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Linguistic barriers in teaching 'English based' medical curriculum to Native Arabic speakers: a literature review.

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Abstract:
English has been recognized as the main language of instruction in the Arab world in many fields of higher education, prompting debate about the advantages and disadvantages of studying in English. The aim of this narrative review paper is to examine the linguistic challenges faced by Native Arabic medical students in learning in English language. We searched relevant literature in PubMed, Scopus, and Google Scholar using specific keywords, e.g., "English based medical curriculum," "preclinical medical education," "Arabization," "challenges," and "opportunities." The preference of English as a medium of instruction in medical schools has posed several challenges for native Arabic speakers (e.g., linguistic dualism, lack of empathy, poor performance) but has also provided alternative routes to overcome these hurdles, such as Arabization and Hybrid Bilingual learning. To date, many medical schools have successfully incorporated these tactics to be more student centric for their native Arabic speaking students. However, the main challenge is absence of large studies and shortage of hybrid-bilingual text for the same.

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I. Introduction:

Over the last few decades, English has emerged as the primary language of academic communication [1]. This has contributed to a global phenomenon of teaching academic subjects in non-English-speaking countries using English as the means of instruction [2,3,4]. This is especially true in the field of medical education, where the bulk of biomedical science research and professional knowledge is published in English [5]. Medical students must eventually improve their English skills to benefit from medical knowledge through journals and literature, where publications are primarily in English. [1]. While about one-third of foreign medical schools located outside the United States and Canada, provide instructions in the English language, about one-fifth of the countries in which these institutions are based mention English as an official language [6].In this paper we discuss the linguistic barriers in teaching purely 'English based' medical curriculum to Native Arabic speakers and the possible alternatives.

II. Material and Method

We searched relevant literature in PubMed, Scopus, and Google Scholar using specific keywords, e.g., "English based medical curriculum," "preclinical medical education," "Arabization," "challenges," and "opportunities." Original studies, reviews, editorials, commentaries, perspectives, short or special communications, and policy papers on English based medical curriculum were reviewed. Information from websites of different medical schools, universities, professional associations, and international or national organizations were extracted. Reference lists from retrieved articles were also examined manually for relevant information.

III. Discussion

English has spread as the teaching language in the Arab world in many fields of higher education, prompting debate about the advantages and disadvantages of studying in English. [1] In order to provide language education support essential for learning needs of medical students, it has now become mandatory to periodically access the language barriers encountered by students in some aspects of their medical-education, such as studying from books, in lectures and in examinations [5].

The science backing mother tongue as a medium of instruction: The use of a second language for medical education may particularly pose a language barrier for students who have not learned or experienced much of the foreign language in the first few years of their primary education [7, 8]. The most disadvantaged students in this regard are those admitted from Governmental schools for admission to medical colleges because their

instructions and delivery is mainly in the Arabic language. No wonder, the imposition of this linguistic dualism, by thinking in one language and studying in another, [6] have led to it being considered to be the second most important issue faced by medical students during their first year of study at a Saudi Arabian medical school [9].
A considerable amount of literature has been published on brain stimulation and knowledge retrieval when teaching is carried out in a foreign language [11]. As noted by Kim et al. [10] the primary disadvantage of learning through a language barrier is the limitation of 'working memory' when instructed in a foreign language [10]. An unambiguous relationship was established between the pattern of activation of various portions of the prefrontal cortex and language of instruction. The anterior part of the right dorsolateral prefrontal cortex and the left superior temporal gyrus was activated in response to the indigenous language, while, stimulation was noted at the posterior portion of the right dorsolateral prefrontal cortex and the left inferior temporal gyrus, when the same tasks were performed in the foreign language [10]. A great deal of previous research on left inferior temporal gyri has proven their ineptness in 'working memory' thus likely to contribute to superficial learning [10].

