 2014; Bidwell et al., 2014; Davda et al., 2018; Oberoi & Lin, 2006).

Research shows that physicians in LMICs, including Iranian medical graduates, reported several occupational and educational issues mainly surrounding poor income, unfavorable workplace infrastructure, high workloads, unfair recruitment systems, poor management in the education system, unsuitable academic environments, and lack of career and training development opportunities (Asadi et al., 2018; Castro-Palaganas et al., 2017; Schumann, Maaz, & Peters, 2019; Sheikh et al., 2012; Tomblin Murphy et al., 2016; Vedadhir & Eshraghi, 2019). Also, IDG immigrants seek an opportunity to practice high-quality dental procedures and career progression opportunities in high-income host countries (Ayers et al., 2008; Balasubramanian, Brennan, Spencer, & Short, 2014). In contrast with these findings, Iranian dentists participating in our study were mostly satisfied with their home country's work environment and dental education, considering themselves qualified and skilled compared to other nationalities in Canada. Lack of patient management skills were the only considerable deficiency they repeatedly mentioned. Essentially, once they met requirements to practice dentistry in Canada, participants found themselves unfamiliar with the nature of patient-professional interactions. Specifically, patients were less deferential to dentists than would be the case in Iran and there was a greater need to treat patients as customers and address any concerns they might raise. There is a need to include this social-context content in the NDEB equivalency exams and provide opportunities for IDGs to learn this new skill under the supervision of local mentors.

The multicultural migrant friendly nature of Canada and the existence of an Iranian community in Ontario (GTA) improved integration experiences for Iranian dentists as they reported low or no cultural shock at the time of arriving in Canada. Yet, a few of them pointed out some undercurrents of racism, mainly with regards to their difference in appearance. However, similar to another study's findings, participants had expected to experience some level of discrimination and they

accepted or ignored it in order to focus on their career path (Davda et al., 2018). The main social barrier to integration mentioned by all participants was the language barrier. Consistent with other studies, difficulties in understanding other nationalities' accents, routine slangs, and culture could directly affect social communication and adaptation for IDGs, even in their dental practice (Ayers et al., 2008; M. Balasubramanian, D. S. Brennan, et al., 2016b).

Institutional barriers during different stages of dental licensing were the most crucial challenges faced by Iranian IDGs in Canada. The NDEB equivalency examinations were perceived to be tough and stressful, but more importantly, unfair, biased, not culturally sensitive, and unnecessarily lengthy. The low success rate on first attempts made some participants wonder whether there were any underlying financial motives at play. Similar to the New Zealand Dental Registration Examination and Australian Dental Council Examination for IDGs from non-accredited dental schools, several challenges were reported about the lack of proper information on the exams' contents and preparation courses, and the need for support systems (Ayers et al., 2008; Balasubramanian, Brennan, Spencer, Watkins, et al., 2014). Moreover, the lack of a resident Canadian embassy in Iran due to political conflicts and poor communication between dental schools in two countries made the registration process even more challenging for Iranian dentists. NDEB and Canadian dental schools could facilitate this process by introducing alternate ways for Iranian dentists to submit their documents.

According to participants' comments, older immigrant dentists, and/or the ones who had specialty training in Iran, seem to have more problems with passing the equivalency exams. The reason might be their precise judgments over the content that are specifically designed for general dentists. The Dental Specialty Assessment and Training Program (DSATP) is administered in only a few dental schools with few positions for a large number of applicants. In addition, it seems universities

are more likely to accept licensed dentists (who have passed the general dentists' examinations) who have some sort of Canadian experience, so as to eliminate the increased cost of professional liability insurance and save time on training about the Canadian dental system. Thus, this way of licensing is almost not considered by Iranian dental specialists due to the low rate of success and high costs.

It is worth noting that IDGs do not need to be Canadian citizen in order to take the equivalency exams; however, they must be a Canadian citizen to be eligible for working in Canada as a dentist. This could make the process of examination more unnecessarily competitive and challenging.

Meanwhile, the new strategic plan presented by NDEB in October 2021, presents some structural changes in the format of exams in assessing the competency of dental graduates of non-accredited dental schools. The ACS exam will be replaced by a new exam called the National Dental Examination of Clinical Competence (NDECC) in June 2022 (NDEB, 2021). It will be offered multiple times in a week with unlimited number of times to attend within a five-year period instead of a maximum of three attempts at the ACS (NDEB, 2021). This test will consist of "clinical skills" and a new component of "situational judgment" and will only be conducted in Ottawa, in which they will provide all required materials and instruments (NDEB, 2021). Future research needs to evaluate and compare IDGs' experiences about these upcoming changes.

Overall, IDGs' delay in integrating into Canadian society, are mostly due to institutional barriers, including lengthy process of licensing, non-culturally sensitive questions, limited access to exams, difficulty in submitting required documents, and the costs of the exams. In addition to these findings, difficulties in entering to dental universities program and passing the clinical exams in a first attempt raises a question regarding systematic bias against IDGs in Canada. While the main role of the regulatory college and the exams board is to fairly assess the qualifications of foreign

applicants, they tend to keep IDGs, including Iranian dentists, out for several intentional or unintentional reasons. Behind the scene, it seems the process is unreasonably difficult for IDGs maybe due to saving jobs for domestic dentists, making money, or systematic discriminatory attitudes.

