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A typology of internationally qualified dentists in the United Kingdom

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ABSTRACT

Introduction: The Global Strategy for Human Resources for Health 2030, requires member states to half their dependency on an international workforce by 2030. In order to design policies towards that goal, country-specific research on migration motivations of the health workforce is required. The United Kingdom (UK) is a net importer of health professionals and whilst there is a body of research on doctors' and nurses' migration, there is no research on the migration motivations of migrant dentists in the UK. This research explored the migration motivations of internationally qualified dentists (IQDs) in the UK and presents a typology to understand the global migration of dentists in the context of oral health workforce.

Methods: The paper presents qualitative data from semi-structured interviews conducted between August 2014 and October 2017, of IQDs working in the United Kingdom. The topic guide for interviews was informed by the literature, with new themes added inductively. A phenomenological approach involving an epistemological stance of interpretivism, was used with framework analysis.

Results: A total of 38 internationally qualified dentists ($M = 18$, $F = 20$), migrating from the five World Health Organization regions, and working in general practice, NHS hospitals and in community dental services across the four nations of the UK were interviewed. Seven types of internationally qualified dentists were identified working in the UK. They were *livelihood migrants, career-orientated migrants, dependant migrants, backpacker migrants, commuter migrants, undocumented migrants*, and *education-tourist migrant*. The categories were based on their migration motivations, which were complex, multifactorial, and included personal, professional, national, and international drivers. The typology, based on their migration motivations, offered a structured, comprehensive understanding of the migrant dental workforce. This typology involving dentists provides additional dimensions to *commuter* and *undocumented* migrants described in the context of other health professionals. The *education-tourist migrant* is a new category proposed as an extension to existing typology in health professional migration.

Conclusions: The typology of internationally qualified dentists has congruency with other health professionals' typology in categories previously described and demonstrates that each of these categories are complex, fluid and change in response to policy changes. The new category of *education-tourist migrant* along with oral health dimensions of *commuter* and *undocumented migrants* adds to the existing typology in health professional migration.

1. Introduction

Research on the migration of health professionals, and their motives is important, and relevant, as most health systems, including the United Kingdom (UK), are struggling to meet the health needs of their populations. Healthcare systems in source, transit, and destination countries must respond to the needs of the population with the 'right type of health workforce' (Campbell et al., 2013). Research on this migrant international health workforce, which supports healthcare systems across higher income countries, is therefore important. Whilst, the migration motivations of nurses, doctors and other health professionals to the United Kingdom (UK), facilitated by active recruitment in the National Health Service (NHS), is well documented (Davda et al., 2018; Buchan et al., 2014), little is known about the motivations of dental professionals migrating to the UK. There is some evidence that dentists have migrated across the EU and to countries such as USA and Australia, variously motivated by financial gain, career progression, a desire for adventure and a desire for life change (Davda, 2020; Balasubramanian

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et al., 2015; Gallagher and Hutchinson, 2018).

Internationally qualified dentists' (IQDs) migration has been reported based on the source and destination countries, routes to registration (which varies across destination countries), their working location (rural and urban) and their sector of work (public and private) but not based on their migration motivations (Balasubramanian et al., 2018; Ayers et al., 2008). In the UK, in order to practise, all dentists have to register with the General Dental Council (GDC), UK's registering body, through one of these four routes, i.e., after qualifying from a UK dental school, qualifying from the EEA dental school and from countries with which UK has bilateral agreements or after qualifying with the Overseas Registration Examinations [ORE and its predecessor International Qualifying Examination (IQE)]. In December 2019, IQDs constituted 28 % (n = 11,985) of all registered dentists, highlighting the reliance of UK on IQDs. EEA qualified dentists were the largest contributors at 6761 (56 %) followed by dentists registered through IQE/ORE route 3591 (30 %) and the remaining through bilateral agreements and exemptions 1633 (14 %) (Davda et al., 2020).

Typologies of migrant health professionals have been suggested as a tool to help to develop sustainable policies for recruitment and retention. This involves research in order to understand the migration motivations on entry to a receiving country (Humphries et al., 2015), the role of professional education (Glinos and Buchan, 2014), patterns of migration (long-term, circular) (Glinos and Buchan, 2014; Kingma, 2006), and mode of integration into the profession (Humphries et al., 2015; Glinos and Buchan, 2014; Kingma, 2006). However, to date, there has been no typology proposed in relation to dentists and their migration. The aim of this study, therefore, was to explore the migration motivations of internationally qualified dentists working in the UK using qualitative methods.

