



Evaluating Language Usage and Attitudes among Future Healthcare Professionals in Morocco

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How to cite this paper: Berrami, H., Serhier, Z., Jallal, M., Diouny, S. and Othmani, M.B. (2024) Evaluating Language Usage and Attitudes among Future Healthcare Professionals in Morocco. *Open Access Library Journal*, 11: e11149.

<https://doi.org/10.4236/oalib.1111449>

Received: March 17, 2024

Accepted: April 16, 2024

Published: April 19, 2024

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Abstract

Introduction: Medical education in Morocco has long been based on the French language; this has created difficulties in understanding courses and scientific research. This study brings a current understanding of language barriers in medical education and contributes to a broader understanding of attitudes towards language practices among medical students. In particular, it seeks to identify the language barriers medical students in Morocco experience in some aspects of their medical education and their language preference for medical education. **Methods:** This cross-sectional descriptive study was conducted among a sample of students studying at the Casablanca Faculty of Medicine and Pharmacy. They were invited to respond to a self-completed questionnaire. **Results:** Overall, 513 students completed the questionnaire. Results show that 46.2% master French very well; 78.3% think that French is widely used among doctors in professional and clinical settings. About 52.4% and 77.1%, respectively, think that English is a global language, and it should be used as a means of instruction in medical schools in Morocco. 56.3% of the students believe that language barriers lead to miscommunication between medical professionals, reducing both parties' satisfaction. 63.9% and 93.8% of the students are in favor of teaching of medical terminology in Arabic and English. Finally 68% of the students who have a very good command of the English language have no difficulty in conducting bibliographic research versus 73% who have difficulty with it having poor level in English. **Discussion:** In different educational settings, when the language of instruction is different from the learner's native language, the potential language barrier can have an adverse effect on an individual's learning and professional life. French facilitates communication in medical and paramedical contexts, but students prefer to study medicine in English although most of them experience difficulties in bibliographic research, due to their poor command of medical terminology

in English. Explaining diseases in Arabic to patients pose challenges in terms of achieving high levels of satisfaction among medical professionals and patients. Conclusion: Most students believe that English is the international language of science and current affairs, they, nevertheless, prefer to study in French. A large proportion of students feel that medical terminology in Arabic should be integrated into the medical curriculum to facilitate doctor-patient communication.

Subject Areas

Global Health

Keywords

Mother Tongue, Medical Students, Medicine, Language Barriers

1. Introduction

In the Moroccan educational system, the French language is taught from the primary cycle as a foreign language until it becomes a language of higher education, especially in the scientific and economic fields. Given their Arabic-speaking training since primary school, most students have a poor command of French and are faced with teaching exclusively in this language, which can hinder their studies.

This foreign language could be at the origin of certain difficulties among Moroccan students, especially medical students. They have found a problem in understanding the courses and acquiring new knowledge, which has a negative impact on the quality of their medical training.

There are several studies that have discussed the teaching of medicine in the mother tongue as a means of understanding the needs of patients and meeting their expectations of the health system [1] [2].

The use of the mother tongue in medical education is considered as a way to free learners from the linguistic dualism imposed by thinking in one language and studying in another. In the Arab world, which has a population of more than 400 million people in 22 countries and speaks mainly Arabic, only the Syrian Arab Republic uses Arabic as the language of instruction in all its medical schools [3], Arabic has been used in this country since 1918, when the first medical college was established [4].

English, on the other hand, is the main language of instruction in most medical schools in the Arab countries, except for four countries that use French: Tunisia, Morocco, Algeria, and Mauritania [5].

Faced with this problem, a descriptive study was conducted with the objective of exploring the language barriers met by students in certain aspects of their medical training, such as in lectures and bibliographic research, taking examinations, and determining the attitude of medical students towards the introduction

of Arabic and English terminology in their academic curricula.

