Teaching and learning medical English for international medical graduates: A scoping review

Chiew Hong Ng[1] & Yin Ling Cheung[1]

Nanyang Technological University (Singapore)[1]

chiewhong.ng@nie.edu.sg, yinling.cheung@nie.edu.sg

Abstract

This paper reviews research on teaching and learning English for international communication in diverse contexts for international medical graduates (IMGs) using medical English as a lingua franca. Through keyword searches in Scopus and EBSCOhost research databases of English-medium peer-reviewed refereed journals from 2008 to 2022, 33 articles were selected to answer three research questions for the present study. The findings highlight the complexity, diversity and challenges of teaching and learning medical English for international communication for IMGs in terms of learners' needs and difficulties in learning medical English (e.g., low proficiency levels and issue of communicative competence), specific courses implemented for IMGs to enhance English (e.g., English for medical purposes, English medium international project, and interdisciplinary collaboration using multimedia) and conceptual frameworks guiding teaching and learning in international multilingual environments (e.g., clinical communication skills and genre approach). Future directions in researching the teaching and learning of medical English as a lingua franca are suggested for practitioners teaching medical English for specific purposes, IMGs and prospective IMGs in international multilingual contexts and researchers specializing in interlingual medical communication.

Keywords: Medical English, international medical graduates (IMGs), teaching, learning, English as a lingua franca (ELF).

Resumen

La enseñanza y el aprendizaje de inglés médico para graduados médicos internacionales: una revisión de alcance

Este artículo analiza la investigación sobre la enseñanza y el aprendizaje del inglés para la comunicación internacional en diversos contextos para graduados internacionales de medicina que utilizan el inglés médico como lengua franca. A través de búsquedas de palabras clave en las bases de datos de investigación Scopus y EBSCOhost de revistas de habla inglesa revisadas por pares desde 2008 hasta 2022, se seleccionaron 33 artículos para responder a tres preguntas de investigación. Los resultados destacan la complejidad, la diversidad y los desafíos que para los graduados médicos internacionales conlleva la enseñanza y el aprendizaje del inglés médico para la comunicación internacional respecto a las necesidades y dificultades de los estudiantes en el aprendizaje del inglés médico (por ejemplo, bajos niveles de competencia y problemas de competencia comunicativa), cursos específicos implementados para IMG para mejorar el inglés (por ejemplo, inglés para fines médicos, proyecto internacional en inglés medio y colaboración interdisciplinaria utilizando multimedia) y marcos conceptuales que guían la enseñanza y el aprendizaje en entornos multilingües internacionales (por ejemplo, habilidades de comunicación clínica y enfoque de género). Se proponen futuras líneas de investigación sobre la enseñanza y el aprendizaje del inglés médico como lengua franca para profesionales de la enseñanza del inglés médico con fines específicos, graduados médicos internacionales en contextos multilingües internacionales e investigadores especializados en comunicación médica interlingüe.

Palabras clave: Inglés médico, graduados médicos internacionales, enseñanza, aprendizaje, inglés como lengua franca.

1. Introduction

English for medical purposes (EMP) is a sub-field of English for Specific Purposes (ESP) to focus on specific English language needs of medical students and professionals in areas like vocabulary specific to the medical field and communication skills. With internationalization and an increase of international medical graduates (IMGs) in diverse settings, universities tend to teach medical English in terms of developing English for Specific Purposes (ESP) courses to meet the needs of IMGs, such as writing a medical journal article (Hull, 2016) and medical documentation such as recording a patient's condition and health documents, and teaching acculturation and language specific to the patient community and hospitals (Hoekje, 2007). There are also research studies on healthcare professionals' communication skills in English as lingua franca, such as intelligibility of interactions (Tweedie & Johnson, 2018, 2019) and engagement between

nurses and patients in clinical bedside handovers (Dahm et al., 2022). This is because "accurate communication and comprehension of information via oral/aural means is potentially, and quite literally, a matter of life and death" (Tweedie & Johnson, 2018, p. 65) in clinical settings and hospitals.

In the field of medical science, globalization with increasing homogenization of science and scientific language has resulted in English as the lingua franca with its primary use as means of communication for correspondence, conferences, and writing of scientific articles (Milosavljević et al., 2015). To Salager-Meyer (2014a), English for Medical Purposes (EMP) is related to English as the lingua franca of scientific communication. Loiacono (2011) considers medical English as "a variety of English for Special Purposes" (p. 11) with focus on issues such as "lexical, linguistic and textual investigations into medical text-types and genres" (p. 11). Medical English represents "a system of communication … [or] … an international 'code'" (p. 11) to exchange information globally. Tweedie and Johnson (2022) have pointed out that Medical English as a Lingua Franca (MELF) involves teaching language in medical ESP to prepare healthcare professionals for the "multilingual, emergent, real-time, and negotiated-meaning interactions which are integral to effective MELF communication" (p. ix). This can mean teaching ELF pragmatic strategies in MELF interactions (Tweedie & Johnson, 2019), important because IMGs have to understand verbal and non-verbal elements of ELF while interacting with diverse people such as patients, nurses, and physicians in varying communication contexts such as "clinics, hospital wards, medical English classrooms, simulation laboratories, and in doctor-patient consultations" (Tweedie & Johnson, 2022, p. x).

With globalization, many Western countries – United States, Canada, United Kingdom and Australia – have become increasingly dependent on IMGs for their medical workforce (Watt et al., 2010; Yates et al., 2016). Many of these IMGs work in the hospitals or seek postgraduate training positions (e.g., residency) (Watt et al., 2010). These IMGs are often non-native speakers of English (NNS) facing challenges in communicating with patients and colleagues (Woodward-Kron et al., 2015) and understanding new hospital systems and guidelines (Yates et al., 2016). Pryor and Woodward-Kron (2014) have identified these issues for practising IMGs in their new environment: language proficiency, conversational English, medical discourse, and understanding different cultural expectations. IMGs need help with medical English from ESP professionals (Tipton, 2005) because IMGs who are non-native speakers of English find working in English

clinical settings challenging due to language and cultural differences (Tipton, 2005).

Antić and Milosavljević (2016) suggest that "[n]eeds analysis is at the core of any ESP/EMP course design and meeting the needs of the learners is one of the basic requirements of a successful course" (p. 76). Salager-Meyer's (2014a) brief review of 30 years of research on written medical discourse highlights the need to teach medical English lexis in reading courses. In teaching of English for medical purposes (EMP), Milosavljević et al. (2015) identify the basic needs of medical students as understanding medical texts, "practicing and improving the speaking skill with an emphasis on acquiring medical terminology through role play, pair and teamwork, projects" (p. 2). Salager-Meyer (2014b) talks about EMP pedagogical studies to improve the English communicative skills of non-Anglophone medical students through interactional as well as sociolinguistic healthcare (doctor/patient) communication. In terms of course designs, in teaching medical English as ESP, the students' disparate General English proficiency levels led Pavel (2014) to design pre- and upper intermediate levels for the courses based on real-life situations where English would be used, such as examining patients, case-report writing and oral communication in English with focus on grammar, lexicon (medical terminology or jargon), reading, listening, and communication skills.

