Ir J Med Sci
DOI 10.1007/s11845-015-1388-0

ORIGINAL ARTICLE

Push and stay factors affecting Irish medical student migration intentions

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Received: 7 October 2015 / Accepted: 21 November 2015
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Abstract
Background A significant proportion of medical students in Ireland have demonstrated strong intentions to migrate following their graduation. Factors influencing these intentions are poorly understood. Our study aimed to investigate 'push' and 'stay' factors that may influence the migration plans of medical students.
Methods Cross-sectional survey of 2273 medical students in Ireland using a mixed methods approach. Survey was completed by 2273 medical students, of which 263 provided free text data that are analysed in this paper.
Results Identified push factors include negative perception regarding career opportunities, working conditions and lifestyle, while family was the only identified strong stay factor. Qualitative analysis of free text responses revealed themes that included training, career, personal and financial factors.
Conclusion This study has provided insight into the factors that influence medical student migration intentions. There is a strong need for all stakeholders to collectively discuss and engage in possible solutions.

Keywords Medical student · Emigration · Qualitative evaluation · Medical education

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Published online: 09 December 2015

Introduction

A key difficulty facing the Irish Health Service is the retention of qualified doctors once they have been trained. A study of 2273 medical students educated and training in Ireland found that 88 % contemplated emigrating from Ireland following their pre-registration intern year. It also established that definite intentions to migrate were greater for those at the senior stage of training than those at the junior stage (38 % compared to 28 %) [1]. Similar migration intentions have also been identified among Non-Consultant Hospital Doctors (NCHDs) in Ireland [2–4]. However, the factors contributing to this high level of migration intention in the Irish setting are poorly understood, but may be partially explained by the dissatisfaction with the postgraduate training experience in Ireland [5, 6].

A number of studies evaluating medical migration have identified 'push' and 'stay' factors. These have been described as a series of forces, whether political, social or economic, which promote migration and retention, respectively [5, 7–11]. 'Push' factors include adverse working conditions, poor lifestyle, lack of career opportunities and financial hardship [1, 12–14]. 'Stay' factors include family commitments, positive working conditions and career opportunities [1, 13]. Understanding the complex factors that influence migration intentions is essential both to inform workforce planning and enable policy makers to implement effective interventions to modify this migration pattern. The aim of our study was to gain a deeper insight into the 'push' and 'stay' factors affecting medical student migration intentions in Ireland.

Methods

A cross-sectional online survey questionnaire was distributed to all medical students enrolled in Ireland's six medical schools, a total of 6180 students. The survey was disseminated by email with a link to the survey URL that was facilitated by school administrators. The survey remained open for approximately 3 weeks. Students received a reminder email 2 weeks after the opening of the study. Students were asked "Which of the following would influence your decision to go abroad for work or further training?" to identify migratory 'push' factors and "Which of the following would influence you decision to stay in Ireland for work or further training?" to identify migratory 'stay' factors. Furthermore, students were asked to select all 'push' and 'stay' factors that applied from a list of factors identified from the literature [15, 16] and also had scope to elaborate or describe other 'push/stay' factors using free text. Free text boxes were capped at 5000 characters to provide respondents adequate opportunity to fully express their thoughts.

This study employed a mixed method embedded research design, which allows the collection and analysis of both quantitative and qualitative data within a traditional qualitative or quantitative research design [17]. Pearson's Chi square was used to determine differences in responses of 'push' and 'stay' factors by country of origin (determined using location of secondary school education). SPSS v.20 was used for data analysis. The free text data were independently analysed by two investigators using a general inductive approach [18]. After discussion, a coding framework was developed to identify response categories and key themes emerging from the data. If new codes emerged during this process, the coding framework was modified and the data were re-analysed. The intention of the analysis was to establish prevalence and patterns of push stay factors across the medical undergraduate population. Ethical approval was granted by the Research Ethics Committee at the National University of Ireland, Galway.

