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UNIVERSITÉ SIDI MOHAMED BEN ABDELLAH DE FES

Year 2025 **Thesis N°115/25**

WHY MOVE ABROAD?
Factors influencing migration intentions of doctors and medical students in Morocco

THESIS

PRESENTED AND PUBLICLY DEFENDED ON 15/04/2025

BY

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Born on November 30th, 1999, in Fez

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FOR THE OBTENTION OF A MEDICAL DOCTORATE (MD)

KEYWORDS:
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JURY

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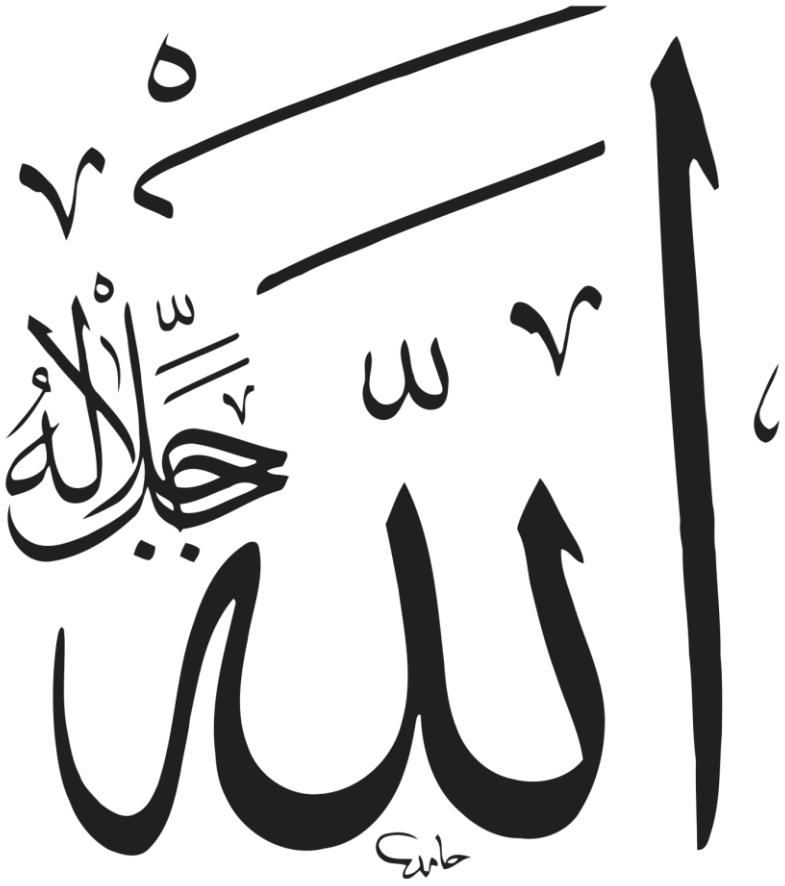
M.	**AMRAOUI ALLAL**…… General Surgeon and Member of the Moroccan Parliament	ASSOCIATED MEMBER

DEDICATION

It is with love, respect, and gratitude that I dedicate this thesis to:



To Allah Almighty, in whom I deeply believe,

who inspired me, guided me on the right path, and allowed me to witness this long-awaited day.

I am grateful to Him for what I have been, what I am, and what I will become, Insha'Allah.

To My Beloved Parents,

I wish to express my deepest gratitude for your unconditional support throughout this academic journey.

This work is the result of the immense efforts and countless sacrifices you made for my education and growth.

You have been my pillars every step of the way, and it is largely thanks to you that I was able to complete this project.

From the bottom of my heart, thank you.

I pray that Allah grants you good health and a long life so that I may, in turn, bring you the happiness you so deserve.

To My Sweet Little Sister And Colleague, HbHb,

Your presence has filled this journey with joy, lightness, and a much-needed dose of silliness.

From the echoes of our childhood giggles to the moments shared during this academic adventure, you've been a constant source of support and warmth.

Having you by my side as both a sister and colleague has made this experience even more meaningful.

I wish you a future filled with happiness, health, and success. May Allah protect you always and bless you with all the good this life has to offer.

In Loving Memory Of My Grandparents,

I dedicate this humble work to you as a token of my deep love and affection.

May your souls rest in peace.

May Allah Almighty envelop you in His Divine Mercy.

To My Maternal And Paternal Family,

I dedicate this work to all of you in gratitude for your support, love, and encouragement.

Within these pages lies a reflection of my affection for you, along with my sincere wishes for your happiness.

May Allah Almighty protect you and grant you health and joy.

To Mahdi,

You've been a constant presence through every high and low, always knowing how to bring calm in the chaos. Your quiet strength, your thoughtful presence, endless patience, and way of making everything feel lighter have meant more to me than words can say. Thank you for always being there, for your support, your gentleness, and all the unspoken ways you've made this journey easier and more beautiful.

I couldn't have done it the same without you.

To Kenza,

Loud, impulsive, and armed with sarcasm at all times, you somehow manage to be both chaos and comfort in one person. Our friendship is built on endless teasing, unpredictable moments, and a mutual refusal to admit we actually care. But the truth is, behind every exaggerated sigh and fake insult, you've been one of the most real and irreplaceable people in my life. You're a storm I've learned to love—though I'll deny I ever said that.

And even if you'll deny it too, I know you love me.

To Ayoub,

I may always call you spoiled (because you are), and I'll probably never stop reminding you of it, but deep down, I know I can rely on you. Like the brother I never had, your presence brings a quiet kind of reassurance, and for that, I'm truly grateful.

Thank you for always hosting with such generosity, and for that oddly endearing fixation on turning off all the big lights just to keep that one little lamp on, it's those quirks that somehow make everything feel like home.

And even if 90% of your suggestions get shut down on the spot, it's comforting knowing you'll keep making them anyway.

To Yasmine,

You were one of the first friends I made on my own, during the very beginning of our internship clinical rotations, and that alone makes our bond so special to me.

You've always had this soft, gentle energy that draws people in, and being around you has felt comforting from the start. Your girly nature and playful spirit are such a big part of what makes you so lovable, genuine, lighthearted, and completely yourself. I'm also forever grateful for our shared love of kitties, even if Smolly nearly ended me that one time.

You've made this journey brighter, warmer, and a whole lot more fun just by being in it.

To Aadel,

You've probably spent more time bullying me than actually being nice, but somehow, that's become one of the most reliable constants in the last year. Your sarcasm, your perfectly timed roasts, and your chaotic sense of humor never fail to make things more entertaining. And as much as I act annoyed, I secretly (very secretly) appreciate how effortlessly you manage to make everything funnier, even when I don't want to laugh.

Also, thanks for all the sweet treats—your way of being nice without actually acting like it.

To all five of you,

Thank you for these past years, for the memories we've created and the bond we've built along the way. From the travels and spontaneous adventures to the games we played and the late-night drives back home, every moment has meant something. I'll always remember the shared jokes, the laughter that brought us to tears, and the way being with you all made even the most ordinary days feel special.

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I love each of you immensely. Thank you for being my people. May we stay together, through everything that's still to come.

To My Bub Afaf,

Even with the distance between us, your presence has remained a steady comfort in my life.

From our shared shifts—though regrettably too few—to our cherished coffee dates (always made sweeter with a little treat), you brought light and warmth to even the most difficult days.

You've been my safe space, my biggest cheerleader, and a reminder that true friendship knows no distance.

Thank you for being by my side, in spirit, in messages, and in every memory that lives in my heart.

This work wouldn't have been the same without you, and neither would I.

To Zakariae, Meryem, Nisrine, Amina

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Thank you for your friendship, your support, and for walking beside me during those formative years.

This work carries a part of everything we've lived together.

To The 22nd Class Of Medical Interns, My Dear Colleagues,

From the very first day, you welcomed me with open arms and made me feel at home.

Your warmth, kindness, and infectious silliness turned this intense journey into a collection of unforgettable memories.

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Your resilience and lighthearted spirit brought brightness to even the toughest moments, and I'll always cherish the times we turned exhaustion into jokes and support into lifelong bonds.

I'm proud to have grown beside you through it all.

May Allah bless you all with success in your careers, peace in your hearts, strength in adversity, and joy in every step of your journey.

To all my professors and mentors, who generously shared their knowledge with me.

To all those whose names may not be mentioned here but who remain deeply present in my heart, to everyone dear to me whom I may have unintentionally overlooked.

To all who contributed, whether directly or indirectly, to the realization of this work.

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To Our Professor and Thesis Protractor, Pr. Abdellaoui Meriem
Professor of Ophthalmology at Hassan II University Hospital in Fez

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Your human qualities, combined with your dedication and generosity, have earned my highest respect and admiration. Throughout this journey, your support and wise counsel have been a constant source of motivation and inspiration.

Please accept my sincere gratitude for your trust, your patience, and the invaluable role you've played in guiding my first steps on this path.

To Our Professor and Thesis President, Pr. Sqalli Houssaini Tarik
Professor of Nephrology at Hassan II University Hospital in Fez
Dean of the Faculty of Medicine, Dentistry and Pharmacy of Fez

I am deeply honored and grateful for your acceptance to preside over this thesis defense. Your presence at this important milestone adds great value to my work and fills me with pride.

Through your humility, kindness, and strong sense of duty, you embody the noble human values of our profession. You have shown me that beyond knowledge, it is through example and commitment that true mentors shape future generations. I will always carry with me the image of a dedicated, inspiring, and deeply respected teacher.

Please accept, Professor, my most sincere thanks and highest consideration.

To Our Professor and Thesis Judge, Pr. Benatiya Andaloussi Idriss
Professor of Ophthalmology at the Hassan II University Hospital in Fez

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To Our Professor and Thesis Judge, Pr. Berraho Mohamed
Professor of Epidemiology, Clinical Research, and Community Health at the Faculty of Medicine, Dentistry and Pharmacy of Fez

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Thank you, Professor, for your support, your insightful contributions, and the example you set through your dedication to education, research, and community health.

To Dr. Allal Amraoui

Surgeon and Member of the Moroccan Parliament

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As both a physician and a political figure, you embody a rare and admirable commitment to serving others, whether in the hospital or in the halls of Parliament.

Thank you, Doctor, for your support and for honoring this project with your involvement.

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LIST OF ABBREVIATIONS

CBME	Competency-Based Medical Education
CI	Confidence Interval
COVID-19	Coronavirus Disease 2019
FMPA	Faculty of Medicine and Pharmacy of Agadir
FMPC	Faculty of Medicine and Pharmacy of Casablanca
FMPDF	Faculty of Medicine, Pharmacy, and Dentistry of Fez
FMPM	Faculty of Medicine and Pharmacy of Marrakech
FMPO	Faculty of Medicine and Pharmacy of Oujda
FMPR	Faculty of Medicine and Pharmacy of Rabat
FMPT	Faculty of Medicine and Pharmacy of Tangier
HICs	High-Income Countries
LMICs	Low- and Middle-Income Countries
OECD	Organization for Economic Co-operation and Development
PLAB	Professional and Linguistic Assessments Board
RFS	Return-for-Service
UAE	United Arab Emirates
UK	United Kingdom
US	United States
USMLE	United States Medical Licensing Examination
WHO	World Health Organization

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INTRODUCTION

Migration is broadly defined as the movement of individuals from one location to another, either within national borders (internal migration) or across international boundaries (international migration). This movement is influenced by various factors, including economic opportunities, political instability, environmental conditions, and social aspirations. Migration may be voluntary, driven by the pursuit of improved living conditions and career prospects, or forced, as in the case of refugees and asylum seekers fleeing conflict or hardship. (1)

Throughout history, migration has played a key role in shaping civilizations, cultures, and economies. While early human migration was driven by the search for resources and security (2,3), modern migration is increasingly influenced by globalization, technological advancements, and economic disparities. (4) Despite shifting contexts, migration remains an essential human response to challenges and opportunities, demonstrating both adaptability and resilience. (5)

Within this broader migration framework, the term ”brain drain” refers to the international transfer of resources in the form of human capital and mainly applies to the migration of relatively highly educated individuals from developing to developed countries. In the non-academic literature, the term is generally used in a narrower sense and relates more specifically to the migration of engineers, physicians, scientists, and other very highly skilled professionals with university training. (6)

The migration of medical professionals, in particular, has become a pressing issue in many developing nations, where healthcare systems often struggle with workforce shortages due to the emigration of qualified doctors and medical students seeking better opportunities abroad.

In Morocco, this phenomenon is of growing concern as increasing numbers of medical students and professionals express intentions to move abroad. While multiple studies have explored the general drivers of migration, limited research has specifically examined the motivations and barriers influencing Moroccan medical professionals' migration decisions. Understanding these factors is crucial in developing effective policies to retain talent and ensure the stability of the national healthcare system.

I. Objectives:

Thus, the primary objectives of this study are to assess migration intentions among Moroccan medical students, interns, and residents, identify key motivations influencing their decisions, examine barriers preventing migration, analyze socio-demographic and academic factors affecting migration choices, and propose strategies to improve retention in Morocco's healthcare system.

Additionally, the study aims to identify preferred migration destinations, evaluate the role of international exposure, and compare migration motivations and barriers between students, interns, and residents.

By addressing these objectives and adopting a comprehensive and context-specific approach, this research seeks to contribute to the broader discourse on healthcare workforce retention and inform strategies for strengthening Morocco's healthcare system.

MATERIALS AND METHODS

I. Study design and setting:

To address the aforementioned objectives, we conducted a cross-sectional descriptive and analytic study from 07/01/2025 to 16/02/2025.

II. Study Population:

The target population comprised medical students from the first till the seventh year, including interns enrolled in Moroccan medical faculties and residents pursuing their training in various specialties within university hospitals across different cities in Morocco.

III. Selection criteria:

1. Inclusion Criteria

-Medical students, interns, and residents enrolled in Moroccan medical faculties.

2. Exclusion Criteria

-Non-consenting participants.

-Graduated medical doctors (general practitioners, specialists), professors, nurses, pharmacists, and healthcare students, apart from medical students.

IV. Sampling Method:

A non-probabilistic convenience sampling method was used to recruit participants.

V. Data Collection

To ensure comprehensive data collection:

1. A thorough literature review was conducted to refine the study objectives and guide questionnaire development.
2. A preliminary questionnaire was designed and pre-tested on five medical students to identify ambiguities or unclear questions.
3. After necessary modifications, the final version was validated by the Clinical Research Department of Mohammed VI University Hospital in Marrakech.

The questionnaire (Appendix A), developed in French, was structured into five sections, incorporating both closed-ended and open-ended questions:

1. Section A: Socio-demographic information;

The first section included questions about gender, age, marital status, perceived socioeconomic status, medical faculty, and academic level.

2. Section B: International experience and language proficiency:

The second section covered:

- Previous work or study abroad experience in the medical field (country and duration)
- Language proficiency
- Concrete steps taken to study or work abroad.

3. Section C: Migration intentions and preferences.

This section explored the participants' intentions to migrate and their preferences:

- Intentions to work or settle abroad during their medical career.
- Preferred migration destinations.
- Temporary and permanent migration preferences.

4. Section D: Motivations and barriers to migration

This section used a Likert scale ranging from 1 to 5 (1 = strongly disagree; 2 = disagree, 3 = neither agree nor disagree, 4 = agree, 5 = strongly agree) to measure the degree of agreement with various motivations and barriers influencing migration decisions.

Two optional open-ended questions were used to gather further insights about any other motivations or barriers that weren't already mentioned.

5. Section E: Suggestions and recommendations.

This section was optional. It collected open-ended questions regarding proposed improvements to the Moroccan healthcare system to enhance medical professional retention.

Once validated, the questionnaire was converted into an online format using Google Forms to facilitate accessibility and ease of participation.

It was then distributed through:

- Social Media Platforms: Facebook and WhatsApp groups dedicated to medical students and residents.
- Professional Associations: Announcements were made through the networks of the Association of medical interns and residents of Fez, the Association of medical interns of Marrakech , and Almoquim; the Association of residents of Marrakech
- University networks: To further reach potential responders, the Faculty of Medicine, Pharmacy, and Dentistry of Fez's (FMPDF) mailing lists for interns, residents, and medical students were used.

The estimated completion time for the questionnaire was approximately 10 minutes.

VI. Data entry and statistical analysis:

Statistical analyses were conducted by the Clinical Research Department of Mohammed VI University Hospital in Marrakech using Statistical Package for Social Sciences version 25 after it was automatically inserted into Google Sheets.

1. Dependent variables

Two main dependent variables were analyzed:

a. Overall Migration Intention: A binary variable (yes/no) indicating whether participants expressed the intention to work or settle abroad at any point in their medical career.
b. Permanent Migration Intention: A binary variable (Yes/No) assessing whether participants intended to permanently settle abroad rather than migrating temporarily.

2. Descriptive analysis:

A descriptive analysis was performed to examine socio-demographic characteristics, academic and professional levels, international experience, migration intentions, motivations, and perceived barriers.

Results were expressed as mean ± standard deviation for quantitative variables and as frequencies and percentages for categorical variables.

3. Comparative analysis and statistical tests:

To identify socio-demographic and academic factors associated with migration intentions, the Chi-square test and Fisher's exact test were used for categorical

variables. For comparisons of means between groups, the non-parametric Mann-Whitney test was applied.

For the analytical results, where statistical comparisons were performed, responses on the Likert scale regarding motivations and barriers were dichotomized as follows:

- "Strongly agree" and "Agree" were categorized as a "Yes" response indicating agreement with the motivation or barrier.
- "Neither agree nor disagree," "Disagree," and "Strongly disagree" were categorized as a "No" response indicating lack of agreement.

This transformation was applied only in the analytical results, where p-values were calculated for statistical comparisons; the descriptive results kept the full Likert scale distribution.

Another comparative analysis of motivations and barriers was conducted to assess differences between medical students and interns/residents. The same statistical tests (Chi-square, Fisher's exact test) were used to evaluate significant differences between these groups

The significance level was set at 5% ($p < 0,05$), and 95% confidence intervals (CI) were reported for key estimates.

4. Thematic analysis:

A thematic analysis was performed on open-ended responses to identify key themes related to migration motivations, barriers, and recommendations.

VII. Ethical Considerations:

Throughout this study, we ensured adherence to ethical principles, particularly respecting participant anonymity and data confidentiality. No personal identifying information was collected at any stage.

The questionnaire included an introduction outlining the study's objectives, emphasizing the voluntary nature of participation, and assuring respondents of their privacy. Consent was obtained through a checkbox before participation.

RESULTS

I. Descriptive results:

1. Socio-demographic data

The study included a total of 313 participants, with 177 medical students (56,5%) and 136 interns and residents (43,5%), of whom 57 were interns (18,2%) and 79 were residents (25,2%), as demonstrated in Figure 1.

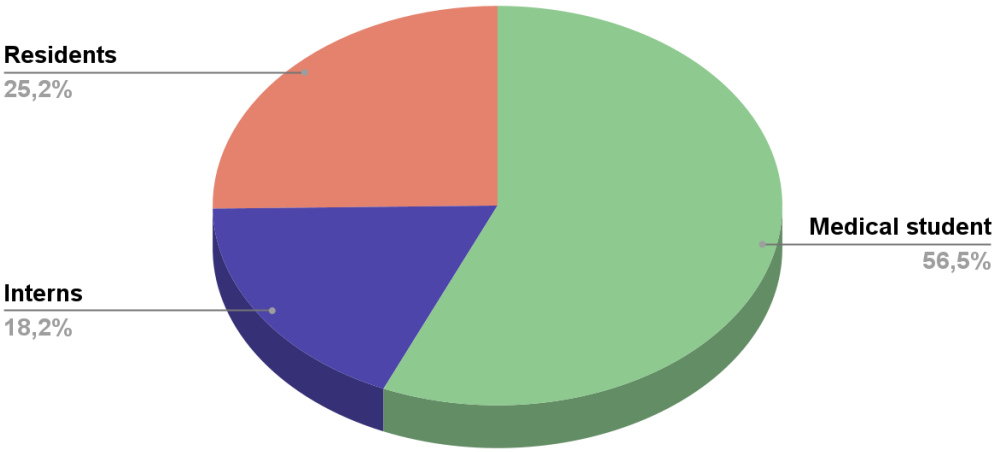

Figure 1: Composition of the Study participants

1.1 Age distribution

The total study population had an average age of 24,48 years (± 3,27), with a median age of 25 years. The age ranged from 17 to 46 years, with the most represented age group being 25 years old (24,9%).

While medical students' mean age was 22,76 years (±2,208), with a median age of 22 years. Their age range extended from 17 to 29 years, with the most represented age group being 25 years old (19,8%).

Interns and residents had a mean age of 26,72 years (± 3,071), with a median age of 26 years. The age range varied from 20 to 46 years, with 25-year-olds (31,6%) being the most represented.

The distribution across age groups is shown in figure 2.

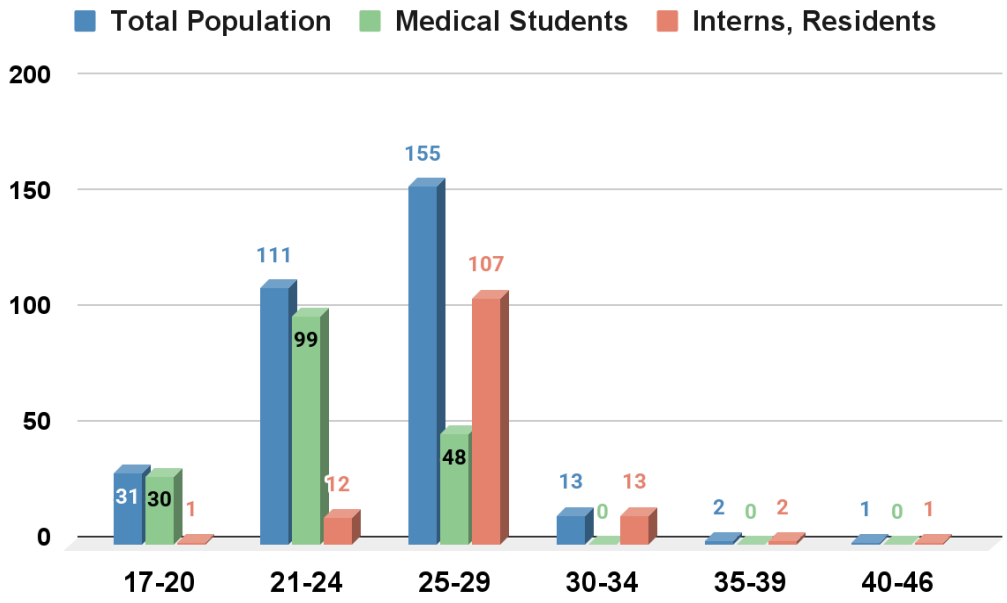

Figure 2: Age distribution among students, interns, and residents

1.2 Gender distribution

The study population was predominantly female, with 65,8% of participants being women and 34,2% being men.

For medical students, 62,7% were female and 37,3% were male.

Among interns and residents, 69,9% were female, while 30,1% were male.

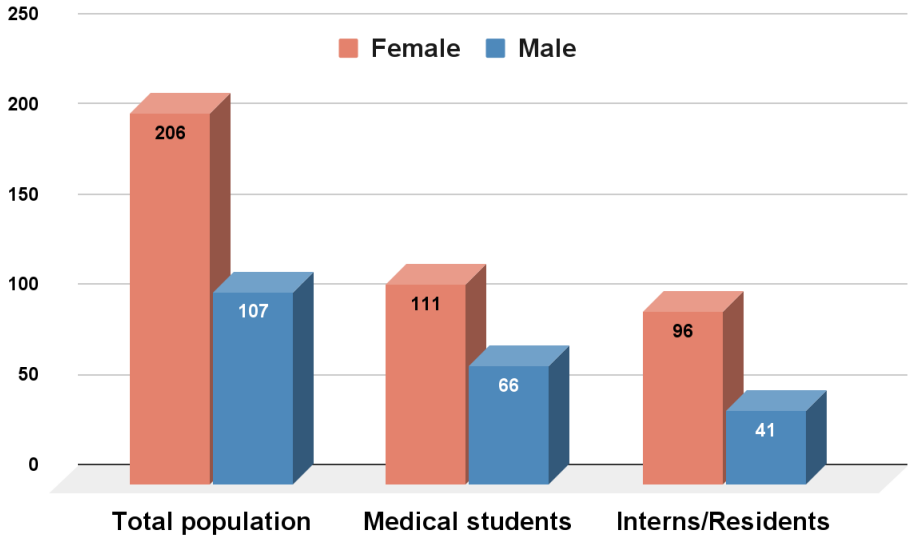

Figure 3: Gender distribution among study participants

1.3 Marital status

As illustrated in figure 4, the vast majority of participants were single, particularly among medical students, as 98,9% were single and 1,1% were married.

As for interns and residents, 78,7% were single, 20,6% were married, and 0,7% were divorced.