In terms of conceptual frameworks guiding teaching and learning English, Pavel (2014) created a "task-based" (Willis, 1996) syllabus to focus on communication activities reflecting the practice of medical professionals; and Brown (2013) taught medical English through Content and Language Integrated Learning (CLIL). To Milosavljević and Antić (2015), medical English genres encompass the written genre of medical English for research articles in terms of IMRD or IMRAD (Introduction, Material and methods, Results, Discussion) structure and the spoken genres of medical English, such as oral presentation and conference as specialized discourse communities for professionals. Plastina (2016) advocates a genre-activity based approach to EMP through producing computer-mediated simulations of medical interviews involving the appropriacy of learners' lexical choices for anatomical and diagnostic terms and rhetorical phases/moves for medical interviews. Given the different varieties of English in multilingual contexts where English is a lingua franca, Tweedie and Johnson (2018) highlight the need to include training in "interactive and authentic listening, and frequency-based vocabulary instruction" (p. 92). To them, teaching of listening skills should cover a wide

variety of Englishes, and enhance interactional listening skills through simulation laboratory or training while pronunciation pedagogy should focus on intelligibility and communicative effectiveness.

Researchers have also focused on oral medical discourse as a conceptual framework which has been analyzed through conversation analysis of naturally occurring verbal communication for turn taking, non-verbal elements and sequential phases of doctor-patient interview, and medical training program, such as surgical instruction in the operating theatre (Gotti, 2015). To increase the competences of international medical personnel communication, materials for their training should focus on the linguistic and metalinguistic features of medical interaction and intercultural communication to prevent misunderstandings as doctors and their patients come from diverse ethnic, cultural and linguistic backgrounds due to internationalization (Gotti, 2015). With communicating with patients as an important competency, King and Hoppe (2013) suggest training programs using a 6-Function Model for patient-centered communication in medical encounters in later years of medical schooling and residency: "(1) fostering the relationship, (2) gathering information, (3) providing information, (4) making decisions, (5) responding to emotions, and (6) enabling disease- and treatment-related behavior" (p. 388).

Although there is much research related to English for IMGs, to our knowledge, there has been no qualitative synthesis that specifically addresses learning and teaching English for IMGs in international multilingual environments since the systematic review by Pilotto et al. (2007) highlighting issues for clinicians training IMGs to take note of in terms of developing IMGs' skills in communicating with patients such as, showing empathy by word choice and non-verbal actions. The identified gap needs to be addressed because a review of classroom practice in medical ESP is important in helping us understand whether classroom pedagogy improves medical literacy (Khazaie & Ebadi, 2023; Wei, 2021) and to inform current practice about IMGs' everyday life using medical English as a lingua franca.

The study investigates the following research questions:

1. What are IMGs' needs and difficulties in learning medical English for international communication?

2. What specific courses have been implemented for IMGs to enhance English for international communication?

3. What are the conceptual frameworks guiding teaching and learning English for international communication for IMGs?

2. Methods

We adopted scoping review which "addresses an exploratory research question aimed at mapping key concepts, types of evidence, and gaps in research related to a defined area or field by systematically searching, selecting and synthesizing existing knowledge" (Colquhoun et al., 2014, p. 5). We conducted a scoping review that was informed by Arksey and O'Malley's (2005) methodological framework for scoping review protocol to answer the three research questions.

2.1. Search parameters and terms

We reviewed only research articles published in English-medium peer-reviewed refereed journals the last fifteen years from 2008 to 2022. We excluded publications produced by individuals that are not published in peer-reviewed journals, such as dissertations. We also excluded book chapters due to time and resource constraints. Scopus and EBSCOhost research databases were used to identify the articles. The term "international medical graduate" was used alone as well as in combination with all other terms to identify relevant articles: "medical English," "English as lingua franca," "teaching medical English," "learning medical English," and "international communication".

2.2. Selection criteria

The inclusion and exclusion criteria were discussed and agreed upon by the two reviewers, and consensus was reached about the inclusion of the final number of articles. The first inclusion criterion was to select articles for the review published between 1 January 2008 and 31 December 2022. We included peer-reviewed publications that studied (1) international medical graduates (medical doctors, physicians, and participants of residency programs), (2) IMGs who are non-native speakers of English and who use English as lingua franca, and (3) the teaching and learning of medical English for existing or potential IMGs. Articles not written or available in the English language or those articles not between 2008 to 2022 were excluded.

Papers specific to nurses and other health care professionals were excluded as the review focused on medical doctors or physicians. We also excluded commentaries, editorials, grey literature, letters and review articles as the focus was on primary data sources from published papers rather than secondary sources in reviews. We excluded studies if they described only theories for teaching medical English; and had no relevance to teaching and learning of medical English in relation to the three research questions. We did not assess the quality of studies as evaluation of study quality is normally not required in scoping reviews (Arksey & O'Malley, 2005).

2.3. Study selection

To select the literature for the scoping review, a systematic process was used. The initial search identified 995 records related to "international medical graduate", "medical English," "English as lingua franca," "teaching medical English," "learning medical English,' and "international communication" through Scopus and EBSCOhost research databases. From the 995 search records, through reviewing the titles and abstracts, we shortlisted 84 articles for full-text review. In the screening stage, out of the 84, 13 duplicate articles were identified and discarded, leaving 71 articles. The screening for eligibility stage involved independent close reading of 71 articles to determine their relevance to the research questions. Thirty-eight full-text articles were excluded. The final number of studies that were included in the scoping review based on the inclusion and exclusion criteria and relevance to the three research questions was 33 (refer to Appendix 1).

2.4. Data analysis

We identified and coded articles meeting inclusion criteria on teaching and learning medical English in international contexts in terms of the themes identified by the three research questions: (1) IMGs' needs and difficulties in learning medical English for international communication; (2) specific courses implemented for IMGs to enhance English; and (3) conceptual frameworks guiding teaching and learning medical English. For research questions 1 and 2 we analyzed by coding for Settings, Participants of study/ Student types and the Main Focus of the Study (whether needs and difficulties, specific courses or both because articles on courses also mentioned learning needs and difficulties to be addressed by the courses) (see Appendix 2) while studies related to conceptual frameworks for research

question 3 are listed in Appendix 3. Where there was uncertainty on the coding, the uncertainties were resolved through discussions between the first and second authors. For instance, the decision was made to classify Woodward-Kron et al. (2015) under courses though the article also highlighted learners' needs and difficulties.

3. Findings

The findings were analyzed and reported in terms of the three research questions. The 33 studies were first analyzed in terms of research questions one and two to identify 17 studies for research question one and 16 for research question two (see Appendix 1 and 2). All 33 studies were then analyzed to identify 14 studies for research question three (see Appendix 3).

3.1. What are IMGs' needs and difficulties in learning medical English for international communication?

Seventeen of the 33 studies pertain to IMGs' needs and difficulties in learning medical English in international multilingual settings. These studies look at proficiency issues, communicative competence, whether learning materials meet IMGs' needs and the learning needs of those in residency programs.

In terms of language proficiency issues, Alqurashi (2016) explored the English language needs of 156 Saudi fellowship doctors and medical major students enrolled at medical and training programs in Australian hospitals and universities. The study suggests that current college English language courses for medical majors need to focus more on improving language-related aspects, such as fluency, accuracy, and structure. Such changes are necessary to prepare doctors and medical professionals for work in medical jobs that depend on heavy usage of the English language and improve communicative competence aspects to ensure smooth cultural interaction with co-workers from all around the world. Twenty-four medical students in an International Medical Program (IMP) in the study by Chan et al. (2022) perceived English language as a learning tool for medical training and practice learning activities (lectures, problem-based learning sessions, clinical skills and simulation sessions, hospital and bedside teaching), a professional language for communication with patients, peers and lecturers and participation in community support and conferences. Their limitations in

English language proficiency impacted their learning as they needed more time and effort to comprehend resources and assessments in English and affected their participation in problem-based learning discussions and patient communication.