Results

Participant demographics

A total of 2273 medical students responded to the survey, providing a response rate of 36.8 %, which varied from 20.0 to 54.0 % between schools. Of those, 1519 (67 %) completed secondary school in Ireland (described as 'Irish students' hereafter), 121 (5 %) in another EU country ('EU students') and 633 (28 %) in a non-EU country ('non-EU students'). Of all participants, 1260 (55.4 %) were female and 624 (27.5 %) had a previous degree. Pre-medical and 1st year students (Juniors) accounted for 613 (27.0 %) of participants, 2nd year and 3rd year students (intermediates) accounted for 995 (43.8 %) of participants and 4th year and 5th year students (seniors) accounted for 665 (29.3 %) of participants. Two hundred and sixty three respondents included free text entries. Of these, 22 responses were not analysed due to their content being unrelated or incomprehensible, resulting in a total of 241 responses that were analysed. The average length of free text responses was 14.3 words and ranged from one word to 119 words. Irish students accounted for 143 of these responses, 13 were from students other EU countries and 85 from non-EU students.

Push and stay factors

Table 1 shows the 'push' and 'stay' factors that respondents were asked to select from a pre-determined list.

'Push' and 'stay' factors varied considerably between students of different citizenships. What is a 'push' factor for one student (career opportunities) can be a 'stay' factor for another. This can be influenced by their citizenship and the extent to which the Irish postgraduate training environment compares to another they may be able to access, perhaps in their country of origin. Irish students selected career opportunities (85 %), working conditions (81 %) and lifestyle (77 %) as 'push' factors reinforcing an intention to migrate, while identifying family (88 %) as a 'stay' factor. EU students indicated career opportunities (81 %), working conditions (76 %) and lifestyle (74 %) as 'push' factors, while identifying family (62 %) as a 'stay' factor. Non-EU students selected career opportunities (82 %), family (64 %) and lifestyle (60 %) as 'push' factors. The majority of respondents (1319) indirectly expressed concerns about training in Ireland—this was consistent regardless of citizenship. Interestingly. debt did not feature strongly as a 'push' or 'stay' factor for any group. Non-EU students indentified career opportunities (56 %) as a 'stay' factor and appear less concerned regarding working conditions. Their responses appear to suggest that they perceive working conditions in Ireland to be similar to those they could, or intend to, access elsewhere. Naturally, family is a 'stay' factor for Irish students and a significant 'push' factor for non-EU students who have been separated from family while studying abroad. Overall, respondents appear to believe that pay and lifestyle will be better outside of Ireland. The following results provide an analysis of the key 'push' and 'stay' factors identified by respondents in free text responses.

Training and career factors

Irish medical students recognised the need to go abroad to receive training in sub-specialties either because training was not offered in Ireland or there was a limited number of training positions. Several Irish medical students who demonstrated an interest in a career in a specific specialty cited this as a deciding factor in their migration intentions. These were mainly students pursuing general practice and surgical training positions.

"… if I get straight onto my chosen training scheme, then I might stay in Ireland". (Irish)

"…Sub specialty pre-hospital emergency medicine is not available in Ireland". (Irish)

"There are 800+ medical graduates in my year. Of these a total of 40 will be able to enter the surgical training programme in Ireland. I want to be a surgeon, if I don't make the programme, I am leaving". (Irish)

Table 1 Push and stay factors by citizenship

	Irish ($N = 1519$)	EU ($N = 121$)	Non-EU ($N = 633$)	P value*
Push factors				
Pay	972 (64.0 %)	76 (62.8 %)	369 (58.3 %)	0.045
Career opportunities	1284 (84.5 %)	98 (81 %)	518 (81.8 %)	0.223
Family	237 (15.6 %)	42 (34.7 %)	407 (64.3 %)	<0.001
Lifestyle	1173 (77.2 %)	89 (73.6 %)	380 (60.0 %)	<0.001
Independence	346 (22.8 %)	31 (25.6 %)	149 (23.5 %)	0.746
Obligation	81 (5.3 %)	10 (8.3 %)	95 (15.0 %)	<0.001
Working conditions	1236 (81.4 %)	92 (76.0 %)	282 (44.5 %)	<0.001
Standard of training	903 (59.4 %)	63 (52.1 %)	353 (55.8 %)	0.114
Debt	205 (13.5 %)	12 (9.9 %)	142 (22.4 %)	<0.001
Stay factors				
Pay	398 (26.2 %)	47 (38.8 %)	263 (41.5 %)	<0.001
Career opportunities	510 (33.6 %)	51 (42.1 %)	353 (55.8 %)	<0.001
Family	1332 (87.7 %)	75 (62.0 %)	150 (23.7 %)	<0.001
Lifestyle	492 (32.4 %)	43 (35.5 %)	222 (35.1 %)	0.420
Independence	74 (4.9 %)	17 (14.0 %)	103 (16.3 %)	<0.001
Obligation	345 (22.7 %)	24 (19.8 %)	92 (14.5 %)	<0.001
Working conditions	326 (21.5 %)	41 (33.9 %)	263 (41.5 %)	<0.001
Standard of training	407 (26.8 %)	37 (30.6 %)	273 (43.1 %)	<0.001
Debt	196 (12.9 %)	14 (11.6 %)	87 (13.7 %)	0.767