2. Materials and Methods

A descriptive cross-sectional study was conducted in 2021 among students of the Faculty of Medicine and Pharmacy of Casablanca (FMPC), using a questionnaire distributed in paper format. Cluster sampling stratified on the years of study was carried out.

The questionnaire collected students' socio-demographic information, their level of language proficiency (Arabic dialect, Arabic, French, English), frequency of language use, perceptions of language use, language barriers encountered by students, and language preferences for use in medical studies.

Statistical analysis was conducted using Jamovi 1.6.15 software. Associations were assessed using the chi-square test. The alpha risk was set at 5%.

3. Results

A total of 513 students completed the questionnaire, the majority of students were female (62.7%). The average age of the students was 20.6 years with an SD = 1.9.

The sample consisted mainly of students from the 1st to the 5th year.

For the country of origin of the students; 93% were Moroccan. Most of the students had completed their pre-university studies in the private sector 82.3% of the students were in primary school, 74% were in middle school and 66.4% were in high school (**Table 1**).

Apart from the Arabic dialect, the proportion of students who were proficient to very proficient in the language was high for French (90.8%) followed by Arabic (81.1%) (**Figure 1**).

The Moroccan Arabic was most used by students with family, friends, and patients with proportions of often to exclusively used of 89%, 87% and 88.6% respectively. Most students (96%) communicated often exclusively in French with teachers (**Table 2**).

About 44% of the students proposed that Classical Arabic should continue to be the official language in Morocco, 74% of the students wrote their emails in French, and 53.5% considered English the most suitable language for professional life.

Regarding students' preferences, 54.2% and 56.4% preferred to receive classes and take exams in French, respectively, while one-third preferred English (**Table 3**).

More than half of the students (56%) find it difficult to explain their conditions and treatment to patients in Arabic, and about one-third (34%) believe that teaching medicine in their native language will facilitate their training.

15% of students report that the French language is an obstacle to their studies.

Most students (93.8%) want to have medical terminology taught in English and 63.9% of them encourage the teaching of medical terminology in Arabic (**Table 4**).

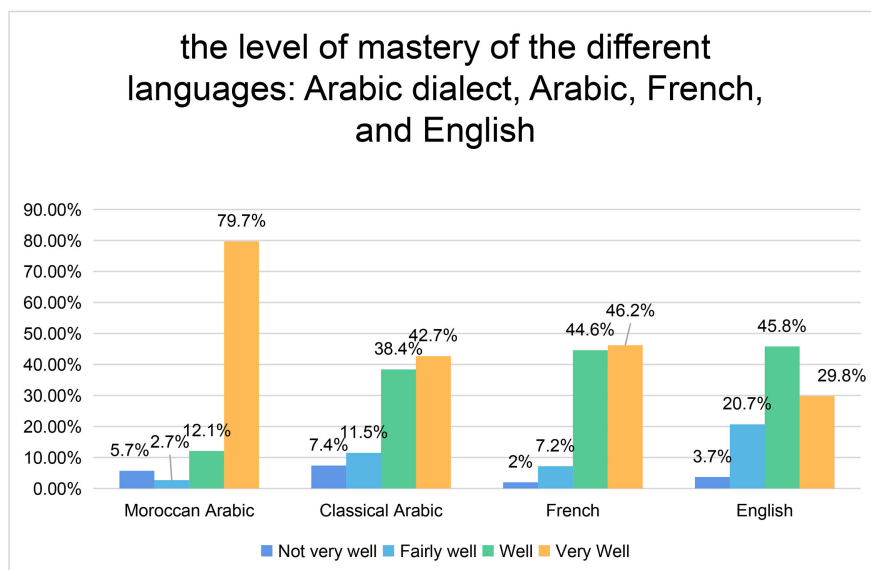


Figure 1. The level of mastery of the different languages: Arabic dialect, Arabic, French, and English.

Table 1. Sociodemographic information.