2. Methods

2.1. Study design

An interpretative phenomenological approach was used as little was known about IQDs' migration and their professional integration in the UK. The rationale was to understand the phenomenon through the meanings attributed by the participants. Qualitative methods adopting a phenomenological approach have been used in the migration studies involving nurses, doctors in the UK and dentists in Australia (Buchan et al., 2014; Davda, 2020; Balasubramanian et al., 2015; Gallagher and Hutchinson, 2018; Balasubramanian et al., 2018; Ayers et al., 2008; Davda et al., 2020; Humphries et al., 2015; Glinos and Buchan, 2014; Kingma, 2006; Eliyas et al., 2017; Balasubramanian et al., 2014; Legido-Quigley et al., 2015; Alexis and Vydelingum, 2009). A topic guide informed by the literature review, was used to conduct the semi-structured interviews. Therefore, the themes and sub-themes were deductive and inductive. The typology was based on qualitative content analysis.

2.2. Ethical approval

Ethical approval was obtained through the King's College London Ethics Committee (Reference BDM/12/13–122).

2.3. Data collection

The purposive sample included IQDs working in general practice, NHS hospitals and in community dental services across the four nations of the UK. Participants were recruited following the dissemination of research information to potential participants through key gatekeepers, including educational bodies involved in training international dentists, Local Dental Committees, Clinical Directors of Corporate dental providers, augmented by snowball sampling. Students in full time education and not working in the dental profession in UK, dentists waiting to sit the licensing examination and those working in areas not linked to the dental profession were excluded. A total of 38 semi-structured interviews were conducted by one interviewer (LSD) from August 2014 to October 2017 by telephone or face-to-face. Interviews, which lasted between 32 and 87 min (average 48 min), were recorded and transcribed verbatim. The first ten transcriptions were reviewed by one of the research team (DRR) to confirm the utility of the topic guide and authenticity of data collection. Field notes were compiled for each participant and were used during analysis. Throughout the interview the thoughts and opinions expressed by the participants were re-iterated to confirm the data. The transcribed scripts were cross checked with the recordings and corrected by the researcher (LSD).

2.4. Data analysis

Thematic content analysis, using the five steps of a framework approach (Spencer et al., 2003), was undertaken. A framework was constructed following a systematic review and meta-synthesis of the literature on migration motivations of international human resources to the UK (Davda et al., 2018). One author (LSD) transcribed all the interviews verbatim, the transcripts were coded, and the themes were developed deductively based on the above framework. During this process some new themes were identified inductively and added to the thematic framework. This framework was therefore refined and enhanced during the data analysis.

The steps included familiarisation by immersion in the raw data (listening to the recorded interviews repeatedly), coding the transcripts, mind mapping and sorting the data by theme, indexing and/or sorting to finalise coding framework. The interpretive coding initially conducted by LSD using Nvivo10© was discussed, refined and agreed by coauthors (JEG, DRR and SS). Data saturation was reached after about 30 interviews. However, all 38 candidates selected based on the sampling grid were interviewed and transcribed for completeness, and to ensure saturation.

Each transcript was coded line by line and all the sub themes and the main themes were discussed first with DRR after ten interviews and then with the other authors (JEG, SS) once initial coding was complete. Consensus was reached on the main themes and some subthemes were reordered. The main themes and subthemes derived through the data analysis are provided in a table form as an Additional file 1. Analysis was completed with data summary and display (to maintain transparency of data to remain rooted in the original data, assumptions challenged and searched within and across the cases) and mapping and interpretation (creating descriptive accounts and typologies). The typology based on migration motivations of dentists was derived primarily inductively from the data and existing typologies were then applied to analyse the congruencies and differences.

3. Results

3.1. General characteristics of the participants

In total 38 participants were interviewed, based on the sampling matrix. The demographics of the participants based on gender, WHO region, country from which they migrated, routes to registration, age at migration, UK region of work, and type of current work in the UK are presented in Table 1.

3.2. Internationally qualified dentists' (IDQs) categories based on their migration motivations

Seven categories of IQD were identified based on their migration motivations. They were *livelihood, career-orientated, backpacker, dependant, commuter, undocumented*, and *education-tourist migrant*. The latter, *education-tourist migrant*, is proposed as a new category, representing individuals who are UK citizens, migrating outside of the UK to obtain

Table 1
Summary of participant dentists' demography.

