

# The impact of the English medical curriculum on medical history taking from Arabic speaking patients by medical students

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## ABSTRACT

**Introduction:** Medical education in Saudi medical colleges is delivered to students through a completely English language curriculum, whereas the practice that students face in the hospital is generally conducted in Arabic language settings. We suggest that the linguistic gap between the adopted medical curriculum and actual practice could influence students' confidence and level of difficulty in history taking in Arabic. The study aimed to identify the effects of learning history taking in the English language on applying it in the medical student's native language. **Methods:** This cross-sectional design study was held in the College of Medicine, King Saud Bin Abdulaziz University for Health Sciences (KSAU-HS). The targeted sample size was 377 medical students from the fourth to the sixth year, and stratified random sampling was used. The questionnaire used was self-developed, validated, and pilot tested in other medical colleges. The questionnaire asked about students' confidence, the difficulty of Arabic history taking, and suggested strategies to improve the current curriculum. **Results:** The response rate was 290 participants (76.9%), males were 205 (71%), and 136 (47%) were in the fourth year. Agreement on feeling confident while taking history taking in Arabic was 98 (33.8%), 102 (35.2%) were neutral, and 90 (31%) disagreed. Moreover, 138 (47.6%) of students preferred training for Objective Structured Clinical Examination (OSCE) in Arabic more than English, 86 (29.7%) were neutral, while 66 (22.8%) disagreed. The mean level of difficulty was  $2.1 \pm 0.7$  (range 1- 5). Additionally, 198 (68%) of students suggested adding short Arabic history courses. **Conclusion:** Students considered history taking in Arabic as easy, even though they were not completely confident. Further efforts are needed to uplift students' of confidence to optimal levels. **Advances in Knowledge:** Communication is the cornerstone of medical education as well as clinical practice. The study explores the impact of instruction language on the physician-patient communication dynamic, providing better infrastructure for evidence-based educational practice. **Application to Patient Care:** This study gives insight into the students' level of preparation to practice in their local community and language. Furthermore, the study addresses strategies to enhance students communication skills and alleviate linguistic barriers in the physician-patient encounter.

**Keywords:** Saudi Arabia, History taking, Arabic, English curriculum

## Introduction

The effective physician-patient relationship is a cornerstone in history taking within the medical practice, in which the exchange of information is the basis of the clinical encounter. The key mission of the medical profession is to be able to provide patients with the highest quality healthcare.<sup>[1]</sup> Establishing the relationship

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starts by taking the history of the patient's complaint, which is integrated with linguistic and psychosocial elements.<sup>[2]</sup>

Medical education in Saudi colleges, including King Saud Bin Abdulaziz University for Health Sciences (KSAU-HS), is delivered through an English language curriculum to the students, which is different from their native Arabic language, resulting in a language barrier. Evidently speaking, secondary education in Saudi Arabia does not provide adequate preparation for such a transition, resulting in a weak emphasis on studying the English language.<sup>[3]</sup> It was described that students have expressed difficulties in coping with studying in the English language in their first years rather than across the whole period of their higher education.<sup>[4]</sup>

Medical students in Saudi encounter clinical scenarios in their lectures, PBL, and clinical skills sessions and Objective Structured Clinical Examination (OSCE) in English during their training. Whereas, the majority of the patients the students have to deal with in hospital practice in Saudi Arabia are native Arabic speakers. The linguistic gap leads to a negative effect on the students' confidence and has a role in changing their way of taking a comprehensive medical history.<sup>[5]</sup> This result has been shown in a study conducted amongst 36 Emirati medical students which found that only 28% of the students were more confident with regards to communicating in Arabic.<sup>[5]</sup> Another study conducted in Oman further noted there was difficulty expressing empathy and eliciting patients' feelings and expectations for medical students who received their communication skills courses in a second language.<sup>[6]</sup> Similar results were also demonstrated in studies conducted outside the Arab region.<sup>[7-9]</sup> In Lebanon, however, a study showed that 88% of the students were either extremely or moderately confident in their history taking in the Arabic language.<sup>[10]</sup> This inconsistency to the literature was attributed to the bilingual character of the Lebanese population. This current study aimed to detect the effects of learning history taking in an English language on applying it in the students' native language, Arabic, during their clinical practice in Saudi Arabia.