Regarding the issue of communicative competence, Cordella and Musgrave (2009) investigated the linguistic realization of empathy in the clinical discourse to find these strategies used by IMGs who are good communicators – sequential organization to provide reassurance; responsiveness to patient's emotionally charged lexical choice; while for some IMGs, differences in cultural background led to the difficulty in the organization of turn-taking in interactions. McGrath et al. (2012) studied 30 IMGs' experiences with learning about patient-centered communication at the point of arrival, during integration and practice to find a significant need for IMGs to be educated in cultural issues including doctor–patient communication practices at a hospital in Brisbane, Queensland, Australia. In the study by Bhat et al. (2014), consultant supervisors reported on 102 IMGs and they highlighted IMGs' difficulties with communication skills, confident use of English, and lack of cultural understanding which affected the quality of doctor-patient relationships in their work in the United Kingdom. Heist and Torok (2020) performed individual semi structured interviews with 35 Japanese IMGs who had completed US clinical training. Nearly all participants reported that English communication was very challenging and they described specific language related struggles and methods to help overcome them. This was because communication struggles were contextualized within an American training culture that values verbal assertiveness. Huhn et al. (2017) found international students studying for Objective Structured Clinical Examination (OSCE) with a specific focus on communication skills showed poorer results in clinical-practical examinations in the field of psychosocial medicine, with conversational skills yielding the poorest scores. In the study by Eseonu et al. (2011), 151 international students reported improvements in clinical communication throughout UK medical schools, but expressed concerns about communication and integration with peers. A majority talked about the need to improve clinical communication training for international students. In terms of studying in a multicultural environment in an English-speaking European country, from 144 online survey participants, 31 interviews and a focus group discussion, McGarvey et al. (2021) found international medical students faced communication difficulties from the perspective of language

and cultural practice, such as differences in interprofessional communication norms. Pryor and Woodward-Kron (2014) adopted genre analysis to examine 12 telephone consultations about a critically ill patient made by junior IMG doctors to a senior doctor to find difficulties pertaining to sequencing the stages of a call and interactional management in the less effective calls. Woodward-Kron (2016) looked at issues faced by IMGs managing patient-centered interviewing to find patient-centered communication – "seeking patient perspectives and eliciting and validating patient emotions … were either not given discursive prominence, … or were largely absent" (p. 268).

There are three studies specifically on communicative competence in terms of socio-pragmatic and pragmalinguistic features. Dahm and Yates (2013) collected data from roleplays of patient-centered medical communication by practicing, locally trained, native English-speaking doctors and non-native IMGs to identify the discourse features that IMGs can find challenging which are related to features of approachability. Dahm et al. (2015) combined perspectives from applied linguistics (looking at language, pragmatic and communication difficulties) and clinical educators to address IMGs' difficulties from multiple dimensions to suggest the improvement of communications training by educators providing more targeted feedback in terms of socio-pragmatic and pragmalinguistic features. Yates et al. (2016) looked at the development of rapport in inter-professional communication by videorecording two role-play scenarios about clinical handovers by medical professionals (four experienced Australian-trained practitioners and three experienced overseas-trained practitioners (for whom English was a second language).

With regard to learning needs and difficulties of IMGs in residency programs, Dorgan et al. (2009) interviewed 12 IMGs to conclude that residency programs need to address challenges related to regional dialect, informal English usage and communication barriers due to cross-cultural differences in training curricula and communication interventions. Jain and Krieger (2011) conducted in-depth interviews with 12 international physicians completing their residency training in the United States to find them using multiple convergence strategies in doctor-patient interactions to compensate for the intercultural and intergroup differences through repeating information, changing speaking styles, and using non-verbal communication. Jain and Krieger (2011) talk about teaching future IMGs accommodation strategies for intercultural medical encounters. In the study

by Sockalingam et al. (2012) of 43 IMGs in five Canadian psychiatry residency programs, IMGs who did not speak English as their first language had greater difficulty coping with language barriers and social isolation in their transition into residency.

3.2. What specific courses have been implemented for IMGs to enhance English for international communication?

There were 16 specific courses implemented for IMGs to enhance English for international communication. The courses identified have addressed the issues of communication skills in professional settings, such as clinical communication skills, issue of pronunciation and intercultural needs besides addressing other needs of IMGs.

For courses addressing clinical communication skills, Cross and Smalldridge (2011) described a safe and effective communication skills course designed by a multi-disciplinary team of language teachers and clinicians to improve written and verbal communication skills in a clinical context to an appropriate level for a foundation year one IMG doctors. For feedback, the language teacher analyzed linguistic skills, such as syntax, pronunciation and context, to improve communication while the clinician gave feedback on the clinical content and structure for written notes and on verbal handover. Watt et al. (2010) reported on a 16-week, intensive, full-time medical communication and clinical skills educational program – Medical Communication Assessment Project (M-CAP) to find 39 IMGs having very large gains in language proficiency (listening and speaking, reading and writing) and outperforming the non-M-CAP participants on clinical skills and professionalism. Wette and Hawken (2011) looked at seven non-English speaking students conducting clinical interviews in English speaking contexts to evaluate their knowledge of lay-medical vocabulary, use of appropriate formulaic language patterns, and the effectiveness of clinical interviews before and after a course of instruction. The IMGs had increased knowledge of informal lay medical language, and prefabricated patterns though they were often less proficient in creating novel responses to patients' statements and getting details of the medical complaints. Woodward-Kron et al. (2011) described teaching clinical and ethical communication through interdisciplinary collaboration using multimedia and drawing on the methodologies from applied linguistics, medical education, and health ethics. Woodward-Kron et al. (2015) developed for IMGs "Doctors Speak Up," an open access resource, to focus on culturally challenging patient interviews as an evidence-based language and communication skill. They

studied 48 IMGs who participated in four practice OSCEs using an innovative feedback methodology, which involved video-recording the interaction and giving feedback by a language expert, a medical clinical educator, and the simulated patient (Woodward-Kron et al. 2011) at each OSCE station. The findings from the OSCE workshops showed that many participants demonstrated aspects of patient-centered interviewing but were hindered by limited interactional competence to elicit information and negotiate behaviors as well as a limited repertoire of English grammar, vocabulary, and phonological phrasing for effective interaction. Wette and Hawken (2016) investigated the effectiveness of a course in English for medical purposes (EMP) to assist international undergraduate medical students to develop knowledge and skill in clinical communication skills. Results from pre- and post-course tests of written knowledge and simulated medical interviews indicated students' progress in their knowledge and ability to ask questions and respond appropriately. However, they had yet to develop skills in the more sophisticated aspects of interviewing, such as maintaining rapport throughout the interview, using appropriate screening questions, and following a clear interview structure. Vekemans (2016) reported how medical undergraduates in their fifth year who needed to attend the course to prepare them for a clinical placement in an English-speaking environment abroad found the continuing medical education (CME) materials engaging in terms of using authentic language in a context they immediately recognized as typical of their future workplace. Kling et al. (2019) reported on an English medium international project by two Departments of Obstetrics and Gynecology and two Departments of Pediatrics at the University of Copenhagen where international students paired with Danish students in a clinical setting.