* Pearson Chi square comparing 'push' and 'stay' factors by citizenship

Some Irish students identified the duration of training schemes in Ireland as an important factor in influencing their migration plans and called for more streamlined and structured training programmes.

"I do feel that when compared with training programmes in North America, for example, that the training here is excessively long". (Irish)

Several non-EU medical students shared concerns about the perceived long length of training programmes in Ireland. One student attributed this to a fundamental flaw in the training system.

"You don't give people enough credit in their ability to learn and adapt at a fast pace, which also negates a major workforce population of qualified doctors that could do so much more to help the patients". (Non-EU)

In addition, several Irish students highlighted that the short-term segmented structure of training schemes in Ireland as an influential factor.

Many schemes here involve 6 months slots in many varied locations, sometimes for as long as 7 years. It's impossible to have a family life under those conditions.

Non-EU students were largely concerned with the perceived obstacles preventing them from securing pre-registration intern positions following graduation. Many of these students expressed wishes to continue their training in Ireland.

"Personally, I would definitely like to stay in Ireland for intern year and beyond. However, since I am a non-EU student who requires a work permit, it is unlikely that I will get an intern position here. I wonder if it will change in the future?" (Non-EU)

The majority of respondents highlighted the need for general improvements in working conditions for junior doctors, several specifically highlighted working hours as a factor and were concerned that poor working conditions would affect their physical and mental health.

"I have heard that the EU working time directive is consistently ignored in Ireland. I believe this would compromise my own health and endanger the life of patients". (Irish)

In addition, many Irish students identified that public perception negatively influenced their working conditions.

"The profession is constantly being undercut by the government and the media. Nobody is backing doctors up". (Irish)

"…despite working harder and longer than any other group of our age, we get nothing but grief and pay-cuts from the government and general public. Even if the US or Canada paid the same money, we wouldn't have to put up with the same hassle working there". (Irish)

Personal factors

Several Irish respondents illustrated the importance of expanding their horizons and gaining life experience. Only a minority of respondents indicated that they wanted to travel to broaden their medical experience.

"To be honest, I think that even if the working conditions were perfect in Ireland I would more than likely work abroad at some stage. I love travel and believe that it really does broaden the mind". (Irish)

Some Irish medical students indicated that pursuing humanitarian work as reason for migrating.

"I want help people who are less well-off than we are in Ireland". (Irish)

All groups of respondents, Irish, EU and non-EU students, identified personal relationships as reasons influencing their migration decisions. Non-EU student responses cited friends as both a reason to migrate and a reason to stay.

"Ireland is a good country to live in. Most of my friends and family are here, and it would be a shame to leave them". (Irish)

"I am from Canada originally so I am thinking of going back to North America but would I like to stay here in Dublin for intern year". (Non-EU)

Financial factors

Irish, EU and non-EU students alike identified that finances played a role in their migration decisions. Irish respondents were specifically concerned about being paid for hours worked, while non-EU respondents were concerned about the high cost of living in Ireland.

"I am not sure I can afford to stay in Ireland unfortunately. I have debts to pay, and financially I may simply not be able to stay in Ireland". (Irish)

"I really love Ireland and would love to stay except for my student debt". (Non-EU)

"Pay for the hours worked, not necessarily a reduction in hours". (EU)

Ethical factors

Some students identified ethical reasons that influenced their migration intentions.

