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Moving beyond orientations: a multiple case study of the residency experiences of Canadian-born and immigrant international medical graduates

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Abstract
Many international medical graduates (IMGs) enter North American residency programs every year. The Canadian IMG physician pool increasingly includes Canadian-born IMGs (C-IMGs) along with Immigrant-IMGs (I-IMGs). Similar trends exist in the United States. Our objective was to understand the similarities and differences in the challenges faced by both I-IMGs and C-IMGs during residency to identify actionable recommendations to support them during this critical time. We performed a multiple case study of IMGs' experiences at a large Canadian university. Within our two descriptive cases (I-IMGs, C-IMGs) we iteratively conducted twenty-two semi-structured interviews; we thematically analyzed our data within, between, and across both cases to understand challenges to IMGs' integration and opportunities for curricular innovations to facilitate their adaptation process. Research team members with different perspectives contributed reflexively to the thematic analysis. Participants identified key differences between medical culture and knowledge expected in Canada and the health systems and curricula in which they originally trained. I-IMG and C-IMG participants perceived two major challenges: discrimination because of negative labelling as IMGs and difficulties navigating their initial residency months. C-IMGs described a third challenge: frustration around the focus on the needs of I-IMGs. Participants from both groups identified two major opportunities: their desire to help other IMGs and a need for mentorship. I-IMGs and C-IMGs face diverse challenges during their training, including disorientation and discrimination. We identified specific objectives to inform the design of curriculum and support services that residency programs can offer trainees as well as important targets for resident education and faculty development.

Keywords IMGs · Residency · Curriculum · Disorientation · Adaptation

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Introduction

Nearly 25% of practicing physicians in North America are international medical graduates (IMGs) (Huang 2000; ECFMG 2015; CFMS 2015; Brotherton and Etzel 2016; Majeed et al. 2017; FAIMER 2017; CAPER 2017). Many new IMG residents enter Canadian and American postgraduate training programs every year (Szafran et al. 2005; McAvinue et al. 2005; Norcini et al. 2005, 2010; Boulet et al. 2006b; Chen et al. 2011; Rao et al. 2013; Monavvari et al. 2015; CAPER 2016, 2017; ECFMG Reporter 2017). It is imperative that these IMG physicians become well-integrated into their new work environments (Hall et al. 2004; Sockalingam et al. 2012); such integration is thought to begin in their residency training (Whelan 2006; Chen et al. 2011; Sockalingam et al. 2012). In Canada, the IMG physician pool increasingly includes Canadian-born IMGs (C-IMGs) and Immigrant-IMGs (I-IMGs). C-IMGs are Canadian citizens or permanent residents who have gone outside Canada or the United States for medical education (Szafran et al. 2005; CaRMS 2010; Thompson 2011; Watts et al. 2011; Kwong 2014; Monavvari et al. 2015; Cavett 2015; CFMS 2015; Morgan et al. 2017b). I-IMGs are immigrants to Canada with a medical degree from a country other than Canada or the United States (Lockyer et al. 2007; CaRMS 2010; Thompson 2011; Barer et al. 2014; CFMS 2015; CAPER 2017) (see Box 1 for definitions). Similar trends are occurring in the United States (Eckhert and van Zanten 2015; Rockey et al. 2015; Are et al. 2017), where the number of American-born IMGs is also increasing (Boulet et al. 2009; FAIMER 2010; ECFMG 2014; Norcini et al. 2014; Are et al. 2017; FAIMER 2017). These shifting demographics further complicate the IMG integration process.

A major challenge for I-IMGs is the need to adapt to a new country and its medical system (Whelan 2006; Kalra et al. 2012; Hatzidimitriadou and Psoinos 2014; Lineberry et al. 2015; Woolf et al. 2016), including such diverse aspects (Chen et al. 2011; McPherson 2012; Triscott et al. 2016) (Hashim 2017; Michalski et al. 2017) as "differences in disease patterns, levels of technology, treatment options, forms of health care delivery, language, culture, lifestyle, gender roles, and in some ways, status" (Curran et al. 2008). I-IMGs enter North American residency training programs through a variety of educational and vocational routes, possessing different levels of English language