There was a course specifically addressing the issue of pronunciation as a communication issue. Khurana and Huang (2013) reported on an accent reduction program for IMGs and international medical researchers (IMRs) to address breakdowns in communication due to pronunciation and intonation patterns. The pre- and post-course self-evaluation by the 82 participants, audio-tape assessment by the course instructor, and videotape assessment by two independent observers indicated significant improvement in distinct pronunciation of words, accurate word or syllable stress and appropriate body language/facial expressions.

There were two courses dealing with intercultural ESP learning contexts to support international students in undergraduate medical and health sciences education. Hamilton and Woodward-Kron (2010) developed a multimedia

tool as a trigger for the teacher to assist learners to explore, understand, and take into account the interrelationship between language, culture and communication in healthcare settings. Hild et al. (2021) described EMP classes using peer tutors (international students who were either native speakers of English or had a good command of English) in doctor-patient role-play activities in English to provide a more motivating and natural language learning environment in which English was the lingua franca. The results showed that the Hungarian medical students were enthusiastic and motivated to participate and interact in English during the role-plays. The interview findings also demonstrated that the role-play activities succeeded in bringing the Hungarian and foreign students closer by weakening or even removing the invisible cultural wall between them.

In terms of courses dealing with diverse teaching programs, Wang et al. (2020) suggest three modules of medical English curriculum system for Medical English Teaching in China and non-English speaking countries for their international medical students: Medical Humanities English, Medical Occupational English and Medical Academic English. In the study by Nilas et al. (2016), a significant subgroup of Danish doctors had difficulties in all forms of communication in English so teaching a course in English was rated as 30 % more difficult than in Danish. This resulted in challenges when coaching international students in non-native English-speaking medical departments. Dahm (2011) studied medical terminology use in doctor-patient role play for a professional ESP course to find IMGs experiencing problems in distinguishing English lay terms from medical terminology because of their limited English proficiency. Mathis et al. (2022) showed that second-year Japanese medical students in their course had strong international posture, as evidenced by a deep desire to communicate internationally and an understanding of the role of English as a tool for global communication. The findings also suggest that, to sustain or improve L2 learning motivation, educators should employ study materials that are pertinent to students' future needs and professions. Wild et al. (2018) designed a three-year multimodal, comprehensive curriculum of patient-centered communication program targeting IMGs for 62 residents and ten faculty members in southern Connecticut. They found modest improvements in patient-centered communication and communication skills among residents and faculty, as well as improved language skills.

3.3. What are the conceptual frameworks guiding teaching and learning English for international communication for IMGs?

Conceptual frameworks guiding teaching and learning English were drawn from 14 of the 33 studies. In terms of communication competence, there are studies that look at the discursive patterns of patient-centered communication (Woodward-Kron, 2016), clinical and ethical communication using multimedia (Woodward-Kron et al., 2011), inter-professional communication (Yates et al., 2016), clinical communication skills instruction (Wette & Hawken, 2016) and multimodal, comprehensive curriculum of patient-centered communication program (Wild et al., 2018). Dahm and Yates (2013) used frameworks from discourse analysis, interlanguage pragmatics, and medical communication (Harvey & Adolphs, 2012; Holmes, 2000). Dahm et al. (2015) used the concepts of socio-pragmatic and pragmalinguistic knowledge and concepts of interpersonal approachability features and framing. Cross and Smalldridge (2011) utilized the Situation, Background, Assessment, Recommendation model (SBAR) proposed by Haig et al. (2006). Khurana and Huang's (2013) Efficacy of Accent Modification Training for International Medical Professionals drew on communication evaluation methods (Friedman et al. 1991; Ulrey & Amason 2001) while Hamilton and Woodward-Kron's (2010) reflective approach was based on research into teaching pragmatics through awareness-raising observation tasks for learners (Dufon, 2004; Yates, 2004).

Pryor and Woodward-Kron (2014) adopted genre analysis to identify a generic structure of nine stages for effective intra-professional medical telephone consultation made by junior IMG doctors to a senior doctor. Woodward-Kron (2016) used systemic functional linguistics and genre theory to look at IMGs managing patient-centered interviewing through 15 video-taped 8-minute roleplay consultations of IMGs and simulated patients. Chan et al. (2022) used Vygotsky's (1978) sociocultural theory for analysis, Kling et al. (2019) English as Medium of Instruction and Vekemans (2016) the concept of Continuing Medical Education.

4. Discussion

Needs analysis and meeting learners' needs is the core of any successful ESP/EMP course design (Antić & Milosavljević, 2016). Pryor and Woodward-Kron (2014) have highlighted these needs for practising IMGs:

language proficiency, conversational English, medical discourse, and understanding different cultural expectations while Salager-Meyer (2014b) talks about communicative skills to improve English language skills. Seventeen of the 33 studies have highlighted similar learning needs and difficulties for IMGs in learning medical English in terms of low proficiency levels (two studies), communicative competence (eight studies), specific socio-pragmatic and pragmalinguistic features (three studies), and the learning needs of those in residency programs (three studies). The present study has revealed that IMGs with limited EL proficiency can be affected in learning in terms of more time needed for comprehending English tests, not doing well in English tests and having limited participation in problem-based learning discussions (Chan et al., 2022). The studies reviewed have not advocated for the teaching of medical English lexis through reading courses (Salager-Meyer, 2014a) or through role play, pair and teamwork, projects (Milosavljević et al., 2015) or teaching writing of case reports, research papers and medical documentation (Milosavljević et al., 2015).

The present study has identified 16 studies pertaining to courses to enhance IMGs' need for communication skills in professional settings in teaching clinical communication skills (eight studies), pronunciation (one study), and addressing intercultural needs (two studies) besides diverse issues (five studies). The results reflect the call to improve the English communicative skills of IMGs as highlighted in the literature with Salager-Meyer (2014b) teaching interactional and (doctor/patient) communication, Pavel (2014) addressing diverse English proficiency levels through courses incorporating real-life situations and Brown (2013) teaching medical English through the Content and Language Integrated Learning (CLIL) Health Care English course. In the present study, though the courses on communication reported gains, they have also highlighted issues to address in future courses. For instance, Wette and Hawken (2016) talk about the need to teach sophisticated interviewing skills, such as maintaining rapport, using appropriate screening questions, and following a clear interview structure. This is in line with Gotti's (2015) suggestion for training materials to focus on the linguistic and metalinguistic features of medical interaction to improve communication and repair misunderstandings. Eight courses have dealt specifically with the important issue of improving clinical communication training for international students as international students had poorer results in conversational skills in clinical-practical examinations in the field of psychosocial medicine (Huhn et al., 2017). Three studies focused

specifically on socio-pragmatic and pragmalinguistic features in clinical communication to identify the discourse features that IMGs find challenging. The studies echo Gotti's (2015) view regarding the importance of correct communication in health service.

There were 14 studies mentioning specific conceptual frameworks guiding teaching and learning English - one on socio-cultural competence in communication, eight studies on communication competence, two on the genre of spoken discourse, one on concept of medical discourse, one on English as Medium of Instruction, one on Vygotsky's (1978) sociocultural theory, and one on Continuing Medical Education. The conceptual frameworks focusing on communication competence surfaced in the present study reiterate the strong focus on medical discourse in oral contexts because of the importance of correct communication in the research literature (Gotti, 2015), such as the need to teach the genre of medical interviews (Plastina, 2016) and ELF pragmatic strategies in MELF interactions (Tweedie & Johnson, 2019). However, there is no study using task-based language teaching (Pavel, 2014), Content and Language Integrated Learning (Brown, 2013), written genre (Milosavljević & Antić, 2015; Salager-Meyer, 2014a) or interactive and authentic listening (Tweedie & Johnson, 2018) mentioned in the literature on Medical English.