The advantages of Mother-tongue and concept of 'Arabization': For a long time, it has been proven that language is the fundamental factor in the perception and understanding of instructional content by learners [12]. Many countries such as Austria, Japan, Germany, and Scandinavia impart medical education in their national languages and, according to the WHO efficiency index, this has not limited their contribution to the world health care arena [13]. A research in Tanzania demonstrated that the standard of education is compromised by teaching in English rather than Kiswahili [14]. Usually, medical school courses in Arab countries are based on British, American, French, and Italian curricula, while most of these nations' governmental high schools offer vast majority their subjects in Arabic[15]. To excel in medical schools, students who obtain a degree in medical sciences are mandated to learn and master English [15].
In Arabic literature, the justification for the Arabization of medical sciences has been heavily debated. Data from several studies conducted in Arabic speaking countries like Saudi Arabia, Sudan and Jordan suggested that Arabization of education could have a positive effect on the continuity and efficiency of the educational outcome [16-20]. An extensively discussed study was conducted at King Faisal University School of Medicine. It concluded that the medical students, interns and residents preferred Arabic language over English language as the medium of instruction [16]. In this study, Ismail [16] claimed that comprehension and reading speed of participants increased by 15% and 43% if they read in Arabic in comparison to English and this difference may eventually reflect in their academic attainment later in life [16]. The main challenge to the concept of 'Arabization' of medical education is limited resources of literature and standard textbooks in Arabic [21]. Moreover, various studies have assessed the difficulties in comprehending English-medical literature, by non-English speaking physicians, eventually, interfering with the practice of Evidence-Based Health Care in later life [22, 23].
The Idea of Hybrid bi-lingual Learning: A small study conducted on the analysis of language of medical textbooks revealed that the scientific vocabulary amounts to only 3.3% of the total content of the books [16]. This heralded and intensified the debate on imparting medical education is through 'Hybrid bi-lingual learning' [24]. This model is a blend of English medical vocabulary, terminology, and abbreviations with Arabic text, making it simpler, effective, and comprehensible for Arabic medical students [24]. A recent study on 'hybrid bi-lingual approach' from Syrian Universities showed that medical sciences students preferred it for written medical texts over pure Arabic or English [22]. They concluded that large-scale implementation of this approach could harmonize both inter-professional ventures and patient-doctor communications during their medical practice [22]. Another beneficial aspect of using this approach in Arabic-speaking medical students is in facilitating empathetic communication and garnering patient's expectations which lacks in their colleagues from English based programs [25]. The traditional arguments on limitation on ability and competence of hybrid Arabic-based education [21, 26-28,] have been inconsistent and contradictory to the recent studies conducted in the United States of America, which showed comparable performance of 'hybrid curriculum' trained doctors to their contemporaries in the assessment by Educational commission for Foreign Medical Graduates. One longitudinal study [29, 30] found that Damascus University, offering exclusive Arabic medical curriculum, took the seventh spot amongst other academic institutions in graduating the highest percentage of foreign licensed practitioners in United States of America proving efficacy of native language as a medium of instruction.

IV. Conclusion

A large and growing body of literature has investigated the adverse effect of language barriers on individual's learning and professional life in medical school where medium of instructions differs from the learner's primary language [31]. This problem is of special interest to young medical students in Middle – eastern and Arabic countries, since medical curriculum there is restricted to English or French [15]. Various studies have emphasized that bilingual medical education [32, 33], selected medical activities [34, 35], or a hybrid system is more efficacious in improving scientific comprehension apart from enriching the English

knowledge of students[24]. However, the key difficulty in introducing such programs is the paucity and small sample of research on the feasibility of 'hybrid bilingual instruction' in medical programs. The globalization of the delivery of healthcare [37] through increased cooperation between medical schools in different countries [36] have transformed medical education into a global enterprise. Hence the need of the hour is to emphasize upon the shift in attitude on designing student-centered educational medium to address the specific needs of culturally diverse students.

Ethical concerns: None

Bibliography

[1]. Mahjoub M, Hochlef M, Ghannouchi N, Bouriga R, Amara A, Njah M. Learning of medical English and academic curricular reform in medicine. Tunis Med. 2019 Jul;97(7):853-858. PMID: 31872394.

[2]. Doiz A, Lasagabaster D. Juan Manuel sierra. English-medium instruction at universities: global challenges. Bristol: Multilingual Matters; 2013.

[3]. Dearden J. Oxford: Department of Education U of O. English as a medium of instruction: a growing global phenomenon - phase 1. In: BRITISH COUNCIL; 2014.

[4]. Taguchi N. English-medium education in the global society: introduction to special issue; 2014.

[5]. Simone GD. Medical writing at the periphery: the case of Italian journal editorials; 2008.

[6]. Boulet J, Bede C, McKinley D, Norcini J. An overview of the world's medical schools. Med Teach. 2007;29(1):20–6.

[7]. Holtzman KZ, Swanson DB, Ouyang W, Dillon GF, Boulet JR. International variation in performance by clinical discipline and task on the United States medical licensing examination step 2 clinical knowledge component. Acad Med. 2014;89(11):1558–62.https://doi.org/10.1097/ACM.0000000000000488

[8]. Mann C, Canny B, Lindley J, Rajan R. The influence of language family on academic performance in year 1 and 2 MBBS students. Med Educ. 2010;44(8):786–94. https://doi.org/10.1111/j.1365-2923.2010.03711.x

[9]. Almoallim H, Aldahlawi S, Alqahtani E, Alqurashi S, Munshi A. Difficulties facing first-year medical students at Umm Alqura University in Saudi Arabia. East Mediterr Health J. 2012;16(12):1272–7.

[10]. Kim JJ, Kim MS, Lee JS, Lee DS, Lee MC, Kwon JS. Dissociation of working memory processing associated with native and second languages: PET investigation. Neuroimage. 2002;15(4):879–91. https://doi.org/10.1006/nimg.2001.1025

[11]. Alnasir FA, Jaradat AA. The effectiveness of AGU-MCAT in predicting medical student performance in year one of the College of Medicine of the Arabian Gulf University. Educ Health (Abingdon). 2011;24(2):447.