Box 1 Definitions of Canadian terms related to international medical graduates

International medical graduate (IMG)	A physician who graduated from a World Health Organization (WHO) listed medical school outside Canada or the United States (Barer et al. 2014)
Immigrant IMG (I-IMG)	An immigrant to Canada with a medical degree from a country other than Canada or the United States (Szafran et al. 2005; CaRMS 2010; Thompson 2011; CFMS 2015; CAPER 2017) In the United States these IMGs are known as non-U.S.-citizen IMGs (McAvinue et al. 2005, Norcini et al. 2005, 2010; Boulet et al. 2006b; Rao et al. 2013)
Canadian IMG (C-IMG)	A Canadian citizens or permanent resident who has gone abroad (outside Canada or the United States) for medical education (Szafran et al. 2005; CaRMS 2010; Thompson 2011; Monavvari et al. 2015; Cavett 2015; CFMS 2015; Morgan et al. 2017b) In the United States these IMGs are known as U.S.-citizen IMGs (McAvinue et al. 2005, Norcini et al. 2005, 2010; Boulet et al. 2006b; Rao et al. 2013)

skills, and a diversity of life experiences (Steinert 2006; Porter et al. 2008; Walsh et al. 2011; Verma et al. 2016; Osta et al. 2017). Some I-IMGs have practiced medicine prior to immigrating (Sockalingam et al. 2014; Goldberg 2016), while others arrive straight out of medical training (Crutcher et al. 2003; Szafran et al. 2005; Wong and Lohfeld 2008). All of these factors affect their educational needs.

In contrast, C-IMGs may not need to adapt to the social norms of a new country when they return to Canada, but they nonetheless face challenges. In 2010, the last year for which there are national data available, more than 3500 Canadians were studying medicine abroad at 80 different medical schools in 30 different countries (CaRMS 2010; Barer et al. 2014). These C-IMGs studies in educational systems with widely-varying curricula, resources, and patient populations. For C-IMGs the choice of a medical school depends on many personal and financial factors. Those with more financial resources tend to choose medical schools in Australia and Ireland (Szafran et al. 2005; CaRMS 2010; Watts et al. 2011). Caribbean medical schools are also very popular due to their geographic vicinity to North America and pre-clerkship rotations based in US medical schools (CaRMS 2010; CFMS 2015; Morgan et al. 2017a, b; CAPER 2017). Increasing numbers of C-IMGs are entering Canadian residency training programs (Szafran et al. 2005; CaRMS 2010; Thompson 2011; Kwong 2014; Monavvari et al. 2015; CAPER 2016, 2017), yet little is known about their unique educational needs.

Previous research on both groups of IMGs has focused on demographic characteristics, geographic distribution, assessment of competence, and credentialing (Bates and Andrew 2001; Fink et al. 2003; Crutcher et al. 2003; Hall et al. 2004; Ko et al. 2005; Whelan 2006; Steinert 2006; Boulet et al. 2006a; Wong and Lohfeld 2008; Zulla et al. 2008; CaRMS 2010; Mok et al. 2011; Hamoda et al. 2012; Lillis and Van Dyk 2014; Ranasinghe 2015; Ragg et al. 2015; Verma et al. 2016; Alam et al. 2017; Mathews et al. 2017; Majeed et al. 2017; Neiterman et al. 2017; Tsugawa et al. 2017). There are studies that have attempted to understand the perspectives of the IMGs themselves, but very few focus on both I-IMGs and C-IMGs. For example, one study suggested three phases of I-IMGs training and practice experiences—loss, disorientation, and adaptation—before they fully integrate into their training and practice environment (Wong and Lohfeld 2008). This study, however, only provided general suggestions for assistance with the transition between these phases; moreover, the proposed framework has not been studied in C-IMGs. Most interventions described in the literature address early disorientation (usually with dedicated workshops or orientation sessions prior to or at the beginning of training). Most of these early phase interventions, however, focus on teaching IMGs about communication and cultural issues that may not be relevant to C-IMGs (Rosner et al. 1993; Bates and Andrew 2001; Hall et al. 2004; Whelan 2006; Lockyer et al. 2007; Goldszmidt et al. 2007; Wong and Lohfeld 2008; Porter et al. 2008; Baker and Robson 2012; McPherson 2012; Wright et al. 2012; Tan et al. 2013; Harris and Delany 2013; Woodward-Kron et al. 2015; Hamarneh 2015; Dahm et al. 2015; Kehoe et al. 2016; Lineberry et al. 2015). Few programs focus on providing "ongoing support" (Kehoe et al. 2016) to both I-IMGs and C-IMGs during their residency to help them transition from the disorientation to the adaptation phase of their experiences.

As educators at a medical school that trains a large number of IMG residents every year (both I-IMGs and C-IMGs) (PGME 2014), our goal is to design a longitudinal set of programs for IMGs within postgraduate medical education that address the multiple needs of both I-IMGs and C-IMGs to support their progression to the adaptation stage of the IMG experience. These needs have themselves yet to be well-defined, so as a first step we sought to perform a detailed need assessment focused on the following questions:

1. What are the challenges perceived by both Immigrant and Canadian IMGs during their residency training?
2. Do these challenges differ between Immigrant IMGs and Canadian IMGs? If so, how?
3. What do Immigrant and Canadian IMGs see as potential targets and methods for curricular interventions to mitigate their own challenges?

