

Original Article

Iraqi medical students are still planning to leave after graduation

Mustafa Ali Mustafa Al-Samarrai ^{1*}, Saad Ahmed Ali Jadoo ²**Abstract**

Background: Medical students constitute the backbone of the future human resource for health, and therefore, as much as attention should be given to secure a high level of education, it should also be given to understand their wishes to leave or to stay at home country. This study aimed to find out the prominent factors associated with Iraqi medical students' planning to leave their country after graduation.

Methods: A descriptive cross-sectional study was conducted among clinical medical students (fourth, fifth, and sixth classes) of two medical colleges (the University of Anbar and University of Fallujah) in Anbar Governorate from 1st to 14th March 2018. A total of 183 students (Response Rate: 72,6%.) completed a self-administered questionnaire consisting of 15 close-ended questions related to the socio-demographic factors, economic characteristics, and some other factors inspired from Iraq's situation. Moreover, one open-ended question was designed to explore the main reasons for migration from the student's point of view.

Results: Although 109 students (60%) felt that serving their citizens and country is a priority, however, the vast majority of 133 (73%) of the surveyed students had a plan to leave Iraq. About two thirds (69 %) of students intended to migrate as soon as they manage to: obtain their graduation certificate (49%); have enough money (34%), and the remaining 18% when they get parents' permission.

Conclusion: Our results suggest that living environments and work-related variables are significantly associated with medical students' intention of migration; however, social reasons and inspiring academic achievement were the main factors triggering students to leave Iraq.

Keywords: Intention of migration, medical students, conflict, Anbar, Fallujah, Iraq

Background

During the last decade, the event of a migration of Iraqi doctors has been escalated, especially in areas of conflict. The demands of human resources have been rapidly growing worldwide for several demographic and epidemiological conditions [1]. A significant consequence was an accelerated international migration of health workers, mainly from developing countries to more developed countries, a phenomenon known as "brain drain"[2,3]. The most favorable destination for doctors migrating from Iraqi and other medium to- low-income countries (donors) are United States, United Kingdom, Canada, and Australia, the so-called- recipient countries. Eventually, those practicing doctors acquired the term, international medical graduates, and constituted about 25% of all physicians there [2]. Year after year, the brain drains kept going, and the problem aggravated for both the donor and the recipient countries. Unfortunately, this problem was not detected until very recently

[2], when the developed countries have registered an expanded gap between demand and supply of physicians, and the developing countries complained of insufficient healthcare providers, resulting in an additional economic divide between them [4]. A situation of "push" and "pull" factors, i.e., factors acting simultaneously as extruder from home and attractive towards abroad [5]. The most common push factors were "the poor salary structure and poor quality of training" [6]; however, Ali Jadoo [7,8] and his colleagues found a more robust history of job dissatisfaction, violent events, and harassment among Iraqi doctors who were intending to migrate.

Moreover, some pull factors in the developed countries are evident, such as smooth immigration policies, higher quality of life, and more professional training make migration even more exciting [9-12]. Findings from a research study conducted in South Africa manifested that the second considerable reason for migration was offering better job opportunities [13]. Last but not least, print and electronic media may also have a significant role to establish migration intentions, particularly in the absence of active legislation and firm regulations, where the private sector offers valuable vacancies in local newspapers with high salaries and privileges [14]. Other varieties of mass media are

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TV channels that act as a double stroke in "Pull" and "push" factors by exhibiting the shiny aspects of west destinations, whereas they exaggerate the disadvantages of the regional health system and lifestyle [14]. After the US-led invasion in 2003, Iraqi intelligentsia in general and doctors, in particular, faced intolerable levels of violence and systematic targeting [7,8,15]. Health care facilities were looted and destroyed; doctors had to defend them with arms, sacrificing their safety [16]. The Iraqi government responded poorly; it neither protected those left inside Iraq nor initiated a serious investigation [17]. Although wages increased after 2003, from "US\$380 annually to US\$5,100 annually", they remain relatively low if we consider the workload and high risks [18]. The deterioration of medical education infrastructure is unprecedented, with a shocking absence of mandatory continuing medical education and proper certification programs [19]. In 2010, the Iraqi government offered immediate job placement for doctors upon their return to Iraq and promised to improve security measures and protect doctors, yet that was not enough to convince doctors to stay in or return to Iraq [20]. The revival plan of the Iraqi health care system seems to be very limp so far; lack of security, lousy management, the politicization of the Ministry of Health, corruption, and inadequate training are all problems that successive decision-makers have failed to solve since 2003 [21-24]. This failure further repelled doctors; 55% of them were severe to look for another job [8]. Many of those leaving their posts are senior doctors, resulting in a critical leadership and mentorship void and, in some cases, the complete disappearance of certain specialties [25]. The peak incidence of migration among Iraqi doctors was in the year 2008. An estimated "20,000 out of 34,000 physicians (registered before 2003) have left or lost (58.8%); 2,000 of them have been killed, and over 250 kidnapped" [26].