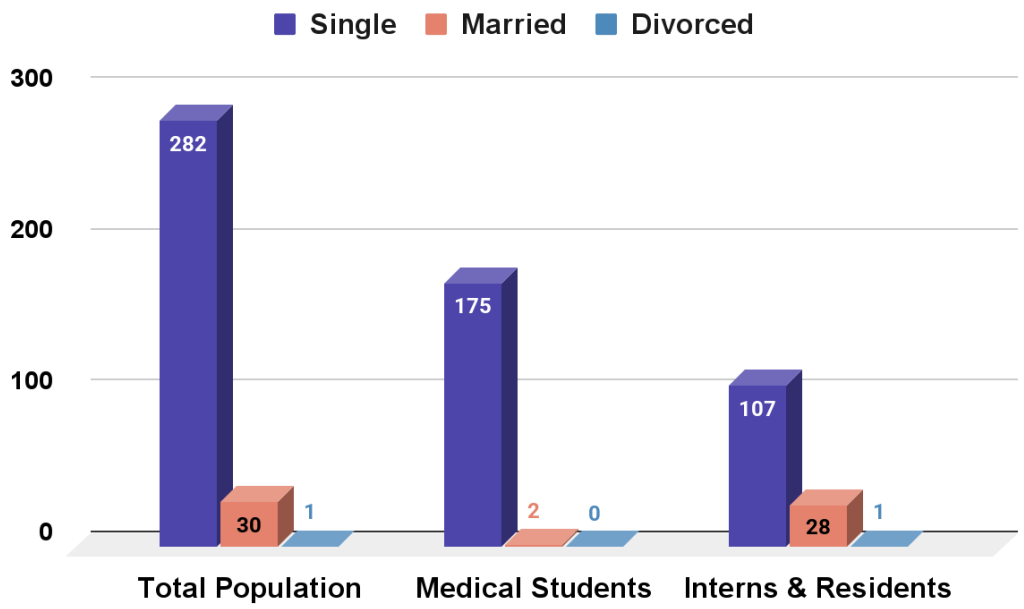

Figure 4: Marital status of study participants

1.4 Socio-Economic perception

Among the total study population, 87,5% identified as middle-class, while 3,5% considered themselves in the low socio-economic category and 8,9% in the high socio-economic category.

Among medical students, a similar trend was observed, with 90,4% identifying as middle-class, 2,3% as low socio-economic status, and 7,3% as high.

For interns and residents, the middle class remained the dominant group at 83,8%, though a slightly higher proportion (5,1%) identified as low socio-economic status and 11,0% as high, as depicted in Figure 5.

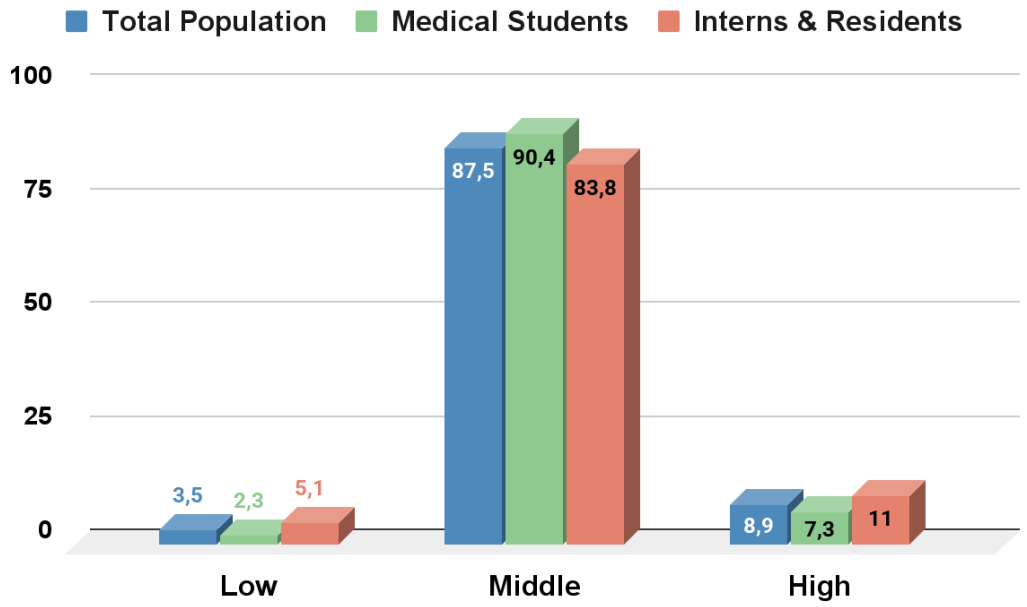

Figure 5: Socio-economic self-perception of study participants

1.5 Medical Faculty

The distribution of participants across medical faculties varied between medical students, interns, and residents; FMPDF (40.9%) and the Faculty of Medicine and Pharmacy of Marrakech (FMPM) (33.5%) had the highest representation, contributing the majority of participants. Among medical students, FMPDF was the most represented (54.8%), followed by FMPM (11,2, the Faculty of Medicine and Pharmacy of Rabat (FMPR)(9.0%), and the Faculty of Medicine and Pharmacy of Casablanca (FMPC) (7.9%). In contrast, interns and residents were predominantly from FMPM (62.5%), with FMPDF accounting for 22.8% of this subgroup. Other faculties, including the Faculty of Medicine and Pharmacy of Oujda (FMPO), the Faculty of Medicine and Pharmacy of Tangier (FMPT), and the Faculty of Medicine and Pharmacy of Agadir (FMPA), had lower representation across all groups, as presented in Figure 6.

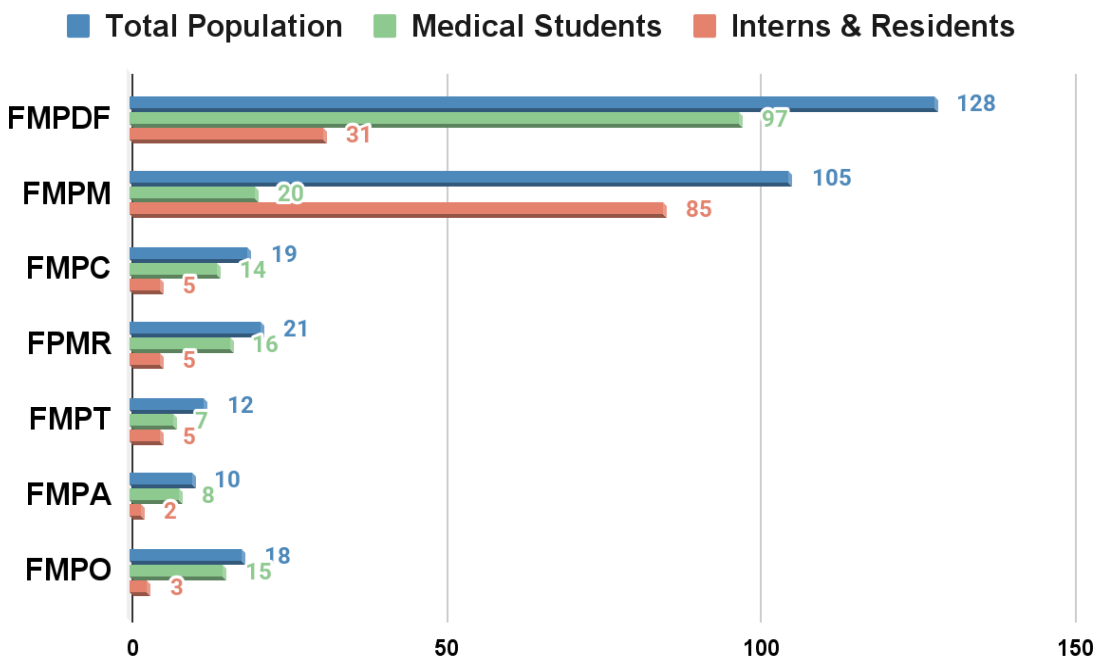

Figure 6: Distribution of participants by Medical faculty

1.6 Academic and professional level

The distribution of years of study among medical students (177) showed a higher concentration in the later years, with 65 students (36,7%) in their 7th year, 31 (17,5%) in the 5th year, and 25 (14,1%) in the 6th year. The 3rd and 4th years had 24 (13,6%) and 16 (9,0%) students, respectively, while the lowest representation was in the 1st and 2nd years, with only 9 (5,1%) and 7 (4,0%) students, respectively, as illustrated in figure 7.

For residents (79), the highest proportion was in the 1st year (36, 45,6%), followed by the 2nd and 3rd years (14 students each, 17,7%). The numbers gradually declined in later years, with 7 (8,9%) in the 4th year and 8 (10,1%) in the 5th year, as shown in Figure 8.

Regarding interns (57), 47 (82,5%) are in their second year, while 10 (17,5%) are first years, as presented in figure 9.

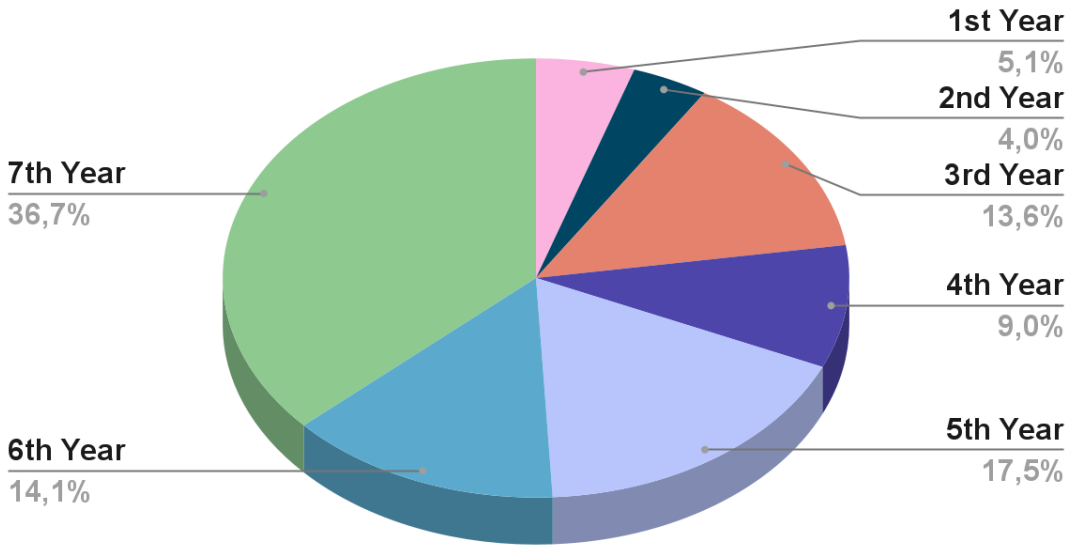

Figure 7: Academic level distribution of medical students

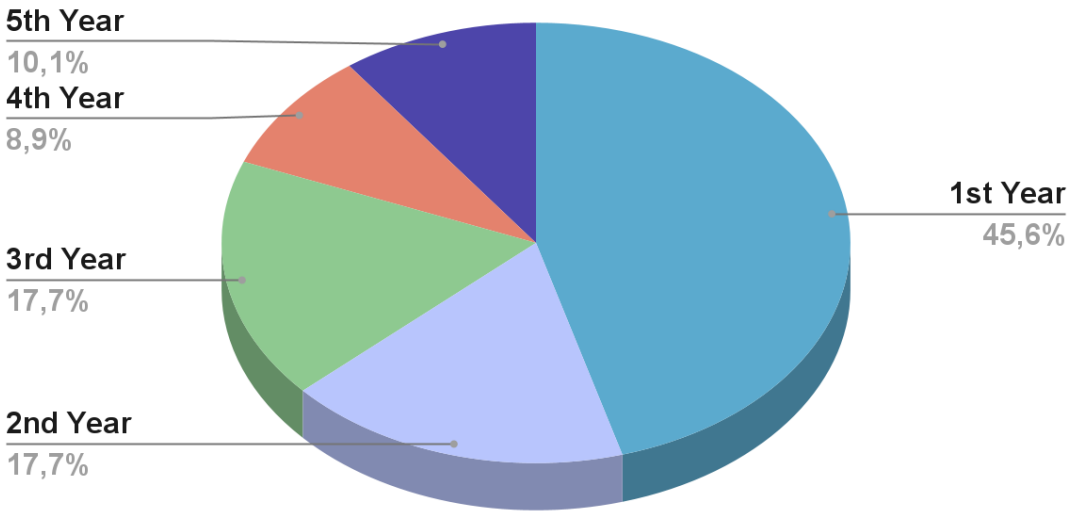

Figure 8: Academic level distribution of residents

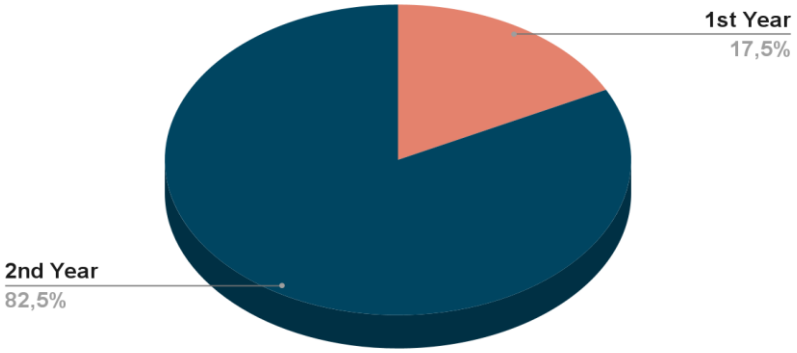

Figure 9: Academic level distribution of interns

2. International experience and language proficiency and procedures taken to study or work abroad:

2.1 International experience:

Among the total study population, the majority (90,1%) had never worked or studied abroad in the medical field, while only 9,9% had international experience. Medical students showed a similar trend, with 91,5% reporting no prior foreign study or work experience and just 8,5% having such exposure. In contrast, a slightly higher percentage of interns and residents (11,8%) had gained international experience, though the vast majority (88,2%) had not, as illustrated in Figure 10.

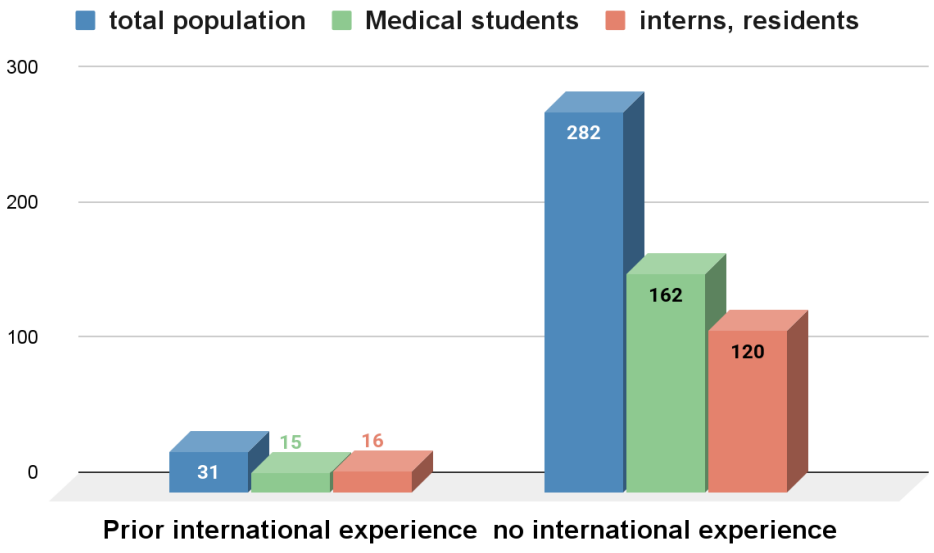

Figure 10: Exposure to international medical experience among participants

2.2 Preferred destinations:

Among the 31 respondents who have traveled abroad for medical-related experiences, France stands out as the most frequently visited country, accounting for a significant majority of visits (54,8%). Belgium follows with 12,9% of the responses, while Canada, Croatia, and the Czech Republic each recorded smaller proportions of visits. Countries such as Nigeria, Cameroon, Wales, Russia, Switzerland, Tunisia, and Italy had relatively lower representation, each accounting for a minor share of international exposure. (Table 1)

Table 1: Past international medical experience by destination

Country	Frequency N=31	percentage (%)
France	17	54,8
Belgium	4	12,9
Canada	1	3,2
Croatia	1	3,2
Czech Republic	1	3,2
Nigeria	1	3,2
Cameroon	1	3,2
Wales	1	3,2
Russia	1	3,2
Switzerland	1	3,2
Tunisia	1	3,2
Italy	1	3,2

2.3 Duration of international experience:

Among the respondents who participated in an international medical experience, 1 month was the most frequently reported duration, accounting for 36,7% of cases. 2 months was the second most common duration, reported by 23,3% of respondents. Stays of 6 months (20,0%) and 12 months (16,7%) were less

frequent, while only 3,3% of respondents reported a 24-month stay as depicted in figure 11.

These findings indicate a range of international stay durations, with short-term experiences being more prevalent.

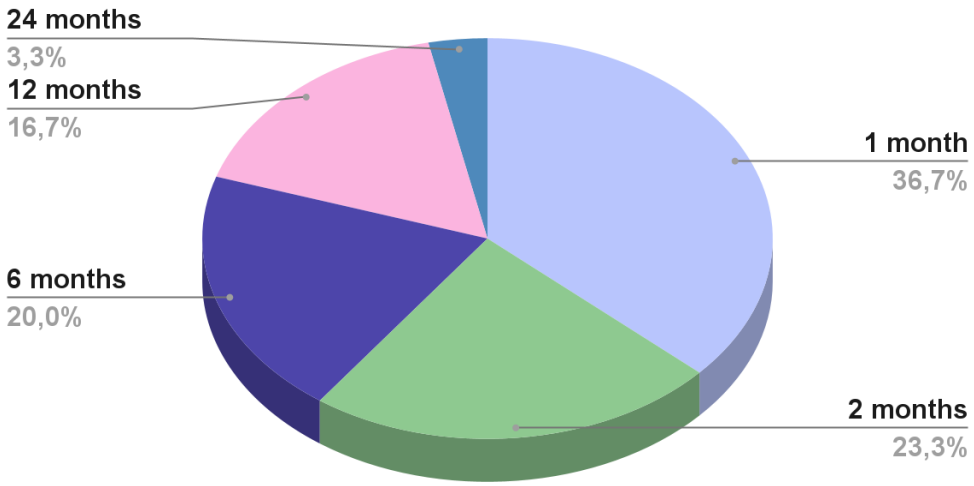

Figure 11: Duration of international medical experience among participants

2.4 Language proficiency:

97,4% of respondents reported proficiency in at least one foreign language as shown in figure 12. Among the total population, 98,0% speak French, 92,5% speak English, 9,5% speak Spanish, and 7,9% speak German. Russian, Italian, Turkish, Dutch, and Swedish are spoken by less than 2,0% of the respondents. As for medical students, 96,6% reported foreign language proficiency, with 97,7% speaking French, 94,2% speaking English, 11,7% speaking Spanish, and 4,7% speaking German. Among interns and residents, 98,5% reported foreign language proficiency, with 98,5% speaking French, 90,3% speaking English, 6,7% speaking Spanish, and 11,9% speaking German. Russian, Italian, Turkish, Dutch, and Swedish remain below 2,0% in both subgroups, as detailed in figure 13.

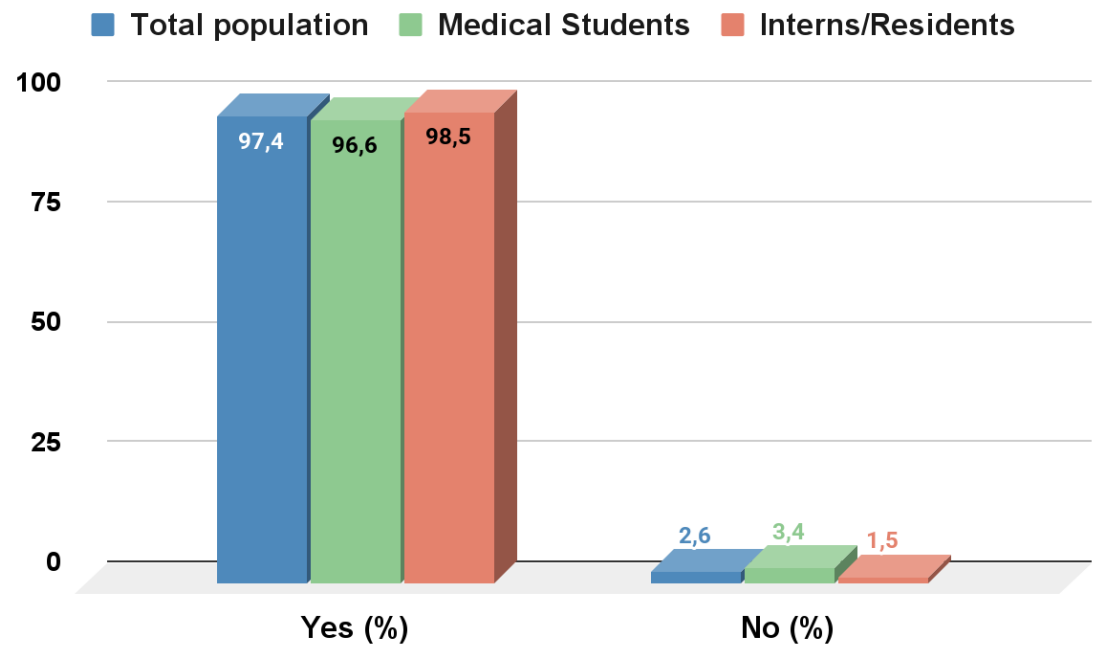

Figure 12: Foreign language proficiency among participants

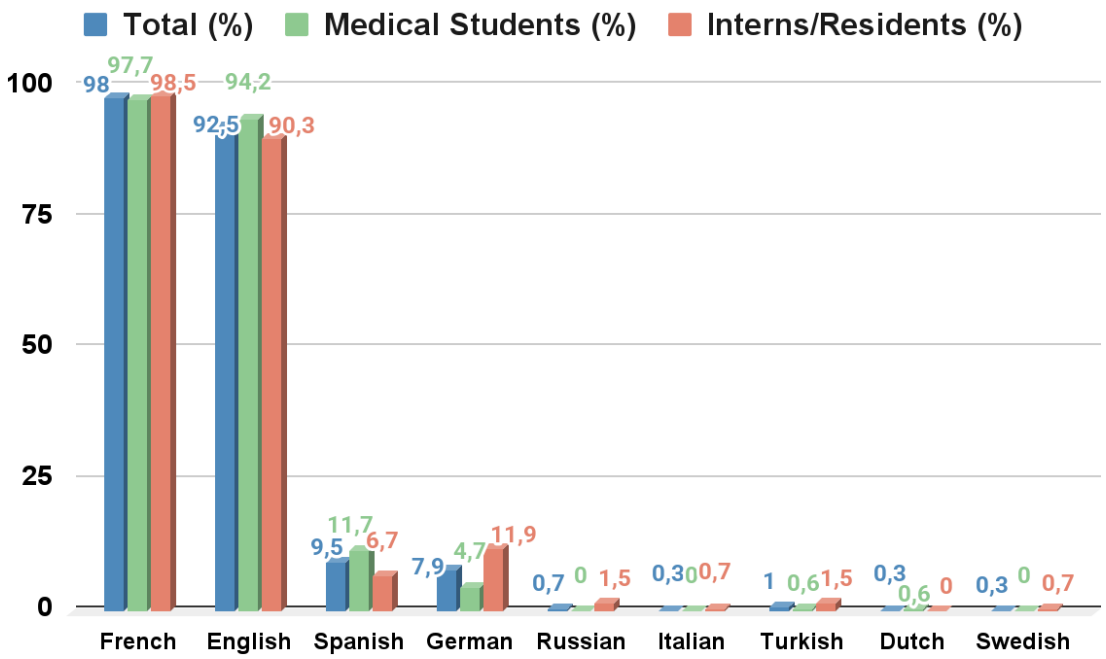

Figure 13: Proficiency in various languages among participants

2.5 Procedures initiated to study or work abroad:

The results showed that 29,4% (N=92) of the total respondents have taken steps to study or work abroad in the medical field, while 70,6% (N=221) had not. Among medical students, 32,2% (N=57) reported initiating procedures to work or study abroad, while 67,8% had not. For interns and residents, 25,7% (N=35) have taken such steps, whereas 74,3% have not.(figure 14)