Study setting and methodology

Our work was grounded in constructivist ontology, whereby we recognize that the reality that we and our participants "perceive is constructed by our social, historical, and individual contexts, and so there can be no absolute shared truth" (Kuper et al. 2008b). Within that framework, we conducted a multiple case study of IMG training experiences at the University of Toronto that consisted of two descriptive cases: I-IMGs at the University of Toronto and C-IMGs at the University of Toronto. A descriptive case study is useful when describing "a phenomenon and the real-life context in which it occurred" (Baxter and Jack 2008). Embedding more than one descriptive case study into a multiple case study "enables the researcher to explore differences within and between cases" (Baxter and Jack 2008), thereby improving understanding of the broader phenomenon of IMG training. Situating our research within these two descriptive cases allowed for a rich, contextually-situated understanding that was informed by the social and historical contexts of our participants' experiences.

The University of Toronto was an appropriate site for this multiple case study of IMG training because it trains hundreds of IMGs (CaPER 2014), (both I-IMGs and C-IMGs) every year. Located in a large, multi-cultural city, its faculty members, Canadian-trained residents, medical students, and patients also come from a wide range of ethnic, cultural, national, religious, and linguistic backgrounds. The University of Toronto Research Ethics Board approved this study and all study procedures were in accordance with that Ethics Board's standards and with the 1964 Helsinki declaration.

Study sample (within-case sampling)

In order to populate our descriptive cases, we enrolled first I-IMGs and then C-IMGs in three large residency programs (Internal Medicine, Family Medicine, and General Surgery) at the University of Toronto. We were mindful that we might need to expand the sample to other programs if we did not have enough participants to achieve sufficient information power (Malterud et al. 2015), including if we saw important differences between participants in these quite different programs. These three programs were selected for their size and for the large number and diversity of their IMG trainees. A research assistant initially sent information by email on behalf of the research team to all 100 IMGs registered in these three residency programs and gathered demographic data from interested residents to guide our sampling. Sixty residents responded to the initial invitation email and were willing to be interviewed. We first interviewed I-IMGs; they were selected (from the initial email respondents) to maximize variation in terms of residency program and level of training. We then used a confirming/disconfirming (Kuper et al. 2008a) snowball sampling (Kuper et al. 2008b) strategy (Kuzel 1999) to identify additional individuals with similar and divergent experiences and viewpoints. A confirming/disconfirming strategy involves "sampling both individuals or text whose perspectives are likely to confirm the researcher's

developing understanding of the phenomenon under study and those whose perspectives are likely to challenge that understanding" (Kuper et al. 2008a). Snowball sampling means "sampling participants found by asking current participants in a study to recommend others whose experiences would be relevant to the study" (Kuper et al. 2008b). This variety of snowball sampling (confirming/disconfirming) helps to promote heterogeneity of participant viewpoints. When we felt we had reached adequate (and indeed rich) representation and information power, including a thorough description of the phenomenon under study from the perspective of I-IMGs, we then turned to studying C-IMGs using the same process. We considered the need for further sampling of I-IMGs after our C-IMG interviews were completed, but found that we had sufficient information power from our original sample to inform our comparative analysis.

Data collection and analysis

We gathered our data using semi-structured interviews (Kvale 1996; Dicicco-Bloom and Crabtree 2006). The interview guide (Appendix) for these interviews was based on our synthesis of what is known in the literature about challenges faced by IMGs. We piloted the interview guide with 2 I-IMGs and 2 C-IMGs who did not meet our inclusion criteria (two were recent graduates from one of the eligible training programs, while one each was a resident in a non-eligible program at our university). We modified the interview guide based on their feedback. We also iteratively adjusted the guide over the course of study based on our concurrent data analysis. A research assistant arranged, conducted (after extensive training by the research team), and audiotaped all of the interviews. We used a research assistant to gather data to avoid power differentials that might arise if one of the staff physician research team members either recruited for or conducted the interviews, as was required by our Research Ethics Board.

An experienced, trained research assistant transcribed and anonymized the audiotapes of the interviews. Research team members analyzed the data concurrently with data gathering to identify key themes and inform iterative adjustments to the interview script as well as to track the sufficiency of our information power (Malterud et al. 2015). The analysis was reflexively mindful of potential power dynamics between the research team and project participants, and of the researchers' own subject-positions. One member of the research team [U.N.], who herself had been an immigrant IMG trainee and who had transitioned to being a staff physician at the time of the study, conducted the primary analysis. She was aided by frequent discussions with the research assistant, a non-clinician with considerable experience in conducting qualitative research in medical education, about the interviews and interview script. Other research team members also read all interview transcripts and brought multiple different perspectives to the data analysis. While all additional team members are physicians, they have multiple cultural backgrounds and different educational and academic roles within the Faculty of Medicine, including teaching, curriculum development and implementation, assessment, and educational research. Most of them are also experienced qualitative researchers, including a doctoral-trained education researcher [A.K] with an international reputation for conducting and teaching qualitative research in medical education. Every team meeting included a reminder about the importance of reflexivity, defined as "understanding one's own privileges and tacit assumptions" (Kuper et al. 2017), in our analysis. Disagreements about coding and analysis were discussed until consensus was reached among the research team.