This could adversely affect IDGs' mental health and put additional pressure on their families. Regulatory practices and orientation courses on new professional and cultural environments could help them better integrate and communicate. Further, Iranian dentists acknowledge the need for change in the process of licensing and navigating the process. They need the system to be more equitable for them, not specifically easier. In the absence of changes and a comprehensive approach in the Canadian system, IDGs continue to be exposed to these problems.

Moreover, an Intersectionality Based Policy Analysis could help policy makers and researchers in this field to better understand the effects of different characteristics such as age, gender, and having a specialty on the experience and integration of IDGs in host countries and formulate meaningful policies over sustainable oral health workforce (Elaine Muirhead, Milner, & Freeman, 2020). Canada should compensate for ethical problems over recruiting IDGs from LMICs, which is also considered as brain drain, through efficiently using their knowledge and skills. Meanwhile, they also need to help source countries who mostly suffer from severe shortages in their dentists' supply, through interactive collaboration and knowledge circulation.

Chapter 7: Conclusion

7.1 Conclusion

The purpose of this study was to determine Iranian dental graduates' migration motivations and post-migration experience in Ontario province, Canada. Following a qualitative approach through personal interviews, we found that Iranian dentists' migration is largely due to their country's push factors including socio-political issues and economic instabilities, rather than professional or educational problems. Following migration, they face several challenges, mainly in terms of institutional barriers in order to get licensed to practice dentistry in Canada.

The main arguments emerging are about the lack of support, both financially and mentally, as well as the knowledge gap regarding the equivalency process and exams. The findings also indicate deficiency in the NDEB process of evaluating qualifications for IDGs graduated from non-accredited dental schools. They have to rely on costly training courses or they struggle to find a local mentor to acquire the necessary skills and increase their chances of success. It seems female dentists, specialists, and older Iranian IDGs experienced more challenges with the examinations and practice of dentistry in Canada, which indicates the need for intersectionality-based analysis and research in the future.

In summary, immigrant dental graduates from Iran are being needlessly stressed and there is a waste of talent for those who are not deemed to have equivalent professional qualifications. It is difficult to be sure about the true motives behind the process of qualification due to the current systematic bias which disadvantages IDGs in different ways. At a minimum, it should be further investigated to identify exam board and regulatory college motivations behind the equivalency evaluation process.

There is still a long way to go in order to see true equity between domestic dentists and international dentists in terms of qualifying for license to practice. It would be helpful to lower institutional barriers and provide equitable access for IDGs, including Iranian dentists, in Canada. Canadian authorities should proactively collaborate with the NDEB authorities to help them minimize the adverse effects of “Brain Waste”. In fact, migration is a common emerging phenomenon and international collaboration is needed to control its consequences both in source and destination countries.

7.2 Recommendations

Our recommendations are based upon two main areas of concern including socio-cultural barriers and institutional issues; two key recommendations are summarized below.

Firstly, to minimize socio-cultural barriers, Canadian authorities could improve governmental supports for IDGs through orientation courses prior to their arrival and assist with finding relevant jobs and available funds. They could also provide language friendly mental health supports and resources, which could specifically be designed for IDGs based on their nationalities to reduce pressure during examinations.

Secondly, to mitigate institutional barriers to obtaining a license to practice, the information on the NDEB website could be improved with regards to training courses, references, and different pathways available, while providing some useful insights from past applicants, even the unsuccessful ones. They could also facilitate the registration process, especially for applicants who have problems in submitting their documents directly from their home universities. Providing shadowing opportunities and adding mandatory mentorship program for IDGs will help them to learn about the dental system in Canada and practice dentistry more independently. The NDEB

authorities should make the process of equivalency fair, equitable, and less subjective based on the current dentistry practices in Canada.

7.3 Strengths and limitations

This study was the first to collect information about lived experiences of Iranian dental graduates in Ontario. The primary strength of this study was the in-depth exploration of migration through researcher-participant interaction, which in turn contributed to the high-quality outcome and improved the validity of the study. The researcher was able to capture first-hand information and probe the underlying assumptions in an informal environment to produce valuable and meaningful data. Broad open-ended questions helped participants raise issues that were very important to them. The interviews were conducted in the English language to eliminate the language translation bias which could emerge during the interpretation of data. The thematic analysis of data enabled the researcher to coproduce the significant issues emerged from the study. Finally, the interviewer had the same cultural background with participants which enabled her to understand the culture and life experience of interviewees and eliminate language difficulties during the interviews.

The weaknesses of this study are mostly related to the limitations caused by the nature of qualitative studies, including researcher bias, in interpretation of the results, the potential subjectivity of interviews, and the possibility of respondents hiding information about sensitive issues. Thus, important reasons or issues might have been overlooked. In addition, Iranian dentists who were not successful in the exams were more likely to hesitate in participating because of their concerns about revealing their identity and losing their home country prestige. Therefore, the small sample size of the study could be non-representative of our study population. Also, the lack of previous data on Iranian immigrant dentists in Canada was challenging and reduced the

generalizability of the results. The themes and results were limited to Iranian dentists and only reflected perspectives from Canada. Moreover, conducting interviews through the *Zoom* platform created a set of barriers including technical issues, communication difficulties especially with participants who turned off their video, and the interviewer had difficulty recognizing their feelings and gestures. Finally, it would have also been fruitful to include the experience of relevant experts and NDEB authorities or other stakeholders from other nationalities in our study to enrich our findings.