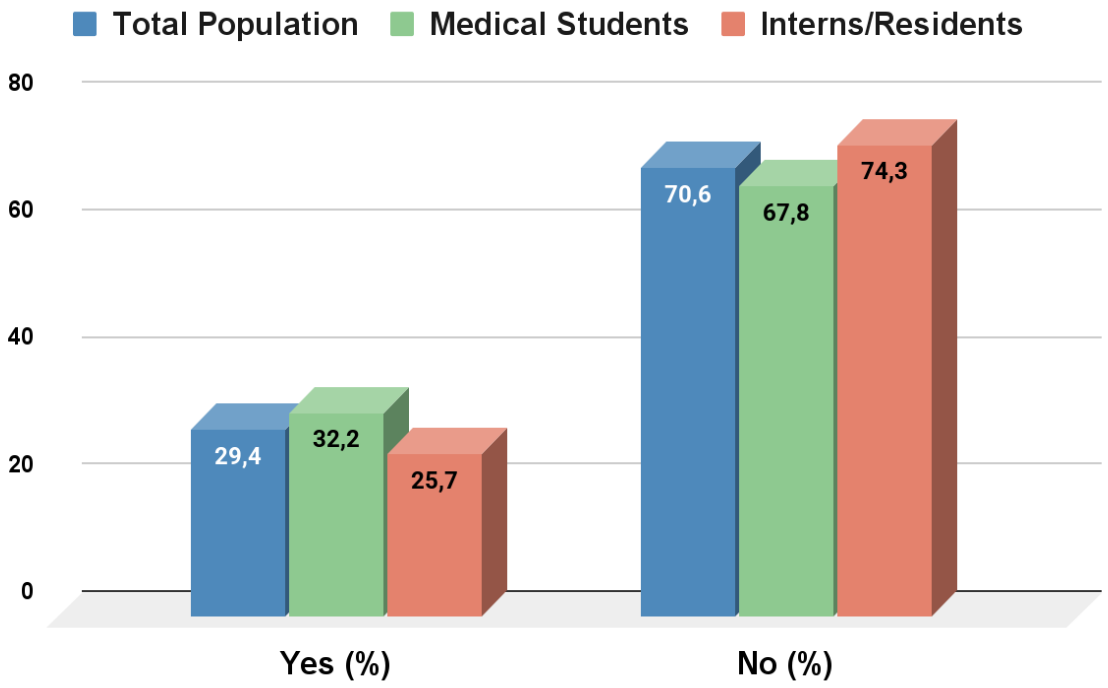

Figure 14: Proportion of participants who initiated migration procedures

The most commonly reported procedure among respondents was researching information online, with 84,8% of the total population, 84,2% of medical students, and 85,7% of interns/residents engaging in this activity. Networking with emigrated professionals followed closely, with 73,9% of the total population, 70,2% of medical students, and 80,0% of interns/residents. Taking language certifications was another frequent step, reported by 59,8% overall, with 52,6% among medical students and 71,4% among interns/residents. Job searching has been pursued by 28,3% of the total population, with a higher frequency among interns/residents (37,1%) compared to medical students (22,8%). Updating professional qualifications has been reported by 14,1% overall, with 10,5% among medical students and 20,0% among interns/residents. The least common step was taking medical certification exams

(e.g., UnitedStates medical licensing examination (USMLE), Professional and Linguistic (PLAB)), reported by 10,9% overall, 12,3% of medical students, and 8,6% of interns/residents.(Table 2)

Table 2: Types of initiated migration procedures

Steps taken	Total Frequency N=92	Total Percentage (%)	Medical Students Frequency N=57	Medical Students Percentage (%)	Interns/ Residents Frequency N=35	Interns/ Residents Percentage (%)
Internet Research	78	84,8	48	84,2	30	85,7
Networking with Emigrated Professionals	68	73,9	40	70,2	28	80
Language certification	55	59,8	30	52,6	25	71,4
Job Search	26	28,3	13	22,8	13	37,1
Updating Professional Qualifications	13	14,1	6	10,5	7	20
Medical Certification Exam (USMLE, PLAB)	10	10,9	7	12,3	3	8,6

3. Migration intentions and preferences:

3.1 Overall migration intention:

Among all respondents, 174 individuals (55,6%, 95% CI: 50,1% - 61,0%) expressed an intention to work or settle in another country during their medical career, while 139 (44,4%) did not. Among medical students, 123 (69,5%, 95% CI: 62,3% - 75,9%) reported intending to work abroad, compared to 54 (30,5%) who did not. In contrast, among interns and residents, 51 (37,5%, 95% CI: 29,6% - 46,1%) expressed a willingness to migrate, while 85 (62,5%) did not.(Figure 15)

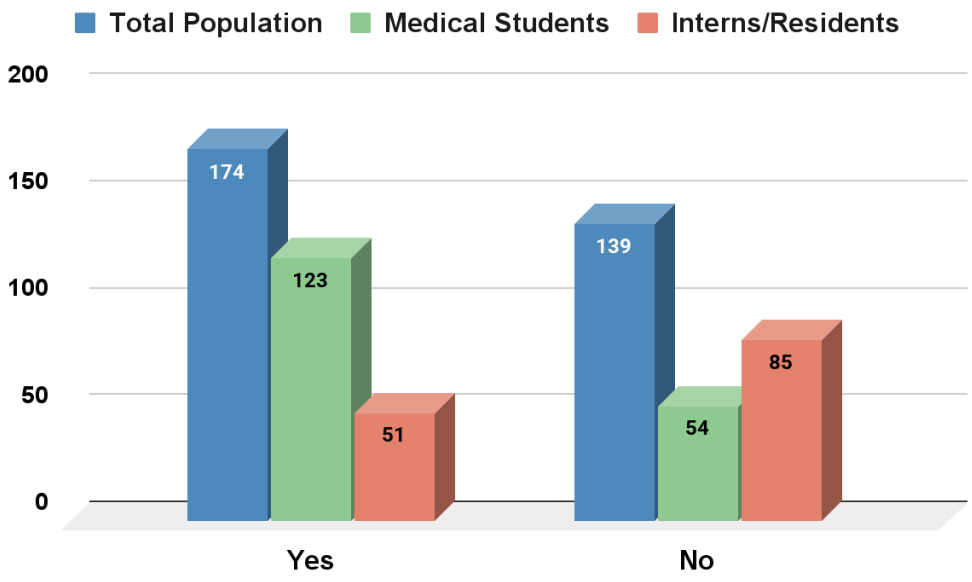

Figure 15: Migration intentions among participants

3.2 Preferred countries:

Among the 174 respondents who expressed an intention to work or settle abroad, the most preferred destinations were Germany (N=92, 52,9%), France (N=76, 43,7%), Belgium (N=36, 20,7%), United States (US) (N=36, 20,7%), and United Kingdom (UK) (N=34, 19,5%). Other preferred countries included Switzerland (N=14, 8,0%), Canada (N=16, 9,2%), and Spain (N=14, 8,0%). Gulf countries were selected by a smaller proportion, with Qatar (N=8, 4,6%), United Arab Emirates (UAE) (N=10, 5,7%), and Saudi Arabia (N=5, 2,9%).

Among medical students (N=123), Germany (N=74, 60,2%) was the most preferred destination, followed by France (N=44, 35,8%), US (N=29, 23,6%), UK (N=26, 21,1%), and Belgium (N=20, 16,3%). Other notable choices included Canada (N=8, 6,5%), Switzerland (N=7, 5,7%), and UAE (N=8, 6,5%).

As for interns and residents (N=51), France (N=32, 62,7%) was the most frequently chosen destination, followed by Germany (N=18, 35,3%), Belgium (N=16, 31,4%), and Spain (N=7, 13,7%). Gulf countries remained less popular, with Saudi Arabia (N=0, 0,0%), Qatar (N=2, 3,9%), and UAE (N=2, 3,9%) being chosen by a small number of respondents,as detailed in table 3.

Table 3: Preferred migration destinations across academic levels						
Country	Total Frequency N=174	Total Percentage (%)	Medical Students Frequency N=123	Medical Students Percentage (%)	Interns/ Residents Frequency N=51	Interns/ Residents Percentage (%)
Germany	92	52.9	74	60.2	18	35.3
France	76	43.7	44	35.8	32	62.7
US	36	20.7	29	23.6	7	13.7
Belgium	36	20.7	20	16.3	16	31.4
UK	34	19.5	26	21.1	8	15.7
Canada	16	9.2	8	6.5	8	15.7
Spain	14	8	7	5.7	7	13.7
Switzerland	14	8	7	5.7	7	13.7
UAE	10	5.7	8	6.5	2	3.9
Qatar	8	4.6	6	4.9	2	3.9
Saudi Arabia	5	2.9	5	4.1	0	0
Netherlands	5	2.9	2	1.6	3	5.9
Austria	4	2.3	3	2.4	1	2
Luxembourg	3	1.7	2	1.6	1	2
Italy	3	1.7	3	2.4	0	0
Australia	2	1.1	2	1.6	0	0
Tunisia	2	1.1	0	0	2	3.9
Japan	1	0.6	1	0.8	0	0
China	1	0.6	1	0.8	0	0
Singapore	1	0.6	1	0.8	0	0
Turkey	1	0.6	0	0	1	2
South Korea	1	0.6	0	0	1	2

3.3 Temporary and permanent migration intention:

Among the 174 respondents who intended to work or settle abroad, 103 (59,2%) planned for temporary migration, while 71 (40,8% 95% CI: 33,8% - 48,2%) intended to settle permanently.

Among medical students (N = 123), 67 (54,5%) aimed for temporary migration, while 56 (45,5%) intended permanent settlement. Among interns and residents (N = 51), 36 (70,6%) planned for temporary migration, while only 15 (29,4%) expressed a preference for permanent migration.(figure 16)

Across all groups, temporary migration intention remains dominant, particularly among interns and residents (70,6%), whereas medical students show a

higher inclination towards permanent migration (45,5%) compared to the other groups.

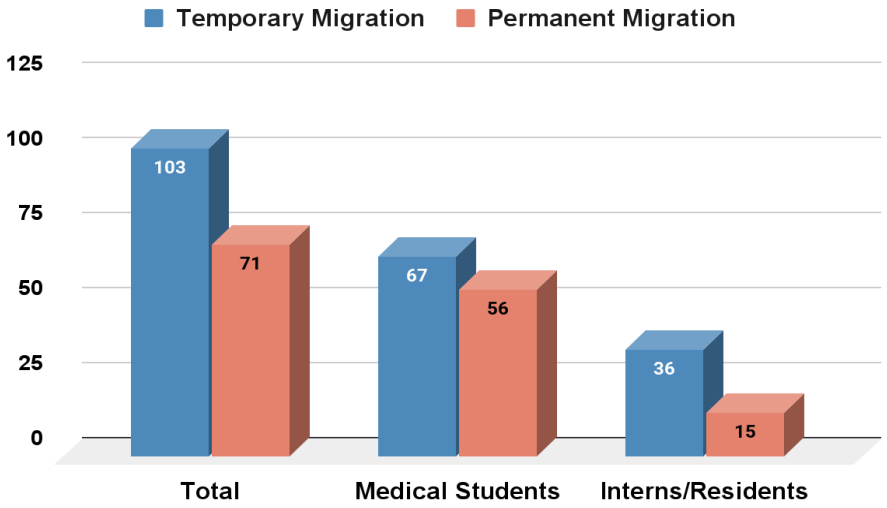

Figure 16: Comparison of temporary and permanent migration intentions

3.4 Temporary migration duration:

Among respondents who planned temporary migration, the average intended duration was 7,34 years (±4,86). The median duration was 7,0 years, with planned durations ranging from 1 to 25 years. As detailed in figure 17 below, most respondents anticipate staying abroad for a short to medium duration, with 83% intending to stay between 1 and 10 years.

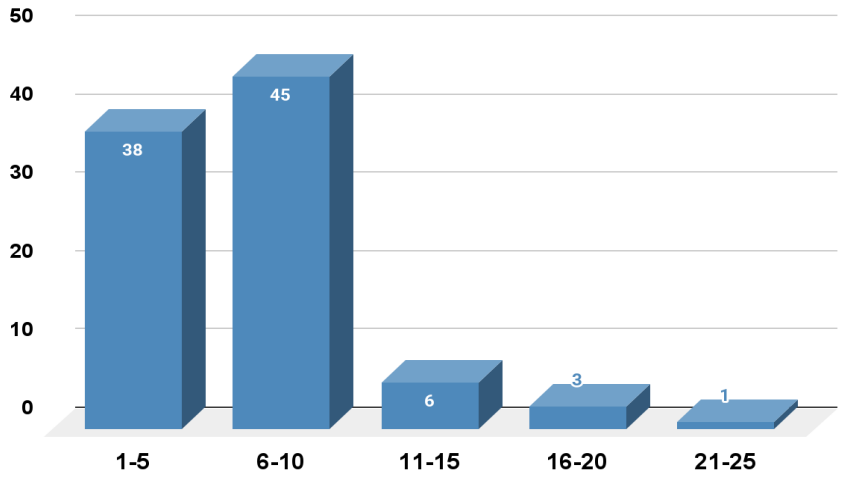

Figure 17: Preferred duration of temporary migration in years

4. Factors influencing migration: Motivations and barriers

4.1 Motivations:

The findings highlight the key factors influencing migration intentions among Moroccan medical professionals. The most commonly cited motivation was the acquisition of advanced skills and international experience, with 93,3% of respondents expressing agreement. Access to cutting-edge medical technologies was also a major factor, endorsed by 92,0% of participants. Opportunities for specialized training and research were cited by 90,8%, while 90,4% highlighted better working conditions as a reason for migration. Improved career advancement prospects were also among the leading motivations, with 88,4% agreement.

In contrast, the motivation with the lowest level of agreement was reuniting with a family member abroad, at 11,8%. A detailed breakdown of these motivations and their respective levels of agreement can be found in Figure 18.

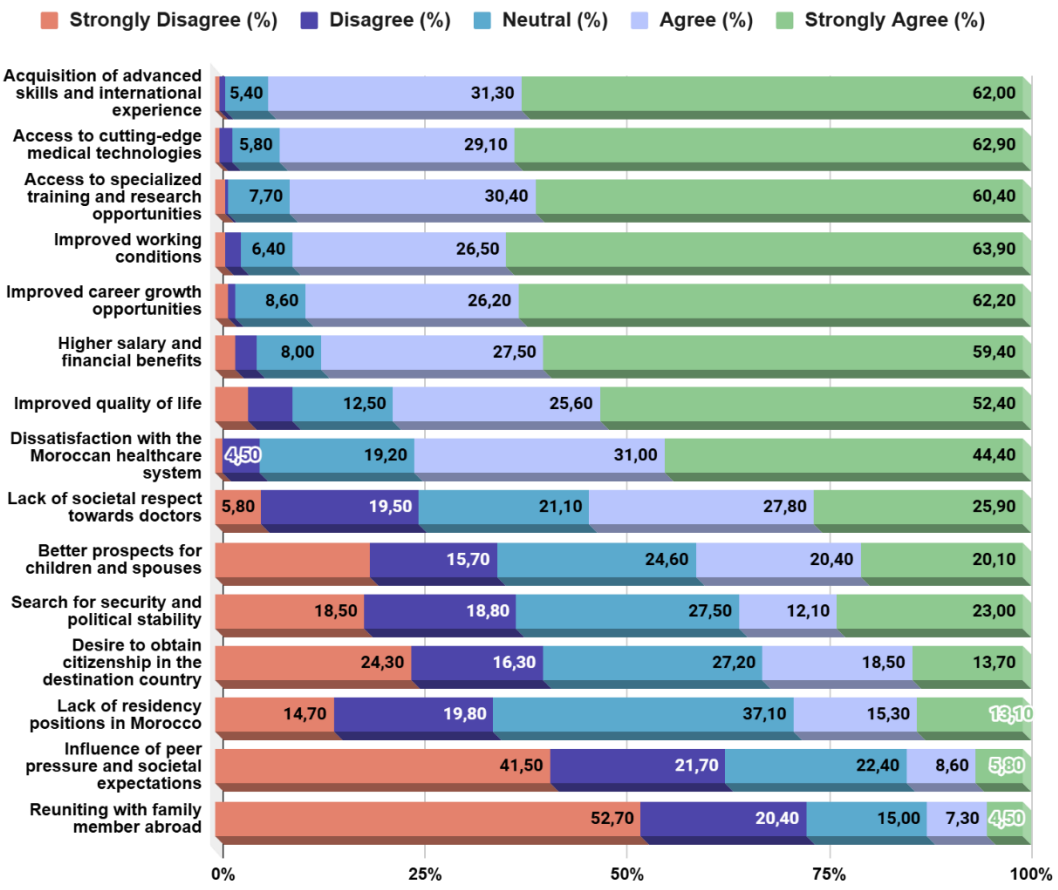

Figure 18: Motivations for migration: overall agreement levels

The analysis of motivation agreement levels among medical students and interns/residents regarding migration intentions highlights several key factors. Among medical students, the most agreed-upon motivations include improvement of working conditions (93,2%), better remuneration (87,5%), and access to advanced skills and international experience (93,7%). Additionally, career growth opportunities (91,5%), access to specialized training and research (93,8%), and modern medical technologies (92,1%) were strong drivers for migration. Dissatisfaction with the Moroccan healthcare system was also notable, with 75,7% expressing agreement.

Among interns and residents, similar trends were observed, though with slightly lower agreement percentages. The most cited motivations were improved working conditions (86,7%), better remuneration (86,0%), acquisition of advanced skills and experience (92,7%), and modern medical technologies (91,9%). Dissatisfaction with the Moroccan healthcare system was 75,0%, similar to students. Interns and residents were less concerned about the lack of residency positions; only 12,5% compared to medical students (40,7%).

On the other hand, the motivation to join a family member abroad was only 14,7% for students and 8,1% for interns and residents. Similarly, peer pressure had low influence, with only 18,1% of students and 9,5% of interns and residents citing it as a reason to migrate.

The motivations of medical students, interns, and residents are broken down in more detail in figures 19 and 20.

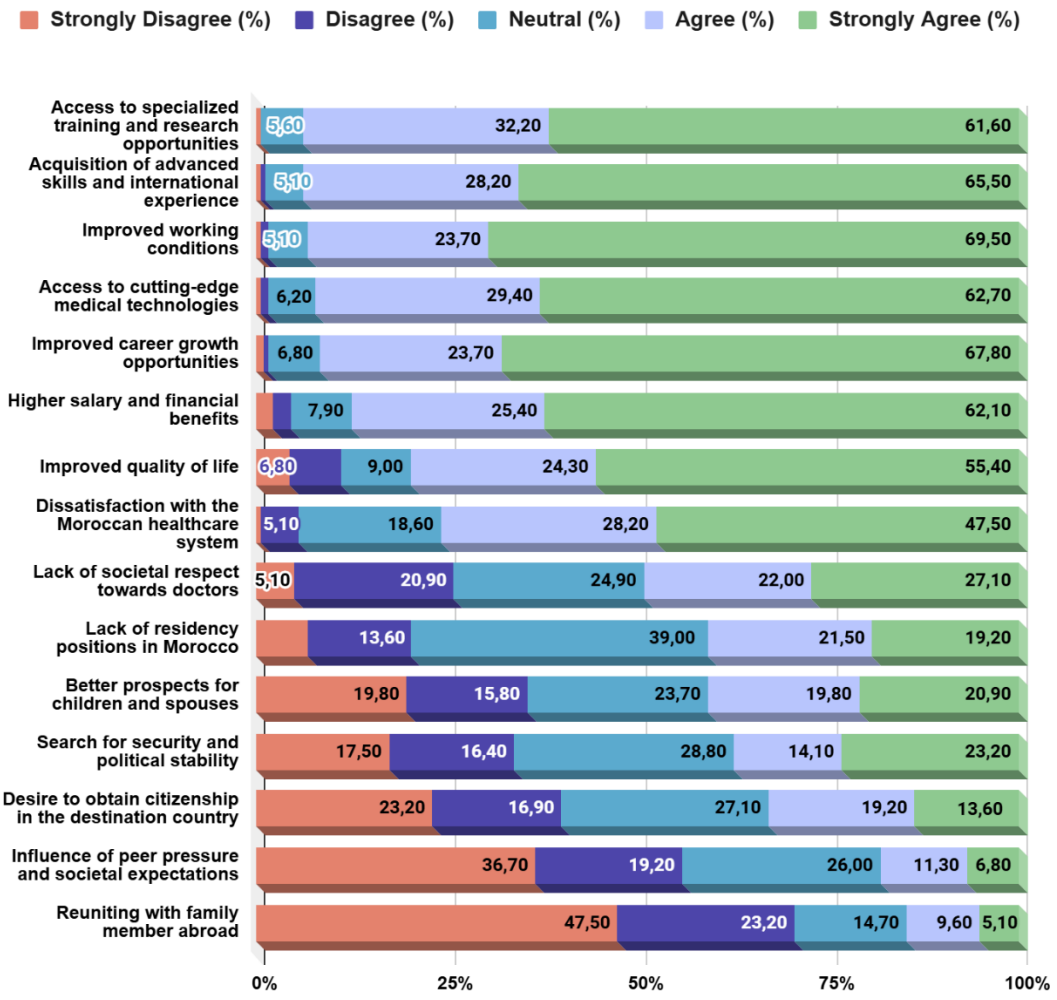

Figure 19: Motivations for migration among medical students

Beyond the structured responses, participants provided further reasons for considering migration. Many emphasized better working conditions, citing higher salaries, improved patient care, and a more organized healthcare system that values medical professionals. Dissatisfaction with financial instability, lack of health insurance, and limited career flexibility within the Moroccan residency system was frequently mentioned.

Another strong recurring theme was dignity and professional respect. Several participants highlighted the toxic work culture in Moroccan hospitals, where doctors face disrespect from both colleagues and the public. Concerns about poor hospital

infrastructure, inadequate medical resources, and a general lack of investment in the healthcare sector also influenced migration considerations.

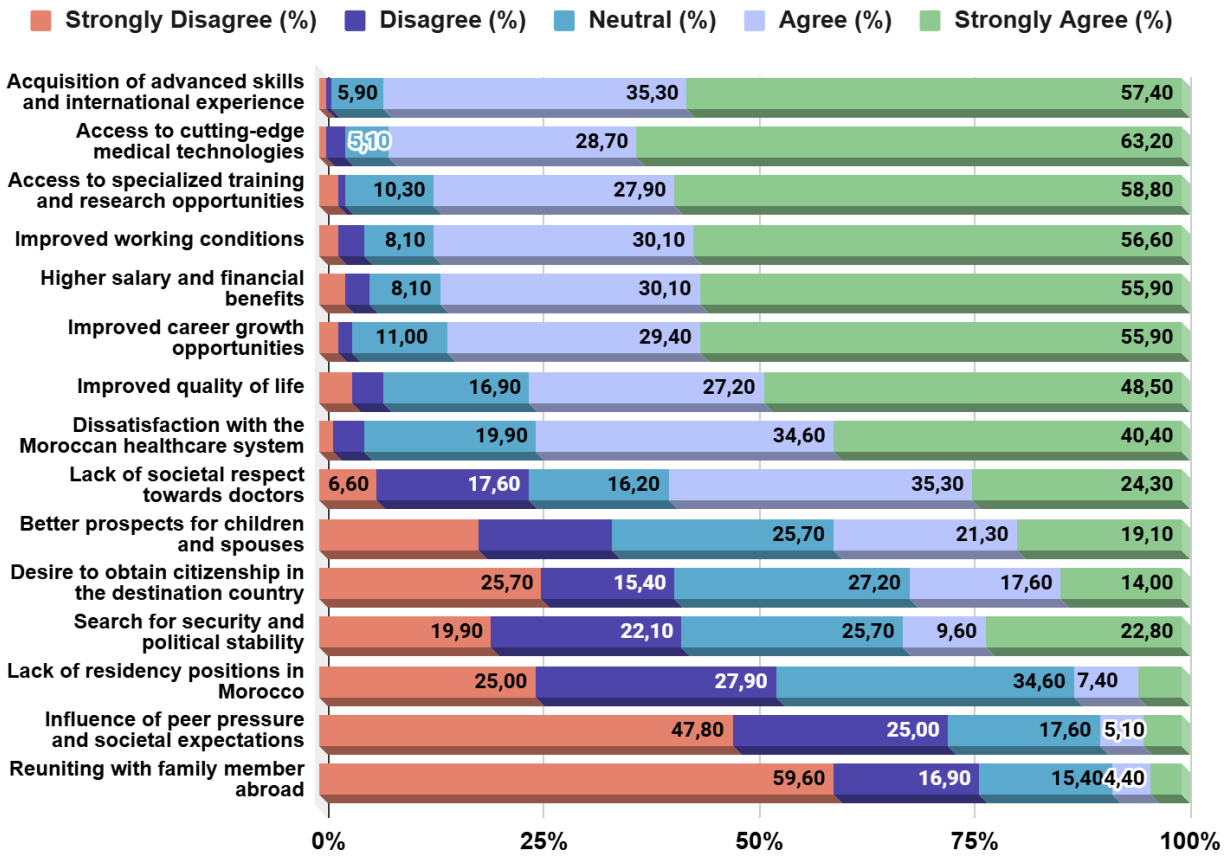

Figure 20: Motivations for migration among interns and residents

Personal well-being and quality of life were also key factors. Participants expressed a desire for a safer environment, greater career progression opportunities, and improved living standards. Some mentioned the freedom to travel, experience new cultures, and work in diverse medical settings as additional motivations.

Social factors also played a role. Some responses pointed to social and gender-related concerns, particularly regarding the treatment of women in Morocco, personal safety, and the difficulties of professional growth in restrictive societal norms. Others sought independence from family expectations or valued having the option to return to Morocco after gaining international experience.