## Methods

This cross-sectional study was conducted in the College of Medicine (COM), King Saud bin Abdulaziz University for Health Sciences University (KSAU-HS), Riyadh, Saudi Arabia. The university has a 6-year medical curriculum with two preparatory years, two pre-clinical years and two clinical years. Clinical exposure begins after the third year after which students have a mandatory summer elective course, allowing them to have some clinical exposure in King Abdulaziz Medical City. The participants included the fourth, fifth, sixth-year medical students. Using the RaoSoft website, the estimated required sample size was 377 to obtain a 95% confidence interval and a 5% margin of error. Stratified random sampling was done based on the students' academic numbers provided by the Student Affairs Department after obtaining approval from the Ethics and Institutional Review Board (IRB) at King Abdullah International Medical Research Center' Ethics committee.

Data collection was done by the investigators in which the nominated participants were individually approached to ensure appropriate selection. Upon meeting the participants, the study's sampling approach, objectives, and the instrument used were explained and written informed consent was obtained. Participants were assured that their participation is both voluntary and confidential. The questionnaire used for evaluating self-reported confidence and difficulties of history taking in Arabic was developed by the investigators. The questionnaire used a 5-point Likert scale to score students' difficulty (i.e., very easy {1} to very difficult {5}) and confidence (i.e., strongly disagree {1} to strongly agree {5}). Validation was done with feedback from two content experts. The questionnaire was pilot tested on 82 students by preliminary data collection with the same characteristics of the targeted participants, and the Cronbach alpha for reliability was (0.66). The questionnaire variables were as follows: demographic data, confidence, training, OSCE training preference and difficulty of history taking in Arabic (chief complaint, etc.).

The data were entered into Microsoft Excel 2016 Version 15.25 (Microsoft Corporation, Redmond, Washington, USA) and analyzed by SPSS Version 24 (IBM Corp. Armonk, New York, USA). Categorical variables are presented as percentages and frequencies, and numerical variables are presented as mean and standard deviation. Main outcome variables were self-reported confidence and difficulty in conducting history taking in Arabic. Kruskal Wallis test was used to show any an association between categorical and outcome variables. A *P* value of less than 0.05 was considered to show a statistically significant difference.

## Results

The total number of participants who completed the questionnaire were 290 (77% response rate). In Table 1, the majority of students were from the 4<sup>th</sup> year (47%) and males were 205 (71%). High school entry represented the majority of 224 (84%) of participants. The same proportion of students were approached across all years, the fourth year being the largest group. There were 25 (9%) students whose mothers were fluent in English, and 113 (39%) had fathers that were fluent in English. There were 32 (11%) students who rated themselves as neutral/fair in English fluency. Figure 1 shows that 98 (34%) of students agreed that they feel more confident while conducting history taking in Arabic. There were 66 students (22%) who disagreed with preferring to take patients medical history in Arabic. The mean level of difficulty of history taking in Arabic was  $2.1 \pm 0.7$  (range 1-5) corresponding to being easy. Additionally, Figure 1 shows that 57 (20%) disagreed about preferring to be trained for OSCE in Arabic.

Upon performing the statistical analysis across students who are native Arabic speakers, a significant association was found between students that disagreed with feeling confident and having fluent mothers in English ( $p = 0.026$ ), while fathers' fluency