7.4 Future research

- Evaluating IDGs newcomers' experience who have mostly migrated after COVID-19 could be beneficial to find new challenges regarding border limitations, exams suspension, economic constraints, and so on.
- Conducting an interview-based qualitative study with experts and authorities would help us compare their opinion with this study and add their recommendations about international oral healthcare workers.
- An Intersectionality Based Policy Analysis could be conducted to study the effects of different characteristics and criteria such as age and gender on IDGs' migration integration.
- A quantitative survey study of the large number of IDGs in different provinces of Canada would increase the generalizability of the findings.

List of References

- Afsahi, M., Haghdoost, A. A., Houshmand, B., Dehghani, M., & Amanpour, S. (2021). Dentist to population ratio and geographic distribution of dentists in Iran in 2019. *Journal of Oral Health and Oral Epidemiology*, *10*(2), 72-80.
- Ager, A., & Strang, A. (2008). Understanding integration: A conceptual framework. *Journal of Refugee Studies*, *21*(2), 166-191.
- Akl, E. A., Maroun, N., Li, C. K., Grant, B. J., & Schünemann, H. J. (2012). Factors Influencing Lebanese Medical Students' Decisions to Train Abroad: Evaluation of a Conceptual Framework. *Open Public Health Journal*, *5*, 19-27.
- Aluttis, C., Bishaw, T., & Frank, M. W. (2014). The workforce for health in a globalized context- global shortages and international migration. *Glob Health Action*, *7*, 23611. doi: 10.3402/gha.v7.23611
- Asadi, H., Ahmadi, B., Nejat, S., Akbari Sari, A., Garavand, A., Almasian Kia, A., & Hasoumi, M. (2018). Factors influencing the migration of Iranian healthcare professionals: A qualitative study. *PLoS One*, *13*(6), e0199613. doi: 10.1371/journal.pone.0199613
- Astor, A., Akhtar, T., Matallana, M. A., Muthuswamy, V., Olowu, F. A., Tallo, V., & Lie, R. K. (2005). Physician migration: views from professionals in Colombia, Nigeria, India, Pakistan and the Philippines. *Soc Sci Med*, *61*(12), 2492-2500. doi: 10.1016/j.socscimed.2005.05.003
- Ayers, K. M., Thomson, W. M., Al-Hassiny, H., Rich, A. M., & Newton, J. T. (2008). A qualitative investigation of the experiences of immigrant dentists working in New Zealand. *N Z Dent J*, *104*(3), 97-103.
- Azadi, P., Mirramezani, M., & Mesgaran, M. B. (2020). Migration and Brain Drain from Iran: Working Paper 9, Stanford Iran 2040 Project, Stanford University.

- Balasubramanian, M., Brennan, D. S., Spencer, A. J., & Short, S. D. (2014). The 'global interconnectedness' of dentist migration: a qualitative study of the life-stories of international dental graduates in Australia. *Health Policy Plan*, 30(4), 442-450.
- Balasubramanian, M., Brennan, D. S., Spencer, A. J., & Short, S. D. (2016a). The international migration of dentists: directions for research and policy. *Community Dent Oral Epidemiol*, 44(4), 301-312. doi: 10.1111/cdoe.12223
- Balasubramanian, M., Brennan, D. S., Spencer, A. J., & Short, S. D. (2016b). 'Newness-struggle-success' continuum: a qualitative examination of the cultural adaptation process experienced by overseas-qualified dentists in Australia. *Aust Health Rev*, 40(2), 168-173. doi: 10.1071/ah15040
- Balasubramanian, M., Brennan, D. S., Spencer, A. J., Watkins, K., & Short, S. D. (2014). Overseas-qualified dentists' experiences and perceptions of the Australian Dental Council assessment and examination process: the importance of support structures. *Australian Health Review*, 38(4), 412-419.
- Balasubramanian, M., Brennan, D. S., Spencer, A. J., Watkins, K., & Short, S. D. (2015). The importance of workforce surveillance, research evidence and political advocacy in the context of international migration of dentists. *Br Dent J*, 218(6), 329-331. doi: 10.1038/sj.bdj.2015.195
- Balasubramanian, M., Spencer, A. J., Short, S. D., Watkins, K., Chrisopoulos, S., & Brennan, D. S. (2016). Development of life story experience (LSE) scales for migrant dentists in Australia: a sequential qualitative-quantitative study. *Community Dent Health*, 33(3), 225-231. doi: 10.1922/CDH_3842Balasubramanian07