4.2 Barriers:

The most commonly cited barriers to migration among the total population were family responsibilities and ties to Morocco (68 %), high financial costs of migration (59,8 %), lack of recognition of Moroccan qualifications abroad (40,3 %), and the influence of religious beliefs (39,3 %). Other reported barriers included challenges in obtaining a visa (37,7 %), difficulties in adapting to a new culture and society (34,5 %), patriotism and a sense of duty to Morocco (33,9 %), and concerns about racism and discrimination overseas (32,6 %). Language barriers in the destination country (23,0 %) and challenges adjusting to foreign climates (20,8 %) were the least frequently cited barriers, though still acknowledged by a portion of respondents (Figure 21).

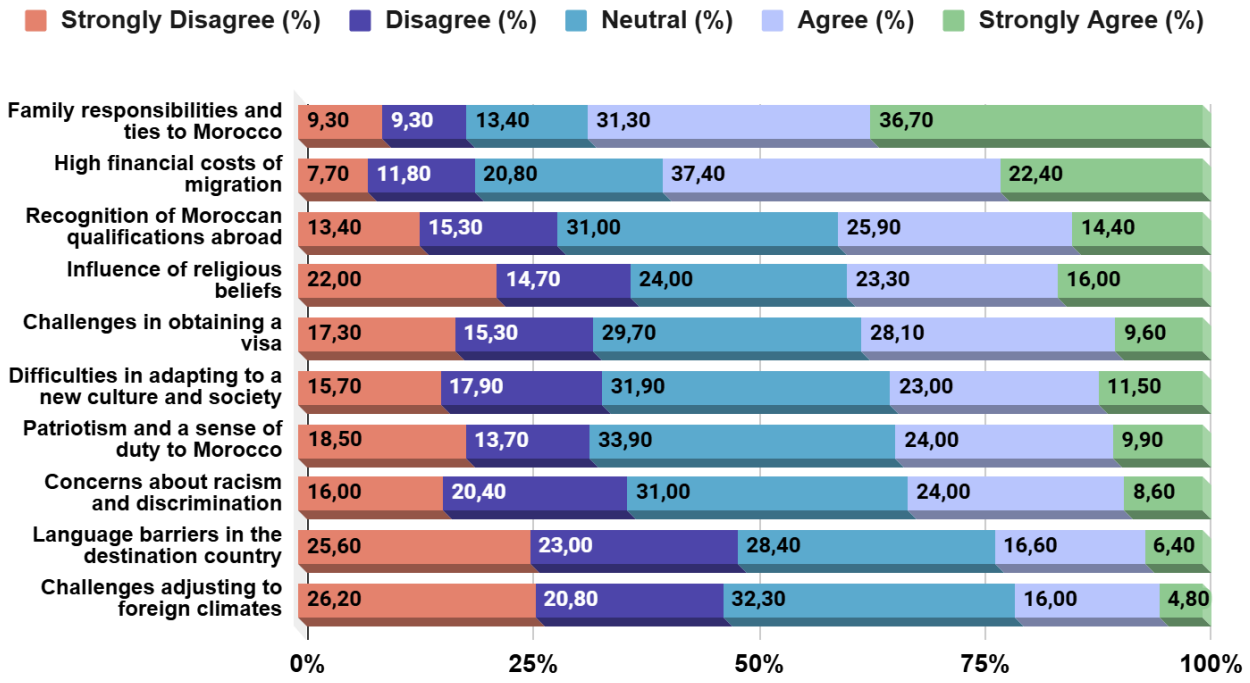

Figure 21: Barriers to migration: overall agreement levels

While both groups share similar top barriers, the pattern of concern differs between them. Interns and residents reported higher agreement for barriers such as family responsibilities and ties to Morocco (72,8% vs. 64,4%) and visa challenges (40,4% vs. 35,6%). In contrast, medical students expressed more concern over the high financial costs of migration (65,5 % vs. 52,2 %) and recognition of Moroccan qualifications abroad (42,3% vs. 37,5%). Differences were also noted in language

barriers (27,7% vs. 16,9%) and adaptation to a new culture (37,8% vs. 30,2%), with students showing higher agreement. These variations are further detailed in Figure 22 and Figure 23.

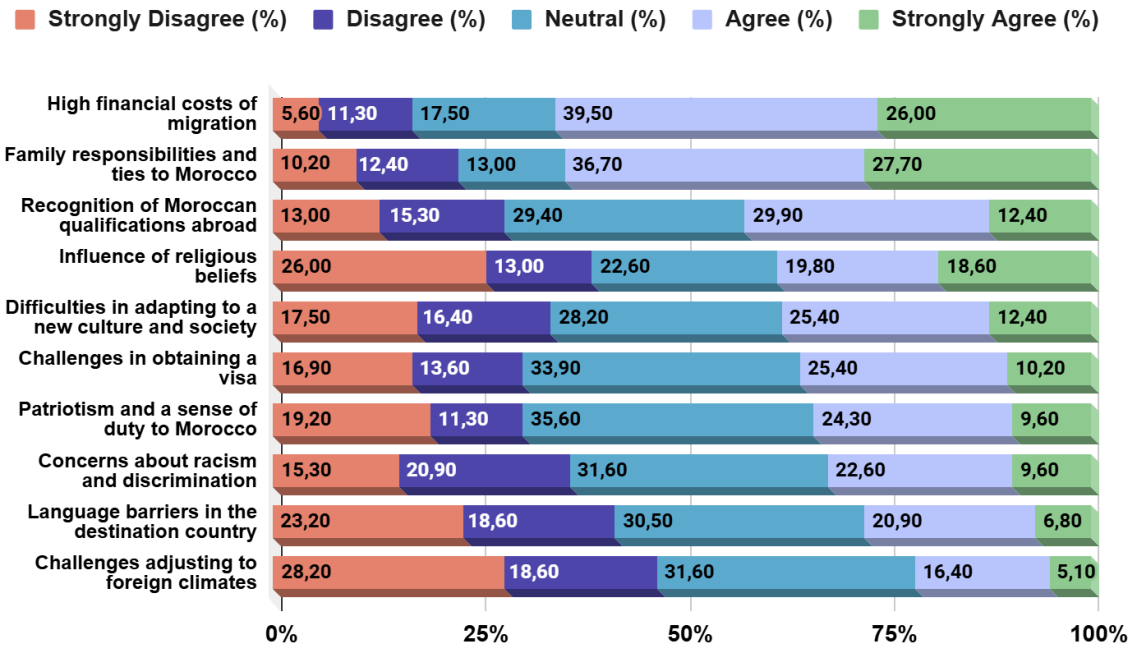

Figure 22: Barriers to migration among medical students

In addition to the structured survey responses, participants identified additional migration barriers through open-ended feedback. Many expressed concerns regarding diploma recognition and professional integration, particularly the accreditation of Moroccan medical qualifications abroad and the perceived difficulty of pursuing medical studies in foreign countries.

Cultural and lifestyle challenges were also frequently mentioned. Respondents highlighted difficulties in adapting to a new society, the lack of familiar Moroccan cuisine, and worries about how foreign cultures and societal norms might impact their children. Some specifically emphasized the importance of raising children in a Muslim-majority country, citing religious values as a key factor in their migration decisions.

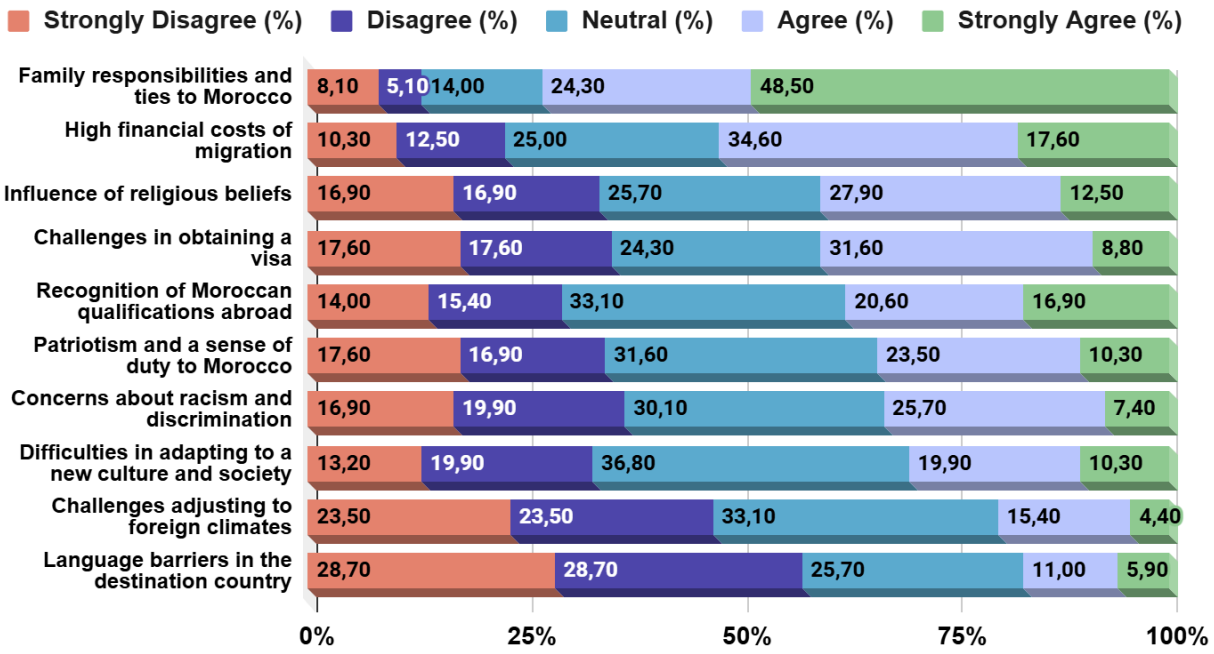

Figure 23: Barriers to migration among interns and residents

Psychological and social pressures further emerged as significant barriers. Some participants reported family expectations to remain in Morocco, while others voiced frustration with the lengthy and complex migration process.

5. Recommendations and suggestions

In order to encourage medical professionals to remain in Morocco, participants offered a wide range of suggestions for enhancing the country's healthcare system. Their suggestions focused on working conditions (29,9%), financial compensation (26,2%), professional recognition (17,8%), infrastructure and systemic reforms (14%), and overall well-being (11,2%).

5.1 Improvement of Working Conditions and Hospital Infrastructure

29,9% of participants emphasized the urgent need for better working conditions in Moroccan hospitals. Many cited insufficient medical equipment, outdated hospital infrastructure, and a shortage of medical staff, which place a heavy burden on healthcare workers. To address these issues, respondents suggested expanding hospital capacity by building more university hospitals and regional hospitals, modernizing existing facilities, and ensuring better resource allocation for improved patient care.

Another major concern was work overload and the lack of regulation in working hours, especially for interns and residents. Many suggested introducing structured work schedules, fairer distribution of responsibilities, and ensuring that doctors focus on medical tasks rather than administrative or logistical duties.

5.2 Financial Compensation and Career Stability

Many participants (26,2%) called for significant salary increases, particularly for resident doctors and interns, whose current wages were described as unacceptably low. Respondents highlighted that financial instability forces many young doctors to consider migration as their only viable option.

Beyond salary adjustments, several responses stressed the need for greater financial security and career stability, including improved retirement benefits, maternity leave policies, funding for continuing education, and structured career progression opportunities. Some also called for paid research and specialization opportunities to encourage professional growth within Morocco.

5.3 Professional Recognition and Workplace Culture

A recurring theme in the responses was the lack of respect and recognition for medical professionals, with 17,8% of respondents highlighting this concern. Many participants described a toxic work culture in hospitals, where hierarchical structures limit opportunities for career progression, junior doctors face excessive workloads, and there is little mentorship or institutional support.

In addition to workplace-related challenges, several participants mentioned a broader societal issue—the lack of appreciation for doctors from both the public and policymakers. Some respondents expressed frustration with how medical professionals are undervalued despite their critical role in healthcare.

Security concerns were also raised for doctors working in rural or underserved areas, with calls for better protection policies, safer working conditions, and financial or professional incentives for those working in high-risk environments.

5.4 Medical Training and Systemic Reforms

Several responses (14%) addressed structural flaws in medical education and residency programs, with strong recommendations for curriculum modernization and training system enhancements. Suggested reforms included:

- Increasing the number of residency positions to accommodate more medical graduates.

- Introducing more flexible training schedules.
- Enhancing medical curricula to meet international standards.
- Providing greater support for research and academic collaboration.

Furthermore, many respondents identified bureaucratic inefficiencies and corruption as barriers to a functioning healthcare system. Several suggested streamlining administrative processes, improving hospital management, and ensuring merit-based promotions to create a more transparent and fair medical system.

5.5 Psychological Well-being and Quality of Life

11,2% of participants emphasized the psychological and emotional toll of working in Morocco's healthcare system. Many pointed to chronic stress, lack of work-life balance, and the absence of mental health support as key concerns.

Public perception was also a major issue, with some respondents stating that doctors in Morocco frequently feel undervalued and unappreciated by society.

II. Analytical results:

1. Socio-demographic data:

We stratified overall and permanent migration intention by socio-demographic data: age, gender, marital status, socio-economic perception, and academic level. (Table 4)

Age was a key factor, with younger individuals showing a stronger inclination to migrate ($p<0,001$ for overall migration intention and $p=0,006$ for permanent migration). Gender was a significant determinant, as males were more likely to consider both overall migration ($p=0,004$) and permanent migration ($p=0,021$). In terms of academic level, medical students had the highest overall intention to migrate (69.5%), followed by residents (43%) and interns (29.8%) . Similarly, the intention to migrate permanently was lowest among interns (5.3%) and highest among medical students (31.6%) ($p<0,001$). As for socioeconomic perception, neither the overall intention to migrate nor the intention to migrate permanently were significantly impacted ($p=0,487$,$p=0,083$)

Table 4: Migration intentions by sociodemographic characteristics						
	Overall migration intention		p	Permanent migration intention		p
	Yes n(%)	No n(%)		Yes n(%)	No n(%)	
Age			<0,001			0,006
	23,86 (±3,137)	25,26 (±3,278)		23,89 (±3,56)	24,66 (±3,167)	
Gender			0,004			0,021
Female	103 (50)	103 (50)		39 (18,9)	167 (81,1)	
Male	71 (66,4)	36 (33,6)		32 (29,9)	75 (70,1)	
Marital status			0,054			0,144
Single/ Divorced	162 (57,2)	121 (42,8)		67 (23,7)	216 (76,3)	
Married	12 (40)	18 (60)		4 (13,3)	26 (86,7)	
Socio-economic perception			0,487			0,083
Low/ Middle	159 (55,8)	126 (44,2)		68 (23,9)	217 (76,1)	
High	15 (53,6)	13 (46,4)		3 (10,7)	25 (89,3)	
Academic level			<0,001			<0,001
Medical student	123 (69,5)	54 (30,5)		56 (31,6)	121 (68,4)	
Intern	17 (29,8)	40 (70,2)		3 (5,3)	54 (94,7)	
Resident	34 (43)	45 (57)		12 (15,2)	67 (84,8)	

2. International experience and procedures taken to study or work abroad:

The analysis showed a significant association between international experience and overall migration intention (p = 0,021). Individuals with international experience were more likely to express migration intentions (74,2%) compared to those without international experience (53,5%). However, no significant association was found between international experience and permanent migration intention (p = 0,418).

Regarding the procedures taken, there was a significant association with both overall migration intention (p < 0,001) and permanent migration intention (p = 0,001). Those who had taken preparatory procedures were significantly more likely to express an intention to migrate overall (80,4% vs. 45,2%) and permanently (34,8% vs. 17,6%) compared to those who had not taken any procedures.

Table 5: Impact of International Experience and Migration Procedures on Migration Intentions

	Overall migration intention		p	Permanent migration intention		p
	Yes n(%)	No n(%)		Yes n(%)	No n(%)	
International experience			0,021			0,418
Yes	23 (74,2)	8 (25,8)		6(19,4)	25 (80,6)	
No	151 (53,5)	131 (46,5)		65 (23)	217 (77)	
Procedures taken			<0,001			0,001
yes	74 (80,4)	18 (19,6)		32 (34,8)	60 (65,2)	
No	100 (45,2)	121 (54,8)		39 (17,6)	182 (82,4)	

3. Motivations:

3.1 Economic and Professional Motivations

Improved working conditions showed a significant association with both overall (p = 0,003) and permanent migration intentions (p = 0,003). Higher salaries and financial benefits were also significantly linked to overall migration (p = 0,017), though their association with permanent migration was not significant (p = 0,24). The acquisition of advanced skills and international experience had a strong association with both overall (p < 0,001) and permanent migration (p = 0,028). Career growth opportunities significantly influenced overall migration (p < 0,001), though the association with permanent migration did not reach statistical significance (p = 0,064). Access to specialized training and research opportunities was significantly associated with overall migration intentions (p = 0,005), though not with permanent migration (p = 0,069). In contrast, access to cutting-edge medical technologies did not show a significant relationship with either overall (p = 0,278) or permanent migration intentions (p = 0,289).

3.2 Systemic and Workplace Dissatisfaction

Dissatisfaction with the Moroccan healthcare system was significantly associated with both overall (p = 0,007) and permanent migration intentions (p = 0,028). The lack of available residency positions was also significantly associated with overall migration (p = 0,038), but not with permanent migration (p = 0,458). The lack of societal respect toward doctors did not show a significant association with overall migration (p = 0,174), but it was significantly linked to permanent migration intentions (p = 0,041).

3.3 Quality of Life and Political Stability

Expectations of an improved quality of life had a strong influence on migration decisions, with highly significant associations for both overall (p < 0,001) and permanent migration intentions (p < 0,001). Similarly, security and political stability showed a significant association with overall (p = 0,023) and permanent migration (p < 0,001). Seeking citizenship in the destination country was significantly associated with both overall (p < 0,001) and permanent migration intentions (p = 0,001).

3.4 Family and Personal Considerations

The intention to reunite with family members abroad is significantly associated with both overall (p = 0,017) and permanent migration (p = 0,02). Better prospects for children and spouses show a significant association with both overall (p = 0,033) and permanent migration (p < 0,001). The influence of peer pressure and societal expectations for migration does not reach statistical significance for neither overall (p = 0,317) nor permanent migration (p = 0,053).

Table 6: Correlation between migration intentions and motivations

	Overall migration intention		p	Permanent migration intention		p
	Yes n(%)	No n(%)		Yes n(%)	No n(%)	
Improved working conditions			0,003			0,003
Yes	165 (58,3)	118 (41,7)		70 (24,7)	213 (75,3)	
No	9 (30)	21 (70)		1 (3,3)	29 (96,7)	
Higher salary, financial benefits			0,017			0,24
yes	158 (58,1)	114 (41,9)		64 (23,5)	208 (76,5)	
No	16 (39)	25 (61)		7 (17,1)	34 (82,9)	
Acquisition of advanced skills and international experience			<0,001			0,028
Yes	172 (58,9)	120 (41,1)		70 (24)	222 (76)	
No	2 (9,5)	19 (90,5)		1(4,8)	20 (95,2)	
Improved career growth opportunities			<0,001			0,064

Yes	165 (59,4)	113 (40,6)		67 (24,1)	211 (75,9)	
No	9 (25,7)	26 (74,3)		4 (11,4)	31 (88,6)	
Access to specialized training and research opportunities			0,005			0,069
Yes	165 (58,1)	119 (41,9)		68 (23,9)	216 (76,1)	
No	9 (31)	20 (69)		3 (10,3)	26 (89,7)	
Access to cutting-edge medical technologies			0,278			0,289
Yes	162 (56,3)	126 (43,8)		67 (23,3)	221 (76,7)	
No	12 (48)	13 (52)		4 (18)	21 (84)	
Dissatisfaction with the Moroccan healthcare system			0,007			0,028
Yes	141 (59,7)	95 (40,3)		60 (25,4)	176 (74,6)	
No	33 (42,9)	44 (57,1)		11 (14,3)	66 (85,7)	
Lack of residency positions in Morocco			0,038			0,458
Yes	57 (64)	32 (36)		21 (23,6)	68 (76,4)	
No	117 (52,2)	107 (47,8)		50 (22,3)	174 (77,7)	
Lack of societal respect towards			0,174			0,041

doctors						
Yes	98 (58,3)	70 (41,7)		45 (26,8)	123 (73,2)	
No	76 (52,4)	69 (47,6)		26 (17,9)	119 (82,1)	
Improved quality of life			<0,001			<0,001
Yes	154 (63,1)	90 (36,9)		68 (27,9)	176 (72,1)	
No	20 (29)	49 (71)		3 (4,3)	66 (95,7)	
Search for security and political stability			0,023			<0,001
Yes	70 (63,6)	40 (36,4)		38 (34,5)	72 (65,5)	
No	104 (51,2)	99 (48,8)		33 (16,3)	170 (83,7)	
Desire to obtain citizenship in the destination country			<0,001			0,001
Yes	74 (73,3)	27 (26,7)		35 (34,7)	66 (65,3)	
No	100 (47,2)	112 (52,8)		36 (17)	176 (83)	
Reuniting with family member abroad			0,017			0,02
Yes	27 (73)	10 (27)		14 (37,8)	23 (62,2)	
No	147 (53,3)	129 (46,7)		57 (20,7)	219 (79,3)	
Better prospects for children and spouses			0,033			<0,001

Yes	79 (62,2)	48 (37,8)		44 (34,6)	83 (65,4)	
No	95 (51,1)	91 (48,9)		27 (14,5)	159 (85,5)	
Influence of peer pressure and societal expectations for migration			0,317			0,053
Yes	27 (60)	18 (40)		15 (33,3)	30 (66,7)	
No	147 (54,9)	121 (45,1)		56 (20,9)	212 (79,1)	

4. Barriers:

4.1 Family and Social Commitments

Family responsibilities and strong ties to Morocco were significant barriers to migration, with associations found for both overall ($p = 0,002$) and permanent migration intentions ($p < 0,001$). Additionally, patriotism and a sense of duty to Morocco significantly influenced migration decisions, affecting overall ($p = 0,001$) and permanent migration intentions ($p = 0,014$).

4.2 Religious and Cultural Considerations

Religious beliefs showed a significant impact on both overall ($p = 0,033$) and permanent migration ($p = 0,037$) intentions. Difficulties in adapting to a new culture and society were also linked to permanent migration decisions ($p = 0,043$), while the influence on overall migration was not statistically significant ($p = 0,059$).

4.3 Recognition and Discrimination Concerns

The recognition of Moroccan qualifications abroad was a notable barrier, with a significant association found for overall migration intentions ($p = 0,014$), though its effect on permanent migration was not statistically significant ($p = 0,298$). Concerns about racism and discrimination also influence overall migration intentions ($p = 0,023$), but no significant association was found for permanent migration ($p = 0,147$).

4.4 Financial and Logistical Barriers

The high financial costs of migration were not found to be a significant barrier, with no association observed for either overall (p = 0,146) or permanent migration intentions (p = 0,199). Similarly, challenges in obtaining a visa showed no significant effect on overall (p = 0,125) or permanent migration intentions (p = 0,056).

4.5 Language and Environmental Adaptation

Language barriers in the destination country did not show a significant association with either overall (p = 0,069) or permanent migration intentions (p = 0,528). Additionally, challenges in adjusting to foreign climates were not significant for overall (p = 0,23) or permanent migration intentions (p = 0,139).

Table 7: Correlations between migration intentions and barriers

	Overall migration intention		p	Permanent migration intention		p
	Yes n(%)	No n(%)		Yes n(%)	No n(%)	
Family responsibilities and ties to Morocco			0,002			<0,001
Yes	106 (49,8)	107 (50,2)		36 (16,9)	177 (83,1)	
No	68 (68)	32 (32)		35 (35)	65 (65)	
High financial costs of migration			0,146			0,199
yes	109 (58,3)	78 (41,7)		46 (24,6)	141 (75,4)	
No	65 (51,6)	51 (48,4)		25 (19,8)	101 (80,2)	
Patriotism and a sense of duty to Morocco			0,001			0,014
Yes	45	61		16 (15,1)	90	

	(42,5)	(57,5)			(84,9)	
No	129 (62,3)	78 (37,7)		55 (26,6)	152 (73,4)	
Influence of religious beliefs			0,033			0,037
Yes	60 (48,8)	63 (51,2)		21(17,1)	102 (82,9)	
No	114 (60)	76 (40)		50 (26,3)	140 (73,7)	
Challenges in obtaining a visa			0,125			0,056
Yes	71 (60,2)	47 (39,8)		33 (28)	85 (72)	
No	103 (52,8)	92 (47,2)		38 (19,5)	157 (80,5)	
Recognition of Moroccan qualifications abroad			0,014			0,298
Yes	80 (63,5)	46 (36,5)		31 (24,6)	95 (75,4)	
No	94 (50,3)	93 (49,7)		40 (21,4)	147 (78,6)	
Concerns about racism and discrimination			0,023			0,147
Yes	48 (47,1)	54 (52,9)		19 (18,6)	83 (81,4)	
No	126 (59,7)	85 (40,3)		52 (24,6)	159 (75,4)	
Difficulties in adapting to a new culture and society			0,059			0,043

Yes	53 (49,1)	55 (50,9)		18 (16,7)	90 (83,3)	
No	121 (59)	84 (41)		53 (25,9)	152 (74,1)	
Language barriers in the destination country			0,069			0,528
Yes	46 (63,9)	26 (36,1)		16 (22,2)	56 (77,8)	
No	128 (53,1)	113 (46,9)		55 (22,8)	186 (77,2)	
Challenges adjusting to foreign climates			0,23			0,139
Yes	33 (50,8)	32 (49,2)		11 (16,9)	54 (83,1)	
No	141 (56,9)	107 (43,1)		60 (24,2)	188 (75,8)	

5. Comparative analysis of motivations and barriers to migration among Moroccan medical students, residents, and interns

5.1 Motivations:

The motivations for migration among medical students and interns and residents reveal several significant associations. Improved working conditions ($p = 0,042$) and access to specialized training and research opportunities ($p = 0,027$) were more frequently cited by medical students (93,2% and 93,8%, respectively) compared to interns and residents (86,8% for both). Additionally, the lack of residency positions in Morocco showed a highly significant association ($p < 0,001$), with 40,7% of medical students identifying it as a key factor, compared to only 12,5% of interns and residents.

