Evaluating Student-Led Medical Foreign Language Courses: A Preliminary Study

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ABSTRACT

Objective: Language barriers between physicians and patients are linked to poorer clinical outcomes, higher healthcare costs, and worse patient satisfaction. Incorporating medical foreign language into medical school curriculums can be costly and time-consuming. We sought to evaluate the efficacy of a student-initiated medical foreign language course in communicating with patients with limited English proficiency (LEP). **Methods:** Senior medical students designed the curriculum and textbook for a medical foreign language course aimed at teaching basic medical Mandarin Chinese, Hokkien Chinese and Malay. After the course, students completed questionnaire on their comfort engaging in patients with LEP and whether they would take a second course. **Results:** A total of 38 students enrolled and 22 completed the post-course questionnaire. Students felt significantly more comfortable engaging patients with LEP ($p < 0.05$). All students agreed the course was effective at teaching medical foreign language and the majority would take a second LINGO course in the future. **Conclusion:** Student-led medical foreign languages classes may be effective in helping medical students communicate with patients with LEP.

Keywords: *Medical foreign language, Curriculum planning, Design and production of learning materials, Communication skills, Student initiated*

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INTRODUCTION

In an increasingly diverse world, language barriers between physicians and patients have been shown to be linked to suboptimal healthcare delivery, including poorer clinical outcomes, increased disease severity, and higher healthcare-related costs (1–5). Furthermore, patients with limited English proficiency (LEP) have been shown to have poorer patient satisfaction and reduced access to health education and preventive care (1, 3–7). Conversely, language concordance between patient and physician reduces healthcare disparities and is linked to better care, reduced emergency department (ED) return visits, and lower healthcare expenditures (3–8).

While professional interpreters provide one solution to language barriers, the quality

of interpersonal care and health education delivered are poorer and interpreters are a suboptimal solution at best (3, 7). Moreover, patients with chronic diseases have better health outcomes, a greater understanding of their conditions, and were more likely to be satisfied with their care when communicating with physicians who spoke their primary language (4). Consequently, in 2012, educators at Harvard Medical School, the University of California San Francisco (UCSF) School of Medicine, and the National Institutes of Health highlighted the need for foreign language education in medical schools, with schools across the United States following suit by integrating medical foreign language courses into their curriculum (9).

In the global context, Singapore is unique as a multicultural, multiracial country that recognises four official languages—English, Mandarin Chinese, Malay and Tamil (10). A recent census in 2010 showed over 95% of the population spoke at least one of the four languages, inclusive of Chinese dialects such as Hokkien, Cantonese and Teochew (10). With an increasingly geriatric population requiring multidisciplinary healthcare, the elderly in Singapore need, but may not be able to access, physicians who speak their native language (10).

Adapting a medical foreign language course is already difficult given the condensed nature of the medical school curriculum (1). Furthermore, the majority of research in medical foreign language education concerns Spanish, as opposed to the Asian languages spoken in Singapore, which could make a language course costly and difficult to tailor to our local environment (4, 7, 8). In Singapore, we sought to address these challenges by having medical students collaborate with language tutors to create a practical, multilingual medical language course and textbook. Our goal was to equip medical students with basic foreign language competency for simple history taking and physical examination. The aim of this study was to evaluate a student-led medical foreign language course in helping

medical students learn basic medical foreign language phrases and improve comfort in speaking to patients with LEP.

METHODS

Recruitment

Medical students were the main participants of the pilot classes, which were developed as part of a student affairs initiative. All data collected was anonymised. Students indicated their consent by completing the questionnaire and were free to decline filling out the questionnaire at any given point.

Curriculum

The language course, titled "LINGO", was conceptualised, designed, and written by senior medical students, all of whom had already completed at least one year of clerkships. Based on the local population, the decision was made to focus the class on Mandarin Chinese, Hokkien Chinese and Malay. The curriculum was designed to cover common vocabulary and phrases and structured by organ system, encompassing the cardiovascular, respiratory, abdominal, neurological and musculoskeletal systems. Additional chapters were added to encompass pediatric, obstetric and gynecological conditions. Basic vocabulary and phrases were also included to facilitate introductions, asking questions and engaging in empathetic conversation.