> *"At the end of the day, we've been trained in Ireland at the expense of the HSE. It behooves us to stay, if we at all can". (Irish)*

> *"The government paid for me to go to college, would be kind of selfish to leave". (Irish)*

> *"A feeling of return of service in exchange for a medical education". (Non-EU)*

Discussion

Medical students in Ireland present a unique situation where in a high-income developed country, a large majority of students expressed intention of migrating after graduation [1]. Our findings suggest that the reasons behind this are multifactorial and include training and career factors, lifestyle, personal factors and financial factors. While there are statistically significant differences between the prevalence and ranking of both migration and retention factors, depending on the respondents' citizenship, some consistent themes appear to emerge. Respondents are concerned about career opportunities, working conditions, standards of training, lifestyle and pay that are available in Ireland. Based on our results, we propose several interventions to assist in ensuring a sustainable medical workforce in Ireland.

Reform of undergraduate training

Our research emphasises the need to allocate time in the undergraduate curriculum to ensure that undergraduate medical students are informed regarding career options and training pathways available to them as they progress through their medical education. This must be reiterated at the various stages of the undergraduate course. This may require further collaboration between universities, postgraduate training bodies and the Health Service Executive.

Reform of medical postgraduate training

The aim of postgraduate medical training is to produce physicians that are competent to practice in their designated specialty. However, the pathway that leads to this ultimate goal varies by jurisdiction and country. A review of postgraduate training in Ireland recommended removing unnecessary barriers to progression through training and the removal of incentives and opportunities to step out of training [19]. Students have highlighted perceptions about several aspects of the postgraduate pathway in Ireland being a deterrent in their decision to continue training in the Irish system. One of these is the segmented nature of the postgraduate training in Ireland, which includes a pre-registration intern year, 2 years of basic specialist training, 4–6 years of higher specialist training, followed by the possibility of further training being required in the form of fellowships [20]. Each segment of training may be undertaken in different geographical areas of Ireland, which may be governed by different postgraduate training bodies. This is in comparison to the Canadian and American system, where medical students proceed directly into a specialised training pathway that ranges from 2 years for general practice residency to 6 years for neurosurgery [21, 22].

While there are significant differences and difficulties comparing the North American and Irish system, there is a need for the Health Service Executive to consider such alternatives with a view for promoting more stability in employment for NCHDs. A more integrated approach could potentially minimise the number of vacancies in more dispersed hospitals and general practice locations. At present, the Irish health service and postgraduate training bodies support training structures which involve urban and rural areas, which translate into significant geographical rotation for trainees with various levels of governance (local, regional and national). Where possible, a training pathway from start to exit should be available to a trainee at the outset. Where this is the case, these opportunities need to be clearly communicated so that undergraduates are aware that this is a possibility. Other work undertaken by this group has revealed the extent to which students acknowledge that they are poorly informed about career opportunities and training structures in Ireland [1].

In addition, several respondents highlighted the lack of certain sub-speciality training schemes. It is inevitable, noting the population size and critical mass of specialists available in Ireland required to oversee training, that time spent elsewhere will be necessary and desirable to complete training in some sub-specialties. It is neither realistic nor feasible to develop postgraduate training programmes for every sub-speciality. However, it should be possible that training schemes create a seamless and clear exit and re-entry to Ireland as part of their training structure, which may be offered on a competitive basis and ideally would be fully supported by the Health Service Executive. More formal collaboration with non-Irish centres of excellence should be encouraged and perhaps supported strategically by the Department of Health so that individual and opportunistic arrangements are not the main process by which such exit and re-entry occur. Adopting this approach requires significant integrated workforce planning and prioritising training on a par with service delivery in the health service. Some training programmes have already

adopted this model [23]; however, it is evident that this information is not known at the medical student level.

Many respondents highlighted their perception that the EU working time directives (EWTD) are not being adhered to. It should be noted that since this study was conducted, there have been many efforts to improve compliance, with 96 % adherence to EWTD that shifts should not exceed 24 h and 72 % adherence to EWTD that the working week should not exceed 48 h in July 2015 [24]. It is essential that this progress is clearly communicated and sustained. It is possible that working conditions also affect perception regarding standards of training. Service priorities dominate the media in any health-related discussions, but there is a clear need for more discourse, with emphasis and promotion of the importance of training, the tangible supports offered for same and the extent to which this is a valued activity at each clinical site. Ultimately, this is likely to improve service delivery by enhancing retention.