Other motivations did not show significant differences across academic levels. However, the lack of societal respect towards doctors was more frequently reported by interns and residents (59,6%) than medical students (49,2%) ($p = 0,043$).

Additionally, societal expectations and peer pressure significantly influenced medical students (18,1%) more than interns and residents (9,6%) (p = 0,023).

Table 8: Differences in Migration Motivations Among Medical Students and Interns/Residents

	Academic level		p
	Medical students n(%)	Interns and residents n(%)	
Improved working conditions			0,042
Yes	165 (93,2)	118 (86,8)	
No	12 (6,8)	18 (13,2)	
Higher salary, financial benefits			0,407
yes	155 (87,6)	117 (86)	
No	22 (12,4)	19 (14)	
Acquisition of advanced skills and international experience			0,429
Yes	166 (93,8)	126 (92,6)	
No	11 (6,2)	10 (7,4)	

Improved career growth opportunities			0,061
Yes	162 (91,5)	116 (85,3)	
No	15 (8,5)	20 (14,7)	
Access to specialized training and research opportunities			0,027
Yes	166 (93,8)	118 (86,8)	
No	11 (6,2)	18 (13,2)	
Access to cutting-edge medical technologies			0,557
Yes	163 (92,1)	125 (91,9)	
No	14 (7,9)	11 (8,1)	
Dissatisfaction with the Moroccan healthcare system			0,494
Yes	134 (75,7)	102 (75)	
No	43 (24,3)	34 (25)	
Lack of residency positions in Morocco			<0,001

Yes	72 (40,7)	17 (12,5)	
No	105 (59,3)	119 (87,5)	
Lack of societal respect towards doctors			0,043
Yes	87 (49,2)	81 (59,6)	
No	90 (50,8)	55 (40,4)	
Improved quality of life			0,244
Yes	141 (79,7)	103 (75,7)	
No	36 (20,3)	33 (24,3)	
Search for security and political stability			0,216
Yes	66 (37,3)	44 (32,4)	
No	111 (62,7)	92 (67,6)	
Desire to obtain citizenship in the destination country			0,463
Yes	58 (32,8)	43 (31,6)	

No	119 (67,2)	93 (68,4)	
Reuniting with family member abroad			0,051
Yes	26 (14,7)	11 (8,1)	
No	151 (85,3)	125 (91,9)	
Better prospects for children and spouses			0,53
Yes	72 (40,7)	55 (40,4)	
No	105 (59,3)	81 (59,6)	
Influence of peer pressure and societal expectations for migration			0,023
Yes	32 (18,1)	13 (9,6)	
No	145 (81,9)	123 0,4)	

5.2 Barriers :

The main barriers to migration among medical students and interns/residents include financial constraints (p = 0,012) and language barriers (p = 0,017), with medical students being more affected. Other obstacles were noted but showed no significant differences between groups.

Table 9: Differences in Perceived Migration Barriers Among Medical Students and Interns/Residents			
	Academic level		p
	Medical student n(%)	Interns and residents n(%)	
Family responsibilities and ties to Morocco			0,072
Yes	114 (64,4)	99 (72,8)	
No	63 (35,6)	37 (27,2)	
High financial costs of migration			0,012
yes	116 (65,5)	71 (52,2)	
No	61 (34,5)	65 (47,8)	
Patriotism and a sense of duty to Morocco			0,543
Yes	60 (33,9)	46 (33,8)	
No	117 (66,1)	90 (66,2)	
Influence of religious beliefs			0,402

Yes	68 (38,4)	55 (40,4)	
No	109 (61,6)	81 (59,6)	
Challenges in obtaining a visa			0,224
Yes	63 (35,6)	55 (40,4)	
No	114 (64,4)	81 (59,6)	
Recognition of Moroccan qualifications abroad			0,225
Yes	75 (42,4)	51 (37,5)	
No	102 (57,6)	85 (62,5)	
Concerns about racism and discrimination			0,482
Yes	57 (32,2)	45 (33,1)	
No	120 (67,8)	91 (66,9)	
Difficulties in adapting to a new culture and society			0,096

Yes	67 (37,9)	41 (30,1)	
No	110 (62,1)	95 (69,9)	
Language barriers in the destination country			0,017
Yes	49 (27,7)	23 (16,9)	
No	128 (72,3)	113 (83,1)	
Challenges adjusting to foreign climates			0,419
Yes	38 (21,5)	27 (19,9)	
No	139 (78,5)	109 (80,1)	

DISCUSSION

I. The Magnitude and Dynamics of Healthcare Worker Migration: Global Trends and the Moroccan Context

The migration of healthcare workers has become an increasingly significant global phenomenon, with mobility intensifying over the past few decades.

Driven by a combination of economic, professional, and systemic factors, healthcare professionals are moving across borders at an unprecedented rate.

The WHO estimates a projected shortage of 18 million health workers by 2030, predominantly in low- and middle-income countries (LMICs). (7) International mobility has expanded considerably, with the number of migrant doctors and nurses in countries of the Organization for Economic Co-operation and Development (OECD) increasing by approximately 60% over the past decade. (8)

Historically, the movement of healthcare workers has steadily increased. In the 1960s, fewer than 2,5 million migrant health workers were recorded worldwide; by the mid-2010s, this figure had surpassed 5 million, with an additional surge during the Coronavirus Disease 2019 (COVID-19) pandemic. (9) Today, around 15% of the global health and care workforce operates outside their country of birth or training, reflecting a significant reliance on cross-border labor. (10)

As healthcare migration continues to shape workforce distributions, it brings both opportunities and challenges. While destination countries benefit from skilled labor, source countries often face workforce depletion, creating critical challenges for their healthcare systems.

The World Health Organization's (WHO) latest "Health workforce support and safeguards list 2023" identifies 55 countries (an increase from 47 in 2020) facing the most critical workforce shortages and vulnerabilities. (11) Many of these are in sub-Saharan Africa and other LMIC regions, where healthcare systems already struggle to meet population health needs. Outward migration further exacerbates these challenges, placing additional strain on health systems. (12)

1. Impact on Low- and Middle-Income Countries

The emigration of trained health professionals poses significant challenges for LMICs. In sub-saharan Africa, which already has the lowest provider-to-population ratios, physician migration further exacerbates these shortages, with only ~2

physicians and 10 nursing/midwifery personnel per 10,000 people, compared to a global median of 49 per 10,000. (13) Such disparities drive movement from low-supply to high-demand areas, impeding progress towards universal health coverage and the health-related sustainable development goals.

Beyond workforce shortages, health worker migration carries substantial economic consequences for LMICs. Governments invest heavily in medical education and training, yet these investments often fail to yield long-term benefits when trained professionals leave for better opportunities abroad. LMICs face an estimated $15.86 billion in annual economic losses due to physician migration, accounting for both the cost of training healthcare workers and the excess mortality associated with workforce shortages. (14)

Within sub-Saharan Africa, the financial impact is particularly severe. The region has lost approximately $2,17 billion due to physician migration to HICs such as Australia, Canada, the UK, and the US, with South Africa alone incurring losses of around $1,41 billion. (15) These financial losses represent not only the direct costs of training medical professionals but also the economic strain imposed by reduced healthcare capacity and the resulting negative public health outcomes.

In Nigeria, for example, an estimated 2,000 doctors migrate annually, further straining a system with only four physicians per 10,000 people. (14,16)

Smaller nations with limited medical training capacities are particularly vulnerable, as even the loss of a few specialists can significantly impact healthcare services. The departure of these professionals weakens clinical care while also disrupting medical education and mentorship, making it even harder to train the next generation of healthcare workers. (17).

2. Impact on High-Income Countries

High-income countries often address healthcare staffing shortages by recruiting internationally trained health workers. In nations such as the US, Canada, and Australia, foreign-trained professionals make up a significant portion of the healthcare workforce. In Canada, nearly 58% of internationally educated healthcare professionals, including nurses, physicians, pharmacists, and dentists, are employed in their field of study. (18) In Australia, the share of foreign-trained doctors has been rising, exceeding 30% as of 2021. (19) These clinicians play a crucial role in filling gaps, particularly in underserved areas and specialized fields. During the COVID-19

pandemic, migrant health workers were essential in staffing hospitals and COVID wards, highlighting the reliance of high-income nations on international recruitment. (20)

However, this practice raises ethical concerns. Aggressively recruiting from countries with their own healthcare shortages can exacerbate global health inequities, as it depletes already struggling health systems. To address this, the WHO introduced the Global Code of Practice on the International Recruitment of Health Personnel in 2010, promoting ethical recruitment and urging caution when hiring from nations facing critical workforce shortages. (21) Despite these guidelines, HICs have been criticized for prioritizing their immediate staffing needs over the long-term impact on source nations.

Moreover, migration does not always fully resolve workforce gaps in destination countries. Many immigrant health professionals encounter significant barriers to practicing at their skill level, leading to "brain waste"—a phenomenon where highly trained doctors or nurses are underemployed due to licensing and credentialing challenges. In the US, approximately 270,000 immigrants with medical or health-related degrees are either underemployed or entirely out of the healthcare workforce. (22) Similarly, in Australia, nearly 45% of permanent migrants (around 621,000 individuals) work below their qualified skill level due to complex and costly systems for recognizing overseas qualifications. (23) This situation represents a loss for both the individual and the health systems that could benefit from their expertise.

In summary, while HICs gain skilled workers through international recruitment, they must navigate ethical obligations and structural barriers to ensure that migrant professionals are integrated into roles that fully utilize their qualifications.

3. The Moroccan context:

In Morocco, the ongoing exodus of healthcare professionals has intensified workforce shortages, putting further strain on the healthcare system. With only 7.3 doctors per 10,000 people, far below the threshold recommended by the WHO (23 per 10,000)(24), the country faces a severe shortage of medical personnel. (25) According to the National Human Rights Council, although 23,000 doctors currently practice within Morocco, an estimated 10,000 to 14,000 Moroccan doctors are

working abroad, meaning that one out of every three Moroccan doctors has left the country. (26)

This brain drain further depletes the national healthcare workforce, disproportionately affecting rural and underserved areas. The outflow of skilled professionals not only worsens existing staffing shortages but also undermines Morocco's efforts to achieve equitable healthcare access.

Understanding the drivers behind this migration is essential to crafting effective policies that retain medical talent, address workforce gaps, and ensure a more resilient healthcare system.

II. Migration intentions: Who wants to leave?

1. Overall migration trends:

Our study found that 55,6% (95% CI: 50,1%–61,0%) of Moroccan medical students, interns, and residents expressed an intention to migrate—a figure that, while not among the highest globally, remains substantial and demands attention. This means that more than on in two future Moroccan healthcare professionals are contemplating leaving the country at some point in their careers. This phenomenon reflects a widespread pattern across LMICs, where structural issues such as under-resourced health systems, stagnant career pathways, and low job satisfaction drive professionals to seek opportunities abroad.

When placed in a comparative context, Morocco's migration intention rate is moderate. Countries like Nigeria (99,3%) (27), Egypt (89,4%) (28), Gaza (91%) (29), and Sudan (84,6%) (30) report alarmingly high rates, often attributed to acute crises—economic collapse, political unrest, or systemic dysfunction.

In contrast, Morocco's rate aligns more closely with nations such as Ghana (57,87%) (31), Algeria (64,4%)(32), Turkey (52,9%) (33), Italy (52%) (34), and India (45%) (35) , where, while dissatisfaction with working conditions may exist, the broader socio-political context is relatively more stable (Table 10).

Notably, even in countries with more developed healthcare systems and higher income levels—such as the UK (32.3%) (36), Italy (52%), Turkey (52,9%)(33) and Malaysia (27,1%) (37)—migration intentions persist. This reinforces the reality that health worker migration is a global phenomenon, not exclusive to LMICs. Even in well-resourced systems, medical professionals may still seek professional growth, international experience, higher salaries, or improved work-life balance abroad. Therefore, Morocco's relatively lower—but still significant—migration intent presents an opportunity window: it indicates that many professionals are not yet fully disengaged, and with the right policy shifts, their retention remains feasible.

Table 10: International Comparison Of Medical Migration Trends			
Author	Year	Country	Migration Intention
Teng et al. (37)	2024	Malaysia	27,1%
Ferreira et al. (36)	2023	United Kingdom	32,3%
Sasika Nipun et al. (38)	2024	Sri Lanka	38.5%
Kansal et al. (35)	2023	India	45%
Martella et al. (34)	2025	Italy	52%
Uzun et al. (33)	2024	Turkey	52,9%
Asadi et al. (39)	2017	Iran	54,77%
Our study	2025	Morocco	55,6%
Boakye et al. (31)	2023	Ghana	57,87%
Lahmer et al.(32)	2018	Algeria	64,4%
Mohamed et al. (30)	2015	Sudan	84.6%
Kabbash et al. (28)	2021	Egypt	89,4%
Abukmail et al. (29)	2021	Gaza	91%
Akafa et al. (27)	2023	Nigeria	99,3%

2. Migration Intentions Among Medical Students and Residents Across Countries

Migration intentions among medical students and residents vary significantly across different regions, shaped by economic conditions, professional opportunities, healthcare system challenges, and personal commitments. In our study, 69,5% of Moroccan medical students expressed a desire to migrate, closely aligning with

findings from another Moroccan study by Sylla et al. (70,1%) (40), indicating a persistent trend in Moroccan medical workforce migration. However, among interns and residents, migration intentions were substantially lower at 37,5%, suggesting that as medical professionals advance in their careers, their likelihood of considering migration decreases. This decline can be attributed to career integration, increased professional stability, and growing personal commitments, such as marriage and financial responsibilities, which make relocation less feasible. (Table 11).

2.1 North Africa: Morocco, Algeria, and Tunisia

The high migration rate among Moroccan medical students (69,5%) is comparable to that of Algeria (64,4%) (32), reflecting similar economic and professional challenges that push young doctors to seek better opportunities abroad. However, when it comes to residents—doctors in training—Algeria sees a higher migration rate (47%) (32) than Morocco (37,5%). This suggests that Morocco may provide slightly better career prospects, professional integration, or postgraduate stability, which helps retain some early-career doctors.

Tunisia, however, presents a different picture. With the highest resident migration rate (69%) (32), it appears that dissatisfaction within the medical profession extends beyond medical school. This trend suggests that factors such as limited career growth, difficult working conditions, and professional stagnation play a larger role in driving doctors away than financial concerns alone. If Morocco fails to take proactive measures to enhance working conditions and career prospects, it risks mirroring Tunisia's trajectory, where dissatisfaction continues at all career levels, not just among students.

Although Morocco retains a higher proportion of its residents compared to Algeria and Tunisia, the fact that over a third still intend to migrate underscores the need for stronger physician retention strategies. Understanding why Tunisian doctors continue to leave even after completing their training and identifying the factors driving Algeria's higher resident migration could help Morocco develop targeted policies that enhance working conditions, career advancement opportunities, and overall professional satisfaction, ultimately reducing the motivation for young doctors to seek opportunities abroad.

2.2 Other African Countries: Ghana, Nigeria, and Uganda

While Ghana (49%) (41) and Uganda (44,6%) (42) report significantly lower medical student migration rates than Morocco (69,5%), all three countries face similar economic hardships and infrastructural limitations. This implies that Moroccan medical students may be influenced by additional push factors beyond financial instability, such as perceived limited postgraduate training opportunities, bureaucratic obstacles, or dissatisfaction with career progression.

However, when transitioning to residency, Morocco sees a steep decline in migration intentions (from 69,5% to 37,5%), while Nigeria's migration rate increases from 62,8% (43) to 74,2% (44). This contrast suggests that while Moroccan students may feel uncertain about their future career paths, those who stay and enter residency may find the professional conditions better than expected or at least more stable than in other countries like Nigeria.

Despite Morocco's better post-graduate retention relative to Nigeria, its high student migration rate remains a challenge, indicating that policy efforts should focus not only on improving residency conditions but also on changing perceptions among medical students about career prospects within the country. By expanding specialization opportunities and ensuring clear career advancement pathways, Morocco can reduce student migration intent before it even begins.

2.3 Emerging Economies: Turkey, Malaysia, Jordan, and Pakistan

Morocco's migration trends also align more closely with Turkey (52,9%) (33) than with Malaysia (27,1%) (37), which reports the lowest migration rate in our dataset. Malaysia's low migration rate may be influenced by its compulsory service requirement (45), along with structured workforce policies that include residency programs, competitive salaries, and post-graduate placement guarantees. While these policies may offer useful insights for Morocco, they do not necessarily indicate voluntary retention.

Meanwhile, Jordan (85%) (46) surpasses Morocco's rate, reflecting extreme migration pressures, possibly due to geopolitical instability and economic difficulties. In contrast, Pakistan's migration rate (48,3%) (47) is significantly lower despite economic struggles, suggesting that policy-driven retention mechanisms—such as government-funded scholarships, structured residency training, and incentives for returning specialists—play a role in limiting migration (48). These

disparities highlight the varying effectiveness of national policies in mitigating medical workforce migration, offering Morocco comparative insights into how structured workforce planning can reduce migration pressures.

2.4 Developed Countries: Italy, Ireland, Portugal, Romania, and the United Kingdom

While migration is often associated with economic hardship, some developed countries exhibit migration trends similar to Morocco. For example, Italy (52%) (34), and Portugal (55%) (34,49), report moderate migration rates, suggesting that even in well-established economies, physician dissatisfaction can drive migration.

In contrast, Ireland (88%) (50) and Romania (84,7%) (51) report some of the highest rates, likely due to structural inefficiencies and international career competition, which are major contributors to migration.

The most notable contrast comes from the UK (32,3 %)(36), which reports one of the lowest migration rates. Unlike other European nations, the UK has historically implemented strategic workforce retention measures, including structured postgraduate training programs, reduced administrative burdens, and clear career progression pathways. (52) This indicates that even in high-income countries, well-implemented workforce retention strategies can significantly reduce migration intent. The UK's ability to keep its medical students within the system could provide key insights for Morocco.

2.5 Trends in Migration Intent Among Medical Students vs. Residents

Across multiple countries, a consistent pattern emerges: migration aspirations tend to decrease once medical students transition into residency and specialization. This trend is observed in Morocco, Algeria, and Ghana, suggesting that as professionals become more integrated into the local healthcare system, financial stability, career progression, and family responsibilities act as deterrents to migration.

However, this is not the case in Tunisia (69 %) (32) or Nigeria (74,2%) (44), where migration rates remain high beyond medical school, suggesting that while some countries successfully retain residents by providing career incentives, others—such as Tunisia and Nigeria—struggle with systemic dissatisfaction that persists beyond financial concerns.

2.6 Comparison of Migration Intentions in LMICs vs. HICs

The contrast in migration intentions between low- and middle-income countries and high-income countries highlights distinct yet overlapping challenges in healthcare workforce retention. Morocco's migration rate (69,5%) aligns more closely with several LMICs, including Algeria (64,4%) (32), Nigeria (74,2%) (44), reinforcing the idea that limited financial incentives, professional instability, and systemic healthcare weaknesses drive migration.

However, even in HICs such as Ireland (88%) (50), and Portugal (55%) (49), and in upper middle-income countries like Turkey (52,9%) (33), migration remains significant, suggesting that economic conditions alone do not determine migration intent. The UK (32,3%) (36), with its significantly lower migration rate, demonstrates that retention strategies, structured career pathways, and favorable working conditions play a crucial role in reducing migration pressures. This means that even if Morocco strengthens salaries and incentives, long-term retention depends on addressing bureaucratic inefficiencies, physician well-being, and professional development opportunities.

Table 11: Migration Intentions Of Medical Students and Residents in Different Countries

Author	Year	Country	Medical students Migration Intention	Residents and interns Migration intention
Teng et al. (37)	2024	Malaysia	27,1%	-
Ferreira et al. (36)	2023	United Kingdom	32,3%	-
Kizito et al. (42)	2015	Uganda	44,6%	-
Khan et al. (47)	2021	Pakistan	48,3%	-
Eliason et al. (41)	2014	Ghana	49%	-
Martella et al. (34)	2025	Italy	52%	-
Uzun et al. (33)	2024	Turkey	52,9%	-
Bojanic et al. (53)	2015	Croatia	53%	-

Adeyinka et al. (43)	2020	Nigeria	62,8%	-
Lahmer et al. (32)	2018	Algeria	64,4%	-
Our study	2025	Morocco	69,5%	37,5%
Sylla et al. (40)	2021	Morocco	70,1%	-
Suciu et al. (51)	2017	Romania	84,7%	-
Omar et al. (46)	2023	Jordan	85%	-
Gouda et al. (50)	2015	Ireland	88%	-
Zehnati et al. (32)	2024	Algeria	-	47%
Ramos et al. (49)	2017	Portugal	-	55%
Benslama et al. (32)	2020	Tunisia	-	69%
Wutor et al. (54)	2024	Ghana	-	71,8%
Akinwumi et al. (44)	2022	Nigeria	-	74,2%

3. Temporary vs permanent migration

The distinction between temporary and permanent migration among Moroccan medical professionals follows global patterns observed in other countries. In this study, 59,2% of participants expressed a preference for temporary migration, primarily for advanced training, sub-specialization, and international clinical exposure before returning. Meanwhile, 40,8% indicated a desire for permanent migration, reflecting long-term integration into foreign healthcare systems.

3.1 Interns & Residents: Morocco in comparison with Pakistan, Nigeria, and Tunisia

The preference for temporary migration among Moroccan interns and residents (70,6%) aligns with trends observed in Pakistan (71,6%) (55) and Tunisia (72%) (56) , where most early-career doctors migrate temporarily to gain specialized training that is either unavailable or limited at home, which suggests that in these countries, including Morocco, young doctors are not necessarily leaving due to financial hardship alone but because their home healthcare systems do not provide sufficient high-level training opportunities.

In contrast, Nigeria (44) presents a different scenario, where 54,1% of junior doctors plan to return, while 45,9% prefer permanent migration, indicating that in healthcare systems facing extreme resource shortages and job market stagnation, initial temporary migration often leads to permanent relocation. Morocco's situation highlights the need for structured reintegration policies to ensure that temporary migration remains a short-term career advancement strategy rather than an irreversible workforce loss.

3.2 Medical Students: Morocco in comparison with Croatia, Malaysia, Lebanon, Italy, and China

Among Moroccan medical students, 45,5% expressed a preference for permanent migration, closely mirroring trends in Croatia (46,5%) (53) , Lebanon (44,6%), (57) and international medical students in China (53,3%). (58) This suggests that in countries where medical graduates face uncertain employment opportunities, a significant portion choose permanent migration as a long-term solution to career instability.

Conversely, in Malaysia (80,7%) (37) and Italy (68,6%) (34) , the preference for temporary migration is much stronger, meaning most students intend to return after completing specialized training abroad. This could be attributed to structured workforce retention strategies, such as clear career pathways, post-graduate job security, and reintegration programs for returning doctors.

China (58) represents a unique case in this discussion. The study referenced does not focus on Chinese nationals migrating but rather on international Asian and African students who completed their medical education in China. Among these students, 46,6% intended to return to their home countries, while 53,3% planned to stay abroad. This highlights a different dynamic of migration, where students educated abroad often face difficulties reintegrating into their home healthcare systems and may opt to remain in more developed countries with better job prospects.

Morocco's situation highlights the need for structured reintegration policies that provide clear career opportunities and employment pathways for returning medical graduates, ensuring that temporary migration remains a short-term professional advancement strategy rather than leading to permanent workforce loss. This concern is reinforced by this study (59) which found that 78% of Moroccan

physicians working abroad have settled permanently, while only 22% intend to return.

4. Country preferences and language proficiency:

Germany (52,9%) emerged as the most preferred migration destination among Moroccan medical professionals, particularly medical students (60,2%), surpassing traditional Francophone destinations such as France (43,7%) and Belgium (20,7%). This trend aligns with the results of a previous Moroccan study by Sylla et al. (40), which also identified Germany as the top migration choice among Moroccan doctors, reinforcing the shift toward countries offering better specialization opportunities and more accessible integration into the healthcare system.