Classes

Each class focused on one organ system and was two hours in length. Each lecture was taught by an external tutor for Malay and Hokkien Chinese and by senior medical students for Mandarin Chinese. Class size ranged from 10–15 students per instructor. After a short didactic lecture, students would pair up to practice basic history taking and physical examination commands. Subsequently, the instructor would review vocabulary and phrases from previous

classes and answer any remaining questions. A total of six sessions was offered for each language.

Textbook

The textbook was designed by medical students as an A5 sized booklet to be also used as a pocket-sized reference during clinical rotations. Like the curriculum, each chapter was structured around an organ system and included vocabulary, phrases and sample conversations. The textbook included the content for all three languages such that students could utilise vocabulary and phrases ad hoc, even if they had not attended the specific language course. The textbook's design, illustrations and translations were done entirely by a team of student editors. See Figure 1 for sample textbook pages.

Vocabulary

COMMON PHRASES USED

English	Malay	Mandarin
Chest pain	Sakit Dada	胸口痛 Xiōngkǒu tòng
Cold sweat	Keringat dingin	冷汗 Lěnghàn
Giddy	Mabuk	晕 Yūn

Figure 1: Common vocabulary. All vocabulary and common phrases were adapted from English to Mandarin Chinese, Malay and Hokkien.

Assessment

After completing the course, all students were invited to fill out an anonymous survey containing Likert scale questions to determine their attitudes towards engaging LEP patients, medical foreign language, course quality, and whether or not they would take a second language course.

Analysis

Results are presented as means with ranges. The Statistical Package for the Social Sciences (SPSS) version 21 (IBM Corp., Armonk, NY) was used for statistical analysis. A student's t-test was used to compare Likert scores pre and post-course with statistical significance defined as $p < 0.05$.

RESULTS

Enrollment

The course was advertised to the 225 candidates in the doctor of medicine programme, of whom 67 (29.7%) responded with interested in enrolling. Enrollment was limited by the need for a low teacher to student ratio. Of respondents, a total of 38 students (56.7%) enrolled in the course. Of these students, 10 were enrolled in Mandarin Chinese, 12 were enrolled in Malay and 16 were enrolled in Hokkien Chinese. At the end of the course, 22 students (57.8%) completed the questionnaire.

Engaging in LEP Patients

Before the course, less than one in five students (18.2%) felt comfortable engaging patients who primarily spoke a foreign language. On average, they felt uncomfortable to very uncomfortable in engaging in these patients. After the course, students on average felt neutral to comfortable with engaging in these patients and felt significantly more comfortable in engaging in patients who primarily spoke a foreign language ($p < 0.01$). Figure 2 shows a graphical representation of the data.
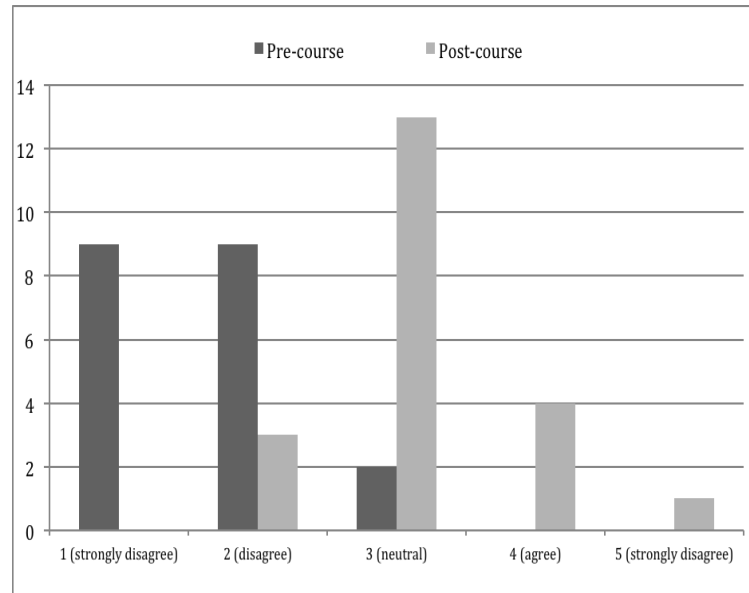