4.1. Teaching implications

There is the need for practitioners teaching medical ESP and internship supervisors working with pre-final year medical students to differentiate multiple learning needs in multilingual settings which can be context specific, such as preparing IMGs for OSCE (Huhn et al., 2017), program specific, such as residency programs with the need to address cross-cultural differences, such as regional dialect (Dorgan et al., 2009), or generic, such as professional language for communication with patients, peers, lecturers, community support programs and conferences (Chan et al., 2022), and rapport building in inter-professional communication (Yates et al., 2016).

To raise the proficiency levels in teaching medical English as ESP for prospective students learning medical English, practitioners can consider Pavel's (2014) course to meet students' disparate General English proficiency levels in terms of courses based on real-life situations of patient examination, case-report writing, focus on grammar, medical terminology or jargon, reading, listening, and communication skills.

To meet the communicative needs of culturally and linguistically diverse IMGs, educators can consider these courses for IMGs: the safe and effective communication skills course to improve written and verbal communication skills in a clinical context (Cross & Smalldridge, 2011); Medical Communication Assessment Project (M-CAP) for medical communication and clinical skills (Watt et al., 2010); interdisciplinary collaboration using multimedia based on applied linguistics, medical education, and health ethics (Woodward-Kron et al., 2011); "Doctors Speak Up" for International Medical Graduates (Woodward-Kron et al, 2015); OSCE workshops (Woodward-Kron et al., 2015), English medium international project (Kling et al., 2019) or multimodal, comprehensive curriculum of patient-centered communication program (Wild et al., 2018).

There is the need to teach socio-pragmatic and pragmalinguistic features in terms of approachability features of appropriate greetings/introductions, medical terminology in lay terms and softening strategies (Dahm & Yates, 2013), and maintaining appropriate social distance, engaging in small talk, and active listening (Dahm et al., 2015). Practitioners teaching medical English can analyze interactions to guide IMGs to identify pragmalinguistic features and discuss sociopragmatic values and communicative expectations of their new community as part of communications training (Yates et al., 2016). They can provide international students opportunities to practise their communicative abilities through conversation training with simulated patients (Huhn et al., 2017).

In terms of course design, Wang et al. (2020) suggest three modules for Medical English Teaching curriculum: Medical Humanities English, Medical Occupational English and Medical Academic English. There might be the need to provide translations or bilingual medical texts for courses with a substantial number of healthcare professionals of another language (Sojoodizadeh et al., 2020). Dahm (2011) advocates for the teaching of medical terminology, clarifying divergences in meanings, technical jargons, and semi-technical terms used by patients through recording role-plays and using the video for group feedback.

4.2. Research implications

As for future directions in researching the teaching and learning of medical English, given the importance of English as a lingua franca and intercultural communication, for researchers specializing in interlingual medical

communication, there could be further research on theoretical frameworks surfaced in this study - genre analysis, such as the nine stages for effective intra-professional medical telephone consultation (Pryor & Woodward-Kron, 2014). Given the focus on communicative competence in terms of socio-pragmatic and pragmalinguistic features, researchers could study in greater depth these features to offer practical suggestions for educators training IMGs. Consideration can be given to 6-Function Model for patient-centered communication (King & Hoppe, 2013) and Gotti's (2015) suggestions of analysing oral medical discourse through conversation analysis of naturally occurring verbal communication, as well as providing medical training programs to improve intercultural communication between doctors and their patients from diverse ethnic, cultural and linguistic backgrounds.

Researchers have focused on speaking skills but as communicative competence involves listening skills (Tweedie & Johnson, 2018), more research is necessary in listening skills for effective interactional competence in doctor- patient consultations especially in multicultural settings where miscommunication could occur due to a lack of listening abilities. There can be more research on designing ESP materials to teach listening and speaking for outpatient situations. Research can be on conceptual frameworks mentioned in the literature not used by the 33 studies, such as task-based language teaching (Pavel, 2014), and Content and Language Integrated Learning (Brown, 2013).

5. Conclusions

The key limitation of this scoping review is that only 33 research papers published in international refereed journals between 2008 and 2022 were reviewed. The conclusions drawn could be of limited generalizability. Still the present paper has highlighted pressing issues and concerns in learning and teaching medical English with English as the lingua franca due to the engagement and increasing dependence on international medical professionals for the medical workforce with globalization. The key issues in learning medical English are low proficiency levels, issues with communicative competence and the need to understand specific socio-pragmatic and pragmalinguistic features for diverse, multilingual settings. Specific courses have been designed to enhance English for IMGs pertaining

to clinical communication skills, pronunciation and addressing intercultural needs through English for medical purposes, English medium international projects, and interdisciplinary collaboration using multimedia which practitioners teaching medical English as ESP can consider for adoption. Specific conceptual frameworks guiding teaching and learning English are mainly on communication competence, socio-cultural competence in communication, the genre of spoken discourse, and the concept of medical discourse. There could be research on other conceptual frameworks, such as task-based language teaching, Content and Language Integrated Learning, written genre and interactive and authentic listening.

References

Alqurashi, F. (2016). English for medical purposes for Saudi medical and health professionals. *Advances in Language and Literary Studies, 7*(6), 243-253.

Antić, Z., & Milosavljević, N. (2016). Some suggestions for modelling a contemporary medical English course design based on need analysis. *Lingua, 184*, 69-78. https://doi.org/10.1016/j.lingua.2016.06.002

Antón-Solanas, I., Coelho, M., Huércanos-Esparza, I., Vanceulebroeck, V., Kalkan, I., Cordeiro, R., et al. (2020). The teaching and learning cultural competence in a multicultural environment (ccmen) model. *Nursing Reports, 10*(2), 154-163.

Arksey, H., & O'Malley, L. (2005). Scoping studies: Towards a methodological framework. *International Journal of Social Research Methodology, 8,* 19-32. https://doi.org/10.1080/1364557032000119616

Bhat, M., Ajaz, A., & Zaman, N. (2014). Difficulties for international medical graduates working in the NHS. *British Medical Journal, 348*, 1-8. https://doi.org/10.1136/bmj.g3120

Brown, P. S. (2013). Teaching a medical English CLIL course with vocabulary learning strategies instruction in Japan. *Asian EFL Journal Teaching Articles, 15*(4), 276-339.