Consequently, in 2011, Iraqi primary health care clinics were nearly 40% deficient in physicians [24]. The national loss of brain drain can be catastrophic, especially when physicians are involved. Subsequently, an inevitable deterioration of the health system and the quality of medical services are the main consequences. Many international studies declared that the migration of junior doctors is much higher than in older, and most of them had such planning since college time. Previous studies conducted in Iraq focused on doctors rather than the undergraduates [7,8]. Therefore, this is the first local study that highlights the early causes behind the migration of Iraqi doctors and how to prevent them.

Methods

Study design and subjects

A descriptive cross-sectional survey was conducted among the medical students of two universities (Anbar and Fallujah) in the Anbar Governorate, West of Iraq. The target population were clinical students, namely: the fourth, fifth and sixth classes from Anbar college of medicine and the fourth and fifth classes from Fallujah College of Medicine (in the academic year of 2017-2018, Fallujah College of Medicine has no sixth class students yet). A qualified and trained research team was recruited to trace students in their college. Lists of all targeted medical students were obtained from the registration office of the two

included college of medicine. All clinical medical students with Iraqi nationality, who were available at the time of study and were willing to participate have been included (Figure 1). The pre-clinical students (first, second, and third classes), foreign nationality students, and those who were not willing to participate or absent at the time of study have been excluded. Each eligible student has consented and received the Arabic copy of the semi-structured questionnaire. Data were collected in two weeks (1st to 14th March 2018). A total of 183 students (Response Rate: 72,6%.) completed a self-administered questionnaire consisting of closed-ended questions related to the socio-demographic factors and economic characteristics and some other predictors inspired by Iraq's situation which may affect student's migration intention. Lastly, an open-ended question was designed to explore the main reasons for migration. Responses measured with a three-point Likert-type scale ranging from a="yes", b="not sure" and c="no", with some modification.

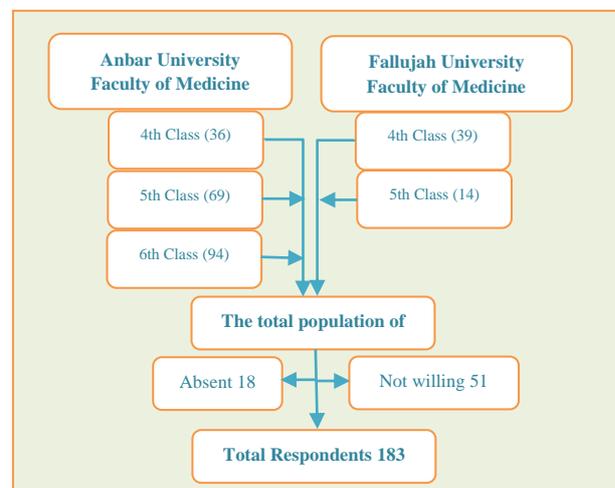


Figure 1 Flow chart of the study

Statistical analysis

Data was collected and analyzed using Microsoft Excel Spreadsheet. Descriptive analysis was performed concerning the overall migration and the 21 items to obtain the percentages.

Results and Discussion

Descriptive analyses

Table 1 shows the full details of the socio-economic aspects for Anbar and Fallujah medical students separately. The subject looks rather sensitive and embarrassing to many students so that writing of student's details in the module of the questionnaire was optional, however among all the respondents (n= 183); male to female ratio was 41: 59, yet; over 20% of them refused to participate. As usual in Iraq, most of the surveyed students (119, 65%) belong to a big family (more than seven members). Two-thirds of respondents (121, 66%) are resident in Anbar governorate and one third (62, 34%) outside Anbar. Fortunately, the average income was swinging equally from middle to high level, but 22% (40) of families had at least one member exposed to considerable violent attacks, and 15% of them had a brother or sister studying in west countries.