- Balasubramanian, M., Spencer, A. J., Short, S. D., Watkins, K., Chrisopoulos, S., & Brennan, D. S. (2016). Job satisfaction among 'migrant dentists' in Australia: implications for dentist migration and workforce policy. *Australian dental journal*, *61*(2), 174-182.
- Balasubramanian, M., Spencer, A. J., Sohn, W., & Brennan, D. S. (2021). The practice of dentistry by Australian-and overseas-trained dentists in Australia: discriminant analysis of key predictors. *Int Dent J*.
- Bidwell, P., Laxmikanth, P., Blacklock, C., Hayward, G., Willcox, M., Peersman, W., . . . Mant, D. (2014). Security and skills: the two key issues in health worker migration. *Glob Health Action*, *7*, 24194. doi: 10.3402/gha.v7.24194
- Boorberg, N. B., Schönwetter, D. J., & Swain, V. L. (2009). Advanced placement, qualifying, and degree completion programs for internationally trained dentists in Canada and the United States: an overview. *J Dent Educ*, *73*(3), 399-415.
- Braun, V., Clarke, V., Hayfield, N., & Terry, G. (2018). Thematic analysis. *Handbook of research methods in health social sciences*, 1-18.
- Castro-Palaganas, E., Spitzer, D. L., Kabamalan, M. M., Sanchez, M. C., Caricativo, R., Runnels, V., . . . Bourgeault, I. L. (2017). An examination of the causes, consequences, and policy responses to the migration of highly trained health personnel from the Philippines: the high cost of living/leaving-a mixed method study. *Hum Resour Health*, *15*(1), 25. doi: 10.1186/s12960-017-0198-z
- Canadian Dental Association (CDA). 2017. "Dental Health Services in Canada." *The State of Oral Health*, Retrieved January 10, 2022, from <https://www.cda-adc.ca/stateoforalhealth/servicescanada/>.

- Canadian Dental Association. (CDA). 2022. "Canadian Dental Schools." *Canadian Dental Association*, Retrieved January 10, 2022 from <https://www.cda-adc.ca/en/becoming/dat/information/schools/>.
- Canadian Occupational Projection System (COPS). 2017. *Dentists - Canadian Occupational Projection System (COPS) - Canada.ca*, Retrieved January 10, 2022, from <http://occupations.esdc.gc.ca/sppc-cops/occupationsummarydetail.jsp?tid=106&>.
- Chaichian, M. A. (2011). The new phase of globalization and brain drain: Migration of educated and skilled Iranians to the United States. *International Journal of Social Economics*, 39(1/2), 18-38.
- Cohen, M. Z., Kahn, D. L., & Steeves, R. H. (2000). *Hermeneutic phenomenological research: A practical guide for nurse researchers*: Sage Publications.
- Collingridge, D. S., & Gantt, E. E. (2008). The quality of qualitative research. *American journal of medical quality*, 23(5), 389-395.
- Constant, A. F., Kahanec, M., & Zimmermann, K. F. (2009). Attitudes towards immigrants, other integration barriers, and their veracity. *International Journal of Manpower*.
- Coulthard, P. (2020). Dentistry and coronavirus (COVID-19)-moral decision-making. *Br Dent J*, 228(7), 503-505.
- Covell, C. L., Neiterman, E., & Bourgeault, I. L. (2016). Scoping review about the professional integration of internationally educated health professionals. *Hum Resour Health*, 14(1), 1-12.
- Creswell, J. W., & Poth, C. N. (2016). *Qualitative inquiry and research design: Choosing among five approaches*: Sage publications.

- Dastjerdi, M. (2012). The case of Iranian immigrants in the greater Toronto area: a qualitative study. *International Journal for Equity in Health*, 11(1), 1-8.
- Davda, L. S., Gallagher, J. E., & Radford, D. R. (2018). Migration motives and integration of international human resources of health in the United Kingdom: systematic review and meta-synthesis of qualitative studies using framework analysis. *Hum Resour Health*, 16(1), 27. doi: 10.1186/s12960-018-0293-9
- Dayrit, M., Taylor, A., Yan, J., Braichet, J. M., Zurn, P., Taylor, A., & Shainblum, E. (2008). WHO code of practice on the international recruitment of health personnel. *Bull World Health Organ*, 86(10), 739. doi: 10.2471/blt.08.058578
- Dedoose. (2021). Dedoose. Retrieved January 10, 2022, from <https://www.dedoose.com/>
- Elaine Muirhead, V., Milner, A., & Freeman, R. (2020). What is intersectionality and why is it important in oral health research? , 48(6), 464-470. doi: 10.1111/cdoe.12573
- Firdous, S. N., Naqvi, S. M. Z. H., & Akhter, M. (2019). Factors affecting migration abroad of dental practitioners from Karachi: A cross-sectional survey. *J Pak Med Assoc*, 69(10).
- Gharakhlou, M., & Langlois, A. (2006). Spatial Distribution of Iranian Population in Canada: A Portrait Using the 2001 Census Data. *Iranian Economic Review*, 11(17), 159-177.
- Glick M, Williams DM, Ben Yahya I, et al. (2021). Vision 2030: Delivering Optimal Oral Health for All. Geneva: FDI World Dental Federation; Retrieved January 10, 2022, from <https://www.fdiworlddental.org/vision2030>.
- Government of Ontario. (2021). "Health Care in Ontario." Retrieved January 10, 2022, from <https://www.ontario.ca/page/health-care-ontario>.
- Green, J., & Thorogood, N. (2018). *Qualitative methods for health research*: sage.

Guest, G., Bunce, A., & Johnson, L. (2006). How many interviews are enough? An experiment with data saturation and variability. *Field methods*, 18(1), 59-82.

Hall, P., Keely, E., Dojeiji, S., Byszewski, A., & Marks, M. (2004). Communication skills, cultural challenges and individual support: challenges of international medical graduates in a Canadian healthcare environment. *Med Teach*, 26(2), 120-125. doi: 10.1080/01421590310001653982

Hollett, A., Hann, S., & Bradbury, C. (2008). A qualitative study of the international medical graduate and the orientation process. *Canadian Journal of Rural Medicine*, 13(4), 163.