Chan, S. M. H., Mamat, N. H., & Nadarajah, V. D. (2022). Mind your language: The importance of English language skills in an International Medical Programme (IMP). *BMC Medical Education, 22*(405), 1-7. https://doi.org/10.1186/s12909-022-03481-w

Chiang, V., & Crickmore, B. L. (2009). Improving English proficiency of post-graduate international nursing students seeking further qualifications and continuing education in foreign countries. *The Journal of Continuing Education in Nursing, 40*(7), 329-336. https://doi.org/10.3928/00220124-20090623-03

Colquhoun, H., Levac, D., O'Brien, K. K., Straus, S, Tricco, A. C., Perrier, L., Kastner, M., & Moher, D. (2014). Scoping reviews: Time for clarity in definition, methods and reporting. *Journal of Clinical Epidemiology, 67*(12), 1291-1294. https://doi.org/10.1016/j.jclinepi.2014.03.013

Cordella, M., & Musgrave, S. (2009). Oral communication skills of international medical graduates: Assessing empathy in discourse. *Communication & Medicine, 6*(2), 129-142. https://doi.org/10.1558/cam.v6i2.129

Cross, D., & Smalldridge, A. (2011). Improving written and verbal communication skills for international medical graduates: A linguistic and medical approach. *Medical Teacher, 33*(7), 364-367. https://doi.org/10.3109/0142159X.2011.577469

Dahm, M. R. (2011). Exploring perception and use of everyday language and medical terminology among international medical graduates in a

medical ESP course in Australia. *English for Specific Purposes, 30,* 186-197. https://doi.org/10.1016/j.esp.2011.02.004

Dahm, M. R., & Yates, L. (2013). English for the workplace: Doing patient centred care in medical communication. *TESL Canada Journal/Revue TESL du Canada, 30*(7), 31-44. https://doi.org/10.18806/tesl.v30i7.1150

Dahm, M. R., Yates, L., Ogden, K., Rooney, K., & Sheldon, B. (2015). Enhancing international medical graduates' communication: The contribution of applied linguistics. *Medical Education, 49,* 828-837. https://doi.org/10.1111/medu.12776

Dahm, M. R., Slade, D., Brady, B., Goncharov, L., & Chien, L. (2022). Tracing interpersonal discursive features in Australian nursing bedside handovers: Approachability features, patient engagement and insights for ESP training and working with internationally trained nurses. *English for Specific Purposes, 66,* 17-31. https://doi.org/10.1016/j.esp.2021.10.002

Dorgan, K. A., Lang, F., Floyd, M., & Kemp, E. (2009). International medical graduate-patient communication: A qualitative analysis of perceived barriers. *Academic Medicine, 84*(11), 1567-1575. https://doi.org/10.1097/ACM.0b013e3181baf5b1

Dufon, M. (2004). Producing a video for teaching pragmatics in the second language classroom. *Prospect, 19*(1), 65-83.

Eseonu, K., Wedderburn, C., & Maurice, J. (2011). Clinical communication for international students in the UK undergraduate curriculum. *The Clinical Teacher, 8,* 186-191. https://doi.org/10.1111/j.1743-498X.2011.00460.x

Friedman, M., Sutnick, A. I., Stillman, P. L., Norcini, J. J., Anderson, S. M., Williams, R. G., Henning, G., & Reeves, M. J. (1991). The use of standardized patients to evaluate the spoken-English proficiency of foreign medical graduates. *Academic Medicine, 66*(9), 61-63. https://doi.org/10.1097/00001888-199109000-0042

Gotti, M. (2015). Insights into medical discourse: diachronic and synchronic perspectives. *ESP Today, 3*(1), 1-20.

Haig, K. M., Sutton, S., & Whittington, J. (2006). SBAR: A shared mental model for improving communication between clinicians. *The Joint Commission Journal on Quality and Patient Safety, 32*(3), 167-175. https://doi.org/10.1016/s1553-7250(06)32022-3

Hamilton, J., & Woodward-Kron, R. (2010). Developing cultural awareness and intercultural communication through multimedia: A case study

from medicine and the health sciences. *System, 38,* 560-568. https://doi.org/10.1016/j.system.2010.09.015

Harvey, K., & Adolphs, S. (2012). Discourse and healthcare. In J. P. Gee & M. Handford (Eds.), *The Routledge handbook of discourse analysis* (pp. 470-481). Routledge.

Heist, B. S., & Torok, H. M. (2020). Japanese International Medical Graduates and the United States clinical training experience: Challenges abroad and methods to overcome them. *Journal of General and Family Medicine, 21*(4), 109-118. https://doi.org/10.1002/jgf2.315

Hild, G., Németh, T., & Csongor, A. (2021). The impact of using international medical students in role-plays on improving Hungarian medical students' English language competence. *ESP Today, 9*(1), 30-49. https://doi.org/10.18485/esptoday.2021.9.1.2

Hoekje, B. J. (2007). Medical discourse and ESP courses for international medical graduates. *English for Specific Purposes, 26,* 327-343. https://doi.org/10.1016/j.esp.2006.09.002

Holmes, J. (2000). Talking English from 9 to 5: Challenges for ESL learners at work. *International Journal of Applied Linguistics, 10*(1), 125-140. https://doi.org/10.1111/j.1473-4192.2000.tb00143.x

Huhn, D., Lauter, J., Roesch, E. D., Koch, E., Möltner, A., Herzog, W., Resch, F., Herpertz, S. C., & Nikendei, C. (2017). Performance of International Medical Students in psychosocial medicine. *BMC Medical Education, 17*(111), 1-7. https://doi.org/10.1186/s12909-017-0950-z

Hull, M. (2016). Medical language proficiency: A discussion of interprofessional language competencies and potential for patient risk. *International Journal of Nursing Studies, 54,* 158-172. https://doi.org/10.1016/j.ijnurstu.2015.02.015

Jain, P., & Krieger, J. L. (2011). Moving beyond the language barrier: The communication strategies used by international medical graduates in intercultural medical encounters. *Patient Education and Counseling, 84,* 98-104. https://doi.org/10.1016/j.pec.2010.06.022

Khazaie, S., & Ebadi, S. (2023). Exploring the feasibility of augmented reality game-supported flipped classrooms in reading comprehension of English for Medical Purposes. *Computer-Assisted Language Learning.* Advance online publication. https://doi.org/10.1080/09588221.2023.2173612

Khurana, P., & Huang, E. (2013). Efficacy of accent modification training for international medical professionals. *Journal of University*

Teaching & Learning Practice, 10(2), 1-11. https://doi.org/10.53761/1.10.2.4

King, A., & Hoppe, R. B. (2013). "Best practice" for patient-centered communication: A narrative review. *Journal of Graduate Medical Education, 5*(3), 385-393. https://doi.org/10.4300/JGME-D-13-00072.1

Kling, J., Tolsgaard, M. G., Løkkegaard, E., Teilmann, G., Mola, G., Poulsen, J. H., Nilas, L., & Cortes, D. (2019). Danish doctors' reactions to 'internationalization' in clinical training in a public university hospital. *BMC Research Notes, 12*(41), 1-6. https://doi.org/10.1186/s13104-019-4405-y

Loiacono, A. (2011). Foreword. In A. Loiacono, G. Iamartino & K. S. Grego (Eds.), *Teaching medical English: Methods and models* (pp. 11-16). Polimetrica.

Mathis, B. J., Mayers, T., & Miyamasu, F. (2022). English as a vocational passport: Japanese medical students and second language learning motivation. *Education Science, 12*(8), 1-10. https://doi.org/10.3390/educsci12010008

McGarvey, A., Karivelil, D., & Byrne, E. (2021). International students' experience of medical training in an English-speaking European country. *Journal of Studies in International Education, 25*(5), 487-504. https://doi.org/10.1177/1028315320976029

McGrath, P., Henderson, D., Tamargo, J., & Holewa, H.A. (2012). Doctor-patient communication issues for international medical graduates: Research findings from Australia. *Education for Health, 25*(1), 48-54.

Milosavljević, N., & Antić, Z. (2015). Medical English genres - indispensable tool for effective academic and professional communication. *Scientific Journal of the Faculty of Medicine in Niš, 32*(1),77-81. https://doi.org/10.1515/afmnai-2015-0008

Milosavljević, N., Vuletić, A., & Jovković, L. (2015). Learning medical English: A prerequisite for successful academic and professional education. *Srp Arh Celok Lek, 143*(3-4), 237-240. https://doi.org/10.2298/sarh1504237m.