Item	N°	%
Gender (n = 513)		
Male	191	37.3
Female	321	62.7
Distribution by year of study		
1st year	103	20.1
2nd year	100	19.5
3rd year	94	18.3
4th year	86	16.8
5th year	100	19.5
6th year	27	5.3
7th year	3	0.6
Country of origin of the students		
Morocco	477	93.0
Other countries	36	7.0
Distribution of private and public sectors in pre-university studies		
Primary		
Public	90	17.7
Private	419	82.3
Middle school		
Public	132	25.9
Private	377	74.1
High School		
Public	171	33.6
Private	338	66.4

Table 2. Frequency of language use in different contexts.

	In a family N (%)	Among friends N (%)	With teachers N (%)	With patients N (%)	With administrative staff N (%)
Moroccan Arabic					
Never	34 (7)	35 (7.6)	175 (44.4)	23 (5.4)	105 (26.2)
Rarely	3 (0.6)	10 (2.2)	141 (35.8)	2 (0.5)	59 (14.7)
Sometimes	17 (3.5)	17 (3.7)	53 (13.5)	24 (5.6)	84 (20.9)
Often	186 (38.4)	246 (53.1)	14 (3.6)	124 (28.9)	102 (25.4)
Exclusively	244 (50.4)	155 (33.5)	11 (2.8)	256 (59.7)	51 (12.7)
Classical Arabic					
Never	221 (54.3)	244 (59.8)	293 (74.2)	229 (60.9)	259 (66.4)
Rarely	84 (20.6)	74 (18.1)	62 (15.7)	53 (14.1)	54 (13.8)
Sometimes	52 (12.8)	33 (8.1)	30 (7.6)	35 (9.3)	45 (11.5)
Often	36 (8.8)	41 (10.0)	4 (1.0)	37 (9.8)	24 (6.2)
Exclusively	14 (3.4)	16 (3.9)	6 (1.5)	22 (5.9)	8 (2.1)
French					
Never	89 (21.1)	50 (11.4)	8 (1.7)	171 (44.5)	31 (6.8)
Rarely	86 (20.4)	59 (13.5)	3 (0.6)	97 (25.3)	25 (5.5)
Sometimes	135 (32.1)	161 (36.8)	9 (1.9)	83 (21.6)	79 (17.4)
Often	97 (23.0)	147 (33.6)	203 (42.2)	22 (5.7)	195 (43.0)
Exclusively	14 (3.3)	20 (4.6)	258 (53.6)	11 (2.9)	124 (27.3)
English					
Never	176 (42.7)	102 (24.6)	256 (65.3)	314 (85.6)	309 (79.8)
Rarely	130 (31.6)	97 (23.4)	85 (21.7)	37 (10.1)	52 (13.4)
Sometimes	75 (18.2)	111 (26.7)	33 (8.4)	7 (1.9)	14 (3.6)
Often	25 (6.1)	93 (22.4)	10 (2.6)	6 (1.6)	9 (2.3)
Exclusively	6 (1.5)	12 (2.9)	8 (2.0)	3 (0.8)	3 (0.8)

Table 3. Students' preferences for language use in different areas.

	Moroccan Arabic N* (%)	Classical Arabic N* (%)	French N* (%)	English N* (%)
The official language in Morocco must be:	164 (32.3)	224 (44.2)	69 (13.6)	50 (9.9)
The language used for studies in Morocco must be:	7 (1.4)	46 (9.1)	189 (37.2)	266 (52.4)
The most suitable language for professional life is:	24 (4.7)	26 (5.1)	187 (36.7)	273 (53.5)
I write my emails in:	6 (1.2)	15 (3.0)	375 (74.0)	111 (21.9)
The current language is	8 (1.6)	26 (5.1)	82 (16.2)	391 (77.1)
The language that most corresponds to my culture and identity is:	228 (45.4)	170 (33.9)	61 (12.2)	43 (8.6)
In the professional setting, the language most used by physicians is:	28 (5.5)	14 (2.8)	398 (78.3)	68 (13.4)
I prefer to receive my courses in*		33 (6.6)	271 (54.2)	196 (39.2)
I prefer to take my exams in	*	35 (7.0)	282 (56.4)	183 (36.6)