Hossain, N., Shah, N., Shah, T., & Lateef, S. B. (2016). Physicians' Migration: Perceptions of Pakistani Medical Students. *J Coll Physicians Surg Pak*, 26(8), 696-701. doi: 2408

Immigration, Refugees and Citizenship Canada. (IRCC). (2020). *Annual Report to Parliament on Immigration - Canada.ca*, Retrieved January 10, 2022, from <https://www.canada.ca/en/immigration-refugees-citizenship/corporate/publications-manuals/annual-report-parliament-immigration-2020.html#permanent>

Immigration, Refugees and Citizenship Canada. (IRCC). (2021a). “Government of Canada.” *Canada.ca*, / Gouvernement Du Canada, Retrieved January 10, 2022, from <https://www.canada.ca/en/immigration-refugees-citizenship/corporate/publications-manuals/annual-report-parliament-immigration-2020.html>.

Immigration, Refugees and Citizenship Canada. (IRCC). (2021b). *Immigrate through Express Entry - Canada.ca*, Retrieved January 10, 2022, from <https://www.canada.ca/en/immigration-refugees-citizenship/services/immigrate-canada/express-entry.html>

- International Organization for Migration. (IOM). (2021). *Key Migration Terms*, Retrieved January 10, 2022, from <https://www.iom.int/migration/key-migration-terms>
- Jadidfar, M. P., & Yazdani, S. (2018). Necessity of Blending Dental Education Into the Mainstream of Medical Education as a Specialty Area: Advocating for a Reform Idea Aiming to Promote the Health System Performance in Iran. *Eval Health Prof*, 163278718807273. doi: 10.1177/0163278718807273
- Juneau, T. (2019). A story of failed re-engagement: Canada and Iran, 2015–2018. *Canadian Foreign Policy Journal*, 25(1), 39–53. <https://doi.org/10.1080/11926422.2018.1564683>
- Kellesarian, S. V. (2018). Foreign-Trained Dentists in the United States: Challenges and Opportunities. *Dentistry journal*, 6(3), 26.
- Khami, M., Murtooma, H., Jafarian, M., Vehkalahti, M., & Virtanen, J. (2008). Study motives and career choices of Iranian dental students. *Medical Principles and Practice*, 17(3), 221-226.
- Kiadaliri, A. A., Hosseinpour, R., Haghparast-Bidgoli, H., & Gerdtham, U.-G. (2013). Pure and social disparities in distribution of dentists: a cross-sectional province-based study in Iran. *International journal of environmental research and public health*, 10(5), 1882-1894.
- King, R., & Skeldon, R. (2010). 'Mind the gap!' Integrating approaches to internal and international migration. *Journal of Ethnic and Migration Studies*, 36(10), 1619-1646.
- Kizito, S., Mukunya, D., Nakitende, J., Nambasa, S., Nampogo, A., Kalyesubula, R., . . . Sewankambo, N. (2015). Career intentions of final year medical students in Uganda after graduating: the burden of brain drain. *BMC Med Educ*, 15(1), 122.
- Labonte, R., Sanders, D., Mathole, T., Crush, J., Chikanda, A., Dambisya, Y., . . . Bourgeault, I. L. (2015). Health worker migration from South Africa: causes, consequences and policy responses. *Hum Resour Health*, 13, 92. doi: 10.1186/s12960-015-0093-4

- Lofters, A., Slater, M., Fumakia, N., & Thulien, N. (2014). "Brain drain" and "brain waste": experiences of international medical graduates in Ontario. *Risk Manag Healthc Policy*, 7, 81-89. doi: 10.2147/rmhp.s60708
- McGrath, P., Wong, A., & Holewa, H. (2011). Canadian and Australian licensing policies for international medical graduates: a web-based comparison. *Education for Health*, 24(1), 452.
- McMahon, G. T. (2004). Coming to America--international medical graduates in the United States. *N Engl J Med*, 350(24), 2435-2437. doi: 10.1056/NEJMp038221
- McMahon, G. T. (2004). Coming to America—international medical graduates in the United States. *N Engl J Med*, 350(24), 2435-2437.
- Moher, D., Liberati, A., Tetzlaff, J., Altman, D. G., & Group, P. (2009). Preferred reporting items for systematic reviews and meta-analyses: the PRISMA statement. *PLoS Med*, 6(7), e1000097.
- National Dental Examining Board of Canada. (NDEB). (2021). *About NDEB*, Retrieved January 10, 2022, from <https://ndeb-bned.ca/about-ndeb/>
- Neiterman, E., Bourgeault, I. L., & Covell, C. L. (2017). What do we know and not know about the professional integration of international medical graduates (IMGs) in Canada? *Healthcare Policy*, 12(4), 18.
- Oberoi, S. S., & Lin, V. (2006). Brain drain of doctors from southern Africa: brain gain for Australia. *Aust Health Rev*, 30(1), 25-33.
- Pakshir, H. R. (2003). Dental education and dentistry system in Iran. *Medical Principles and Practice*, 12(Suppl. 1), 56-60.

Master's Thesis – S. Hajian; McMaster University – Global Health.