Variable	Categories	No. of participants		
		Total	EEA *	Non-EEA
Gender	Male	18	7	11
	Female	20	7	13
Age at the time of interview	20–30 yrs	4	4	0
	31–40 yrs	15	6	9
	41–50 yrs	17	3	14
	> 51 yrs	2	1	1
Age at the time of migration	<18 yrs	1	1	0
	19–30 yrs	23	8	15
	31–40 yrs	9	2	7
	41–50 yrs	2	2	0
	>51 yrs	1	0	1
	British born	2	1	1
Source country based on WHO regions	European Region[1]	17	14	3
	South-East Asian	10	0	10
	Region	5	0	5
	Eastern Mediterranean	3	0	3
	Region	2		2
	African Region	1		1
	Western Pacific Region			
	Region of the Americas			
Route to registration with the General Dental Council (UK's registering body)	IQE/ORE	19	0	19
	Exempt persons [EEA /	15	14	1
	Bilateral agreement (1)]	4	0	4
	None[2]			
Current Status with the General Dental Council	GDC registered as a	32	14	18
	dentist	1	0	1
	GDC registered as a DCP	2	0	2
	GDC registered +	3	0	3
	Source Country (Dual registration)			
	Not registered			
Destination country in UK	England	33	12	21
	Wales	2	0	2
	Northern Ireland	2	1	1
	Scotland	1	1	0

Legend.
[1] The WHO Europe includes 53 countries in the continent of Europe, whilst the European Union (EU) was an economic and political union of 28 countries and European Economic Area (includes all EU countries and Norway, Iceland, Lichtenstein who have similar rights of access but are not EU members). At the time of research, the UK was still part of the EU, but had voted to leave in 2016.
[2] Four IQDs were not registered with GDC; three were working in education, research and trade related to dentistry and one IQD was registered as dental therapist.
* EEA-European Economic area.

their primary dental qualification and, thereafter, migrating back to practice in the UK. Whilst the categories arising from the dentists' migration are congruent to those described in health professionals' migration, additional dimensions to categories of *dependant, commuter and undocumented migrants* are described. Each of the seven migrant dentist categories is presented below and illustrated through quotes from the interview data. It is important to note that migration motives are complex and interrelated.

3.2.1. The livelihood migrant dentists

Livelihood migrant IQDs ($n = 14$) reported coming to the UK to earn more money in search of a better life for themselves, and their families; they formed one third of the research participants (from EEA and non-EEA countries). Source country 'push factors' such as high costs of dental education, urban concentration of dentists, lack of public sector jobs and unemployment influenced their decision to migrate. They used active recruitment, their ability to speak English, ease of travel and their networks to facilitate migration. They also referred to the high cost of postgraduate education and the tough competition they faced at home and felt that a calculated risk of migrating to the UK, or elsewhere, would cost them a similar amount; and, if they were successful, their earning potential would be higher.

It is important to note that the quotations presented in this paper are identified by P-participant number, Gender (M, F), Age (category), WHO region of origin, and line number of the interview transcript. For example, the quote below was from a dentist Participant 34, male, 37 years of age when interviewed, migrating from European Union region, country of qualification and the quote is from line 109 of the interview transcript.

> *"I mean there were more opportunities, obviously it was more money as well; my wife is a doctor and she wanted to pursue her career abroad and I just felt it was a good time and at the time we were just joining the European Union, the market had opened up, there were many companies from the UK starting to come … and have seminars including dentists so yes, we went for a few seminars, conferences and then yes, decided to … (to move to UK)"(P34, M, 37yrs, EU, Romania, 109)*

These IQDs, looking for better opportunities, would have migrated anywhere in the world if they were not able to come to the UK.

3.2.2. Career-orientated migrant dentists

'Career-orientated migrant' dentists ($n = 10$), reported their primary motivation was to obtain post-graduate education and training. The source country 'push' factors were mostly lack of, or inability to access, post-graduate training due to fewer places and costs. A post-graduate UK degree, however, although expensive gave them the potential to earn more and was therefore considered as a worthwhile investment by the immediate and extended families who often funded their education. International education which was previously only accessible to affluent families or those who were successful in obtaining scholarships was now increasingly available to all in SEA, due to the availability of educational loans making mobility easier and affordable.

> *"When I was working, I had a friend who had moved to England (who inspired me) and after that the Royal College of Surgeons conducted FDS exams (sic Fellowship in Dental Surgery of one of the Royal Colleges of Surgeons' in the UK) in a dental school in my country. I was told that the training in the UK was excellent in OMFS (sic Oral Maxillofacial Surgery) (P1, F, 46yrs, SEA, India, 2)"*

Established or older IQDs decided to migrate because of career stagnation. Professional networks played an important role in inspiring and guiding some IQDs, especially in the field of research. Travel and training scholarships to the UK, offered by the educational sector facilitated mobility to the UK.