Table 1 Socio-demographic distribution of Anbar medical students (n=183)

University	Anbar			Fallujah		Total	
	Class	Fourth N (%)	Fifth N (%)	Sixth N (%)	Forth N (%)		Fifth N (%)
Total number of students		36(14.3)	69(27.4)	94(37.3)	39(15.5)	14(5.5)	252(100%)
Number of participants		29(80)	60(87)	48(51)	33(85)	13(93)	183(72.6)
Gender of students							
Number of females		14(48)	34(75)	33(69)	18(55)	9(70)	108(59.0)
Number of males		15(52)	26(25)	15(31)	15(45)	4(30)	75(41.0)
The number of family members							
< 7		10(34)	23(38)	12(25)	15(45)	4(30)	64(35.0)
≥ 7		19(66)	37(62)	36(75)	18(55)	9(70)	119(65.0)
Current home address							
Anbar province		22(76)	40(67)	25(52)	23(70)	11(85)	121(66.0)
Other governorates		7(24)	20(33)	23(48)	10(30)	2(15)	62(34.0)
Average family income							
Medium		19(66)	22(37)	21(44)	20(60)	10(77)	92(50.2)
Good		10(34)	38(63)	27(56)	13(40)	3(23)	91(49.8)
Exposed to severe violence							
Yes		7(24)	15(25)	7(15)	10(30)	1(8)	40(21.9)
No		22	45(75)	41(85)	23(70)	12(92)	143(78.1)
Is there a family member in the West?							
Yes		5	3(5)	1(2)	3(10)	3(23)	15(8.2)
No		24	57(95)	47(98)	30(90)	10(77)	168(91.8)

Migration intention

Table 2 shows the more closely related details with migration. The highest percent (42%) intended to live outside the country after they have been graduated, and 32% preferred the capital of Iraq (Baghdad) to live in than their province (Anbar). Findings showed that Baghdad was a preferable choice for students who were already left Anbar and residents in Baghdad since the Islamic State of Iraq and Syria (ISIS) invasion in 2014 and mostly arranged their life to persist there. The vast majority of 133 (73%) of the surveyed students had a plan to leave Iraq, but in over half of them (98, 53.6%) preferred to leave with their family. At the same time, about 25.1% (46) had a plan to leave Iraq permanently; however, 77 (42%) claimed that they would be back a few years later after gaining citizenship of the recipient country.

Furthermore, about half (86, 47%) of the surveyed students were not sure whether living abroad is more beneficial from the economic point of view or not. Nevertheless, the vast majority 135 (74%) of medical students still believed that security situation would stay critical for a long time and could be an excellent motivator for migration, and 106 students (58%) expected that migration might probably offer a better future for them and their families. Indeed, this is an alarming situation; because physicians of Anbar governorate are almost always local, i.e., no doctors drain from other governorates. The doctor who leaves Anbar will not be substituted; eventually, a further deficiency in physicians will be manifested.

Reasons for migration

Concerning gender, table 3 presents the findings concerning the main reasons behind the decision of clinical medical students to migrate. Out of 183 respondents, 127 (69.4%) have actively responded to the open-ended question, and each has recorded the most impelling factor towards migration. Results revealed five principal causes that have been categorized and arranged in descending order: personal, social, academic, security, and tourism (Table 3). About half (59, 45.0%) of them (especially among the female gender 47%) were hesitated to explore the real reason for migration and reported as special reasons (personal), i.e., related to the students' circumstances and orientation. Hesitation was evident among students having a family member outside the country and among those with highly educated parents. The ratio of personal reasons is slightly higher in latter classes (fifth and sixth) than the fourth one who seemed less alert than earlier colleagues or most likely has no specific goal. They just want to escape problems instead of facing them and showing impotent awareness of early and late disadvantages of westering. This behavior looks rather peculiar and not listed in similar studies where respondents have determined their triggers for migration precisely [27-30]. The social reason was the second important factor triggering students to leave or to stay in Iraq. About (69, 40.0%) of the presented students stated that Iraq still had better social and religious environments, and the same proportion (71) believed not.