[12]. UNESCO report. Enhancing Learning from access to success. Report of the first experts' meeting: Defining areas of action. Paris. 2007 [read more]

[13]. Ajay Tandon. et al. Measuring Overall Health System Performance for 191 Countries. GPE Discussion Paper Series: No. 30 [read more]

[14]. Martha Qorro. Does Language of Instruction Affect Quality of Education?. HakiElimu Working Papers. Tanzania. 2006 [read more]

[15]. Abstracts from the 38th annual meeting of the society of general internal medicine. J Gen Intern Med. 2015;30 Suppl 2(Suppl 2):45-551. doi:10.1007/s11606-015-3271-0

[16]. Ismail HM. Are we ready for Arabization in medical education?. J Fam Community Med [serial online] 2002];9:67-69.

[17]. Mohmdani AA, Abdel Rahman SH. Evaluating the impact of Arabization on medical students' acquisition, Gezira University, Sudan. Eastern Mediterranean health journal. 2006

[18]. Mahamoud Al-Asal, Oqlah Samadi. The effect of language of instructions on university participants' acquisition of scientific terms. European Scientific Journal. Vol. 25, 5-28

[19]. Muna Al-Ajrami. The Dilemma of Arabization in the Arab World:Problems and Solutions. Theory and Practice in language Studies. Vo. 5. Oct. 2015.

[20]. Al-Sibaie ZA, Othman M. Defense for medical education in Arabic. Journal of Family & Community Medicine 1994;1(1):1-9. (in Arabic)

[21]. Elnashar M, Abdelrahim H. Arabization of medical sciences: history, challenges and recommendations | Weill Cornell medicine - Qatar. 2015. https://qatar-weill.cornell.edu/continuing-professional-development/topic-ofthe- month/archive/arabization-of-medical-sciences-history-challenges-andrecommendations

[22]. Baethge C. The languages of medicine. Dtsch Arztebl Int. 2008;105:37–40.

[23]. Letelier L, Zamarin N, Andrade M, Gabrielli L, Caiozzi G, Viviani P, et al. Exploring language barriers to evidence-based health care (EBHC) in postgraduate medical students: a randomised trial. Educ Health. 2007;20:82–2.

[24]. Alsuliman, T., Alasadi, L., Mouki, A. et al. Language of written medical educational materials for non-English speaking populations: an evaluation of a simplified bi-lingual approach. BMC Med Educ 19, 418 (2019). https://doi.org/10.1186/s12909-019-1846-x

[25]. Hashim MJ, Major S, Mirza DM, et al. Medical Students Learning Communication Skills in a Second Language: Empathy and expectations. Sultan Qaboos Univ Med J. 2013;13(1):100-106. doi:10.12816/0003202

[26]. Sabbour SM, Dewedar SA, Kandil SK. Language barriers in medical education and attitudes towards Arabization of medicine: student and staff perspectives. EMHJ. 2010;16:1263–71.

[27]. Alshareef M, Mobaireek O, Mohamud M, Alrajhi Z, Alhamdan A, Hamad B. Decision makers' perspectives on the language of instruction in medicine in Saudi Arabia: a qualitative study. Health Professions Education. 2018. https:// doi.org/10.1016/j.hpe.2018.03.006

[28]. Alhamami M. Teaching science subjects in Arabic: Arab university scientists' perspectives. Language Learning in Higher Education. 2015;5:105–23.

[29]. Tekian A, Boulet J. A longitudinal study of the characteristics and performances of medical students and graduates from the Arab countries. BMC Medical Education. 2015;15:200.

[30]. Young A, Chaudhry HJ, Pei X, Arnhart K, Dugan M, Snyder GB. A census of actively licensed physicians in the United States, 2016. Journal of Medical Regulation. 2017;103:7–21.

[31]. Yang, M., O'Sullivan, P.S., Irby, D.M. et al. Challenges and adaptations in implementing an English-medium medical program:a case study in China. BMC Med Educ 19, 15 (2019). https://doi.org/10.1186/s12909-018-1452-3

[32]. Liao R, Zhan X. Preparation for bilingual medical education. Medical Teacher. 2013;35:1053–3.

[33]. Yang Z, Xi J. Bilingual medical education: opportunities and challenges. Med Educ. 2009;43:613–4

[34]. Imam AM, Al-Salloom AA, Ibrahim MIM, Elsanosi BH, Al-Wabel AH. Student presentation: a conceptual model. Education in Medicine Journal. 2014;6. https://doi.org/10.5959/eimj.v6i2.229.
[35]. Choon-Eng GM. Globalization of problem-based learning (PBL): crosscultural implications. Kaohsiung J Med Sci. 2008;24:S14–22.
[36]. McLean M, McKimm J, Major S. Medical educators working abroad: A pilot study of educators' experiences in the Middle East; 2014.
[37]. Dent J, Harden RM. A practical guide for medical teachers E-book. Elsevier health sciences; 2013.

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