3.2.3. Dependant migrant dentists

'Dependant migrant' IQDs ($n = 5$) reported coming to the UK as spouses of other highly skilled migrants mostly doctors, engineers and those in the financial sector. Their decision to migrate was very much dependant on the spouse's career decisions and that of the family. Females were more likely to come to the UK as dependants, but this did not exclude males (Participant 4). A few IQDs chose to marry a person already in the UK or most likely to go to UK, as they wanted to live outside their source country (P6, P23, P26). They involved their families in making the choice regarding which country they wanted to migrate to, after considering pros and cons of going to the USA, UK, Australia, Middle East or other European countries.

> *"I preferred to stay there (SEA country)…because after I married I came here. It's an arranged marriage by my parents. He was already working here (in UK) around 10 years (P6, F, 42yrs, SEA, Sri Lanka, 130)"*

They relied on their family and professional networks and the internet to gather information to make an informed choice. Calculated risks were taken by IQD couples on applying for PG education, based on their affordability, while one of them put their own career on hold. Others, had to get married and come to the UK, in order to flee civil war.

The time taken for *dependant* IQDs to integrate was longer due to the additional career breaks taken either to accommodate spouse's career decisions or to raise a family.

3.2.4. Backpacker migrant dentists

'*Backpacker*' IQDs ($n = 4$), reported migrating in search of adventure and travel, seeking to experience and learn about new cultures or languages. The professional drivers were secondary. There were three female participants (25–29 years) and one male (64 years) who were identified in this category suggesting that dentists from either end of the age spectrum i.e., recent graduates and those towards retirement may consider migration for reasons of travel and adventure.

> *"It's basically, I was such a curious person. As I was travelling all around the world quite a lot and I made up my mind that one day I would like to go and live in another country. Because for me, to live only in one country, the whole life is just not interesting (93–96)…Because I love outdoors, I decided that I wanted to go to Scotland, instead of England (P36, F, 27yrs, EU, Baltic states, 111)"*

The ease of travel across Europe, and bilateral agreements with UK facilitated this migration. There were non-EU dentists in this category who were more established in their careers and chose to travel in later years.

3.2.5. Commuter migrant dentists

The '*commuter migrant*' IQDs (P18, P19) in this study travelled infrequently and were of two types. Those who travelled to the source country or to a transit country, to maintain their clinical skills and/or earn an income, while waiting to be registered in the UK (P18) and those who after working in UK, for a considerable amount of time, returned to work in the source country, while maintaining dual registration and undertaking locum work in the UK (P19). The distance from the source/transit country did not seem to influence their decision to commute as much as strong family drivers. They used the opportunity, to seek flexible dental employment, tailored to their needs.

> *"I used to go every three or four months and see patients so, I carried on working while I was here anyway… I was studying a degree so I went there and I carried on studying, I needed some money to carry on in England, I'd see some family patients and some friends that wanted to see me so there was always a reason to go to home country and work. (P18, F, 44yrs. AMR, South America, 53)"*

The macro drivers that enabled such migration were the ability to obtain part time or short-term employment and globalisation of provision of private health care by multinational companies across several countries.

3.2.6. Undocumented migrant dentists

Undocumented migrant IQDs (P12, P21, P22), were those qualified dentists who were living in the UK, but not registered as dentists on the GDC register. They had entered the UK as a student, dependant, and as a dental nurse or on permit free training visas.

> *"I started off as an orthodontic nurse …and then… was offered to… go on a training to become, an orthodontic therapist. So, I thought well, this is quite close to what I am supposed to be doing anyway, as a dentist, …this is what I want basically to be a clinician … So then after that …I (am) kind of not that keen …(to do) the dental exam (ORE) anymore to be honest (P21, F, 39yrs, WPR, East Asia, 383)"*

The reasons why they were not registered as a dentist were varied, including working in areas of the dental profession such as education, dental industry or as a dental therapist.

3.2.7. Education-tourist migrant dentists

An '*Education-tourist* migrant' IQDs ($n = 3$) were British citizens, who had travelled abroad to obtain their primary qualification from a dental school outside the UK. This is an interesting and important emerging group of migrant health professionals. The increase in the foreign universities offering dental education in English, ease of travel (particularly when the UK was a member of the EU), financial capabilities of families to support their education, and the acceptance of these qualifications by the GDC appeared to be their main drivers. Having British citizenship meant they could potentially apply for any job on return. IQD P28 (Male) and IQD P32 (Female), both were not successful in obtaining a place in a UK Dental School and instead read for a primary science degree. Thereafter, their families supported them to undertake a dental degree (BDS) in Europe.