Our descriptive thematic analysis (Braun and Clarke 2006) had three phases that contributed to our understanding of the unique situation of each group of IMGs as well as the experiences of IMGs more broadly. We first created within-case descriptions to ensure that we understood our phenomenon under study as experienced separately by each group of IMGs. We then conducted between-case comparisons, looking for differences and similarities that helped us understand each case. Finally, we completed a cross-case analysis, ensuring that the two cases contributed to our understanding of the phenomenon as a whole. While no particular theoretical framework was used a priori in this descriptive study, members of the research team were sensitive to issues arising out of critical social theories, including post-colonial (Said 1978; Spivak 1988), and other equity theories (Hooks 1981; Bleakley 2013; Kuper 2016).

Once we had completed our analysis we member checked (Kuper et al. 2008b) our anonymized results with several mixed groups of I-IMGs and C-IMGs at our institution during previously-scheduled educational sessions. The initial group contained a small number of research participants; subsequent groups did not (since our original participants had moved on in their training). These IMGs endorsed our findings, which resonated strongly with their own experiences; the resulting discussions often contained examples from their own experiences which confirmed our understanding of the results.

Results

We interviewed 11 Immigrant IMGs (I-IMGs) and 11 Canadian IMGs (C-IMGs) at various levels of training in Internal Medicine (9), Family Medicine (7), and General Surgery (6). As agreed with our local Research Ethics Board and as promised to our participants, we did not collect demographic information on gender, race, or religion even when we might have been able to infer it from their appearances or names. We are also not able to provide a table linking other demographic categories for each participant in order to protect their identities. The I-IMGs had graduated from a diverse group of medical schools in South Asia, Middle East, South America, and Eastern Europe. Five of these I-IMGs had then undertaken further clinical training and/or clinical work experience for between 2 and 5 years after completing medical school but prior to immigration to Canada; the other six participants had no clinical experience after finishing medical school prior to immigration. It had taken them a range of one to seven years of applying before finding IMG residency training positions in Canada.

The C-IMGs graduated from medical schools in the Caribbean, Western Europe, Australia, South Africa, and Israel. Four participants went to medical school after doing a masters and one entered directly after high school. One participant did a 3-month internship abroad before starting residency in Canada; the rest were all recent graduates who had returned to start residency in Canada immediately after finishing medical school. Among the 22 total participants, eight were in their first year of residency training, six were in their final year of training, and eight were partway through their residency programs.

We identified five major themes through our analysis of our interviews with these participants: three substantial challenges faced by IMGs during their residency training and two clear areas of opportunity for improving their training experiences. These are listed in Table 1. We will now explore each theme in turn.

Table 1 Challenges and Opportunities for International Medical Graduates (IMGs)

Challenges
(1) A Challenge Shared Among I-IMGs and C-IMGs: Perceived Systemic and Individual Discrimination
(2) A Challenge Shared Among I-IMGs and C-IMGs but within Different Contexts: Navigating the Initial Transition Period
(2a) I-IMGs During the Initial Transition Period
(2a–i) Surviving Culture Shock
(2a–ii) Learning Specific Differences Between Old and New Working Environments
(2a–iii) Developing Strategies for Blending In
(2b) C-IMGs During the Initial Transition Period
(3) A Challenge Unique to C-IMGs: Frustration Around the Focus on the Needs of I-IMGs
Opportunities (Viewed Similarly by I-IMGs and C-IMGs
(4) The Desire to Help Other IMGs
(5) An Identified Need for Mentorship

We identified five major themes from interviews with our participants: three categories of challenges faced by IMGs and two major areas of opportunity for improving their training experiences. These are discussed in detail, with supporting quotations, in the text

(1) A challenge shared among I-IMGs and C-IMGs: perceived systemic and individual discrimination

There was a very strong perception among all of our participants of being treated differently by their peers, faculty members, and the overall educational system as compared to their peers who graduated from Canadian medical schools. The behaviors perceived as discriminatory could be implicit or explicit, expressed by demeanor, actions or manner of speech. One resident, for example, specified that s/he heard the following from one of his/her Attending Physician:

> This is coming from Staff; 'you go to a supermarket, you know a brand is good and you're not sure about another brand, you definitely pick a brand that you know is good' so that's like a Canadian [medical school] grad vs. an IMG (I-IMG).

Another participant shared that he/she was doing very well in the program and was given following feedback: "My program director told me once: 'We forget you're an IMG'. And I just felt a little bit like 'what does that even mean'" (I-IMG). Some I-IMGs attributed this discriminatory behaviour to being recognizable as visible minorities; as one participant shared: "If you look different, people [faculty and peers] will always give you the comments: that's not the way we do things here" (I-IMG). Similarly, another participant shared: "If you appear different; people's perception of you is reflected in the way you're treated" (I-IMG).