Tapping into the non-EU Irish Graduate Workforce

Non-EU students account for a large proportion of medical students enrolled in Irish medical schools. To date, it has been expected that the majority of these students will return to their countries of origin or travel elsewhere for post-graduate training. Although certain students have a return of service agreement with their countries of origin, our study demonstrated that many would like the opportunity to remain in Ireland. Non-EU students also perceived that it is becoming increasingly difficult to obtain an intern position.

The Irish health service finds itself in a situation where junior doctors are migrating out of the Irish system and there is increased recruitment of doctors from overseas. Concurrently, Irish-trained non-EU medical graduates are being deterred from entering the Irish postgraduate training system. A solution to this is to allocate some training positions to non-EU students who wish to remain Ireland. At present, there are no such mechanisms in the system. Return of service agreements, where the cost of training an individual is offset in exchange for a pre-specified number of years of service could be employed to subsidise the cost of creating these training positions in addition to reducing the cost of foreign recruitment of physicians [25]. Return of service agreements is used extensively in Canada and has been shown to be effective in improving physician retention [26]. The feasibility of introducing similar programmes in Ireland warrants further investigation. Additionally, EU working directives place several limitations on hiring non-EEA graduates, where graduates from EU countries are prioritised while applying for posts in Ireland. Prior to implementing any initiatives, current legislation must be studied to determine appropriate methods of implementing such initiatives.

Countering amenity migration

Lifestyle choices are a potentially unexplored factor. Previous research has alluded to the concept of amenity migration, where graduates migrate to countries that are perceived as desirable [27]. This is supported by quantitative data from this study, where 80 % of Irish medical students indicated lifestyle as a migratory 'push' factor [1]. Future studies should aim determine the extent of amenity migration among young Irish doctors as well as describe their return migration patterns.

Limitations

The study achieved a response rate of 37 %, which is lower than similar studies that used postal questionnaires [28]. In addition, free text responses were received from a small proportion of respondents (12 %, $n = 263$). As such, the study could have been affected by non-responder bias. In addition, the results may also have been affected by self-selection bias [29], with the potential that responses were only received from those with an interest in medical migration. The study is also limited in that it did not elicit whether respondents were graduate or undergraduate medical entrants. This would have been useful in providing additional detail in terms of identifying factors affecting migration intentions. The free text responses that were collected were relatively short (14 words per response on average), which may be attributable to the online nature of data collection and lack of face-to-face interaction with respondents. This limited the extent to which in-depth interpretation could be undertaken. As such, the free test responses were primarily restricted for identifying descriptive patterns in the data. To provide a more in-depth insight, further research employing methodologies that can elicit more detailed responses should be undertaken (e.g. focus groups or one-to-one interviews). While acknowledging these limitations, our study nevertheless provides a valuable insight into medical migration in Ireland and raises important issues for consideration by policy makers.

Conclusion

The study has provided an insight into the factors that underpin the migration intentions of medical students in Ireland. Suggestions are made with regard to further research which is needed and should be supported. Some suggestions are made as regards strategies to improve retention. It would appear consistently that the concerted efforts need to be undertaken by all stakeholders (medical schools, postgraduate training bodies and the Health Service Executive) to increase awareness of the training opportunities available in

Ireland and to promote models of good training practice and positive training experiences where they exist. This needs to begin at the undergraduate stage. The comments made by one of the respondents cited earlier "*The profession is constantly being undercut by the government and the media. Nobody is backing doctors up*" are more difficult to address.

Acknowledgments We thank all the students who participated in the study and all medical school staff who helped in administering the study. We thank Prof. Ruairí Brugha and colleagues for input on study design, the Irish Medical Council, and the HSE Medical Education and Training Committee for background information and support.

Compliance with ethical standards

Transparency declaration The lead author affirms that the manuscript is an honest, accurate, and transparent account of the study being reported; that no important aspects of the study have been omitted; and that any discrepancies from the study as planned (and, if relevant, registered) have been explained.

Conflict of interest All authors declare that they have no competing interests.

Informed consents were obtained from all participants electronically prior to starting the survey. This article does not contain any studies involving interventions on human participants.

Funding No funding was received for this project.

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