> *"I called the GDC and NHS and …they said you would be fine … study abroad and come back here and that's how I decided for many reasons to study abroad and…when you come back you just, you feel like you're kind of a foreigner. Yeah, you feel lost in the system and so whoever you are, nobody knows you and you don't know anyone. (P28, M, 33yrs, EU, Hungary, 600)"*

> *"What I feel is that there's no system… I think, the dental organizations … or the GDC has to recognise that there are a lot of students abroad, studying who're going to come back and there's no system that they come back into … (P32, F, 29yrs, EU, Spain, 777)"*

In these examples, both IQDs reported that they struggled to integrate into the dental profession on their return to the UK.

3.3. Variation of the typology of IQDs from existing typology of migrant health professionals'

The typology presented above, although congruent to previous typologies based on migration motivations of health professionals, both nurses and doctors, includes a new category of *education-tourist migrant* and adds new dimensions to the *dependant, commuter and undocumented migrant* categories (Table 2). *Dependant migrants* were described as *partner migrants* in nurse migration (Kingma, 2006); however, they were excluded in health professional migration typology (Balasubramanian et al., 2015), and re-introduced in the typology of migrant doctors as *family migrants* (Humphries et al., 2015). There were a high number of IQDs migrating to the UK as dependants, and this was important in the context of highly skilled migrants as described later.

Unlike other health professionals working across the border, for e.g., in EU or middle eastern countries, dentists in our *commuter* category migrated across larger geographical area such as from Columbia, India, middle eastern countries and South Africa. The reasons for their commute were to maintain skills and financial gain, while waiting for the long registration process. This was also facilitated by dual registration. The *undocumented migrants* in this study continued to contribute to the dental profession as dental care professionals, in dental education and trade; this immense contribution is not documented in the literature.

Humphries et al. [10,] ranked the migrant doctors' categories as primary and secondary. The primary categories were rated as the most important deciding factor, secondary were the additional factors influencing the migration. Similar categories could be seen amongst IQDs in UK (Table 3). However, the hierarchy of decision-making process to migrate to the UK was complex, multifaceted, and overlapping; influenced by personal, professional, national, and international drivers.

4. Discussion

Seven types of internationally qualified dentists were identified based on their migration motivations as *livelihood, career-orientated, dependant, backpacker, commuter, undocumented* and *education-tourist* migrant. While six categories align with those described in other health professionals' migration, this research suggested a new category of *education-tourist migrant* and added new dimensions to previously

Table 2
Variation of the typology of internationally qualified dentists to other health professionals' typology.

Health care profession	Authors	Categories
Internationally trained nurses in the global context	Kingma 2006	Economic migrant Quality of life migrant Career move migrant Partner migrant Adventurer Holiday worker Contract worker Survival migrant
Health professionals across European Union(EU)	Glinos and Buchan, 2014	Livelihood Career-orientated Backpacker Commuter[1] Returners[2] Undocumented[3]
Non-EU doctors in Ireland	Humphries et al. 2015	Livelihood Career-orientated Backpacker Commuter- Returners Undocumented Family migrant[4] Safety & security[5]
IQDs in the UK	Current study	Livelihood migrant Career-orientated migrant Backpacker migrant Education-tourist migrant[6] Dependant migrant[7] Commuter migrant[8] Undocumented migrant[9]

Legend: The table demonstrates how the internationally qualified dentists' typology compares to the typology in healthcare based on migration motivations, developed by Glinos and Buchan and later modified by Humphries et al. and others (Kingma, 2006; Glinos and Buchan, 2014; Humphries et al., 2015).

[1] Commuter and returner migrants in Glinos and Buchan, (2014) appear to be based on daily commuters across borders and those that return after short periods.

[2] Returners are similar where regional mobility is permitted and appears to be based on the duration that they are away from the country of qualification.

[3] Undocumented was a new category (Glinos and Buchan, 2014) but no mention of the family partner was present in this typology.

[4] Family (Partner migrant) is similar to Kingma categories

[5] Safety (survival migrant) are similar to the Kingma categories.

[6] Education-tourist migrant is a new category which has not been previously described in the literature.