The term IMG was also described as a label: "You have to be conscious of being an IMG all the time and labelled as someone" (I-IMG) and another participant offered: "I don't know how to describe it, but there was almost like a bias, there was definitely a stereotype that came with the [term] IMG" (C-IMG). Another participant shared "It's hard enough, without having to think that someone else thinks you're incompetent just because you went to medical school outside of Canada" (C-IMG).

They also shared their struggles when trying to integrate into a new working environment: "Sometimes you feel like you do have to kind-of prove yourself that you do know

what you're talking about, and you're not just an IMG" (C-IMG). Another participant shared: "It's almost like a goal for us to integrate and have everyone look at you just like they would anyone else in your program" (C-IMG).

(2) **A challenge shared among I-IMGs and C-IMGs but within different contexts: navigating the initial transition period:**

All IMG residents experienced a period of disorientation and transition in the first year of residency. The period of disorientation varied, and was strongly influenced by their prior exposure to the Canadian medical culture. Some I-IMGs had entered residency after a Canadian clerkship program or an unofficial fellowship (paid clinical work which does not lead to an independent practice license but is available to some I-IMGs who were already certified specialist physicians in their home countries) (Sockalingam et al. 2014; Goldberg 2016). This group of I-IMGs was more comfortable and did not report the same problems as those described by residents who entered their residency programs after doing only a brief mandatory pre-residency orientation. C-IMGs who had done medical student electives in Canada or the United States also felt slightly more comfortable as compared to their peers who had no North American elective experience. The reported length of their self-identified transition periods varied between the residents in our study, ranging from 3 to 12 months. Residents who had the support of another IMG peer or faculty member felt that they went through that transition process more smoothly as compared to those IMGs who did not have this sort of support. However, I-IMGs experienced this transition differently than C-IMGs; the differences between their experiences, along with supportive quotes from the data are delineated in the subthemes below.

(2a) ***I-IMGs during the initial transition period***

During this transition period I-IMG participants (a) survived culture shock; (b) learned the differences between their old and new working environments; and (c) developed various strategies for blending into their new medical culture.

(2a–i) Surviving culture shock

During the transition period, trainees experienced culture shock both personally and professionally. What they found most challenging was not their clinical knowledge or skills but how to use them in a North American context: "Illnesses are the same but patient expectations and how you manage them may be different" (I-IMG). The unwritten rules of conduct for learners and residents particularly shocked them, as for example the idea that "Here, it's a notion that if you don't speak, you don't know anything" (I-IMG). However, they described adapting to the differences which they encountered: "Initially you get set back because you are used to seeing less expressive people (patients and allied health) but over time you get used to it" (I-IMG).

(2a–ii) Learning specific differences between old and new working environments

I-IMG residents identified many specific differences between their present and past working environments as both clinicians and learners. Most of the clinical differences discussed involved electronic records, medico-legal standards, patient autonomy, and health care resources. One trainee noted: "There is a lot of inter-professional collaboration which wasn't seen back there in my country and there's a lot of team work over

here" (I-IMG). Another mentioned: "our medications had different names; we never rounded on patients [in my home country] without a nurse with us" (I-IMG). However, there were also differences around expectations of learner behaviors—the social norms in a new medical setting. For example: "Back [in my home country] we came to hospital in ties and shirts. We can never call our staff [there] with their names; I can't even call him with his last name" (I-IMG). This was contrasted with a more informal and less hierarchical approach in this resident's current training program.

(2a–iii) Developing strategies for blending in

As they were learning specific differences, residents also developed various strategies to smooth their transition periods and to help them blend in. Most of these strategies were developed after close observation and very hard work by the residents themselves, which they accepted as the norm: "You should be able to adapt yourself and adjust yourself and blend, to be able to connect to the system" (I-IMG). They did ask for help but were also concerned that by asking too many questions they might appear inept to their peers: "You will look really incompetent if you ask for it, but if you don't ask you're never going to know" (I-IMG). Residents with prior work experience or specializations felt that they had to change their mindset and take a conscious step backwards to restart the recertification process: "You had to forget all your training and put yourself in the role of a brand new student" (I-IMG). A participant who was a practicing specialist in his/her home country shared:

> When a practicing doctor starts as a resident and does not know many of the things, like the [health care and residency] system, it might make it more difficult for him to adjust, but you remind yourself that this is just a phase I have to survive (I-IMG).

Another participant with many years of work experience shared: "I just have to play my role. If I'm a first year, I just work like that and it worked" (I-IMG).