Continued

I prefer to communicate within the hospital department by *	162 (32.6)	233 (46.9)	102 (20.5)
I prefer to conduct bibliographic research in: *	20 (4.0)	226 (45.5)	251 (50.5)
I prefer to attend conferences in*	30 (6.1)	230 (46.7)	231 (47.3)
I would have preferred this questionnaire to be in: *	47 (9.7)	276 (56.7)	164 (33.7)

*: the question concerning the Moroccan Arabic was not asked.

Table 4. Language barriers perceived by students in the Faculty of Medicine and Pharmacy of Casablanca.

	YES N (%)	NO N (%)
The French language is an obstacle for my studies	78 (15.3)	432 (84.7)
The language barrier made my medical studies more difficult	88 (17.3)	421 (82.7)
The language barrier prevents me from participating in activities during my stage	93 (18.6)	406 (81.4)
I have a good knowledge of medical terms in Arabic	91 (17.9)	417 (82.1)
I have a good knowledge of medical terms in English	186 (36.7)	321 (63.3)
I find it difficult to explain to patients their pathologies and treatments in Arabic	270 (56.3)	210 (43.8)
I have already translated a course from French into Arabic to better understand	94 (18.7)	409 (81.3)
I am satisfied with the teaching of medicine in French	311 (62.1)	190 (37.9)
I encourage the teaching of medical terminology in Arabic as well	321 (63.9)	181 (36.1)
I encourage the teaching of medical terminology in English as well	471 (93.8)	31 (6.2)
I find difficulties in carrying out bibliographic research	234 (46.9)	265 (53.1)
Teaching through the mother tongue would facilitate my studies and training	171 (34.3)	328 (65.7)

The association between the level of proficiency in English and difficulties in conducting bibliographic research is statistically significant. Indeed, 68% of the students who have a very good command of the English language have no difficulty in conducting bibliographic research versus 73.7% who have difficulty with it having poor level in English.

The association between the level of proficiency in French and difficulties in performing bibliographic research is statistically significant. Indeed, 44.5% of the students who had a good to very good command of the French language had difficulties in carrying out bibliographic research, compared to 69.8% of those who had a poor to fairly good command of the language (**Table 5**).

Table 5. Association between proficiency in English and French and difficulty in conducting literature searches.

	Difficulty in searching the literature. N° (%)	P value
English language skills		
Bad	14 (73.7)	P < 0.001
fairly good	70 (68.0)	
Good	103 (44.8)	
very good	47 (32.0)	
French language skills		
Poor to fairly good	30 (69.8)	P < 0.001
Good to very good	202 (44.5)	

We tested a second hypothesis concerning the existence of an association between the level of mastery of the French language and the linguistic obstacle that makes medical studies more difficult for the students participating in our study: The association between the level of mastery of the French language and the linguistic obstacle that makes medical studies more difficult is statistically significant. Approximately 52.2% of the students who have a poor to fair mastery of this language encounter difficulties in medical studies (**Table 6**).

4. Discussion

In different educational settings, when the language of instruction is different from the learner's native language, the potential language barrier can have a negative effect on an individual's learning and professional life [6]. This issue is of particular importance in Arab countries, as medical students whose native language is Arabic are taught in either French or English.

In our study, WFC students were able to critique and identify various barriers in current medical education related to the language of instruction. Indeed, 15.3% of the students found the French language to be an obstacle to their studies, and 38% were not satisfied with the teaching of medicine in French.

However, 65.7% of the students were not convinced that teaching through the mother tongue will facilitate their studies and training. In the study that was done in Egypt more than 50% of the students mentioned that teaching medicine in a foreign language was not a problem in the learning process [7].

French has been the main language of instruction in Moroccan medical schools for many years and 54.2% of our students have not offered any alternative to the language of instruction, as well as 54.2% and 56.4% respectively prefer to receive lectures and take their exams in French.