[7,8,9] New dimensions as applied to dentistry are described in the text

described categories in the context of dentistry. The typology typically used in health professionals migration, based on migration motivations, suggested that this tool can be used to study the impact of policy levers to influence migrant health worker decision-making, if they are sufficiently "tuned into migrant health worker motivation" (Humphries et al., 2015; Kingma, 2006; Buchan et al., 2006).

Oral and dental healthcare is an important part of a good health care system, that should deliver quality services to all people, when and where they need them (World Health Organization, 2020). Unfortunately, this is more often the case only in high-income countries; and, even so, this varies from country to country. IQDs training pathway and their transition into the employment market is dependent on how dental education, training and dental services are commissioned across countries. Commercialisation of dental higher education has potentially given rise to the education-tourist migrant as discussed in detail below along with its relevance for policy makers in dental education.

Table 3
Typology ranking (Humphries et al. 2015) applied to UK IQDs.

Primary categories	Internationally qualified dentists in the UK Number (percentage of the total participants)
Livelihood migrant	14 (37%)
Career-orientated migrant	10 (26%)
Dependant migrant	5 (14%)
Back-packer migrant	4 (10%)
Safety and security migrant	1 (3%)
Education-tourist migrant [a]	3 (8%)
Secondary categories	
Commuter- returner migrant	1 (3%)
Undocumented migrant	1 (3%)

Legend: Applying the primary and secondary ranking (Humphries et al. 2015) to the IQD typology in the present study validates the ranking as IQDs could be categorised predominantly as *Livelihood migrants* (37%) and *career-orientated migrants* (26%). The *dependant migrant, backpacker migrant* and *safety & security migrant* were distinct but demonstrated fluidity and converted *to livelihood and career-orientated migrant* in response to policy changes. There was some overlap in the categories as IQDs had more than one driver prompting migration.

[a] This is distinct and new category that is proposed as a primary category due to the internationalisation of dental and medical education opportunities globally, that could potentially impact the integration of these highly skilled individuals.

4.1. Commercialisation of higher education

Commercialisation of higher education has led to an expansion of dental education in some countries leading to an overproduction of dental graduates, with no consideration given to dental workforce planning (Gallagher and Eaton, 2015; Masuoka et al., 2014). Internationalisation of dental education with several countries offering a dental degree in English, has added to this increase. Whilst this may be necessary based on the population's dental needs, little provision is made to facilitate this workforce into employment. Dental education in UK is currently funded by the Governments and partly by student fees (Gallagher and Eaton, 2015). However, globally dental education shows a wide variation across countries with public, private and joint models not only in education and training but also in oral health care provision (Masuoka et al., 2014; Davidson et al., 2011). Dentists train for a similar period to doctors (5 years in Europe), with similar financial investment in their education as reported by Gallagher et al. (2017), but they start treating patients as part of their training earlier than doctors (Gallagher et al., 2017). However, there were no clear career pathways for the IQDs in many EEA and non-EEA countries due to a lack of robust oral health systems. There were inherent inequalities both in terms of who can access dental care and how it was delivered. In India, the population dentist ratio justifies the number of dentists that are trained (n = 28, 000), but the urban concentration of dentists means that many young dentists are unemployed or under-employed while large parts of the population have no access to dentistry (Elangovan et al., 2010).

In high- and middle-income countries doctors and nurses mostly have a structured career pathway into organised health systems, unlike dental graduates, who must rely on their networks to gain employment in the private sector or compete for the few public sector jobs. Dental professionals' work environments tend to be concentrated in the urban areas and funded predominantly by private enterprise. This drives the *livelihood migrant dentists* from rural to urban, and national to international migration. Unless they work in academia, public hospitals or in specialities, they mostly work in isolated small groups compared to nurses and doctors, lacking continued professional support (Harris et al., 2008). There is under-investment in dentistry globally, resulting in a lack of employment and opportunities for postgraduate training (Gallagher and Hutchinson, 2018; Balasubramanian et al., 2018). It is important to recognise that it is against this background that the IQDs are migrating. Therefore, analysing the macro-, meso- and micro-drivers and integration experiences of IQDs based on a typology could help to

tailor policies to manage workforce planning and supporting this highly trained mobile workforce.