(2b) ***C-IMGs during the initial transition period***

C-IMGs also report a clear disorientation phase in the first year of residency despite the fact that most of them grew up in Canada and had done their undergraduate degrees in Canada. They were very familiar with the general Canadian culture, but they were still transitioning to a new health care system and working environments. For them the culture shock was mostly professional; "It's almost like you're a hidden minority, and no one would recognize that you're an IMG, but you're certainly trying to adjust to a new system" (C-IMG). Another participant shared: "Because your medical school training was a bit different, the challenges are learning what the differences are, and compensating for them" (C-IMG). They were specifically figuring out how to conduct themselves as learners in this new educational environment.

> Medicine has huge, vast array of knowledge, where [local University] students come across one way with their knowledge, we [C-IMGs] come across a different way. So if you offer a different way of presenting the information, it may appear like you don't know, but you just know them in a different way. You learn by experience (C-IMG).

Finally, many C-IMGs, depending on where they had trained, felt that they weren't as prepared as local students for particular responsibilities. For example, in many medical

schools outside North America, medical students neither look after their own patients nor do call.

> [Canadian] medical students are treated like, almost like junior residents. They're given their own patients, they write notes, and they're very early on, trained on these kinds of things. Those are things I didn't really get as a medical student (C-IMG).

C-IMGs worked very hard and spent hours reading and learning about the norms of the Canadian health care system to adapt as well as prove that they are equally competent to their peers graduating from Canadian medical school. One participant shared: "I worked even harder to prove to them [peers and faculty] that I was competent. It's extra pressure that other doesn't have" (C-IMG).

(3) **A challenge unique to C-IMGs: frustration around the focus on the needs of I-IMGs**

C-IMGs felt very frustrated that existing supports for IMGs in our jurisdiction, such as a mandatory orientation program, were mostly aimed at I-IMGs without really taking into account C-IMG perspectives and needs. "I thought it was a big waste of time. It was insulting that I had to be re-acclimatized to my own country" (C-IMG). They noted that they are comfortable in the general Canadian culture; they just want to learn the workings of their hospitals and the health care system to transition well into the residency training programs. "Sitting in a classroom 8 hours per day, you know, learning about how to hold someone's hand, it was very frustrating. I can't believe I did that" (C-IMG). Although the particular orientation program in which they participated is unique to the province where our study took place, our participants' experiences within it reinforced to them a problematic lack of attention to the differences between the educational needs of I-IMGs and C-IMGs, who are often treated by educators and planners as a homogeneous group.

(4, 5) **Opportunitis viewed similarly by I-IMGs and C-IMGs**

In addition to these significant challenges, our participants also identified two major opportunities to facilitate their integration.

(4) ***The desire to help other IMGs***

All of our participants shared an intense desire to help new IMG residents entering local training programs. This sentiment was expressed repeatedly and spontaneously in the interviews we conducted and was also explicitly identified as a cause of some of our participants' eagerness to be part of the study: "I had lots of challenges during my 3 years, but particularly in the first year, and I thought by participating in this study it would make it easier for IMGs entering into the program" (I-IMG).

As one resident put it, "Given the difficult experiences I've had coming in, I wanted to participate to provide more information that hopefully in the future will help other IMGs coming into Canada" (C-IMG). They also specifically expressed a willingness to become involved with potential future initiatives to help new IMGs. For example, one resident explicitly said "I have a lot of interest in helping IMGs in the system" (I-IMG); another

resident shared "If I can be helpful [and] make a difference, I'd be part of any groups that would be able to offer some assurances or help some IMGs" (C-IMG).

(5) ***An identified need for mentorship***

Participants identified many potential targets for interventions to help IMGs. The most striking of these related to their own wishes to have had faculty and peer mentors to help them adapt and progress successfully in their residencies. Thinking about what should be provided for future IMGs, they noted that mentors should not be involved in their formal evaluations and assessment processes, but should rather be able to focus on creating an open mentoring relationship. As one I-IMG resident commented on current existing supports (including identifying what needed to be changed):"I mean the IMGs don't need a fancy dinner and a course. They need somebody who can sit like this and say 'let's talk about what you will be facing" (I-IMGs). Another said, "One of the things I wish the program had is somebody who is more close to IMGs and can act as a counselor" (I-IMG).

C-IMGs shared similar thoughts: "I knew it was going to be difficult, but I still, like, wanted someone to talk to about it, and there wasn't enough of that" (C-IMG). Another participant shared "I wish there was someone who's a bit senior who could give me this information" (C-IMG).

Residents differed in their views as to whether their faculty mentor needed to be an IMG him/herself in order to understand their challenges and issues. Some felt that an educator who was very aware and knowledgeable about these particular learners and had experience working with them could be appropriately supportive. One participant noted: "My preceptor was very helpful, she was very experienced, she had IMGs before; she gave me appropriate feedback" (I-IMG). However, others felt that if the faculty member had been an IMG and had personal experience of the whole process, then they would be more compassionate and helpful:

> I think among our staff or somebody in medical education, preferably that person is an IMG because he will be the best person to understand how we ended up here and the things we've faced. And that person can dedicate some of his time to speak with IMGs. There are people who deal with resident wellness but they are not IMGs (I-IMG).