Figure 2: Student responses to the statement "I feel comfortable engaging in a patient who primarily speaks in a foreign language (1 = strongly disagree, 5 = strongly agree) " (mean pre-course 1.71, post-course 3.14, $p < 0.05$).

Course Satisfaction

All students agreed that the course was effective in teaching medical foreign language, 66% of whom strongly agreed with the sentiment. Of students polled, 86.3% were satisfied or very satisfied with the content and quality of the textbook. All but one respondent (95.45%) would consider taking a second language course. Malay was the most popular choice (63.6%), followed by Hokkien Chinese (27.3%) and Mandarin Chinese (9.09%). All 22 students who completed the exit questionnaire (100%) felt that the course should be continued. The results of the questionnaire are shown in full in Table 1.

Table 1: Questionnaire results. The results of the questionnaire administered to the students before and after the class (*n* = 22)

Questionnaire Results	Before LINGO mean (min-max)	After LINGO mean (min-max)
I feel comfortable engaging in a patient who primarily speaks in a foreign language. (1 = strongly disagree, 5 = strongly agree)	1.71 (1–3)	3.14 (2–5)
I was satisfied with the content and quality of the LINGO textbook. (1 = strongly disagree, 5 = strongly agree)		4.19 (3–5)
I feel LINGO is effective at teaching medical foreign language. (1 = strongly disagree, 5 = strongly agree)		3.86 (2–5)
I feel the LINGO language class should be continued. (1 = strongly disagree, 5 = strongly agree)		5.00 (5–5)
I want to take another LINGO course in the future. (1 = strongly disagree, 5 = strongly agree)		4.18 (3–5)
If so, which one?		Responses (%)
Malay		14 (63.6%)
Hokkien Chinese		6 (27.3%)
Mandarin Chinese		2 (9.09%)

CONCLUSION

As the population in Singapore ages, the number of patients with LEP will only increase and the need for language-concordant physicians will drastically rise. Consequently, it is crucial that medical education integrates medical foreign language courses into the curriculum early on to improve patient care and optimise healthcare delivery in the future. However, given the condensed, exhaustive medical education curriculum, it may not be feasible or time-efficient to do so formally.

The research done on our pilot medical foreign language course suggests that a student-led medical foreign language course may be effective in helping medical students develop practical skills for communicating with patients with LEP. By allowing students to decide on the content and direction of the curriculum and textbook, we were able to focus on salient and practical material. After taking the course, students felt significantly more comfortable with engaging in patients who did primarily spoke a foreign language.

Additionally, the vast majority of the students felt the course was effective in foreign language instruction and were keen to take another LINGO course in the future. Given that the textbook was designed as a pocket-sized reference, students were able to continue using the textbook for on-the-go learning and ad hoc use in the wards.

As a pilot study, there are some limitations to this study. Self-reported language proficiency has been noted in previous studies to lead to false language fluency that may not translate to actual language competency (1). Additionally, our results are not longitudinal and involve a small sample size. Similarly, the languages we studied were Mandarin Chinese, Malay and Hokkien Chinese, thus our results may not be generalisable to other languages or regions. To ideally assess the efficacy of a student-run course, a larger sample size with multiple objective assessments and patient feedback on language skills would be ideal.

This is the first study to evaluate student-led medical language foreign education and suggests that such courses may be

helpful in helping medical students increase their comfort with engaging patients with LEP. Especially in regions with diverse, multilingual populations, our study set the precedent for student-led foreign language education in medical school to improve confidence and provide students with practical language skills in the clinical environment.

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