Pay Scale. (2021). *Average Dentist Salary in Canada*. Retrieved January 10, 2022, from <https://www.payscale.com/research/CA/Job=Dentist/Salary>

Price, T., Lynn, N., Coombes, L., Roberts, M., Gale, T., de Bere, S. R., & Archer, J. (2018). The international landscape of medical licensing examinations: a typology derived from a systematic review. *Int J Health Policy Manag*, 7(9), 782.

Royal College of Dental Surgeons of Ontario (RCDSO). (2021). *Applying to RCDSO*. Retrieved January 10, 2022, from <https://www.rcdso.org/en-ca/rcdso-applicants>

Sector, S. P. (2008). *Archived — International Mobility of Highly Skilled Workers: A Synthesis of Key Findings and Policy Implications - Economic analysis and statistics*. Innovation, Science and Economic Development Canada. Retrieved January 10, 2022, from <https://www.ic.gc.ca/eic/site/eas-aes.nsf/eng/ra02037.html>

Schumann, M., Maaz, A., & Peters, H. (2019). Doctors on the move: a qualitative study on the driving factors in a group of Egyptian physicians migrating to Germany. *Global Health*, 15(1), 2. doi: 10.1186/s12992-018-0434-x

Sheikh, A., Naqvi, S. H., Sheikh, K., Naqvi, S. H., & Bandukda, M. Y. (2012). Physician migration at its roots: a study on the factors contributing towards a career choice abroad among students at a medical school in Pakistan. *Global Health*, 8, 43. doi: 10.1186/1744-8603-8-43

Siyam, A., & Dal Poz, M. R. (2014). *Migration of health workers: WHO code of practice and the global economic crisis*: World Health Organization.

Statista. (2017). *Number of licensed dentists in Canada by province*. Retrieved January 10, 2022, from <https://www.statista.com/statistics/686355/number-of-licensed-dentists-in-canada-by-province/>

- Sweis, L. E., & Guay, A. H. (2007). Foreign-trained dentists licensed in the United States: exploring their origins. *The Journal of the American Dental Association*, *138*(2), 219-224.
- Syed, N. A., Khimani, F., Andrades, M., Ali, S. K., & Paul, R. (2008). Reasons for migration among medical students from Karachi. *Medical Education*, *42*(1), 61-68. doi: 10.1111/j.1365-2923.2007.02904.x
- Tomblin Murphy, G., MacKenzie, A., Waysome, B., Guy-Walker, J., Palmer, R., Elliott Rose, A., . . . Bourgeault, I. L. (2016). A mixed-methods study of health worker migration from Jamaica. *Hum Resour Health*, *14*(Suppl 1), 36. doi: 10.1186/s12960-016-0125-8
- United Nations. (UN). (2020). *International Migration 2020 Highlights*. Retrieved January 10, 2022, from <https://www.un.org/en/desa/international-migration-2020-highlights>
- United Nations. (UN). (2021). *Migration*. Retrieved January 10, 2022, from <https://www.un.org/en/global-issues/migration>
- University of Toronto. (UOT). (2021). *The International Dentist Advanced Placement Program (IDAPP) - Faculty of Dentistry, University of Toronto*. Retrieved January 10, 2022, from <https://www.dentistry.utoronto.ca/prospective-students/international-dentists/join-DDS-IDAPP>
- University of Western. (2021). *Internationally Trained Dentists (ITD) Program*. Retrieved January 10, 2022, from https://www.schulich.uwo.ca/dentistry/future_students/internationally_trained_dentists_program/index.html
- Vedadhir, A., & Eshraghi, S. (2019). Attitude toward migrate abroad in Iranian medical community: a qualitative study. *Quarterly Journal of Research and Planning in Higher Education*, *25*(2), 23-42.

Master's Thesis – S. Hajian; McMaster University – Global Health.

Walton-Roberts, M., Runnels, V., Rajan, S. I., Sood, A., Nair, S., Thomas, P., . . . Bourgeault, I.

L. (2017). Causes, consequences, and policy responses to the migration of health workers:

key findings from India. *Hum Resour Health*, 15(1), 28. doi: 10.1186/s12960-017-0199-y

World Bank. (WB). (2016). *Documents & Reports*. Retrieved January 10, 2022, from

<https://documents.worldbank.org/en/publication/documents-reports>

Yin, R. K. (2014). *Case study research: Design and methods* (5 ed.): Thousand Oaks, CA: Sage.

Zurn, P., Dal Poz, M. R., Stilwell, B., & Adams, O. (2004). Imbalance in the health workforce.

Hum Resour Health, 2(1), 1-12.

Appendices

Appendix A: Interview Guide



Global Health
Office

Interview Guide

- ✓ Check Zoom if recording and enable close captioning.
- ✓ Check if participant has read the letter of information.
- ✓ Check if participant has signed the consent form. And, read the consent form verbally.

Opening the interview:

1. Greeting and thank you.
2. Overview of study
3. Explain interview process. (Some questions may bring up uncomfortable emotions and participants can skip any question or withdraw from the interview at any time. Participants will be provided with contact information for free-of-charge counselling services in Ontario.)

Questions:

Migration Motivations

- When and why you decided to migrate to Canada?
 - Are there any aspects in your student, professional or social life in your home country that you did not like?
- If you were given an opportunity to change a few things in your home country what would they be?