Nilas, L., Løkkegaard, E. C., Laursen, J. B., Kling, J., & Cortes, D. (2016). Are Danish doctors comfortable teaching in English? *BMC Research Notes, 9*(420), 1-5. https://doi.org/10.1186/s13104-016-2229-6

Pavel, E. (2014). Teaching English for medical purposes. *Bulletin of the Transilvania University of Brașov Series VII, 56*(2), 39-46.

Pilotto, L. S., Duncan, G. F., & Anderson-Wu, J.

(2007). Issues for clinicians training international medical graduates: A systematic review. *MJA, 187*(4), 225-228. https://doi.org/10.5694/j.1326-5377.2007.tb01204.x

Plastina, A. F. (2016). Genre-knowledge transfer in English for medical purposes: A genre activity-based research study. In G. Garzone, D. Heaney & G. Riboni (Eds.), *Focus on ESP teaching developments and issues* (pp. 25-46). LED. https://doi.org/10.7359/791-2016-plas

Pryor, E., & Woodward-Kron, R. (2014). International medical graduate to doctor telephone communication: A genre perspective. *English for Specific Purposes, 35*, 41-53. https://doi.org/10.1016/j.esp.2013.12.001.

Salager-Meyer, F. (2014a). Origin and development of English for medical purposes. Part I: Research on written medical discourse. *Medical Writing, 23*(1), 49-51. https://doi.org/10.1179/2047480613Z.000000000187

Salager-Meyer, F. (2014b). Origin and development of English for medical purposes. Part II: Research on spoken medical English. *Medical Writing, 23*(2), 129-131. https://doi.org/10.1179/2047480614Z.000000000204

Sockalingam, S., Hawa, R., Al-Battran, M., Abbey, S.E., & Zaretsky, A. (2012). Preparing International medical graduates for psychiatry residency: A multi-site needs assessment. *Academic Psychiatry, 36*(4), 277-281. https://doi.org/10.1176/appi.ap.09110219

Sojoodizadeh, R., Ahangari, S., & Sheykhsaran, E. (2020). Evaluation of Tabriz medical students' expectations of learning English for specific purposes (ESP): A focus on gender and subject field. *Research and Development in Medical Education*, *9*(5), 1-5. https://doi.org/10.34172/rdme.2020.005

Tipton, S. (2005). Improving international medical graduates' performance of case presentations. *Journal of Applied Linguistics, 2*(3), 395-406. https://doi.org/10.1558/jal.v2i3.395

Tweedie, M. G., & Johnson R. C. (2018). Listening instruction and patient safety: Exploring Medical English as a lingua franca (MELF) for nursing education. *Journal of Belonging, Identity, Language, and Diversity, 2*(1), 75-100.

Tweedie, M. G., & Johnson R. C. (2019). Research directions in medical English as a lingua franca. *Language and Linguistics Compass, 13*(3), 10-12. https://doi.org/10.1111/lnc3.12312

Tweedie, M. G., & Johnson, R. C. (2022). Introduction. In M. G. Tweedie & R. C. Johnson (Eds.), *Perspectives on medical English as a*

Lingua Franca (pp. vii-xi). Cambridge Scholars Publishing.

Ulrey, K. L., & Amason, P. (2001). Intercultural communication between patients and health care providers: An exploration of intercultural communication effectiveness cultural sensitivity, stress, and anxiety. *Health Communication, 13*(4), 449-463. https://doi.org/10.1207/s15327027hc1304_06

Vekemans, H. (2016). Handing over and letting go: Using online continuing medical education in teaching and assessing medical English language and communication skills to undergraduates. *Cercles, 6*(1), 15-32. https//doi.org/10.1515/cercles-2016-0001

Vygotsky, L. S. (1978). *Mind in society: The development of higher psychological processes.* Harvard University Press.

Wang, C., Wang, H., & Luan, X. (2020). Construction of modular-based curriculum framework for medical English teaching in China. *English Language Teaching, 13*(12), 37-42. https://doi.org/10.5539/elt.v13n12p37

Watt, D., Violato, C., Lake, D., & Baig, L. (2010). Effectiveness of a clinically relevant educational program for improving medical communication and clinical skills of international medical graduates. *Canadian Medical Education Journal, 1*(2), 70-80. https://doi.org/10.36834/cmej.36541

Wei, W. (2021). Research on the medical English teaching under the condition of medical literacy based on computer-aided technology. *Journal of Physics: Conference series, 1744*, 1-5. https://doi.org/10.1088/1742-6596/1744/4/042001

Wette, R., & Hawken, S. (2011). Gains in skills and knowledge by international medical students after instruction in English and communication skills. *New Zealand Studies in Applied Linguistics*, *17*(2), 117-124.

Wette, R., & Hawken, S. (2016). Measuring gains in an EMP course and the perspectives of language and medical educators as assessors. *English for Specific Purposes, 42*, 38-49. https://doi.org/10.1016/j.esp.2015.11.002

Wild, D., Nawaz, H., Ullah, S., Via, C., Vance, W., & Petraro, P. (2018). Teaching residents to put patients first: Creation and evaluation of a comprehensive curriculum in patient centered communication. *BMC Medical Education, 18*(266), 1-9. https://doi.org/10.1186/s12909-018-1371-3

Willis, J. (1996). *A framework for task-based learning*. Longman.

Woodward-Kron, R. (2016). International medical graduates and the discursive patterns of patient-centred communication. *Cercles, 6*(1), 253-273. https://doi.org/10.1515/cercles-2016-0012

Woodward-Kron, R., Flynn, E., & Delaney, C. (2011). Combining interdisciplinary and international medical graduate perspectives to teach clinical and ethical communication using multimedia. *Communication & Medicine, 8*(1), 41-51. https://doi.org/10.1558/cam.v8i1.41

Woodward-Kron, R., Fraser, C., Pill, J., & Flynn, E. (2015). How we developed *Doctors Speak Up*: An evidence-based language and communication skills open access resource for International Medical Graduates. *Medical Teacher, 37*, 31-33. https://doi.org/10.3109/0142159X.2014.909584

Yates, L., (2004). The secret rules of language: Tackling pragmatics in the classroom. *Prospect, 19*(1), 3-21.

Yates, L., Dahm, M. R., Roger, P., & Cartmill, J. (2016). Developing rapport in inter-professional communication: Insights for international medical graduates. *English for Specific Purposes, 42,* 104-116. https://doi.org/10.1016/j.esp.2016.01.006

Chiew Hong Ng is a Senior Lecturer at the National Institute of Education, Nanyang Technological University, Singapore. She specializes in reading pedagogies and teacher cognition. She has published in Changing English, Education and Information Technologies, International Journal of TESOL Studies, and The European Journal of Applied Linguistics and TEFL.

Yin Ling Cheung is an Associate Professor at the National Institute of Education, Nanyang Technological University, Singapore. She specializes in

second language writing. She co-edited Advances and Current Trends in Language Teacher Identity Research (Routledge, 2015). Her publications have appeared in Journal of English for Academic Purposes and System.