Similar preferences have been observed in other contexts, with Romanian (51), Croatian (53), and Jordanian (46) medical graduates also considering Germany as a key migration destination, reflecting its growing appeal beyond traditionally German-speaking countries.

This aligns with the findings from a German-based study by Schumann et al. (60), which explained that Egyptian physicians were drawn to Germany due to its strong demand for foreign-trained doctors and a more straightforward licensing process compared to other Western countries. Despite only 7,9% of respondents in our study reporting proficiency in German, Germany continues to be appealing because of its easier licensing process, which in many federal states only calls for a language test and credential verification rather than the onerous quotas and equivalency procedures that are enforced in other European nations.

Additionally, Germany also serves as a transit country for some foreign-trained physicians, as highlighted by Schumann et al. (60) Many doctors migrate to Germany for training, licensing, or initial work experience, with some later continuing their careers in other European nations. The presence of well-established networks of foreign-trained doctors and online communities likely facilitates this process, making Germany both a competitive destination and a gateway to further mobility within Europe.

France (43,7%) and Belgium (20,7%) remain leading destinations for Moroccan medical professionals, particularly among interns and residents (62,7%), reflecting strong linguistic, geographical, and historical ties. With 98,0% of respondents proficient in French, professional integration in their healthcare systems is facilitated

compared to non-Francophone destinations. Additionally, their geographical proximity to Morocco and the presence of established Moroccan communities make them practical choices for those seeking easier mobility and support networks.

Morocco aligns with the global trend observed in most studies below in table 12 , where the US and UK consistently rank as top destinations for medical migration. However, the relatively lower preference (20,7% for the US and 19,5% for the UK) among Moroccan professionals despite the minimal linguistic barriers, as 92,5% of respondents were proficient in English, making these countries theoretically accessible, may be explained by geographical distance and the complexity of accreditation processes. Unlike Germany, which offers a more straightforward pathway into the medical workforce, both the UK and the US impose extensive licensing requirements (PLAB in the UK, USMLE in the US), creating additional barriers and prolonging the accreditation process for foreign-trained doctors.

Medical students seem more inclined toward these destinations compared to interns and residents, possibly because they have more time to prepare for licensing exams and can take PLAB and USMLE earlier in their medical careers, making the transition more feasible than for those already engaged in postgraduate training. This is reflected in our study, where 23,3% of medical students preferred the US and 22,1% preferred the UK, compared to 15,7% and 14,9% of interns and residents, respectively.

Despite Arabic being Morocco's first language, Gulf countries—including the UAE (5,7%), Qatar (4,6%), and Saudi Arabia (2,9%)—ranked the lowest among preferred destinations. Unlike European countries, where specialization opportunities and structured residency programs are key factors driving migration, the Gulf region is often perceived as offering limited career progression and fewer research or academic opportunities. While salaries in these countries are higher, they do not seem to outweigh concerns about long-term professional growth and integration into the healthcare system.

This trend differs from what was observed in Jordan (46), where Gulf countries were a more common migration destination for medical professionals. The contrast may be explained by closer cultural and professional ties between Jordan and the Gulf, as well as a healthcare system that facilitates Jordanian doctor recruitment.

In Morocco's case, preference for European destinations may also be influenced by established migration networks and the presence of family abroad, particularly in France, Belgium, and Germany. Additionally, the lack of permanent residency options in Gulf countries may discourage Moroccan doctors from viewing them as viable long-term destinations compared to European alternatives.

Table 12: Comparative analysis of migration destinations across countries

Study	Year	Country	Preferred countries
Our study	2025	Morocco	Germany, France, Belgium, US, UK.
Teng et al. (37)	2024	Malaysia	Australia, UK, Singapore.
Wutor et al. (54)	2024	Ghana	US, UK, Canada.
Kansal et al. (35)	2023	India	US, UK.
Omar et al. (46)	2022	Jordan	US, UK, Germany, Arabian Gulf countries.
Adebayo et al.(61)	2022	Nigeria	UK, Canada, US.
Sylla et al. (40)	2021	Morocco	Germany.
Khan et al. (47)	2021	Pakistan	UK.
Suciu et al. (51)	2017	Romania	Germany, France, Great Britain
Bojanic et al. (53)	2015	Croatia	Germany, US, UK, Switzerland, Canada.
Kizito et al. (42)	2015	Uganda	US, UK, South Africa, France, Canada.
Imran et al. (62)	2011	Pakistan	UK, US.
Akl et al. (57)	2008	Lebanon	US, France, UK, Canada.

III. Socio-Demographic Factors and Migration Intentions

Our study identified several statistically significant associations between socio-demographic factors and migration intentions, highlighting how age, gender, marital status, academic level, and socioeconomic background influence Moroccan medical professionals' likelihood of considering migration.

1. Age

Age was a strong predictor of migration intention, with younger individuals significantly more likely to express migration aspirations than older professionals. This finding aligns with studies from Ghana, (54) where doctors aged 20–29 years had higher odds of intending to migrate than those aged 40 and above Similarly, in Nigeria (44,63,64), younger age was a significant factor associated with migration intent, reinforcing the idea that early-career professionals are more willing to relocate for training and career advancement.

Findings from West Africa (65) confirm that migration becomes less common beyond the age of 35, likely due to career stability, family obligations, and a reduced willingness to navigate complex licensing procedures abroad.

These findings suggest that migration is primarily a career-building strategy for younger doctors, who have fewer personal and professional constraints and greater flexibility to undertake licensing exams and integrate into foreign healthcare systems. Older professionals, on the other hand, may have already established stable careers, limiting their motivation or ability to migrate.

2. Gender

Gender was also a significant predictor of migration intentions, with male medical professionals showing a higher likelihood of considering migration than their female counterparts. This trend aligns with findings from Jordan (46) , Ghana (54), and Nigeria (61), where men were more likely to express migration aspirations.

However, gender differences in migration aspirations appear to be context-dependent. While some studies found a statistically significant gender gap with fewer female medical students intending to train abroad compared to males, other studies show no discernible difference. Men and women had comparable migration aspirations, according to research from Romania (51), Ireland (50), and India (35),

indicating that in certain contexts, gender-related barriers to migration may be less pronounced.

This variation in findings suggests that while male doctors may generally have greater flexibility to migrate due to fewer family responsibilities and fewer societal constraints, shifting gender norms and increasing female participation in medicine may narrow this gap over time.

3. Marital Status

While our study found that single individuals were more likely to express migration intentions than married ones, the association was not statistically significant ($p = 0,054$). However, multiple global studies have found a significant association between marital status and migration intentions, consistently showing that married individuals are less likely to migrate.

Results from Lebanon (57), Jordan (46), and Nigeria (61) all support that marital status significantly influences migration decisions, with single doctors exhibiting a higher likelihood of migration than their married counterparts. Similarly, studies conducted in Estonia (66) and Poland (67) indicate that marriage is associated with a reduced likelihood of migration, probably attributed to the stability provided by family life and the practical challenges of relocating with dependents.

The recurring pattern observed across various contexts emphasizes the impact of family responsibilities on migration decisions. The financial burden, logistical complexities, and professional adjustments required to relocate with a spouse or children often present significant challenges, making migration a less viable option for individuals with established family commitments.

Although our study did not find a statistically significant association between marital status and migration intentions, it does not necessarily imply that marital status has no effect in Morocco. Instead, the high proportion of single respondents in our sample may have reduced variability, limiting the ability to detect a strong relationship.

4. Academic Level

Academic level was a highly significant factor in migration intentions ($p < 0,001$), with medical students exhibiting the highest migration aspirations. This trend aligns with findings on age, reinforcing that early-career professionals are

more mobile and open to seeking opportunities abroad before committing to long-term professional and personal obligations.

International studies have consistently supported this pattern. In Lithuania (68), medical students exhibited the highest migration intentions, followed by residents and physicians, highlighting a progressive decline in migration aspirations as professionals advance in their careers. This trend was also reinforced by findings from Estonia (66), Poland (67), and Nigeria (44).

This decline in migration aspirations can be attributed to the increasing professional integration, financial stability, and strengthened local networks that come with career progression, making migration both less necessary and less feasible. Early-career doctors often view migration as an essential step toward specialization and professional development, driven by the pursuit of advanced training opportunities and improved working conditions. However, as medical professionals gain greater exposure to the realities of clinical practice and establish themselves within their healthcare system, they may reconsider the practicality of relocating. Nonetheless, in contexts where access to specialization remains constrained, migration may continue to be a viable and appealing option even for those in more advanced stages of training.

5. Socioeconomic Status

Unlike other sociodemographic factors, socioeconomic status did not show a statistically significant association with migration intentions in our study. This suggests that migration is perceived as a career necessity rather than a decision driven solely by financial means, with medical professionals across different economic backgrounds considering relocation as a way to access better training, career prospects, and working conditions.

This aligns with previous studies in Morocco (40) and Nigeria (44), both of which reported no significant relationship between socioeconomic profile and migration intentions. However, in contrast, research conducted in Estonia (66) found that income was a significant factor, with lower-income professionals expressing higher migration aspirations.

This contrast might be a reflection of disparities in economic stability and access to migration pathways; in certain situations, migration is driven by financial

hardship, but in others, it is made available to people of all income levels through organized programs and international scholarships.

In Morocco, the lack of a significant association suggests that migration is viewed as a strategic career move rather than a privilege limited to those with greater financial means, with opportunities for financial support abroad encouraging professionals from all economic backgrounds to consider relocation as a viable option for career advancement.

IV. International experience and Migration intentions

Exposure to international study or work environments appears to be a significant factor influencing migration aspirations among medical professionals, as showed in our study, where 74,2% of participants with prior international experience expressed migration intentions, compared to 53,5% of those without such exposure ($p = 0,021$), suggesting that firsthand experience with foreign healthcare systems, training opportunities, and professional networks enhances the appeal of working abroad by offering insight into different medical practices, career prospects, and education systems, making migration seem more tangible and attainable.

This is corroborated by studies across various countries. In Romania (51), students who participated in Erasmus exchange programs showed significantly higher migration intention, which was also the case in Turkey (33) for students planning to take part in international exchange programs; likewise, studies in Ghana (54) and Portugal (49) found that medical professionals who had obtained their degrees abroad were significantly more likely to migrate.

This aligns with findings from Iran (39), where prior time spent abroad, whether for academic or professional purposes, was linked to migration aspirations. The same was found in Italy (34), as early international experiences even during high school or college were associated with a greater likelihood of seeking migration after graduation.

These consistent findings across different settings suggest that international exposure not only broadens professional perspectives but also fosters a sense of familiarity and confidence in navigating foreign healthcare systems. This experience serves as both an incentive for migration and a practical gateway, equipping

individuals with the knowledge and networks necessary to pursue career opportunities abroad.

A specificity in our study is that although international experience significantly increased overall migration intentions, it did not show a significant link to permanent migration (p = 0,418), suggesting that while exposure abroad enhances the appeal of migration, it does not necessarily translate into a long-term commitment to staying abroad. Some individuals may encounter challenges such as cultural differences, professional integration difficulties, or unmet expectations, leading them to reconsider permanent relocation. Others may view international experience as a temporary opportunity to gain specialized skills before returning home. Furthermore, familial, cultural, and institutional ties to Morocco may promote return rather than permanent residency.

V. Concrete departure preparation and Migration intentions

The steps taken by Moroccan medical professionals to prepare for migration provide valuable insight into their level of commitment to relocating abroad. In our study, 29,4% of respondents reported initiating procedures to study or work abroad, with medical students (32,2%) slightly more proactive than interns and residents (25,7%). Among the most common steps taken, 84,8% engaged in online research about migration pathways, 73,9% networked with professionals already working abroad, and 59,8% obtained language certifications. These findings suggest that many prospective migrants actively explore their options and take concrete measures to facilitate their transition into foreign healthcare systems.

This is consistent with research from Romania (51), which found a significant correlation between migration intent and engaging in preparatory actions, such as enrolling in language courses (44,5%), looking for jobs online (42,7%), and getting in touch with Romanian doctors overseas (75,2%). Similarly, our results also showed a strong association between having taken migration-related steps and both overall migration intention (p < 0,001) and permanent migration intention (p = 0,001), indicating that individuals actively preparing for migration are significantly more likely to commit to leaving.

However, the lower engagement in certification exams such as USMLE or PLAB (10,9%) and credential updates (14,1%) suggests that while many consider migration, fewer commit to the lengthy, costly, and demanding processes required for destinations like the United States and the United Kingdom. This may be explained by the already long and intensive medical education pathway, making additional years of preparation and exams less appealing. Instead, the emphasis on language certification aligns with migration preferences toward Germany, France, and Belgium, as identified in our study. Given that most Moroccan medical professionals are proficient in French (98%) and English (92,5%), learning German becomes the most strategic linguistic investment, supporting Germany's position as the top preferred destination despite its linguistic barrier, highlighting how both practical migration pathways and language adaptability influence migration choices.

VI. Motivations for migration: Why do they want to leave ?

Moroccan medical students and residents cited multiple reasons for wanting to work abroad, ranging from better working conditions and salaries to higher-quality training and career growth opportunities. Dissatisfaction with the Moroccan healthcare system and the public perception of doctors also played a significant role.

1. Economic and professional opportunities

Across different countries, studies have consistently identified better remuneration, improved working conditions, and career advancement as the primary drivers of medical migration, as corroborated by research from Ghana (54), Pakistan (62), Nigeria (43), and Italy (34).

Our findings confirm that Morocco follows this global trend, with better working conditions (93,2 %), remuneration (87,5 %), and career advancement (91,5 %) as the most cited reasons for migration. Similarly, evidence from Benabdellah et al. (59) which examined Moroccan doctors who had already emigrated, supports this pattern. Their study found that 41 % of emigrated Moroccan doctors cited salary dissatisfaction, while 20 % left due to limited career growth, corroborating findings by Sylla et al. (40)

However, migration motivations differ across economic contexts. In Pakistan, Nigeria, and Ghana, poor salaries and job insecurity are dominant push factors,

whereas in Italy, career growth plays a more prominent role than financial gain. This suggests that while Moroccan doctors, like those in lower-income countries, are significantly influenced by financial factors, career advancement is also an important consideration—aligning partially with trends observed in higher-income settings.

Statistical analyses further confirmed the significance of these motivations. While improved working conditions were highly associated with both overall and permanent migration, higher salaries and career advancement showed no association with permanent migration, indicating that many doctors may view higher earnings and career advancement abroad as temporary benefits; opportunities to gain financial stability and professional experience before eventually returning to Morocco.

Interestingly, medical students placed greater emphasis on improved working conditions (93,2%) than interns and residents (86,7%) ($p = 0,042$). This difference may suggest that students, who have yet to experience the full challenges of medical practice, hold higher expectations for workplace conditions abroad, whereas interns and residents may have already adapted to some of these challenges in Morocco.

2. Training and research opportunities

For many medical professionals, migration is not only about better salaries or working conditions but also about the pursuit of specialized expertise and advanced training opportunities that are often unavailable in their home country. Studies from Lebanon (57) , Turkey (33) and Italy (34) have shown that doctors frequently seek international experience to access advanced skills, high-quality training programs, and research environments that are often unavailable in their home countries, aligning with our results, where acquisition of advanced skills and international experience (93,7%) and access to specialized training and research (93,8%) were among the most cited reasons for migration.

Statistical analyses further confirmed the significance of these factors. The acquisition of advanced skills and international experience was highly associated with both overall migration ($p < 0,001$) and permanent migration ($p = 0,028$), indicating that many Moroccan doctors view foreign training as a crucial step toward securing competitive career opportunities, which may ultimately encourage long-term settlement abroad.

However, access to specialized training and research was significantly associated with overall migration (p = 0,005) but not with permanent migration (p = 0,069), which may indicate that while many seek advanced education abroad, some intend to return to Morocco after obtaining competitive credentials that could improve their career prospects domestically.

While both groups placed a strong emphasis on training-related motivations, our findings revealed that access to specialized training and research was significantly more important to medical students (93,8%) than to interns and residents (86,8%) (p = 0,027). This suggests that students, who have yet to enter clinical specialization, are more focused on securing opportunities for advanced education abroad, whereas interns and residents—already engaged in their specialty training—may prioritize gaining work experience and career stability in their migration decisions.

3. Systemic and workplace dissatisfaction

Structural deficiencies in the Moroccan healthcare system also proved to strongly shape migration intentions. Three out of four respondents expressed dissatisfaction with hospital infrastructure, resource limitations, and lack of professional autonomy. These concerns echo broader challenges seen in many countries where doctors face workplace constraints that hinder professional development and patient care.

A particularly pressing issue is the perceived shortage of residency positions, cited by 40,7% of medical students. Indian medical students shared this concern, as 68,7% identified limited residency spots as a decisive push factor. (35) However, only 12,5% of interns and residents in Morocco shared this concern, suggesting that those who have already passed the residency exam no longer see it as a major barrier. This shift in perception may indicate that while medical students worry about their future placement opportunities, interns and residents—having successfully entered specialization—either no longer feel affected by the shortage or have adjusted their expectations.

The impact of these systemic barriers on migration choices is evident. Dissatisfaction with the healthcare system was significantly linked to both overall (p = 0,007) and permanent migration (p = 0,028), reinforcing that structural limitations contribute to both short-term and long-term migration decisions. However, the

perceived shortage of residency positions was only significantly associated with overall migration (p = 0,038) but had no significant association with permanent migration (p = 0,458). This suggests that many doctors view migration as a way to access specialty training abroad with the expectation of returning, rather than as a permanent decision.

Apart from systemic constraints, workplace culture emerged as a decisive factor in migration intentions. Open-ended responses frequently referenced hierarchical tensions, lack of professional support, and an overall toxic work environment. In Pakistan (69) , more than half of medical students identified poor hospital environments as a major driver of migration, while in Uganda (42), 53,6% of doctors cited workplace dissatisfaction. Benabdellah et al. (59) similarly reported that workplace conflicts, particularly with superiors, were a frequent grievance among Moroccan doctors.

Ultimately, these findings highlight that migration is not solely driven by economic aspirations but also by a search for professional environments that foster respect, career growth, and better working conditions.

4. Social and professional perception

Beyond these previous concerns, Moroccan doctors also experience unique societal challenges that reinforce migration intentions. One of the most distinctive factors is the lack of societal respect for doctors.

While 53,7% of respondents explicitly agreed that doctors in Morocco face a lack of societal respect, this issue was even more prevalent in open-ended responses, where many participants described feeling undervalued and unappreciated by society. Sylla et al. (40) further highlighted that 83,6% of Moroccan medical students felt denigrated by the media, reinforcing a negative public perception of doctors.

Interestingly, interns and residents were more likely to report experiencing a lack of societal respect (59,6%) compared to medical students (49,2%) (p = 0,043). This difference suggests that exposure to real-world medical practice heightens awareness of these issues, as interns and residents interact more directly with patients, hospital administrations, and the public. Meanwhile, medical students may be less frequently subjected to direct mistreatment but remain aware of the profession’s declining societal status.

This widespread lack of societal recognition not only affects professional morale but also influences long-term migration decisions, as our findings confirmed that lack of societal respect was significantly associated with permanent migration intentions (p = 0,041) but not with overall migration (p = 0,174), suggesting that while it may not be the primary factor prompting immediate migration, it plays a key role in doctors' decisions to settle abroad permanently, seeking environments where their profession is more valued.

5. Work-life balance and quality of life

The prospect of a better quality of life and greater stability also played a crucial role. In our study, 78% of respondents cited quality of life improvements as a key driver for migration, while 35,1% mentioned concerns about political security and stability. These findings suggest that beyond career aspirations, many doctors seek a more balanced and predictable lifestyle.

A similar trend has been observed in Italy (34) and Ireland (50), where medical professionals often migrate to escape stressful working conditions, reduce professional burnout, and secure a healthier work-life balance. Unlike migration patterns in lower-income countries, where financial concerns dominate, doctors from middle-income settings like Morocco increasingly prioritize factors related to well-being and personal stability.

Statistical analyses support the relevance of these motivations. The expectation of a better quality of life was highly correlated with both overall ($p < 0,001$) and permanent migration intentions ($p < 0,001$), indicating that for many doctors, migration is seen as an investment in long-term well-being. Similarly, concerns about political stability and security were associated with both overall ($p = 0.023$) and permanent migration ($p < 0,001$), reflecting the desire for a more predictable and secure living environment.

Although obtaining citizenship was not among the most frequently cited motivations (13,2%), its significant association with both overall ($p < 0,001$) and permanent migration ($p = 0,001$) suggests that for some doctors, migration is not just a temporary career move but a strategic decision for long-term legal and social security. This could indicate that while many initially migrate for professional reasons, some come to view citizenship as a means to ensure greater career stability, legal protection, and access to rights in their host country. Similar patterns

have been observed in Morocco (70), where healthcare workers also cited nationality acquisition as a factor, as well as in Jordan (46) and Pakistan (71) , where foreign citizenship was viewed as a key step toward long-term settlement and improved opportunities.

Beyond structured responses, open-ended feedback highlighted frustration with excessive workloads, unpredictable schedules, and a lack of institutional support.

Rather than being driven solely by professional growth, many doctors saw migration as a way to regain control over their work-life balance, reduce stress, and find greater stability, ensuring a future that is not only financially secure but also emotionally and socially fulfilling.

6. Family and personal considerations

In our study, 40,5% of respondents cited better prospects for their children and spouses, while 11,8% mentioned reuniting with family abroad.

While these were not among the dominant motivations, their statistical significance highlights their relevance, confirming that for many Moroccan doctors, migration is seen as a long-term investment in their family's future.

Family considerations were also a major concern in Nigeria (43), particularly the desire to secure better education and healthcare access for children. Likewise in Pakistan (71), where a significant proportion of medical students planned to bring their families abroad after acquiring citizenship, highlighting that migration is not solely a personal decision but a broader effort to enhance the well-being of their loved ones.

Open-ended responses further illustrated this perspective, with several participants emphasizing their desire to offer their children a better future in terms of education and overall life stability. Others highlighted family reunification as an emotional factor rather than a purely practical one, underscoring the role of personal ties in shaping long-term migration intentions.

While peer pressure was not a dominant motivation (15,4%), it was significantly more influential among medical students (18,1%) compared to interns and residents (9,6%) ($p = 0,023$), suggesting that social expectations around migration may have a greater impact on those still in training, possibly due to their younger age and earlier career stage.

VII. Barriers to migration: What's holding them back?

For many Moroccan medical students and residents, the desire to migrate is met with frustrating challenges that make leaving far from easy. From financial constraints and visa difficulties to family obligations and uncertain career prospects abroad, these barriers shape not only who manages to leave but also who is forced to stay behind.

1. Financial and logistical barriers

For many Moroccan medical students and residents, the financial burden and bureaucratic complexities of migration pose significant obstacles. In our study, 59,8% of respondents cited high migration costs, including examination fees, licensing procedures, and relocation expenses, while 37,7% reported visa and work permit challenges as major barriers.

These struggles are not unique to Morocco. In Jordan (46), financial constraints (42,7%) and visa difficulties (42,2%) were among the most frequently reported barriers, while in Lebanon (57) , 53% of respondents expressed concerns over the cost of training abroad. Similarly in Ghana (54), financial difficulties were a major reason for delayed or abandoned migration plans.

In contrast, Croatia (53) reported lower financial barriers (25%), likely due to its integration into the European Union, which allows for free movement and mutual recognition of qualifications, significantly reducing migration costs. However, for Moroccan doctors, these financial challenges are further exacerbated by the unpredictability of visa approvals and the complexity of work permit procedures. Several respondents described the process as financially draining and difficult to navigate without strong institutional or financial support.

While financial constraints affect doctors at all levels, they were significantly more challenging for medical students (65,5%) compared to interns and residents (52,2%) ($p = 0,012$). This disparity likely reflects the greater financial dependence of students, who often lack personal income and rely on family support, whereas interns and residents may have already built some financial stability.

Financial and visa-related challenges, although frequently mentioned, did not reach statistical significance for migration intentions, indicating that although they

pose practical challenges, doctors who are motivated to migrate might see them as obstacles to overcome rather than deterrents.

2. Professional and regulatory barriers

For Moroccan doctors seeking to migrate, diploma recognition poses a significant challenge, with 40,3% of respondents citing it as a major barrier, but it was not associated with migration intentions, suggesting that while it is a frustrating obstacle, it may not be a deciding factor in the migration process.

This issue extends beyond Morocco, as Lebanese doctors also identified certification requirements as a significant barrier to training abroad (52%). (57) Similarly, 57,8% of Nigerian resident doctors cited the non-recognition of their residency training abroad as a deterrent to migration (61). These findings emphasize how strict accreditation systems limit medical mobility and make it harder for foreign-trained doctors to integrate into new healthcare systems.