As for the knowledge of medical terms in Arabic, 82.1% of the students claim not to know them. In addition, 56.3% of the students found it difficult to explain to patients their pathologies and treatments in Arabic. 63.9% of the participants encouraged the teaching of medical terminology in Arabic also to facilitate contact with the patient; since 59.7% of the participants communicated exclusively through Moroccan Arabic with their patients.

Table 6. Association between French language proficiency and language barrier.

	Language barrier N° (%)	P value
French language skills		
Poor to fairly good	24 (52.2%)	P < 0.001
Good to very good	63 (13.7%)	

A study conducted in Egypt found that 70.6% of students preferred to learn how to collect medical history in Arabic [7]. Another study that was done in The United Arab Emirates examined medical students' confidence in communicating with Arabic-speaking patients after receiving training in English communication skills, only a quarter of the students were confident in taking medical histories in Arabic [8]. Knowledge of medical terms in a patient's native language is an essential component of the doctor-patient interaction. Medical graduates who have been trained in a foreign language may find it difficult to communicate with their patients in their native language.

Another study conducted in Lebanon showed that during the clinical years, the vast majority (88.5%) of the medical students in Lebanon are confident in taking a medical history in their mother tongue (Arabic) although their medical training is done by a foreign language (English or French) (Abi Raad *et al.*, 2016) and 15.9% of the students in the dental faculty of Saudi Arabia preferred to do their curriculum only by their mother tongue Arabic [9].

In our study 18% of our students claim that they have ever translated a course from French to Arabic for better understanding, which is still low compared to the study done in Egypt where almost half of their students participating in the study had resorted to translating most of the medical books into Arabic to facilitate learning [7]. In other countries such as Latin America, most major U.S. medical textbooks have been translated into Spanish and Portuguese [10], as well as that mother tongue-based bilingual education not only increases access to skills, but also improves the quality of basic education by facilitating classroom interaction and the integration of prior knowledge and experiences into new learning [11].

Several scholarly researches have confirmed the effect of language barriers in learning and its impact on students' academic performance at the university level and beyond [12] and have discussed the problems of studying in English for Arab medical students [13] [14] [15], indeed in a study done in Saudi Arabia among pharmacy students showed that 44% of the study participants preferred to receive their lectures in their native language which is Arabic, as opposed to 19% who would prefer to receive them in English only [16].

Concerning the English language, 63.3% of the students did not have a good knowledge of medical terms in English, and 93.8% encourage the teaching of medical terminology in English. On the other hand, 50.5% and 47.3% prefer to do their bibliographic research and attend lectures in English, respectively.

However, 36% and 47% of the students respectively supported the teaching of

medicine and medical terminology in both Arabic and English [17].

The association between the level of proficiency in English and difficulties in conducting bibliographic research is statistically significant. Indeed, 68% of the students who have a very good command of the English language have no difficulty in conducting bibliographic research versus 73.7% who have difficulty with it having poor level in English.

Medical staff and health professionals need continuous training to stay up to date and many resources for this purpose are in English hence the value of learning medical terminology in English [7] since the English language is considered the international language of medicine [18], as well as the English language has now clearly established itself as the main language of the international scientific community [19].

5. Conclusions

In this study, we have analyzed the language practices, preferences, and linguistic difficulties among the students of the Faculty of Medicine, and we have found that although the majority believe that English is the language of current affairs and science above all, they prefer to receive their courses in French given our Moroccan context of which it is our 2nd language.

Nevertheless, it is essential to integrate the English language into the medical curriculum, given that most scientific articles and therapeutic guidelines are written in this language, and this is fundamental for the continuous training of future doctors.

The Arabization of studies is not encouraged, but a large proportion of the students believe that medical terminology in Arabic should be integrated into the medical curriculum to facilitate doctor-patient communication.

Conflicts of Interest

The authors declare no conflicts of interest.

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