4.2. Typology as a tool for studying the impact of policies

This study has shown that the typology of migrant dentists is fluid and suggests that it may be controlled with policy changes. As migration motivations can be complex, there are often primary and secondary categories when the typology is applied, as shown in Table 3. It can be argued that the typology of *career-orientated migrants* can be combined with *livelihood migrants* as most IQDs, who aspired to obtain higher qualifications or training did so to increase their chances of employment and indirectly to earn more. It may also be a cultural norm, that IQDs from non-EEA countries expressed career aspirations as their primary motive and that the resulting financial gain was less important to them (Vujicic, 2004). Influence of 'cultural and religious beliefs', 'intrinsic motivation to be the best' and 'to contribute to the profession' are well documented as non-financial motivations that drive the health care workers to work in rural areas, under-developed areas and in some very challenging environments (Mathauer and Imhoff, 2006).

The *dependant migrants* who were following their spouse's career decisions and that of the family have been previously described as partner migrants (Kingma, 2006), or family migrants (Humphries et al., 2015). The terminology of 'dependant' has been used for this category in this study based on the current visa category used by the Home Office in the UK, to describe migrants entering UK as partners who are financially dependent. Active recruitment and changes to national immigration policies, also impacted this group. Several *dependant* IQDs who were already in the country, and had initially put their careers on hold, decided to sit the IQE/ORE when the UK Government in 2004 declared a shortage of dentists in the country (Davda et al., 2020; Department of Health 2004). This changed the five *dependant* migrants in this study to either *career-orientated* or *livelihood* migrants. In 2012, restrictions were placed by the Home Office on the Tier 1, student route, post study employment and family migration, making it difficult for non-EEA dependants to enter the UK unless they earned above £18,600 (US$ 24,725 approximately) per year before tax, which could be a policy lever to reduce this type of migrants (Gupta, 2006).

Dental graduates from high income countries such as the UK mostly migrated to Australia citing travel and adventure as reasons for migration (Davda, 2020), and comprised 28 % ($n = 286$) of the international dentists working in Australia, responding to a survey, which represented a potential loss of workforce to UK. This may also apply to IQDs from low-income countries who are financially able to fund their travel. This suggests that this type of migration can be considered as a 'choice' or 'luxury' for those who can afford it. EEA IQDs, in this study came as travellers and often worked as dental nurses; and, following a recruitment drive for dentists in the UK, they subsequently decided to register as dentists. Therefore, they changed from a *backpacker* to a *livelihood* migrant, over a period of time. There may be potential issues with retention of this group as they may continue with onward migration or return to the source country as 'returners', as suggested/described by Glinos and Buchan (Glinos and Buchan, 2014).

The *education-tourist* migrant IQDs travelled abroad mainly to the EEA countries where dental education was affordable, ease of travel and the education was in English. The freedom of movement and recognition of professional qualification across the European Union under the EU Directive 2005/36/EC facilitated this opportunity. It is likely that this group will increase, with the trends in internationalisation of dental education in the UK and abroad (Sinclair et al., 2016; Bravo et al., 2015), and the importance placed in current education systems on the benefits of widening horizons (The British Council - International Education Services 2014). There may be a globally migrant dentist population trained in one country and practising dentistry in several countries during their professional career. This category of IQDs present unique challenges to the registering and educational bodies and employers to integrate them into the system. On the other hand, this emerging group of IQDs, if supported through targeted policies could easily be transitioned into the UK dental workforce, as they are British citizens and thus potentially have fewer cultural and social barriers than that of other types of migrant dentist (Buchan et al., 2014). However, with BREXIT, this group may become a short-term category in the UK, as even before the UK left the EU in 2017, and restrictions were placed on travel during the Covid-19 pandemic, there was a decrease in the overall proportion (34–18 %) of students leaving the UK to study abroad compared with 2015 (The British Council - International Education Services, 2014). The main reasons were economic (fall of the pound sterling compared with Euro) and anxiety around safety; however, university partnerships were considered a favourable route to go abroad (The British Council - International Education Services 2014). Therefore, it is important to monitor the flow of this category of IQD migrants and provide the necessary support to successfully integrate them into the profession.

The *commuter* IQD migrants in this study were different to the '*commuter*' health professionals described by Buchan (Balasubramanian et al., 2015). Buchan et al. (2014), described them commuting daily or weekly across borders due to the EU Directive 2005/36/EC. The distances there were shorter and good infrastructure of roads, trains and flights facilitated this in EU. In contrast, *Commuter* IQDs demonstrated the effects of globalisation, where the skills acquired in one part of the world could be transferred to another and benefit both countries. Dual registration was perceived by these IQDs (for example P19) as a way to raise the standards of oral health care delivery in the hospital that they returned to, in addition to providing additional income, which helped them to educate their children. There may not be many such IQDs on the register, but if dental health care companies adopt a global business model, it is possible that this type of career may be attractive to both British and overseas trained dentists.