Language barriers further complicate migration efforts. 23% of Moroccan respondents mentioned language as a concern, with medical students (27,7%) being significantly more affected than interns and residents (16,9%) ($p = 0,017$). The difference in language barrier perception between them may be linked to their preferred migration destinations. Medical students overwhelmingly favored Germany (60,2%), a country where proficiency in German is essential for medical practice. In contrast, interns and residents were more likely to choose France (62,7%), where they already have linguistic proficiency, and may feel more confident in their ability to communicate and adapt professionally.

This challenge is echoed in other contexts. In Italy (34) and Jordan (46), language difficulties were one of the most cited obstacles for medical students planning to move abroad.

Ultimately, both credential recognition and language barriers present hurdles rather than deterrents, as doctors motivated to migrate often seek ways to navigate these challenges through additional training, certification exams, or language courses.

3. Personal and social barriers

Family considerations are among the most universal barriers to migration; they emerged as a significant barrier affecting both overall and permanent

migration, as they were cited by 81% of Irish medical students (50) , 67,8% of Jordanian students (46), and 68% of respondents in our study.

This trend is consistent across several countries, with many medical professionals hesitant to leave behind loved ones, particularly in cultures like ours where strong familial bonds play a central role. However, in Morocco, this influence is particularly strong when it comes to permanent migration decisions, reinforcing the idea that for many doctors, temporary migration is a more feasible option than permanently leaving their home country.

Religious beliefs, being associated with both types of migration, also played a role, as emphasized by open-ended responses; many are concerned about cultural adaptation, including the challenge of living in a non-muslim country and raising children outside of their religious and social norms. These concerns were also shared by medical students in Pakistan (72) and Jordan (46), who cited religion and cultural identity as key reasons for choosing to remain.

Beyond religious and family ties, patriotism also emerged as a significant barrier, cited by 33,9% of respondents and showing a statistically significant association with both overall and permanent migration intentions. This reflects a deep-seated attachment to Morocco and a desire to contribute to the country despite its challenges. The same was reported by Ghana (54) and Nigeria, where doctors expressed a commitment to serving their home countries despite the appeal of migration (61). This influence was particularly strong in India, where 42,2% of medical students cited national service as a key reason to stay (35), reinforcing the idea that while many Moroccan doctors may consider migration, their long-term commitment to their country remains an important factor in their decision-making.

This is particularly evident in how both cultural adaptation concerns and patriotic sentiments were primarily associated with permanent migration, suggesting that while cultural barriers may not hinder short-term mobility for professional development, they play a greater role in decisions about permanent migration, as many respondents saw temporary migration as a way to gain experience without severing ties to their home country.

IX. Suggestions and recommendations: How can we keep them from leaving?

1. Improving working conditions

1.1 Regulating work hours and shift limits

Morocco's healthcare system struggles with severe staff shortages, excessive working hours, and high burnout rates, with doctor-patient ratios falling below WHO standards. (73) A study on Moroccan anesthesiologists and intensive care unit doctors found high levels of emotional exhaustion (74) indicating a broader issue affecting hospital-based physicians. However, burnout is not limited to high-stress fields; a 2022 survey (75) found that over 50% of primary care doctors in France, Germany, Belgium, the UK, and the US also reported increasing stress and burnout due to growing workloads.

These working conditions contribute significantly to medical migration, as Moroccan doctors often seek better environments abroad where work-life balance and support systems are stronger. To mitigate this, France and Germany both follow the European Working Time Directive, which limits the average workweek to 48 hours, including on-call hours, and mandates at least 11 consecutive hours of daily rest and a minimum of one full day off per week. (76)

Morocco could adopt a similar working hour policy, ensuring maximum weekly limits on shift hours to prevent exhaustion, with mandatory consecutive rest hours and weekly days off to improve recovery.

Additionally, staffing shortages could be addressed by optimizing recruitment policies. A study from the US (77) found that task-shifting strategies, where non-clinical tasks are delegated to administrative personnel, reduce physician workload, allowing doctors to focus on medical care rather than administrative burdens.

1.2 Enhancing mental health support and work-life balance

Beyond workload regulations, physician well-being is also influenced by mental health support systems and flexible work policies. Studies show that structured hospital-based mental health programs, including peer support networks, psychological counseling, and stress management workshops, are linked to improved physician well-being. (78)

Other countries, such as Canada and the UK, have introduced work-life balance initiatives such as parental leave, flexible scheduling, and telemedicine adoption for remote consultations. (79,80) Morocco could adopt similar policies to enhance job satisfaction and work-life balance and reduce migration pressure.

2. Strengthening Financial incentives

For years, newly graduated doctors in Morocco's public sector earned relatively low salaries, making migration a more attractive option. In 2022, the government introduced a monthly salary increase for public-sector physicians, addressing a long-standing demand. (81)

While this was an important step, non-contract-bound residents have not received any salary increases, despite performing the same tasks as their contractual counterparts—and continue to earn only 3,500 Moroccan Dirhams per month, a figure just slightly above the national minimum wage (82). While a salary difference is expected due to their differing employment statuses, the disparity remains disproportionately large—fueling persistent dissatisfaction and frustration among young doctors.

Other countries have recognized this issue and designed targeted incentives; France offers salary bonuses and tax exemptions for doctors in underserved areas (83) , while the UK provides one-time bonuses and ongoing financial allowances for doctors while also offering funded career development, ensuring long-term support for doctors working in shortage areas. (84)

However, income alone may not offset other drawbacks of certain practice locations or career stages. Many doctors working in underserved areas often face overwhelming workloads and limited infrastructure.

Morocco's 35% increase in healthcare funding and the creation of 16,500 new healthcare jobs (81) mark a significant investment in the sector. However, ensuring these measures translate into fair pay across all employment categories and financial assistance or grant programs for doctors in high-need areas will be crucial for long-term retention.

3. Investing in healthcare infrastructure and resources

Many Moroccan doctors cite poor hospital conditions and lack of essential equipment as key frustrations, particularly in rural areas. Limited investment in healthcare infrastructure has resulted in overcrowded facilities, outdated technology,

and resource shortages, impacting both patient care and physician morale (73). Research shows that healthcare infrastructure investment is directly linked to physician retention and service quality, as better facilities attract and retain medical professionals. (85)

In response, Morocco has increased its healthcare budget by 35%, reaching 30.7 billion Dirhams in 2024, and launched a rehabilitation program for 1,400 health centers, with 481 already renovated. (81) Construction is also underway for three regional hospitals and a new University Hospital Center in Rabat. (86)

While these initiatives represent significant progress, rural areas remain underserved, and resource shortages persist in public hospitals. To maximize the impact of these investments, Morocco could modernize hospital infrastructure, expand public-private partnerships to accelerate hospital development and maintenance efforts, and introduce telemedicine to improve access in remote areas.

Some countries have implemented similar initiatives to address healthcare disparities: India's 10-Bed ICU Project improved critical care access in rural hospitals using cost-effective telemedicine systems (87). Nigeria's Primary Healthcare Revitalization Plan focused on upgrading thousands of primary health centers with better infrastructure, medical supply chains, and workforce support. (88) Meanwhile, countries like Bangladesh and Benin adopted Satmed, a satellite-based eHealth platform that enhances diagnostics and medical training in remote hospitals. (89)

By integrating digital health innovations, Morocco could improve healthcare accessibility and efficiency (90), ensuring equitable service distribution across regions, making the local medical environment more attractive to physicians, and reducing incentives to migrate in search of better work conditions.

4. Medical training and specialization opportunities

Morocco's medical education system faces persistent challenges, as demonstrated by the recent nationwide medical student strike. While additional residency spots have been discussed, the system still grapples with issues like outdated equipment, overcrowding, and insufficient resources, contributing to ongoing frustration among young doctors and leading them to seek training abroad. (91)

To address these issues, a comprehensive strategy is required:

4.1 Expanding residency and training opportunities

A shortage of residency positions has created bottlenecks for medical graduates, limiting their ability to specialize locally. Expanding training slots alongside improvements in supervision and training infrastructure could help alleviate this issue. Strengthening preceptor training programs—which ensure experienced physicians provide structured mentorship to residents—would also enhance the quality of medical education. Lithuania successfully tackled similar challenges by expanding physician training programs as part of broader healthcare reforms, leading to improved retention rates and a more balanced distribution of specialists. (92)

4.2 Facilitating international fellowships and structured return pathways

Many Moroccan doctors seek specialized training abroad due to limited subspecialty programs and insufficient advanced training opportunities domestically. However, without structured incentives to return, many choose to remain abroad, contributing to a brain drain in Morocco's healthcare system. Establishing bilateral agreements with leading medical institutions could provide international training pathways while ensuring Moroccan doctors return and contribute to the local system.

Countries with structured return-for-service (RFS) agreements have successfully improved physician retention. In Canada, Newfoundland and Labrador's RFS fellowship program retained 90% of participants in the region after four years, compared to just 60% of non-participants. (93) Implementing similar return-based fellowships could help Morocco retain highly trained specialists while expanding its pool of experts in critical medical fields.

4.3 Curriculum and training reform

Morocco's medical education system remains heavily theory-based, with limited early clinical exposure. A shift to competency-based medical education (CBME) could better prepare future doctors by focusing on demonstrated abilities rather than time-based progression. In CBME, students move forward only when they've mastered specific skills—such as safely inserting an intravenous line, delivering bad news to a patient, or managing an emergency case. For instance, instead of simply completing a cardiology rotation, a student would need to show they can recognize and respond appropriately to a patient experiencing chest pain.

While CBME does rely on clearly defined learning outcomes, it goes beyond a checklist of objectives. It emphasizes frequent observation, structured feedback, and real-world performance—ensuring that graduates are not only knowledgeable but truly ready to provide safe, effective, and patient-centered care from the outset. (94)

4.4 Research and academic opportunities

Limited research funding and career pathways push Moroccan doctors abroad, as many seek better opportunities in academic medicine. Strengthening medical research programs could enhance physician retention by providing structured career growth beyond clinical practice. Expanding research funding, integrating early research training into medical education, and creating dedicated career paths for physician-scientists would ensure long-term engagement in the field. In the US, physician-scientists who maintained consistent research activity from early training had higher career success and retention rates, highlighting the importance of structured research continuity. (95) Establishing similar frameworks in Morocco would not only retain specialists but also boost medical innovation and reduce dependence on foreign institutions for advanced research training.

5. Changing the cultural and societal perception of doctors

Negative public perception, workplace pressures, and strained doctor-patient relationships contribute to job dissatisfaction and physician turnover. Research shows that poor public trust and a lack of appreciation significantly impact physician morale and retention, as seen in China (96), where deteriorating doctor-patient relationships have led to increased turnover intentions among medical professionals, highlighting the need for public awareness initiatives. Similarly, in India, doctors reported higher burnout and lower job satisfaction when they felt unsafe or undervalued by the public, reinforcing the link between social perception and physician retention. (97)

Improving doctors' public image could involve positive media coverage, national awareness campaigns, public recognition programs—such as awards or official appreciation days that highlight doctors' contributions—and stronger patient-doctor communication training. Community engagement efforts, such as health education sessions in schools or participation in local community events, can also foster closer ties between doctors and the public, helping to rebuild trust, enhance morale, and reduce migration.

6. Encouraging the return of Moroccan doctors abroad

A significant number of Moroccan doctors have established careers abroad, making reintegration into the national health system a complex challenge. While doctors trained under government-funded cooperation programs often return through structured agreements, those who emigrated independently face bureaucratic and professional barriers. Despite recent reforms—such as the enactment of Law 21.33, which promotes equality between foreign and Moroccan doctors and encourages the return of expatriate physicians (98)—public sector employment remains less attractive due to limited financial incentives, slow career advancement, and rigid administrative processes. Opening a private practice is also hindered by complex licensing and regulatory hurdles. Evidence from countries like South Africa shows that physician return is possible when favorable policy and economic conditions are in place; between 1991 and 2017, physician emigration there declined sixfold, with nearly a third of emigrated doctors returning in response to workforce policy reforms and improved economic stability. (99) Similarly, Morocco could encourage return migration by improving working conditions, streamlining credential recognition, offering relocation support, and creating competitive, secure opportunities in clinical and academic medicine, while also investing in the digitalization of administrative processes to reduce bureaucratic barriers and facilitate reintegration.

7. Promoting ethical international recruitment practices

To promote fair and sustainable health workforce management, destination countries should adhere to the principles outlined in the WHO Global Code of Practice on the International Recruitment of Health Personnel, which emphasizes ethical recruitment practices that do not exacerbate health workforce shortages in source countries. As stated in Article 3.6 of the Code, 'Member States should strive, to the extent possible, to create a sustainable health workforce and work towards establishing effective health workforce planning, education, and retention strategies that will reduce their need to recruit migrant health personnel'(21). In addition, the WHO’s 2024 guidance on bilateral agreements stresses that such agreements should be 'guided by principles of transparency, fairness, and mutuality of benefits,' ensuring protection of migrant health workers’ rights while supporting health system sustainability in both source and destination countries. (100,101)

X. Limits and Strengths of the Study

This study is one of the first in-depth studies on the migration intentions of Moroccan medical professionals, providing valuable insights into the motivations and barriers influencing their decisions. Given the impact of medical migration on both national healthcare stability and the global workforce, this research addresses a pressing issue with significant policy implications. The inclusion of a diverse sample of medical students, interns, and residents from various Moroccan faculties enhances the study's generalizability, offering a more comprehensive understanding of migration trends. Furthermore, the thorough development of our survey, which was informed by similar studies, strengthens the validity of our findings and enhances their potential for international comparability.

However, the study has certain limitations. While the sample of 313 participants is diverse, it remains relatively small compared to the overall population of Moroccan medical students and professionals. Moreover, the non-probabilistic convenience sampling method may have introduced self-selection bias, as individuals with stronger migration intentions might have been more likely to respond, potentially leading to an overestimation of migration trends. The cross-sectional design further restricts the ability to assess how migration attitudes evolve over time. Response bias is also a potential limitation, as participants may have provided answers influenced by social desirability, which could affect the accuracy of reported motivations and barriers.

XI. Future Research Perspectives

Future research should adopt a longitudinal approach to track how migration intentions evolve into actual migration behaviors over time, as stated intentions do not necessarily translate into definitive actions. Expanding the sample size and employing random sampling methods could improve generalizability and reduce selection bias. Further qualitative research, including in-depth interviews, could offer richer insights into motivations and barriers. Lastly, evaluating the impact of policy interventions, such as financial incentives and improved working conditions, would be essential in developing effective retention strategies.

CONCLUSION

The migration of Moroccan healthcare professionals remains a critical issue with profound implications for the national healthcare system, workforce stability, and patient care. This study has provided valuable insights into the motivations and barriers influencing the migration intentions of Moroccan medical students and professionals, highlighting the complex interplay of economic, professional, and systemic factors that drive this phenomenon. The findings confirm that limited career opportunities, challenging working conditions, and a perceived lack of professional recognition are significant push factors, while personal and logistical barriers serve as deterrents to migration.

The consequences of this brain drain extend beyond the loss of trained personnel, exacerbating existing healthcare shortages, particularly in underserved regions. As demonstrated in global trends, the departure of medical professionals can hinder healthcare accessibility, increase patient burdens, and compromise long-term efforts to improve public health. Additionally, Morocco's experience aligns with broader patterns observed in other low- and middle-income countries, where physician migration contributes to economic losses and slows healthcare system development.

Addressing this issue requires targeted policy interventions aimed at improving working conditions, offering financial incentives, and expanding professional development opportunities. Furthermore, structured return pathways for Moroccan doctors abroad could help mitigate the impact of migration by reintegrating skilled professionals into the national healthcare system. Future research should continue to explore long-term migration trends, the effectiveness of policy measures, and the evolving aspirations of medical professionals to ensure a more sustainable healthcare workforce.

Ultimately, while medical migration is a global reality, Morocco has the opportunity to develop strategic retention and reintegration policies that balance the professional aspirations of its healthcare workforce with the pressing needs of its healthcare system.

ABSTRACT

Background

The migration of healthcare professionals is a growing concern worldwide, particularly in low- and middle-income countries like Morocco. The increasing number of Moroccan doctors and medical students seeking opportunities abroad represents a crucial challenge for the country's healthcare system. This study aims to examine the migration intentions of Moroccan medical students, interns, and residents, exploring their main motivations and perceived barriers, while proposing possible courses of action to curb this phenomenon.

Methods

A cross-sectional, descriptive, and analytical study was conducted. Data were collected using an online questionnaire distributed to medical students, interns, and residents across various Moroccan medical faculties and hospitals. The survey included sociodemographic information, migration intentions, motivations, barriers, and recommendations. Descriptive statistics and comparative analyses were performed to identify significant associations between migration intentions and influencing factors. A p-value < 0.05 was considered statistically significant.

Results

Our study included 313 participants, 56,5% of whom were medical students, 25,2% residents and 18,2% were interns. The mean age was 24,5 ± 3,3 years. Women represented 65,8% of the sample, and 88,2% of participants declared themselves to be single. The majority perceived themselves as middle-class (87,5%). The faculties of Fez (40,9%) and Marrakech (33,5%) were the most represented. Academically, 36,7% of students were in 7th year and 27,7% in 6th year. Interns were predominantly in 2nd year (82,5%) and residents in 1st year (45,6%).

Just 9,9% of participants reported medical experience abroad. In addition, 97,4% claimed proficiency in at least one foreign language, mainly French (98%) and English (92,5%). Only 29,4% said they had taken concrete steps towards migration, including searching for information online (84,8%), contacting Moroccan doctors abroad (73,9%), preparing for language certifications (59,8%), looking for a job (28,3%), updating professional qualifications (14,1%) and preparing for exams such as the USMLE or PLAB (10,9%).

A total of 55,6% of participants expressed an intention to migrate during their career. The preferred destinations were Germany (52,9%), France (43,7%) and Belgium (20,7%). Of these, 59,2% were considering temporary migration and 40,8% a permanent move. Statistical analysis showed that several factors were significantly associated with this intention: younger age ($p < 0,001$), male gender (66,4% of men vs. 50% of women, $p = 0,004$), academic level (students: 69,5%, residents: 43%, interns: 29,8%, $p < 0,001$), international medical experience ($p = 0,021$) and initiation of migration procedures ($p < 0,001$).

The most frequently cited motivations were the acquisition of advanced skills and international experience (93,3%, $p < 0,001$), access to specialized training and research (90,8%, $p = 0,005$), improving working conditions (90,4%, $p= 0,003$), career development (88,4%, $p < 0,001$), seeking a better quality of life (78%, $p < 0,001$) and the desire to obtain citizenship in the host country (73,3%, $p < 0,001$). Factors such as access to modern medical technology (92%) were mentioned very frequently, but without any statistically significant link with the intention to migrate ($p > 0,2$).

The main obstacles reported by participants were the financial costs associated with migration (77,6%), difficulties in obtaining a visa (77,4%) and non-recognition of Moroccan diplomas abroad (76,7%). Although these were the most frequently cited barriers, none of them showed a statistically significant association with intention to migrate ($p > 0,05$). In contrast, other personal and cultural factors were significantly associated with this intention, including family responsibilities and emotional ties with the country (74,9%, $p <0,001$), patriotism (68%, $p =0,001$), religious beliefs (57,6%, $p =0,033$), difficulty in socio-cultural adaptation (71,7%, $p =0,043$) and fear of discrimination or racism (66,1%, $p =0,023$).

Significant differences were observed according to academic level. Students were more likely to mention the lack of residency positions as a motivating factor for migration (40,7% vs. 12,5% for interns and residents, $p < 0,001$), language barriers (27,7% vs. 16,9%, $p = 0,017$), social pressure to migrate (18,1% vs. 9,6%, $p = 0,023$) and the cost of migration (65,5% vs. 52,2%, $p = 0,012$). Interns and residents, on the other hand, were more likely to mention the lack of societal recognition of the medical profession (59,6% vs. 49,2%, $p = 0,043$), as well as a stronger family attachment, although this difference was not statistically significant ($p = 0,072$).

Finally, participants put forward a number of recommendations to curb the medical exodus: improved working conditions (29,9%), salary enhancement and professional stability (26,2%), recognition of skills and reform of hospital culture (17,8%), development of training opportunities (14%).

Discussion

Our study revealed a marked intention to migrate among future Moroccan doctors (55,6%), a rate which, although lower than that observed in countries facing major economic, political or social challenges such as Nigeria (99,3%), Gaza (91%) or Egypt (89.4%), remains worrying. It is at an intermediate level, close to that observed in other low- and middle-income countries such as Ghana (57,9%) and Iran (54,8%), and slightly higher than in some high-income countries such as Turkey (52,9%), Italy (52%) or the UK (32,3%). By comparison, neighboring countries such as Algeria and Tunisia, with rates of 64,4% and 69% respectively, also show high levels of migration intent. This position underlines the growing, but still manageable, vulnerability of the Moroccan healthcare system.

The motivations and obstacles identified in our study are largely consistent with those observed in other international contexts. Aspirations for specialized training, better working conditions and professional recognition emerge as common elements, while socio-cultural obstacles, linked to family responsibilities and complex administrative procedures, also slow down the intention to migrate for some participants.

Retention strategies have been put in place in countries facing similar challenges, such as Pakistan, which has developed government scholarships and specialized training programs. Canada and the United States have also introduced tax incentives and return programs for foreign-trained doctors. Morocco could draw inspiration from these initiatives to improve working conditions, expand opportunities for specialization and modernize administrative procedures.

Conclusion

The high prevalence of migration intentions among Moroccan medical professionals underscores the urgent need for systemic reforms. While many seek temporary migration for training and professional development, others intend to settle abroad permanently, posing a long-term risk to the workforce. Addressing these challenges requires a comprehensive strategy that improves working

conditions, enhances training opportunities, and offers financial incentives, while also establishing structured pathways for return migration.

Résumé

Introduction

La migration des professionnels de santé est une préoccupation croissante à l'échelle mondiale, en particulier dans les pays à revenu faible et intermédiaire comme le Maroc. L'augmentation du nombre de médecins et d'étudiants en médecine marocains qui cherchent des opportunités à l'étranger constitue un enjeu crucial pour le système de santé du pays. Cette étude vise à examiner les intentions de migration des étudiants en médecine, internes et résidents marocains, en explorant leurs principales motivations et les obstacles perçus, tout en proposant des pistes d'action possibles pour enrayer ce phénomène.

Méthodologie

Une étude transversale, descriptive et analytique a été menée. Les données ont été recueillies à l'aide d'un questionnaire en ligne distribué aux étudiants en médecine, internes et résidents issus de différentes facultés de médecine et hôpitaux marocains. L'enquête comprenait des informations sociodémographiques, les intentions de migration, les motivations, les obstacles et des recommandations. Des statistiques descriptives ainsi que des analyses comparatives ont été réalisées afin d'identifier les associations significatives entre les intentions de migration et les facteurs influents. Une valeur de $p < 0,05$ a été considérée comme statistiquement significative.

Résultats

Notre étude a inclus 313 participants, dont 56,5% d'étudiants en médecine, 25,2% de résidents et 18,2% d'internes. L'âge moyen a été de 24,5 ± 3,3 ans. Les femmes ont représenté 65,8% de l'échantillon, et 88,2% des participants ont déclaré être célibataires. La majorité se sont perçus comme appartenant à la classe moyenne (87,5%). Les facultés de Fès (40,9%) et de Marrakech (33,5%) ont été les plus représentées. Sur le plan académique, 36,7% des étudiants ont été en 7ème année et 27,7% en 6ème année. Les internes ont majoritairement été en 2ème année (82,5%) et les résidents en 1ère année (45,6%).

Seulement 9,9% des participants ont rapporté une expérience médicale à l'étranger. Par ailleurs, 97,4 % ont affirmé maîtriser au moins une langue étrangère, principalement le français (98%) et l'anglais (92,5%). Environ 29,4% ont déclaré avoir

entamé des démarches concrètes en vue de migrer, notamment par la recherche d'informations en ligne (84,8%), la prise de contact avec des médecins marocains à l'étranger (73,9%), la préparation de certifications linguistiques (59,8%), la recherche d'emploi (28,3%), la mise à jour des qualifications professionnelles (14,1%) et la préparation à des examens comme l'USMLE ou le PLAB (10,9%).

Au total, 55,6% des participants ont exprimé une intention de migrer au cours de leur carrière. Les destinations préférées ont été l'Allemagne (52,9%), la France (43,7%) et la Belgique (20,7%). Parmi eux, 59,2% ont envisagé une migration temporaire et 40,8% une installation définitive. L'analyse statistique a montré que plusieurs facteurs étaient significativement associés à cette intention : un âge plus jeune ($p < 0,001$), le sexe masculin (66,4% des hommes contre 50% des femmes, $p = 0,004$), le niveau académique (étudiants : 69,5%, résidents : 43%, internes : 29,8%, $p < 0,001$), une expérience médicale internationale ($p = 0,021$) et l'initiation de démarches de migration ($p < 0,001$).