Appendix 1. Classification of empirical studies reviewed for Research Questions 1 and 2

	Author (Year of publication)	Total number (n=33)
Studies related to IMGS' learning needs and difficulties	Alqurashi (2016) Bhat et al. (2014) Chan et al. (2022) Cordella and Musgrave (2009) Dahm and Yates (2013) Dahm et al. (2015) Dorgan and Kemp (2009) Eseonu et al. (2011) Heist and Torok (2020) Huhn et al. (2017) Jain and Krieger (2011) McGarvey et al. (2021) McGrath et al. (2012) Pryor and Woodward-Kron (2014) Sockalingam et al. (2012) Woodward-Kron (2016) Yates et al. (2016)	17
Studies on specific courses implemented for IMGs to enhance English	Cross and Smalldridge (2011) Dahm (2011) Hamilton and Woodward-Kron (2010) Hild et al. (2021) Khurana and Huang (2013) Kling et al. (2019) Mathis et al. (2022) Nilas et al. (2016) Vekemans (2016) Wang et al. (2020) Watt et al. (2010) Wette and Hawken (2011) Wette and Hawken (2016) Wild et al. (2018) Woodward-Kron et al. (2011) Woodward-Kron et al. (2015)	16

Appendix 2. Coding of studies for Research Questions 1 and 2 (n=33)

Study	Settings	Participants of study/ Student types	Main focus of study
Alqurashi (2016)	medical and training programs in Australian hospitals and universities	Saudi fellowship doctors and students of medical majors	Learners' needs and difficulties
Bhat et al. (2014)	UK work environment	IMGs	Learners' needs and difficulties
Chan et al. (2022)	International Medical Programme (IMP)	medical students from Year 1, 2 and 3	Learners' needs and difficulties
Cordella and Musgrave (2009)	Performance of OSCE (Australia)	IMGs	Learners' needs and difficulties
Cross and Smallridge (2011)	UK work environment	IMGs	A Safe and Effective Communication Skills course
Dahm (2011)	specialized training for international doctors	IMGs	Professional ESP course
Dahm and Yates (2013)	role-playing hospital situations (Australia)	NNES IMGs	Learners' needs and difficulties
Dahm et al. (2015)	IMGs' difficulties in Australia	IMGs	Learners' needs and difficulties
Dorgan et al. (2009)	three US clinics	IMGs - residents from the Caribbean, Colombia, Denmark, India, Iran, Pakistan, and Peru	Learners' needs and difficulties
Eseonu et al. (2011)	learning clinical communication in UK	IMGs	Learners' needs and difficulties
Hamilton and Woodward-Kron (2010)	intercultural ESP learning context medical and health sciences education	undergraduate IMGs	'Reflective' approach
Heist and Torok (2020)	clinical training experience (US)	Japanese IMGs	Learners' needs and difficulties
Hild et al. (2021)	EMP classes with English as the lingua franca	IMGs	Course to improve medical students' oral skills
Huhn et al. (2017)	OSCE in the field of psychosocial medicine (Germany)	IMGs	Learners' needs and difficulties
Jain and Krieger (2011)	residency training (US)	international physicians	Learners' needs and difficulties
Kling et al. (2019)	EMI clinical training courses in Obstetrics and Gynecology and Pediatrics	International students working in pairs with local Danish speaking students	Courses in Obstetrics and Gynecology and Pediatrics
Khurana and Huang (2013)	US university	IMGs and international medical researchers (IMRs)	Accent Modification Training for International Medical Professionals
Mathis et al. (2022)	medical faculty of a national university in Japan	second-year Japanese medical students	Compulsory EMP course
McGarvey et al. (2021)	medical university in Ireland with diverse international student representation.	IMGs	Learners' needs and difficulties
McGrath et al. (2012)	Australian work environment	IMGs	Learners' needs and difficulties
Nilas et al. (2016)	IMGs in non-native English speaking medical departments	Danish doctors teaching IMGs	Difficulties in teaching and communication in English
Pryor and Woodward-Kron (2014)	Telephone communication	IMGs	Learners' needs and difficulties
Sockalingam et al. (2012)	five Canadian psychiatry residency programmess	IMGs	Learners' needs and difficulties
Vekemans (2016)	course preparation for a clinical placement in an English-speaking environment abroad	medical undergraduates	Continuing medical education course
Wang et al. (2020)	modules designed for non-English speaking countries for IMGs	IMGs	Three modules of medical English curriculum
Watt et al. (2010)	Medical communication and clinical skills educational program	IMGs	M-CAP program
Wette and Hawken (2011)	instruction in English and communication skills	non-English speaking IMGs	English and communication course
Wette and Hawken (2016)	effectiveness of a course in EMP	IMGs	Clinical communication skills (CCS) instruction
Wild et al. (2018)	Residency in Connecticut	residents and ten faculty members	Comprehensive curriculum in patient centered communication
Woodward-Kron (2016)	workshops for IMGs (Australia)	IMGs	Learners' needs and difficulties
Woodward-Kron et al. (2011)	development of education resource (Australia)	IMGs	Clinical and ethical communication using multimedia
Woodward-Kron et al. (2015)	practice OSCEs (Australia)	IMGs	Learners' needs and difficulties Doctors Speak Up course
Yates et al. (2016)	inter-professional communication (Australia)	three experienced overseas-trained practitioners (for whom English was a second language) and four native doctors	Learners' needs and difficulties

Appendix 3. List of empirical studies reviewed for Research Question 3

	Author (Year of publication)	Total number
Conceptual frameworks guiding teaching and learning medical English	Chan et al. (2022) Cross and Smalldridge (2011) Dahm and Yates (2013) Dahm et al. (2015) Hamilton and Woodward-Kron (2010) Khurana and Huang (2013) Kling et al. (2019) Pryor and Woodward-Kron (2014) Vekemans (2016) Wette and Hawken (2016) Wild et al. (2018) Woodward-Kron (2016) Woodward-Kron et al. (2011) Yates et al. (2016)	14
Studies related to IMGS' learning needs and difficulties	Alqurashi (2016) Bhat et al. (2014) Chan et al. (2022) Cordella and Musgrave (2009) Dahm and Yates (2013) Dahm et al. (2015) Dorgan et al. (2009) Eseonu et al. (2011) Heist and Torok (2020) Huhn et al. (2017) Jain and Krieger (2011) McGarvey et al. (2021) McGrath et al. (2012) Pryor and Woodward-Kron (2014) Sockalingam et al. (2012) Woodward-Kron (2016) Yates et al. (2016)	17
Studies on specific courses implemented for IMGs to enhance English	Antón-Solanas et. al. (2020) Cross and Smalldridge (2011) Dahm (2011) Hamilton and Woodward-Kron (2010) Hild et al. (2021) Khurana and Huang (2013) Kling et al. (2019) Mathis et al. (2022) Nilas et al. (2016) Vekemans (2016) Wang et al. (2020) Watt et al. (2010) Wette and Hawken (2011) Wette and Hawken (2016) Wild et al. (2018) Woodward-Kron et al. (2011) Woodward-Kron et al. (2015)	17
Conceptual frameworks guiding teaching and learning medical English	Antón-Solanas et. al. (2020) Chan et al. (2022) Chiang and Crickmore (2009) Cross and Smalldridge (2011) Dahm and Yates (2013) Dahm et al. (2015) Hamilton and Woodward-Kron (2010) Hoekje (2007) Khurana and Huang (2013) Kling et al. (2019) Pryor and Woodward-Kron (2014) Vekemans (2016)	14

Wette and Hawken (2016)
Woodward-Kron (2016)
Woodward-Kron et al. (2011)
Yates et al. (2016)