Settling Down Experience

- Did you experience any cultural shock when you first came to Canada?
- While in Canada have you received any support to facilitate your integration (and from whom)?
 - Financial (maybe from government)
 - Community integration (maybe from ethnic or religious community)
 - Information about dental exams/practice (maybe ethnic networks of practice)
- Can you describe your experience during the immigration process to Canada?
- What did you find different about Canada?

The National Dental Examining Board(NDEB) of Canada

- Have you started the Process to become licensed to practice dentistry in Canada? (when and what stage in the process are you at?)
- How did you know the process to become a dentist in Canada?
 - Did you find the information matched your expectations?
 - Can you tell me about your experience obtaining information about the credentialing process and interacting with the regulatory authorities?
- If you have taken the NDBE examination, can you describe your experience?

- Process in general, exams, preparation for exams, information available to prepare for exam
- Are questions culturally appropriate; any indication of racism?
- How did you know the process to become a dentist in Canada? Do you find those information match with what you had experienced after landing?

Integration Barriers and Facilitators (to Canadian society)

- Can you describe the main barriers to your being able to integrate into Canadian society?
- Can you describe any factors or events that were helpful in your being able to integrate into Canadian society?
- What impacts did COVID-19 have on your integration to Canadian society?
- Overall, what changes would you like to see to assist future IDGs in integrating into Canadian society?

Integration Barriers and Facilitators (to the practice of dentistry)

- Can you describe the main barriers to your being able to practice dentistry in Canada?
- Can you describe any factors or events that were helpful in your being able practice dentistry in Canada?
- What impacts did COVID-19 have on your ability to complete credentialing requirements or to practice dentistry in Canada?
- Overall, what changes would you like to see to assist future IDGs in navigating the Canadian dental system?

Closing the interview:

1. Ask if there is anything the participant wants to add to the interview
2. Thank you

- ✓ Check if the interview was recorded
- ✓ Transfer and encrypt file
- ✓ Collate field notes

Appendix B: Letter of Approval from MREB



McMaster University Research Ethics Board (MREB)
c/o Research Office for Administrative Development and Support
MREB Secretariat, GH-305
1280 Main St. W.
Hamilton, Ontario, L8W 4L8
email: ethicsoffice@mcmaster.ca
Phone: 905-525-9140 ext. 23142

CERTIFICATE OF ETHICS CLEARANCE TO INVOLVE HUMAN PARTICIPANTS IN RESEARCH

Today's Date: Apr/15/2021

Supervisor: Dr. Glen Randall

Student Investigator: Dr. Sara Hajian

Applicant: Sara Hajian

Project Title: Migration motives and post migration experiences of Iranian dental graduates migrating to the province of Ontario in Canada

MREB#: 5313

Dear Researcher(s)

The ethics application and supporting documents for MREB# 5313 entitled "Migration motives and post migration experiences of Iranian dental graduates migrating to the province of Ontario in Canada" have been reviewed and cleared by the MREB to ensure compliance with the Tri-Council Policy Statement and the McMaster Policies and Guidelines for Research Involving Human Participants.

The application protocol is cleared as revised without questions or requests for modification. The above named study is to be conducted in accordance with the most recent approved versions of the application and supporting documents.

If this project includes planned in-person contact with research participants, then procedures for addressing COVID-19 related risks must be addressed according to the current processes communicated by the Vice-President (Research) and your Associate Dean (Research). All necessary approvals must be secured before in-person contact with research participants can take place.

Ongoing clearance is contingent on completing the Annual Report in advance of the yearly anniversary of the original ethics clearance date: Apr/15/2022. If the Annual Report is not submitted, then ethics clearance will lapse on the expiry date and Research Finance will be notified that ethics clearance is no longer valid (TCPS, Art. 6.14).

An Amendment form must be submitted and cleared before any substantive alterations are made to the approved research protocol and documents (TCPS, Art. 6.16).

Researchers are required to report Adverse Events (i.e. an unanticipated negative consequence or result affecting participants) to the MREB secretariat and the MREB Chair as soon as possible, and no more than 3 days after the event occurs (TCPS, Art. 6.15). A privacy breach affecting participant information should also be reported to the MREB secretariat and the MREB Chair as soon as possible. The Reportable Events form is used to document adverse events, privacy breaches, protocol deviations and participant complaints.

Document Type	File Name	Date	Version
Recruiting Materials	Social Media post	Feb/18/2021	1
Consent Forms	Consent - Oral Script	Mar/06/2021	1
Letters of Support	Free Counselling services	Apr/10/2021	1
Response Documents	Summary of Revisions	Apr/14/2021	1
Interviews	Interview guide	Apr/14/2021	2
Consent Forms	Consent - Letter of Information	Apr/14/2021	2

Dr. Violetta Igheski

Dr. Violetta Igheski, MREB Chair, Associate Professor, Department of Philosophy, UH-308, 905-525-9140 ext. 23462, igheski@mcmaster.ca
Dr. Sue Becker, MREB Vice-Chair, Professor, Department of Psychology, Neuroscience and Behaviour, PC-312, 905-525-9140 ext. 23020, beckers@mcmaster.ca

Appendix C: Letter of Information/ Consent

DATE: 2/8/2021

LETTER OF INFORMATION / CONSENT



A Study of Iranian Dental Graduates Migrating to Canada

Principal Investigator:

Dr. Glen Randall
Department of Health Policy & Management
McMaster University
Hamilton, Ontario, Canada
905-525-9140 ext. 26191
E-mail: randalg@mcmaster.ca

Student Investigator:

Dr. Sara Hajian
Department of Global Health
McMaster University
Hamilton, Ontario, Canada
905-525-9140 ext. 22835
E-mail: hajians@mcmaster.ca

Purpose of the Study:

The aim of this research study is to gain a better understanding of the migration experiences of Iranian dental graduates in Ontario, Canada. In particular, we are interested in your motivation to migrate and your experiences around integration in Ontario, including barriers to complete the Ontario dental equivalency process and obtain employment. The outcomes of this study will generate the data required to inform a long-term policy to manage oral health human resources in both source and destination countries while providing new insights on international governance in dentistry.

You are invited to take part in this study based on the fact that you are an international (Iranian) dental graduate living in the province of Ontario and went through the equivalency process to become eligible to practice in Canada. We would like to conduct a personal interview to learn your motivations and post migration experiences in Canada. This is student research project that is part of a master's level thesis for McMaster University's Global Health program. All interviews will be conducted by Dr. Sara Hajian.

Procedures involved in the Research:

You are invited to participate in this research project by agreeing to be interviewed. Interviews will last less than one hour. Interviews will be organised virtually following health precautions for the COVID-19 pandemic. The interviews will use the Zoom platform, which is an externally hosted cloud-based service. A link to their privacy policy is available here (<https://zoom.us/privacy>). Please note that whilst this service is approved for collecting data in this study by the McMaster Research Ethics Board, there is a small risk with any platform that data collected on external servers could fall outside the control of the research team. If you are concerned about this, we would be happy to make alternative arrangements for you to participate, such as telephone interviews. Please talk to the researcher if you have any concerns.

During the interview, you will be asked about issues concerning your decision to immigrate to Canada and your experiences following your arrival. You will also be asked about equivalency exams, cultural shock, work and education in Canada. You will also be asked for some demographic/background information like your age and marital status. The interview will be audio recorded and notes will be taken with your permission.

Potential Harms, Risks or Discomforts:

Potential Harms, Risks or Discomforts:

The risks involved in participating in this study are minimal. You may feel uncomfortable with some of your previous unpleasant memories. You may find it stressful to talk freely about some sensitive topics such as political issues.

You do not need to answer questions that you do not want to answer or that make you feel uncomfortable. I describe below the steps that will be taken to protect your privacy.

Potential Benefits:

The research will not benefit you directly, but we hope to learn more about international dental graduates migrating to Canada and barriers to integration and employment that may inform future policies.

Confidentiality:

You are participating in this study confidentially. Your name, or any information that would allow you to be identified, will not be used. No one but me or my supervisor will know whether you were in the study unless you choose to tell them. You have the option to turn off your camera during the interview.

The information/data you provide will be kept on a personal (researcher) computer and will be protected by a password. Once the study is complete, an archive of the data, without identifying information, will be maintained for maximum five years before completely destroyed.

Participation and Withdrawal:

Your participation in this study is voluntary and you are free to withdraw from the interview for whatever reason, even after signing the consent form or part-way through the study or up until [August 1, 2021], when we expect to be analysing our data.

If you decide to withdraw, there will be no consequences to you. In cases of withdrawal, any data you have provided will be destroyed unless you indicate otherwise. If you do not want to answer some of the questions you do not have to, but you can still be in the study.

Information about the Study Results:

I expect to have this study completed by approximately [January, 2022]. The results will be available in the thesis and an academic manuscript. If you would like to receive the summary personally, please let me know how you would like me to send it to you.

Questions about the Study:

If you have questions or need more information about the study itself, please contact us at:

[hajians@mcmaster.ca]

This study has been reviewed by the McMaster University Research Ethics Board and has received ethics clearance. If you have concerns or questions about your rights as a participant or about the way the study is conducted, please contact:

McMaster Research Ethics Secretariat
Telephone: (905) 525-9140 ext. 23142
C/o Research Office for Administrative Development and Support
E-mail: ethicsoffice@mcmaster.ca

CONSENT

- I have read the information presented in the information letter about a study being conducted by **Dr. Glen Randall and Dr. Sara Hajian**, of McMaster University.
- I have had the opportunity to ask questions about my involvement in this study and to receive additional details I requested.
- If I do not want to answer some of the questions I do not have to, but I can still be in the study.
- I can decide to stop at any time, even part-way through the interview for whatever reason.
- If I decide to stop during the interview, the researcher will ask me how I would like her to handle the data collected up to that point, whether returning it to me, destroying it or using the data collected up to that point.
- I understand that if I agree to participate in this study, I may withdraw from the study at any time or up until **[August 1, 2021]**.
- I have been given a copy of this form.
- My participation in the study is voluntary and I agree to participate in this study.

Signature: _____ Date: _____

Name of Participant (Printed) _____

1. I agree that the interview can be audio recorded.

Yes

No

2. I agree to have my responses from this project used in future related projects.

yes

no

3. Yes, I would like to receive a summary of the study's results.

Please send them to me at this email address _____

Or to this mailing address: _____

No, I do not want to receive a summary of the study's results.