They also identified specific ways in which mentors could be helpful to them:

> As a mentor, I think you would need to understand where people are coming from and the challenges they are facing; it would be, someone to just sort-of vent, perhaps, and say, oh my goodness, this is tough, and see if they had any recommendations for how to go about things (C-IMG).

From their point of view, a mentor needed to be familiar with the system, with the resources, and with the cultural norms of the training program as well as offering advice and suggestions as needed:

> One of the staff who also happened to be an IMG was quite helpful. She had gone through the system and she knew how things are and what they [program and staff preceptors] are looking for in a good resident so she used to give me a lot of tips. So yeah, she helped me in many ways (I-IMG).

Discussion

Our study compares and contrasts the specific needs of I-IMGs and C-IMGs entering our residency training programs. This comparison of both IMG groups is a unique and distinct contribution of our research. Our findings suggest that both I-IMGs and C-IMGs experience a period of disorientation and transition despite participating in a mandatory orientation program before starting their residencies. This suggests that differences beyond general cultural ones are relevant for IMGs, including differences in the medical system and knowledge expected in Canada as compared to countries where they were trained. The transition from disorientation phase to adaptation phase (Wong and Lohfeld 2008), however differs by IMG group. General cultural adaptation is more relevant to I-IMGs, whereas, adaptation to educational and healthcare system is pertinent for both groups. On the other hand, there were instances among the IMGs in the population from which our study sample was drawn where I-IMGs and C-IMGs had gone to medical school in the same country and were not all that different in terms of their educational needs. This can further complicate curriculum planning but may positively increase social cohesion between both groups of IMGs.

Specific actionable recommendations from our data:

Although IMGs transition towards adaptation over time by gaining work experience in the Canadian health care system, our study did identify important targets and learning objectives for curricular innovations that could accelerate adaptation phase (Wong and Lohfeld 2008) for both I-IMGs and C-IMGs. These adaptation programs must be tailored to the needs of individual resident, but should also address faculty and training program factors that influence the transition process (FMEC 2012; Kehoe et al. 2016).

We propose two different kinds of programs to support IMGs: (1) mentorship programs for IMG residents, and (2) educational programs for faculty members and for all resident trainees addressing discrimination in its multiple forms.

(1) *Mentorship programs for IMG residents*

Our study findings point towards the need for a longitudinal, collaborative, peer-and-faculty mentorship model focused on first year IMG residents. This mentorship model (Eisen et al. 2014; Fleming et al. 2015; Webb et al. 2015) would be intended to help IMGs fully integrate and transition into their residency training programs. Our study participants (both C-IMGs and I-IMGs) were clear in their desire to help other IMGs. Therefore, involving senior IMG residents as peer mentors would give IMGs an opportunity to 'pay it forward' and potentially negate the perception of being treated differently or "othered" as their own peers are helping them integrate successfully to reach their full learning potential. Seeing senior IMG peers who are progressing successfully also provides junior IMG trainees with emotional and appraisal support. Study participants also wanted faculty mentors not involved in their evaluation to support the disorientation to adaptation process (Wong and Lohfeld 2008). Ideally, the faculty mentor involved should be experienced in training and educating IMGs. While some IMG physicians did feel that having faculty mentors who themselves were former IMGs would be optimal, others did not share that view, and we are cognizant that there may not be

sufficient IMG faculty in every centre to fulfil that role. We are currently piloting and evaluating the impact of such a mentorship program at our institution.

(2) *Educational programs for faculty and all residents*

Our most troublesome finding was that, despite having been accepted into competitive residency programs, both IMG groups perceived that they were treated differently by faculty members and resident colleagues because they carried the label of "IMG". This perception of discrimination against IMGs has been described in relation to selection for residency training (Nasir 1994; Kant 2001; Moore and Rhodenbaugh 2002) and to the experiences of minoritized IMG physicians (Coombs and King 2005; Chen et al. 2010; Moberly 2014; Sockalingam et al. 2014; Neiterman and Bourgeault 2015), but has not before been documented or explored with a mixed population of I-IMG and C-IMG residents. Discrimination was brought up by all of our participants regardless of their program or year of residency training. Some I-IMGs attributed their experiences in this regard as relating to being recognizable as a visible minority due to their communication style, accent or way of dressing. However, C-IMGs also experienced the same perception of discrimination, using the term "hidden minority" to describe how their typically-Canadian appearance and communication style protected them until their IMG status became known. Interestingly, most of the IMGs in our study did not feel that their race, ethnicity or religion contributed to their being recognized as IMGs, likely because Canadian medical schools graduates are very racially and ethnically diverse. The universal feeling among IMG residents of being "othered" (Muzzin and Mickleborough 2013; Stegers-Jager and Themmen 2013) by many of their peers and teachers contributed to their disorientation and delayed their process of integration; it also raises concerns about equity within our training programs. Their broad perception of widespread "othering" points clearly to the need for more faculty development initiatives incorporating ideas such as intersectionality (Tsouroufli et al. 2011; Zarconi 2012) and cultural safety (Anderson et al. 2003; Kumagai and Lypson 2009) concepts which are normally discussed in the medical education literature in reference to interactions with diverse patient groups rather than with learners. These initiatives will prepare and empower faculty members to foster a safe environment (Kehoe et al. 2016) and to supervise IMG trainees in a culturally sensitive, equitable, and inclusive manner.