The *undocumented migrants* could include all IQDs who have not been able to register as dentists in UK such as *dependent, backpacker, safety, and security migrants*. Journeys and experiences of health workers who are also asylum seekers are likely to be more complex than the current cohort as seen amongst internationally trained nurses in UK (Winkelmann-Gleed and Seeley, 2005), and merit further research. It is important not to interpret *undocumented* as "unproductive" or "not contributing to the profession". Individuals may have actively decided not to take a clinical role and move laterally to contribute to the dental profession using their clinical expertise in education, research, management or industry and take a different pathway either by choice or be forced to make the best of the circumstances**.** Our research suggests that the accreditation and professional integration process in the UK was shorter for EU qualified dentists compared with those that qualified elsewhere due to the barriers of overseas registration examinations, immigration status and the need for work permits along with the requirement to undertake 'Performer List Validation by Experience (PLVE)' to work in the NHS (Davda et al., 2022).

The long-term impact of Covid-19 and BREXIT on migration of IQDs is unknown. The flow of dentists from EEA countries into UK reduced during BREXIT debates but continued during covid and thereafter as the GDC has continued to recognise their qualifications. As we go to press, it is important to note that a five-year extension has been granted to the European Qualifications (Health and Social Care Professions) (Amendment etc.) (EU Exit) Regulations (2019/593) ('the EU Exit Regulations') which came into force on the day of EU Exit and included provisions for the unilateral automatic recognition of European Economic Area (EEA) and Swiss professional qualifications (Department of Health and Social care, 2023). Interestingly, in 2022, 37 % ($n = 729$) of all the dentists joining the register had qualified in the EEA in comparison with 54 % ($n = 1061$) UK qualified dentists demonstrating the continuing high reliance on international dentists (General Dental Council, 2023). In contrast, the Overseas Registration examinations were suspended in March 2020 and resumed in February 2022, decreasing the non-EEA IQDs applying for registration for two years (Odejimi, 2021). This has

led to several IQDs becoming trapped in the examination process with no support. There are, however, reports of pressures on the NHS dentistry, inability to recruit dentists and burnout post-COVID resulting in practice closures (Gallagher et al., 2021), which have very recently led to statements on increasing dental student and dental therapy student numbers again (NHS England, 2023). Education models that incorporate the highly skilled IQDs at pre-registration stages, a global curriculum standard may be solutions in supporting this migrant workforce. Once recruited, retention of this workforce by employment supportive policies such as support to resettle in the society and policies that recognise the diversity and create a more inclusive environment in the profession are important.

5. Strengths and limitations

The findings of this qualitative study cannot be generalised as representing the views of all IQDs in the UK; but rather they represent a purposive sample at a particular point in time, just prior to BREXIT and the COVID-19 pandemic, with their resultant workforce and healthcare disruptions (General Dental Council, 2023; Odejimi, 2021; Gallagher et al., 2021; NHS England, 2023). Our research drew on IQDs experiences, relying on participants memory recall and their willingness to share their stories at the time of interview. None-the-less, the categories presented in the dentists' typology, align with larger health professional studies with most migrant dentists fitting into the primary categories of *livelihood and career-orientated migrants*. This knowledge of the type of IQDs on entry to the UK may help in policy interventions especially in case of *dependant* and *education-tourist* migrants who could be supported better to integrate into the profession. The *commuter* and *undocumented* categories, although less common amongst the sample, represent important indicators of possible migration routes and hence relevant for dental workforce planners and those who may be involved in supporting their transition. British trained dentists who emigrated and then returned to practice in the UK were not captured in this study and would have come under the *returner* type described by Buchan (Balasubramanian et al., 2015). This typology of dentists with seven categories describes a new type of health professional migrant, i.e., the *education-tourist migrant* which reflects the new trends of globalisation, commercialisation of education and technology which may potentially influence the decision-making process amongst other health professional migrants.

6. Conclusions

Given that the UK has become reliant on internationally qualified dentists,understanding their migration and integration experiences is important to inform oral health workforce policies. The findings suggest a typology based on migration motives of internationally qualified dentists working in the UK, which may be a useful tool in considering the policy impact on international migration.

Declaration of competing interest

The authors declare that they have no known competing financial interests or personal relationships that could have appeared to influence the work reported in this paper.

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Supplementary materials

Supplementary material associated with this article can be found, in the online version, at doi:10.1016/j.jmh.2024.100232.

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