Table 2 Factors related to migration distributed in medical classes of Anbar and Fallujah Universities (n=183)

University Class	Anbar			Fallujah		Total
	Forth N (%)	Fifth N (%)	Sixth N (%)	Forth N (%)	Fifth N (%)	Total N (%)
After graduation, I intend to live in:						
A- In my province	8(28)	10(17)	18(38)	9(27)	3(23)	48(26.2)
B- In the capital	9(31)	24(40)	14(31)	9(27)	1(62)	58(31.7)
C. Outside the country	12(41)	26(43)	15(31)	15(46)	9(15)	77(42.1)
I want to emigrate:						
A- Alone	5(17)	18(30)	4(9)	5(15)	3(23)	35(19.1)
B- With my family	15(52)	32(53)	28(58)	15(46)	8(62)	98(53.6)
C- No wish	9(31)	10(17)	16(33)	13(39)	2(15)	50(27.3)
I plan to travel:						
A- Permanently	3(10)	25(42)	10(20)	5(15)	3(23)	46(25.1)
B- Until I have a nationality or residency	7(24)	11(18)	4(9)	10(30)	4(30)	36(19.7)
C- For tourism only	19(66)	24(40)	34(71)	18(55)	6(47)	101(55.2)
I think that working outside the country offers a higher economic:						
A- Yes	7(24)	33(55)	13(27)	13(39)	1(8)	67(36.6)
B- No	8(28)	4(7)	7(15)	6(18)	5(38)	30(16.4)
C- Not sure	14(48)	23(38)	28(58)	14(43)	7(54)	86(47.0)
I fear that the security situation of the country will remain awkward for a long time:						
A- Yes	16(55)	48(80)	35(73)	25(76)	12(92)	136(74.3)
B- Not sure	13(45)	12(20)	13(27)	8(24)	1(8)	47(25.7)
Immigration abroad will provide my family with a better future						
A- Often	17(59)	37(62)	22(46)	24(73)	7(54)	107(58.5)
B - Not sure	4(14)	20(33)	15(31)	4(12)	4(31)	47(25.7)
C- I do not think so	8(28)	3(5)	11(23)	5(15)	2(15)	29(15.8)
Considering religion and social, I still believe that life in Iraq is the best:						
A- Yes	10(35)	19(32)	21(44)	18(55)	1(8)	69(37.7)
B- Not sure	4(14)	14(23)	15(31)	8(24)	2(15)	43(23.5)
C- No	15(51)	27(45)	12(25)	7(21)	10(77)	71(38.8)
The inner feeling in the need to serve my family and my country:						
A - Does not exist	5(17)	11(18)	2(4)	1(3)	1(9)	20(10.9)
B - Not submitted to my interests	3(10)	19(32)	14(29)	12(36)	6(46)	54(29.5)
C- It comes first	21(73)	30(50)	32(67)	20(61)	6(46)	109(59.6)
For those who intend to migrate, the main determinants of travel time are:						
A- I have a graduation certificate	13(45)	34(57)	21(44)	18(55)	6(46)	92(50.0)
B- Availability of sufficient funds	12(41)	16(26)	16(33)	9(27)	5(39)	58(32.0)
C- Parental consent	4(14)	10(17)	11(23)	6(18)	2(15)	33(18.0)
My final decision regarding travel is						
A- Yes	21(73)	44(73)	30(62)	20(61)	12(92)	127(69.4)
B- No	8(27)	16(27)	18(28)	13(39)	1(8)	56(30.6)

Table 3 Reasons for migration in Anbar and Fallujah medical students in relation to gender (n=127)

The main reason for travel	Male	Female	Total
	N (%)	N (%)	N (%)
Special (not identified)	19 (46)	40 (47)	59 (46)
Social	9 (22)	20 (23)	29 (23)
For academic achievement	4 (10)	16 (19)	20 (16)
Security	6 (15)	8 (9)	14 (11)
Tourism	3 (7)	2 (2)	5 (4)
Financial	-	-	-
Total	41	86	127

Furthermore, 58% declared that they look for a better future for their family outside Iraq. It seems that the religion and looking for a better future for their family were the main variables influencing two thirds (69.0%) of students to choose the personal and social reasons as the main triggering factors for migration. They were inspired by academic achievement, as indicated in 20 (16.0%) of surveyed students. This could be explained partly by the job dissatisfaction of previous colleagues who practiced medicine as rotators in low rank and unsatisfactory accreditation of local medical institutions and is supported by regional studies conducted in Iraq and Lebanon [8, 23, 27]. Gender variation is not correlated with all causes. Apart from academic reasons, females were generally more interested in training improvement, and higher education than males [31], which might be simply justified by the higher number of females in all included medical classes; otherwise, no obvious factor can be correlated.