Les motivations les plus fréquemment évoquées ont été l'acquisition de compétences avancées et d'une expérience internationale (93,3%, $p < 0,001$), l'accès à une formation spécialisée et à la recherche (90,8%, $p = 0,005$), l'amélioration des conditions de travail (90,4%, $p= 0,003$), l'évolution de carrière (88,4%, $p < 0,001$), la recherche d'une meilleure qualité de vie (78%, $p < 0,001$) et le souhait d'obtenir la citoyenneté dans le pays d'accueil (73,3%, $p < 0,001$). Certains éléments comme l'accès à des technologies médicales modernes (92 %) ont été très fréquemment mentionnés, mais sans lien statistiquement significatif avec l'intention de migrer ($p > 0,2$).

Les principaux obstacles rapportés par les participants ont été les coûts financiers liés à la migration (77,6%), les difficultés à obtenir un visa (77,4%) et la non-reconnaissance des diplômes marocains à l'étranger (76,7%). Bien qu'il s'agisse des barrières les plus fréquemment citées, aucune d'entre elles n'a montré d'association statistiquement significative avec l'intention de migrer ($p > 0,05$). En revanche, d'autres facteurs personnels et culturels ont été significativement associés à cette intention, notamment les responsabilités familiales et les liens affectifs avec le pays (74,9%, $p <0,001$), le patriotisme (68%, $p =0,001$), les croyances religieuses (57,6%, $p =0,033$), la difficulté d'adaptation socio-culturelle (71,7%, $p =0,043$) et la crainte de discrimination ou de racisme (66,1%, $p =0,023$).

Des différences significatives selon le niveau académique ont été observées. Les étudiants ont été plus nombreux à mentionner le manque de postes de résidanat comme facteur de motivation à la migration (40,7% contre 12,5% chez les internes et résidents, $p < 0,001$), les barrières linguistiques (27,7% contre 16,9%, $p= 0,017$), la pression sociale à migrer (18,1% contre 9,6%, $p = 0,023$) et le coût de la migration (65,5% contre 52,2%, $p = 0,012$). De leur côté, les internes et résidents ont davantage évoqué le manque de reconnaissance sociétale de la profession médicale (59,6% contre 49,2%, $p = 0,043$), ainsi qu'un attachement familial plus marqué, bien que cette différence n'ait pas été statistiquement significative ($p = 0,072$).

Enfin, les participants ont proposé plusieurs recommandations pour freiner l'exode médical : amélioration des conditions de travail (29,9 %), revalorisation salariale et stabilité professionnelle (26,2 %), reconnaissance des compétences et réforme de la culture hospitalière (17,8 %), développement des opportunités de formation (14 %).

Discussion

Notre étude a révélé une intention de migration marquée chez les futurs médecins marocains (55,6%), un taux qui, bien qu'inférieur à celui observé dans des pays confrontés à des défis économiques, politiques ou sociaux majeurs comme le Nigeria (99,3%), Gaza (91%) ou l'Égypte (89,4%), reste préoccupant. Il se situe à un niveau intermédiaire, proche de celui observé dans d'autres pays à revenu faible ou intermédiaire comme le Ghana (57,9%) et l'Iran (54,8%), et légèrement plus élevé que dans certains pays à revenu élevé comme la Turquie (52,9%), l'Italie (52%) ou le Royaume-Uni (32,3%). En comparaison, des pays voisins comme l'Algérie et la Tunisie, avec des taux respectifs de 64,4 % et 69 %, présentent également des niveaux élevés d'intention de migration. Cette position souligne une vulnérabilité croissante, mais encore maîtrisable, du système de santé marocain.

Les motivations et obstacles identifiés dans notre étude sont largement cohérents avec ceux observés dans d'autres contextes internationaux. Les aspirations à une formation spécialisée, à de meilleures conditions de travail et à la reconnaissance professionnelle se dégagent comme des éléments communs, tandis que des freins d'ordre socio-culturel, liés aux responsabilités familiales et aux démarches administratives complexes, ralentissent également l'intention de migration pour certains participants.

Des stratégies de rétention ont été mises en place dans des pays confrontés à des défis similaires, comme le Pakistan, qui a développé des bourses gouvernementales et des programmes de formation spécialisés. Le Canada et les États-Unis ont également mis en place des incitations fiscales et des programmes de retour pour les médecins formés à l'étranger. Le Maroc pourrait s'inspirer de ces initiatives pour améliorer les conditions de travail, élargir les opportunités de spécialisation et moderniser les démarches administratives.

Conclusion

La forte prévalence des intentions de migration parmi les professionnels de santé marocains souligne la nécessité urgente de réformes systémiques. Si beaucoup recherchent une migration temporaire pour leur formation et leur développement professionnel, d'autres envisagent une installation permanente à l'étranger, ce qui représente un risque à long terme pour le personnel de santé. Relever ces défis nécessite une stratégie globale visant à améliorer les conditions de travail, à renforcer les opportunités de formation et à offrir des incitations financières, tout en encourageant la réintégration des professionnels formés à l'étranger.

ملخص

الخلفية

تُعدّ هجرة المهنيين الطبيين مصدر قلق متزايد على مستوى العالم، لا سيما في البلدان ذات الدخل المنخفض والمتوسط مثل المغرب.وتُعد الزيادة في عدد الأطباء وطلاب الطب المغاربة الباحثين عن فرص عمل في الخارج تحديًا كبيرًا للنظام الصحي الوطني. تهدف هذه الدراسة إلى فحص نوايا الهجرة لدى طلاب الطب والأطباء الداخليين والمقيمين المغاربة، من خلال استكشاف دوافعهم الرئيسية والعقبات المتصورة لديهم، مع اقتراح مسارات العمل الممكنة للحد من هذه الظاهرة.

المنهجية

أُجريت دراسة مقطعية وصفية وتحليلية، حيث تم جمع البيانات باستخدام استبيان عبر الإنترنت وُزّع على طلاب الطب والأطباء الداخليين والمقيمين في مختلف كليات الطب والمستشفيات المغربية. شمل الاستبيان معلومات ديموغرافية، ونوايا الهجرة، والدوافع، والعوائق، والتوصيات. تم استخدام الإحصائيات الوصفية والتحليلات الإحصائية لتحديد الارتباطات المهمة بين نوايا الهجرة والعوامل المؤثرة. اعتُبرت القيمة الاحتمالية (p-value) أقل من 0,05 ذات دلالة إحصائية.

النتائج

شملت دراستنا 313 مشاركًا، 56,5% منهم من طلاب الطب، و25,2% من الأطباء المقيمين، و18,2% من الأطباء الداخليين. كان متوسط العمر 24,5 ± 3,3 سنوات. مثلت النساء 65,8% من العينة، وأعلن 88,2% من المشاركين أنهم غير متزوجين. اعتبر الغالبية أنهم ينتمون إلى الطبقة المتوسطة (87,5%). كانت كليات فاس (40,9%) ومراكش (33,5%) الأكثر تمثيلاً. من الناحية الأكاديمية، كان 36,7% من الطلاب في السنة السابعة و27,7% في السنة السادسة. كان المتدربون بشكل رئيسي في السنة الثانية (82,5%) والأطباء المقيمون في السنة الأولى (45,6%).

أبلغ 9,9% فقط من المشاركين عن خبرة طبية في الخارج. بالإضافة إلى ذلك، قال 97,4% منهم أنهم يتحدثون لغة أجنبية واحدة على الأقل، خاصة الفرنسية (98%) والإنجليزية (92,5%). قال حوالي 29,4% أنهم اتخذوا خطوات ملموسة للهجرة، بما في ذلك البحث عن المعلومات عبر الإنترنت (84,8%)، والاتصال بالأطباء المغاربة في الخارج (73,9%)، والتحضير لشهادات اللغة (59,8٪)، والبحث عن وظيفة (28,3%)، وتحديث المؤهلات المهنية (14,1%) والتحضير لامتحانات مثل USMLE أو PLAB (10,9%).

أعرب 55,6% من المشاركين عن نيتهم للهجرة خلال حياتهم المهنية. وكانت الوجهات المفضلة هي ألمانيا (52,9%) وفرنسا (43,7%) وبلجيكا (20,7%). ومن بين هؤلاء، توخى 59,2% منهم هجرة مؤقتة و40,8% هجرة دائمة. أظهر التحليل الإحصائي أن العديد من العوامل ارتبطت بشكل كبير بهذه النية: العمر الصغير (p <0,001)، جنس الذكور (66,4% من الرجال مقارنة بـ 50% من النساء، p = 0,004)، المستوى الأكاديمي (طلاب: 69,5%، مقيمون: 43%، متدربون: 29,8%، p <0,001)، التجربة الطبية الدولية (p = 0,021) والبدء في إجراءات الهجرة (p <0,001).

وكانت الدوافع الأكثر ذكرًا هي اكتساب المهارات المتقدمة والخبرة الدولية (93,3%، p <0,001)، والوصول إلى التدريب المتخصص والبحوث (90,8%، p = 0,005), وتحسين ظروف العمل (90,4%، p = 0,003)، والتطور المهني (88,4%، p <0,001)، والسعي إلى تحسين جودة الحياة (78%، p <0,001) والرغبة في الحصول على الجنسية في البلد المضيف (73,3%، p <0,001). ذُكرت بعض العناصر مثل الحصول على التكنولوجيا الطبية الحديثة (92%) بشكل متكرر، ولكن دون أي صلة ذات دلالة إحصائية مع نية الهجرة (p > 0,2).

كانت العقبات الرئيسية التي أبلغ عنها المشاركون هي التكاليف المالية المرتبطة بالهجرة (77,6٪)، وصعوبات الحصول على تأشيرة (77,4٪) وعدم الاعتراف بالشهادات المغربية في الخارج (76,7٪). على الرغم من أن هذه العوائق كانت الأكثر ذكرًا، إلا أن أياً منها لم يُظهر ارتباطاً ذا دلالة إحصائية مع نية الهجرة (p > 0,05). من ناحية أخرى، ارتبطت عوامل شخصية وثقافية أخرى بشكل كبير مع هذه النية، لا سيما المسؤوليات العائلية والروابط العاطفية مع البلد (74,9%، p <0,001)، والوطنية (68%، p = 0,001)، والمعتقدات الدينية (57,6%، p = 0,033)، وصعوبة التأقلم الاجتماعي والثقافي (71,7%، p = 0,043)، والخوف من التمييز أو العنصرية (66,1%، p = 0,023).

لوحظت اختلافات كبيرة وفقًا للمستوى الأكاديمي. ذكر عدد أكبر من الطلاب عدم وجود وظائف إقامة كعامل محفز للهجرة (40,7% مقابل 12,5% للمتدربين والمقيمين، p <0,001)، وحواجز اللغة (27,7% مقابل 16,9%، p = 0,017)، والضغط الاجتماعي للهجرة (18,1% مقابل 9,6%، p = 0,023) وتكلفة الهجرة (65,5% مقابل 52,2%، p = 0,012). كان المتدربون والمقيمون أكثر عرضة للإشارة إلى عدم الاعتراف المجتمعي بمهنة الطب (59,6% مقابل 49,2%، p = 0,043)، بالإضافة إلى الروابط الأسرية الأقوى، على الرغم من أن هذا الفرق لم يكن ذا دلالة إحصائية (p = 0,072).

وأخيرًا، قدم المشاركون عددًا من التوصيات للحد من الهجرة من مهنة الطب: تحسين ظروف العمل (29,9%)، وزيادة الأجور والاستقرار المهني (26,2%)، والاعتراف بالشهادات وإصلاح ثقافة المستشفيات (17,8%)، وتطوير فرص التدريب (14%).

المناقشة

كشفت دراستنا عن وجود نية ملحوظة للهجرة بين الأطباء المغاربة المستقبليين (55,6%)، وهو معدل وإن كان أقل من المعدل الذي لوحظ في البلدان التي تواجه تحديات اقتصادية أو سياسية أو اجتماعية كبيرة مثل نيجيريا (99,3%) أو غزة (91%) أو مصر (89,4%)، إلا أنه يظل مقلقًا. وهو في مستوى متوسط، قريب من المستوى الذي لوحظ في بلدان أخرى منخفضة ومتوسطة الدخل مثل غانا (57,9%) وإيران (54,8%)، وأعلى قليلاً من بعض البلدان ذات الدخل المرتفع مثل تركيا (52,9%) وإيطاليا (52%) والمملكة المتحدة (32,3%). وبالمقارنة، فإن البلدان المجاورة مثل الجزائر وتونس، بمعدلات 64,4% و69% على التوالي، لديها أيضًا مستويات عالية من نية الهجرة. يسلط هذا الموقف الضوء على هشاشة نظام الرعاية الصحية المغربي المتزايدة، ولكن لا يزال من الممكن السيطرة عليها.

تتفق الدوافع والعقبات التي حددناها في دراستنا إلى حد كبير مع تلك التي لوحظت في سياقات دولية أخرى. تبرز التطلعات إلى التدريب المتخصص، وظروف العمل الأفضل والاعتراف المهني كعناصر مشتركة، في حين أن العقبات الاجتماعية والثقافية، المرتبطة بالمسؤوليات الأسرية والإجراءات الإدارية المعقدة، تبطئ أيضاً من نية الهجرة لدى بعض المشاركين.

وقد تم وضع استراتيجيات استبقاء في البلدان التي تواجه تحديات مماثلة، مثل باكستان، التي طورت منحاً دراسية حكومية وبرامج تدريب متخصصة. كما قدمت كندا والولايات المتحدة الأمريكية حوافز ضريبية وبرامج عودة للأطباء المدربين الأجانب. ويمكن للمغرب أن يستلهم من هذه المبادرات لتحسين ظروف العمل وتوسيع فرص التخصص وتحديث الإجراءات الإدارية.

الخلاصة

إن الانتشار الكبير لنوايا الهجرة بين العاملين المغاربة في مجال الرعاية الصحية يسلط الضوء على الحاجة الملحة لإجراء إصلاحات منهجية. فبينما يسعى الكثيرون إلى الهجرة المؤقتة من أجل التدريب والتطوير المهني، يفكر آخرون في الاستيطان الدائم في الخارج، وهو ما يمثل خطرًا طويل الأمد على العاملين في مجال الرعاية الصحية. وتتطلب معالجة هذه

التحديات استراتيجية شاملة لتحسين ظروف العمل وتعزيز فرص التدريب وتوفير الحوافز المالية، مع تشجيع إعادة إدماج المهنيين المدربين الأجانب.

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APPENDICES

Appendix A: Questionnaire

Why move abroad? Factors influencing migration intentions of doctors and medical students in Morocco.

Bienvenue dans notre enquête en ligne.

Ce questionnaire, conçu dans le cadre d'un travail de thèse, a pour objectif d'explorer les intentions de migration des étudiants en médecine et des médecins au Maroc, ainsi que les facteurs qui influencent cette décision. Nous cherchons à comprendre vos motivations et les obstacles que vous rencontrez, afin de développer des recommandations et des stratégies efficaces de rétention.

Votre participation à cette enquête est entièrement volontaire, anonyme et ne prendra pas plus de 10 minutes. Les informations recueillies seront utilisées exclusivement à des fins de recherche et resteront strictement confidentielles.

Nous vous remercions sincèrement pour votre temps et votre contribution à cette étude.

* Indique une question obligatoire

Acceptez-vous de participer à cette étude ? *

- ☐ Oui.
- ☐ Non. (Quitter le formulaire)

I. Informations socio-démographiques

Sexe *

- ☐ Féminin
- ☐ Masculin

Âge *

_____

État civil *

- ☐ Célibataire
- ☐ Marié(e)
- ☐ Veuf(ve)
- ☐ Divorcé(e)

Faculté d'origine *

- ☐ FMPDF
- ☐ FMPM
- ☐ FMPC
- ☐ FMPR
- ☐ FMPT
- ☐ FMPA
- ☐ FMPO

Statut socio-économique perçu *

- ☐ Bas
- ☐ Moyen
- ☐ Élevé

Niveau d'études *

- ☐ Étudiant en médecine
- ☐ Médecin interne du CHU 1ère année
- ☐ Médecin interne du CHU 2ème année
- ☐ Médecin résident

Si vous êtes étudiant en médecine, veuillez préciser votre année d'étude *

- ☐ 1ère année
- ☐ 2ème année
- ☐ 3ème année
- ☐ 4ème année
- ☐ 5ème année
- ☐ 6ème année
- ☐ 7ème année

Si vous êtes médecin résident, veuillez préciser votre année d'étude *

- ☐ 1ère année
- ☐ 2ème année
- ☐ 3ème année
- ☐ 4ème année
- ☐ 5ème année

Veuillez préciser votre spécialité * _____

II. Expérience internationale et compétences linguistiques

1. Avez-vous déjà travaillé ou étudié à l'étranger dans le domaine médical ? *
   - ☐ Oui
   - ☐ Non

   -Si oui, indiquez les pays et la durée de votre séjour : _____
2. Maîtrisez-vous des langues étrangères ? *
   - ☐ Oui
   - ☐ Non

   -Si oui, quelles langues parlez-vous couramment ? (Cochez tout ce qui s'applique) *
   - ☐ Français
   - ☐ Anglais
   - ☐ Espagnol
   - ☐ Allemand
   - ☐ Autre (précisez) : _____
3. Avez-vous déjà entamé des démarches pour travailler à l'étranger ? *
   - ☐ Oui
   - ☐ Non

   -Si oui, quelles démarches avez-vous effectuées ? (Cochez toutes les réponses applicables) : *
   - ☐ Test de langue
   - ☐ Examen de certification médicale, équivalence (ex : USMLE, PLAB)
   - ☐ Recherche d'opportunités d'emploi
   - ☐ Mise à jour des qualifications professionnelles
   - ☐ Recherche d'informations sur Internet
   - ☐ Prise de contact avec des personnes ayant émigré

III. Intentions et Préférences de Migration

4. Envisagez-vous de travailler ou de vous installer dans un autre pays au cours de votre carrière médicale ? *
   - ☐ Oui
   - ☐ Non

   -Si oui, quels pays envisagez-vous de migrer ? (par ordre de préférence)

---

5. Avez-vous l'intention de vous installer définitivement à l'étranger ? *

   - ☐ Oui
   - ☐ Non

- Si non, combien de temps envisagez-vous de rester à l'étranger ?

IV. Facteurs d'influence

Veuillez indiquer votre niveau d'accord avec les affirmations suivantes concernant vos motivations et obstacles à la migration, en utilisant l'échelle suivante:

(1 : Pas du tout d'accord, 2 : Pas d'accord, 3 : Neutre, 4 : D'accord, 5 : Tout à fait d'accord)

6. Motivations (DRIVERS): Raisons qui vous incitent à migrer? *

	Pas du tout d'accord	Pas d'accord	Neutre	D'accord	Tout à fait d'accord
Amélioration des conditions de travail	☐	☐	☐	☐	☐
Recherche de meilleures rémunérations	☐	☐	☐	☐	☐
Acquisition des compétences avancées et une expérience internationale	☐	☐	☐	☐	☐
Accès à de meilleures perspectives et opportunités d'évolution de carrière	☐	☐	☐	☐	☐
Accès à des formations spécialisée et à des opportunités de recherche	☐	☐	☐	☐	☐
Accès à des technologies médicales	☐	☐	☐	☐	☐

modernes					
Insatisfaction envers le système de santé marocain	☐	☐	☐	☐	☐
Manque de postes de résidanat au Maroc	☐	☐	☐	☐	☐
Manque de respect sociétal envers les Médecins	☐	☐	☐	☐	☐
Amélioration de la qualité de vie	☐	☐	☐	☐	☐
Recherche de sécurité et stabilité politique	☐	☐	☐	☐	☐
Désir d'obtenir la nationalité du pays de destination	☐	☐	☐	☐	☐
Rejoindre un membre de la famille à l'étranger	☐	☐	☐	☐	☐
Meilleures opportunités pour les enfants et les conjoints (éducation, santé et emploi).	☐	☐	☐	☐	☐
Influence des pairs et des attentes sociétales pour émigrer. (peer pressure)	☐	☐	☐	☐	☐

7. Quelles sont, selon vous, les raisons supplémentaires qui vous incitent à envisager de travailler à l'étranger dans le domaine médical ?

   _____

8. Barrières: Obstacles qui vous empêchent de migrer? *

	Pas du tout d'accord	Pas d'accord	Neutre	D'accord	Tout à fait d'accord
Responsabilités familiales et liens au Maroc	☐	☐	☐	☐	☐

Coûts financiers élevés liés à la migration	☐	☐	☐	☐	☐
Patriotisme, devoir envers le Maroc	☐	☐	☐	☐	☐
Influence des croyances religieuses	☐	☐	☐	☐	☐
Difficultés à obtenir des visas	☐	☐	☐	☐	☐
Non-reconnaissance des qualifications marocaines	☐	☐	☐	☐	☐
Préoccupations liées au racisme et à la discrimination à l'étranger	☐	☐	☐	☐	☐
Difficultés d'adaptation socio-culturelle	☐	☐	☐	☐	☐
Barrières linguistiques dans le pays d'accueil	☐	☐	☐	☐	☐
Difficulté des conditions climatiques étrangères	☐	☐	☐	☐	☐

9. Quels obstacles supplémentaires anticipez-vous ou avez-vous rencontrés pour travailler à l'étranger dans le domaine médical ?

   _____

V. Propositions et recommandations

Cette section vise à recueillir vos suggestions et réflexions sur les améliorations à apporter au système de santé marocain afin de mieux comprendre les leviers qui pourraient encourager les médecins à y exercer.

10. Quelles améliorations, selon vous, devraient être apportées au système de santé marocain pour inciter davantage de médecins à y travailler ?

    _____

Hippocratic Oath

Upon being admitted to membership in the medical profession, I solemnly pledge to devote my life to the service of humanity.

I will treat my masters with the respect and recognition due to them.

I will practice my profession with conscience and dignity. The health of my patients will be my first goal.

I will not betray the secrets entrusted to me.

I will maintain by all means in my power the honor and noble traditions of the medical profession.

Doctors will be my brothers.

No consideration of religion, nationality, race, no political or social consideration will come between my duty and my patient.

I will maintain respect for human life from conception.

Even under threat, I will not use my medical knowledge in a manner contrary to the laws of humanity.

I commit to it freely and on my honor.

قَسَمُ أَبُقْرَاط

فِي هَذِهِ اللَّحْظَةِ التِّي يَـــتِـــمُّ فِيهَا قَبُولِي عُضْوًا فِي المِهْنَةِ الطِّـبِّـيَّـــــةِ أَتَعَهَّدُ عَلَانِيَّةً بِأَن أُكَرِّسَ حَيَاتِي لِخِدْمَةِ الإِنْسَانِيَّةِ:

- أن أَحْتَرِمَ أَسَاتِذَتِي وأَعْتَرِفَ لَهُمْ بِالجَـــمِيلِ الذِّي يَسْتَحِقُّونَهُ.
- أَن أُمَارِسَ مِهْنَتِي بِوَازِعٍ مِنْ ضَمِيرِي وَشَرَفِي جَاعِلًا صِحَّةَ مَرِيضِي هَدَفِي الأَوَّلْ.
- أَنْ لَا أُفْشِيَ الأَسْرَارَ المَعْهُودَةَ إِلَيَّ.
- أَنْ أُحَافِظَ بِكُلِّ مَا لَدَيَّ مِنْ وَسَائِلٍ عَلَى الشَّرَفِ والتَّقَالِيدِ النَّبِيلَةِ لِمِهْنَةِ الطِّب.
- أَنْ أَعْتَبِرَ سَائِرَ الأَطِبَّاءِ إِخْوَةً لِي.
- أَنْ أَقُومَ بِوَاجِبِي نَحْوَ مَرْضَايَ بِدُونِ أَيِّ اعْتِبَارٍ دِينِي أَو وَطَنِي أَو عِرْقِي أَو سِيَاسِي أَو اجْتِمَاعِي.
- أَنْ أُحَافِظَ بِكُلِّ حَزْمٍ عَلَى احْتِرَامِ الحَيَاةِ الإِنْسَانِيَّةِ مُنْذُ نَشْأَتِهَا.
- أَنْ لَا أَسْتَعْمِلَ مَعْلُومَاتِي الطِّـبِّـيَّـــــةِ بِطَرِيقَةٍ تَضُرُّ بِحُقُوقِ الإِنْسَان مَهْمَا لَاقَيْتُ مِنْ تَهْدِيدٍ.

بِكُلِّ هَذَا أَتَعَهَّدُ عَنْ كَامِلِ اخْتِيَارِي وَمُقْسِمًا بِاللهِ.

وَاللَّهُ عَلَى مَا أَقُولُ شَهِيد.

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FACULTÉ DE MÉDECINE, DE PHARMACIE ET DE MÉDECINE DENTAIRE

سنة 2025 أطروحة رقم 25/115

لماذا الهجرة إلى الخارج؟
العوامل المؤثرة في نوايا الهجرة لدى الأطباء وطلاب الطب في المغرب

الأطروحة

قدمت ونوقشت علانية يوم 2025/04/15

من طرف

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المزدادة في 30 نونبر 1999 بفاس
طبيبة داخلية بالمستشفى الجامعي محمد السادس

لنيل شهادة الدكتوراه في الطب

الكلمات الأساسية:

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