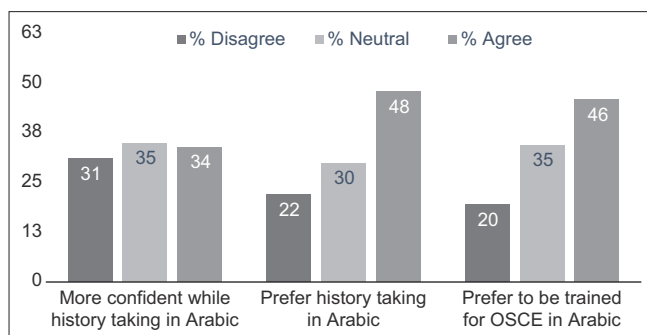
did not show any significant association ( $p = 0.24$ ). Another finding was that students who reported feeling more confident in Arabic rated themselves to be fluent/neutral/fair in English fluency ( $p = 0.006$ ) [Table 2]. The results did not show any significant associations between feeling confident and years of study (junior vs senior), preference of language training, or practicing history taking in Arabic (table not is shown). However, a significant association was found between students' years of studying (junior vs senior) and the frequency of using English medical terms while taking medical history in Arabic ( $p = 0.035$ ) Table 3.

Figure 2 shows students' responses on suggested strategies to improve history taking in Arabic, showing that 198 (68%) of the students preferred adding short courses and communication skills in Arabic, and 159 (55%) have recommended having mixed Arabic and English simulated patients during OSCEs. Only 8% suggested being taught mainly in Arabic.

**Table 1: Basic demographic characteristics of study participants (n=290)**

Year	4 <sup>th</sup>	136 (47%)
	5 <sup>th</sup>	96 (33%)
	6 <sup>th</sup>	58 (20%)
Entry*	High school entry	244 (84%)
	Bachelor entry	45 (16%)
Gender	Male	205 (71%)
	Female	85 (29%)
GPA**	5.0-4.75	48 (22%)
	4.74-4.50	66 (30%)
	4.49-4.00	81 (36%)
	< 3.99	27 (12%)
Arabic mother tongue	Yes	284 (98%)
	No	6 (2%)
Mother's fluency in English	Yes	25 (9%)
	Some	72 (25%)
	No	193 (67%)
Father's fluency in English	Yes	113 (39%)
	Some	79 (27%)
	No	98 (34%)
Students' fluency in English	Fluent	122 (42%)
	Good	136 (47%)
	Neutral/Fair	32 (11%)

\*n=289, \*\*n=222



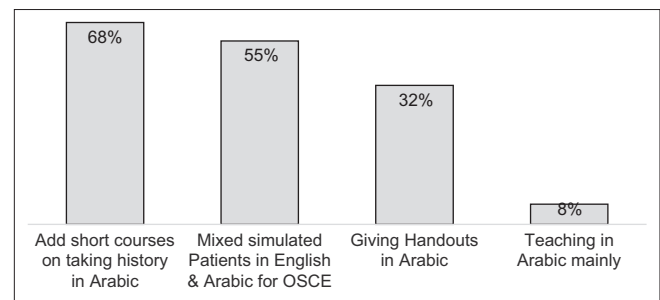
**Figure 1: Agreement distribution of confidence, preference of training and taking medical history in Arabic (n = 290)**

## Discussion

The study aimed to assess the students' confidence while taking medical history in Arabic. The outcomes demonstrated that two-thirds of the studied population were less confident about taking medical history in Arabic than in English, which indicates that students training and preparation for practicing history taking in their local community and language is suboptimal. The here mentioned result is consistent with previously articles studies in the region, one of which was done in the United Arab Emirates which showed that only a quarter of the Emirati students were more confident in history taking in Arabic than in English.<sup>[5]</sup> Another Emirati study demonstrated that just less than half of the students were able to communicate better in Arabic than English, even though they were all native Arabic speakers.<sup>[11]</sup> In addition, an Egyptian study showed that two-thirds of students felt a gap between their education and clinical practice that might be due to their education in a non-native language.<sup>[4]</sup> Moreover, a compelling study conducted in Oman showed that medical students who trained for communication skills in a foreign language had difficulties expressing empathy and eliciting patients' feelings and expectations.<sup>[6]</sup>