We are planning a series of faculty development initiatives to sensitize clinical teachers and educators to these issues, which we hope will have important impact on the integration and success of our IMG trainees, as well as integrating a curriculum related to equity and discrimination into our residency training programs and local medical school (Kuper et al. 2017). The specific focus of similar initiatives in other settings could be guided by local needs assessments and current sociopolitical contexts.

Limitations

This study took place at a single multi-hospital institution in a large, highly-diverse Canadian urban centre. It is possible that IMGs training in smaller, less-diverse centres would have different training experiences, particularly in terms of perceived systemic and individual discrimination. However, our experience is that the overall milieu in our centre is relatively welcoming of minoritized populations, and so we suspect that the clear

concerns expressed by the trainees in our study might actually be more apparent in these other, smaller centers. Similarly, this study focusses substantially on the experiences of IMG trainees in the North American context and not on IMG physicians directly entering practice ready programs and workplace settings. However, many countries outside North America including, for example, the United Kingdom (Morrow et al. 2013; Moberly 2014; Hashim 2017), Norway (Sandbu et al. 2015; Skjeggestad et al. 2017), and Australia (Pilotto et al. 2007; McDonnell and Usherwood 2008; McGrath et al. 2009; Harris and Delany 2013; Laurence et al. 2016) also have large IMG physician work forces, and the literature suggests that there are barriers to integration for these physicians as well for which our findings might be relevant. The methodological flexibility provided by the multiple case study design leaves room for incorporating future explorations of the phenomenon of IMG training at other sites nationally or internationally (as well as with other groups of IMGs as structures and rules for their training change). We would welcome collaborations with researchers from other institutions who might be interested in exploring this further. In addition, this study also only focused on the views of trainees, rather than that of the educators who supervise them. However, the views of such educators have been described in previous studies (Bates and Andrew 2001; Zulla et al. 2008) and we wanted instead to access the perceptions of IMGs themselves.

Conclusion

Both C-IMGs and I-IMGs face many challenges during their training beyond those experienced by all residents. We identified specific needs and concerns that can inform the design of curricula and support services for IMGs during their residencies. The insight that C-IMGs and I-IMGs share similar experiences should prompt educators in other countries/contexts to consider attending to the experiences and potential unmet needs of their local equivalents of C-IMGs. The notion of "othering" as applied to IMGs also carries the possibility of theoretical transferability. We have delineated a concrete proposed intervention directed at IMGs to help with their transition and integration in a way that will be perceived as empowering rather than othering. However, faculty development initiatives and structural changes, including those that address the systemic and individual discrimination perceived by IMGs, will be needed for IMGs to truly feel valued and at home in their residency training programs.

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Compliance with ethical standards

Conflict of interest Authors declare no conflict of interest, including any financial interests and/or relationships or affiliations relevant to the subject of this manuscript.

Ethics approval University of Toronto Research and Ethics Board approved this study.

Appendix: Interview guide

Please Note: These are questions for a semi-structured interview. They are intended to indicate the themes to be discussed at each interview. Given the nature of semi-structured interviews, follow-up 'probe' questions depend very much on the answers received to the standardized initial questions as well as on the results of the concurrent analysis of previous interviews. This is standard procedure in many types of qualitative research.

Please also note that the term IMG (which stands for international medical graduate) is both a formal designation used by national bodies and university training programs as well as the common self-referential term used with the IMG community in Canada. It will, therefore, be very familiar to, understood by, and likely used by all of our study participants. We will thus be using it (and not a longer, more explicit term) in our interview questions.

1. Tell me why you decided to participate in this study.
2. What is your previous professional background?
3. What is your experience of being an IMG so far?
4. How do you feel about your residency training here as an IMG?
5. How would you compare it with your previous training?
6. What are the challenges you have faced as an IMG in a Canadian residency program?
7. How do you think they are different from (or similar to) the challenges your IMG peers have faced?
8. How do you think they are different from (or similar to) the challenges your non-IMG peers have faced?
9. What do you think is needed to rectify the challenges you have faced as an IMG?

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