Unlikely, the security situation was at the bottom of the list to be a reason to migrate among 14 (11%) students, which most likely attributed to the relative feeling of safety among people of the Anbar governorate after liberation from ISIS; thus, security has not taken as a priority. Moreover, the apparent gender difference in the security is related to exposure to violence rather than gender itself, i.e., nearly all students who had previously exposed to violent attacks, against them or their families; were accepting security as the main reason regardless of their gender [8]. Surprisingly, none of the responded medical students considered a financial factor as the leading cause to leave as it was in the 1990s of the last century and the early 2000s of the current century [8]. This finding may go partly with students' belief that Iraq is still more beneficial than other states from the economic point of view, probably owing to satisfaction with their current income (50% high, 50% middle, 0% low) and relatively adequate income for medical doctors in all of the Iraqi medical structures whether it was the governmental or private sector. Lastly, the difference between Anbar and Fallujah students were not eligible, and the same was true among middle and late classes. About 60% of students (109) felt that serving their citizens and country comes first, and 54 (30%) confessed that the sake of their country comes after their interest, unlike 18 (10%) who lacked national belong and loyalty in their decision. Despite these outputs that were sound encouraging, the last reading looks the contrary instead; more than two thirds (126, 69.0%) of students intended to migrate as

soon as they manage to: obtain their graduation certificate in half of them (83, 49%); have enough money (42, 34%), and the remaining (22, 18%) when they get parents' permission.

On the other hand, and only one third (31%) overtook all the above challenges and decided to stay whatever it costs. There is no significant gender difference concerning other leading causes, as illustrated in Table 3. There are some limitations to this study. First, researchers measured intentions to leave rather than actual migration, which could be changed after the student graduated. Furthermore, there might be a response bias, because we had no information about the non-respondent students which were relatively high (27.4%). Some students (about 10%) were not in their mood at the time of the survey for being busy with exams. As a result, their answers were rather aggressive. Because of a cross-sectional design, the study could not be possible to build a causal relationship among the variables. This survey included only students from Anbar and Fallujah universities so that students in other universities of the country could likely have had differing plans and intentions.

Conclusion

Over the last three decades, the Iraqi healthcare system had a complaint with a serious shortage of qualified doctors. Intention to migrate reported in over fifty percent of medical doctors. Although it has not disclosed, the relative sense of security after liberation from ISIS was directly affected the students' way of thinking. Among the remarkable results of this study was the high percentage (69.0%) of medical students who wish to leave the country after graduation. It is clear that security concerns still affect the students' decision-making process. Most of the surveyed students justified their intention to migrate for personal or social reasons; however, this interpretation contradicts the high proportion of intention to leave. The urgent and thoughtful intervention at an undergraduate level has become necessary to avoid further brain drain. More reassuring measures for medical students to ensure future career, training opportunities, attending scientific conferences, improving salaries, providing legal protection, and guiding society to express more respect to health workers.

Abbreviations

ISIS: Islamic State of Iraq and Syria; N or n: Number

Declarations

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Availability of data and materials

Data will be available by emailing ma_m776@yahoo.com.

Authors' contributions

MA is the principal investigator of the study who designed the study and coordinated all aspects of the research, including all steps of the manuscript preparation. He is responsible for the study concept, design, writing, reviewing, editing, and approving the manuscript in its final form. SAAJ contributed in the study design, analysis and interpretation of data, drafting the work, writing the manuscript and reviewed and approved the manuscript. All authors read and approved the final manuscript.

Ethics approval and consent to participate

We conducted the research following the Declaration of Helsinki, and the Ethical Committee of the Faculty of Medicine, University of Anbar,

approved the protocol (Ref: official letter No. 249 issued on 27th February 2018). Confidentiality was assured with signed informed consent.

Consent for publication

Not applicable

Competing interest

The authors declare that they have no competing interests.

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