Further studies were done outside the Arab region further demonstrated similar results. In India, a study showed that students studying medicine in English had difficulties communicating with patients in their local language.<sup>[7]</sup> A similar Malaysian study also showed that students who trained in Australia had difficulties communicating with patients in their native language when they returned home.<sup>[8]</sup> Furthermore, in South Africa, a study explored medical students' training in English while practiced in an isiZulu speaking community. Participants agreed that their current education insufficiently supports the needs of the local community.<sup>[9]</sup> However, in Lebanon, a study showed contradictory results in which students were more confident while communicating with patients in Arabic than in English. This inconsistency in the literature was attributed by the author to the bilingual/trilingual nature of their population.<sup>[10]</sup>

The current study further demonstrated no significant association between levels of difficulty and confidence while taking history in Arabic and the students' level of education (senior vs junior),



**Figure 2: Students' selection on suggested strategies to improve history taking in Arabic**

**Table 2: Comparison of mothers, fathers, and students' fluency in English with confidence, preference of training and taking medical history in Arabic**

English fluency	Answer (n)	More confident while Arabic history taking	Prefer to take history in Arabic	Prefer to be trained for OSCE in Arabic
Mothers	Yes (25)	3 (3,5)	3 (2,4)	3 (2,4,5)
	Some (70)	3 (2,4)	3 (3,4)	3 (2,4)
	No (189)	3 (2,4)	3.5 (3,4)	4 (3,4)
	<i>P</i>	0.026	0.05	0.199
Fathers	Yes (111)	3 (2,4)	3 (3,4)	3 (2,4)
	Some (77)	3 (2,3)	3 (3,4)	3 (3,4)
	No (96)	3 (2,4)	3 (3,4)	4 (3,4)
	<i>P</i>	0.24	0.703	0.112
Students	Fluent (119)	3 (2,4)	3 (3,4)	3 (2,4)
	Good (135)	3 (2,4)	4 (3,4)	4 (3,4)
	Neutral (30)	2.5 (2,3)	4 (3,4)	3.5 (3,4)
	<i>P</i>	0.006	0.039	0.036

Results are shown in median and quartiles

**Table 3: The association between the years of studying and the frequency of using English terms in history taking in Arabic**

	4 <sup>th</sup>	5 <sup>th</sup>	6 <sup>th</sup>	<i>P</i>
Never/slightly	40 (29.4%)	50 (52.1%)	28 (48.3%)	0.003
Moderately	47 (34.6%)	24 (25%)	14 (24.1%)	
Very/Extremely	49 (36%)	22 (22.9%)	16 (27.6%)	

Results are shown in frequencies and percentages

with an exception for juniors being more likely to use English and medical terminology while taking history in Arabic. While the majority of the literature shows linguistic difficulties to be more significant in junior students compared to seniors, it is important to note out that this conclusion is most evident in areas of academic performance, English proficiency and comprehension, rather than mother tongue communication skills.<sup>[12-15]</sup> In Egypt, a study reported similar results, in which two-thirds of clinical years students (4<sup>th</sup>-6<sup>th</sup> years) believed that studying medicine in English affected their Arabic communication with patients.<sup>[4]</sup> Moreover, a Bahraini study explored language barriers in final year medical students found that only two-thirds of students were confident in communicating with patients in Arabic, evidently noting that this issue is still detectable in senior medical students.<sup>[16]</sup>

Furthermore, the evidence that seniors have significantly less self-reported linguistic difficulties does not mean that their comprehension is optimal. In Oman, students who attended Arabic-medium secondary schools had equivalent trouble with general and medical terms. Insufficiencies in the two territories diminished with time however stayed even following three years of English-medium advanced education.<sup>[13]</sup> Another study examined medical students, interns and residents, showed that candidates reading speed in Arabic is increased by 43% and comprehension by 15% in comparison to English.<sup>[17]</sup> Moreover, that study reviewed 10 English medical textbooks, and it was shown that only 3.3% of the texts were medical terminology, meaning that more than 96% of the students' comprehension relies on their general English vocabulary and comprehension.<sup>[17]</sup>

Even though comprehension evidently improves with practice, in some areas more than others, but whether it can become an equivalent to the mother tongue is still a matter of debate.

The study further addressed possible strategies to improve students' Arabic communication skills. Students have preferred the utilization of Arabic language in their communication skills courses, and around half of the students favored to be trained for OSCEs in Arabic. This demonstrates that students would find the utilization of Arabic language beneficial in their medical curriculum. However, only a minority of students agreed on teaching the curriculum in Arabic as the main language. These results were consistent with another study conducted in the country, which interviewed eight decision-makers regarding the possible implementation of the Arabic language in the university's medical education. The decision-makers widely agreed that implementing Arabic in the communication skills courses and programs was possibly beneficial. Nevertheless, they also reported that the English language is still the current preferred language for medical education in general.<sup>[18]</sup> Another study conducted explored the preference of both students' and teaching faculty regarding the Arabization of the curriculum, where less than 15% of students agreed on implementing a complete Arabized curriculum except for communication skills and OSCEs. This preference for Arabizing communication skills courses, however, was not supported by the faculty.<sup>[19]</sup> These results were also supported by an Egyptian study that showed the vast majority of clinical years medical students preferred to learn medical history taking in Arabic.<sup>[4]</sup>

Supplementing the English medical curriculum with Arabic has also been explored in the literature. In Syria, an experimental crossover trial compared a bilingual approach with a pure Arabic and pure English teaching approach. Medical students who undertook the bilingual approach scored the highest mean of the three approaches.<sup>[20]</sup> In another interesting study in Syria, students have scored significantly higher mean and correct answers with the fastest time for the hybrid questions than pure

English or pure Arabic question.<sup>[21]</sup> Moreover, a Bahraini study implemented Arabic translations of key information in their Pharmacology lecture slides. Most students reported increased levels of confidence in drug selection and a better understanding of drug interaction. Students further noted that this would be of help in their future clinical practice.<sup>[22]</sup> In Bahrain, another study further showed that even though students reported that learning medicine in a second language did not alter their academic performance, over one-third of students thought that combining English and Arabic in their medical curriculum could be of benefit, which according to the author indicates that students believed and held into the importance of Arabic language in medical education.<sup>[16]</sup> Furthermore, a Saudi study also showed that medical students found that Arabic-English code-switching in the classroom was, in fact, more desirable for course content comprehensibility.<sup>[23]</sup>

Without a doubt, the English language is of crucial advantage, as research, references and study aids are more abundant in English, and as its terminology is more stable and unified when compared to Arabic.<sup>[24]</sup> Additionally, an English-based curriculum also facilitates international scientific communication and is essential for international examinations, potentially reducing the likelihood of utilizing Arabic as the main language of instruction.<sup>[21,25,26]</sup>

However, the debate between choosing Arabic or English as the main language of medical instruction is not a simple matter. The possibility of an Arabic-English hybrid system showed to have favorable outcomes in the literature, as it can possibly reserve both the benefit of the mother tongue in communication and comprehension and the benefit of English as an international scientific communication language.<sup>[21-27]</sup> The supplementation of the Arabic language in certain elements of the curriculum appears to be of benefit; however, the English language still is the preferred language for medical education in the Arabic region. All previously stated strategies and potentially beneficial interventions which would facilitate students transition into the healthcare system, as history taking is a corner stone in establishing the rapport between the patient and the primary care physicians

The current study is the first in Saudi Arabia to investigate the confidence of college students in taking medical history in Arabic. It was a cross-sectional design conducted in a single university, thus we encourage fellow researchers to explore this phenomenon in other universities. Confidence assessment was through a self-reported questionnaire that might not reflect students' actual performance but rather their own perception. Assessing their confidence qualitatively by an interview-based evaluation would yield more concrete results.

## Conclusion

The study demonstrated that students' confidence while history taking in Arabic is not optimal; however, the overall difficulty appears to be easy for the students. Students also agreed that

implementing Arabic in their communication skills courses would be beneficial for their Arabic communication skills in their medical practice. Therefore, a gradual implementation of the Arabic language to the communication courses is recommended along with preserving the use of English as it's the international language of science. Arabization of medical education in Saudi Arabia requires further research.

## Ethical approval

IRB approval was obtained by King Abdullah International Medical Research Center

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Nil.

## Conflicts of interest

There are no conflicts of interest.

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