

## LISTENING INSTRUCTION AND PATIENT SAFETY: EXPLORING MEDICAL ENGLISH AS A LINGUA FRANCA (MELF) FOR NURSING EDUCATION

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**ABSTRACT.** This study examines the intelligibility of interactions in Medical English as a lingua franca (MELF), in relationship to patient safety. Fourteen nursing students from six different first languages (L1s) listened to a recorded MELF health assessment scenario discussion involving two nurses with differing L1s. Comprehension questions measured intelligibility of: recognition, comprehensibility, and interpretability. Results indicated that perceived intelligibility generally aligned with actual intelligibility; areas of misalignment pertained to matters of critical import to patient safety. Senior nursing instructors' views were explored through semi-structured interviews and all deemed that patient safety in the scenario was threatened by issues of intelligibility, particularly at the phonological and lexical levels. While hospital settings demand exceptional communicative precision for patient care, findings underscored challenges when English was a lingua franca. Results point toward the inclusion of interactive, authentic listening, and content-specific vocabulary instruction as critical components in the language curriculum of MELF nursing education contexts.

**RÉSUMÉ.** Cette étude examine l'intelligibilité dans les interactions de l'anglais médical en tant que lingua franca (MELF), en relation avec la sécurité des patients. Quatorze étudiantes en soins infirmiers ayant six langues maternelles (L1) différentes ont écouté une discussion sur le scénario d'évaluation de la santé du MELF, dans laquelle deux infirmières ayant des L1 différentes ont été enregistrées. Les questions de compréhension mesuraient l'intelligibilité dans les catégories de reconnaissance, de compréhensibilité et d'interprétabilité. Les résultats indiquent que l'intelligibilité perçue correspond généralement à l'intelligibilité réelle ; cependant, les zones de désalignement se rapportent à des questions d'importance critique pour la sécurité des patients. Les opinions des instructrices chevronnées en soins infirmiers ont été explorées au moyen d'entrevues semi-dirigées ; elles ont jugé que la sécurité des patients dans le scénario était menacée par des problèmes d'intelligibilité, notamment au niveau phonologique et lexical. Alors que les contextes hospitaliers exigent une précision communicative exceptionnelle pour les soins aux patients, les résultats soulignent les défis particuliers rencontrés lorsque l'anglais est une lingua franca. Les résultats indiquent l'importance de l'inclusion d'une écoute interactive et authentique, et d'une instruction de vocabulaire de spécialité en tant que composantes essentielles du curriculum de langue dans les contextes d'enseignement infirmier du MELF.

**Keywords:** *Medical English as a lingua franca (MELF); English as a lingua franca (ELF); English for Nursing Purposes (ENP); English for Specific Purposes (ESP).*



## INTRODUCTION

Qatar, as with many of its Arabian Peninsula neighbours, has seen massive infrastructure expansion due to the development of oil and gas resources in the region, which has been carried out by a largely expatriate workforce. In 2012, out of a total population of just under 1.8 million, Qataris accounted for only 15% of the citizenry. The countries representing this sizeable expatriate population includes: India (24% of Qatar's total population), Nepal (16%), and the Philippines (11%), while non-Qatari Arabs accounted for 13% of the nation's total (Paschyn, 2012).

Theoretical discussions of English as a lingua franca (ELF) in the Arabian Peninsula are rather forcibly moved to a practical level, given the reality that such interactions characterize the region's health care settings. The influx of large numbers of expatriate health care workers has given rise to English becoming the lingua franca of many hospitals and clinics across the Arabian Peninsula; this phenomenon has been linked to concerns over patient medication errors (Bladd, 2008), thus making this discussion one of grave practical import. For the purposes of this article, Seidlhofer's (2011) definition of ELF will be employed: "any use of English among speakers of different first languages for whom English is the communicative medium of choice, and often the only option" (p. 7).

Despite this multilingual environment, English has become the functional language for health care settings in the State of Qatar. This is largely due to the present and historical roles of English—the dominant language of the expatriate workers' countries of origin—and also the growing dominance of English as the linguistic vehicle for medical communication (Maher, 1987). In such a context, intelligibility among different varieties of English, in order to deliver safe and effective patient care, is a critical concern. As Smith and Nelson (2006) noted, given the global expansion of English, it is largely unimportant if a particular group of English users are unintelligible to another linguistic group; what matters is that they are intelligible among themselves. English users in Nepal<sup>1</sup>, for example, may utilize phonological or lexical features unfamiliar to speakers of Philippine English (who interact among each other with their own English variety); the subsequent shortcomings in intelligibility between these two groups will be of no import—until they find themselves in a situation where English is used as a lingua franca. In many Arabian Peninsula clinics and hospitals, such a situation is a daily occurrence (Almutairi & McCarthy, 2012; El-Haddad, 2006). Indeed, such interactions formed a foundational impetus for this present study. For example, while visiting a Qatar clinic, one of the authors noted multiple English dialects in the following communication: "an Indian pharmacist deciphered the instructions of a Filipino doctor to a Qatari patient, mediated through a Sri Lankan nurse" (Tweedie & Johnson, 2018, p. 73).

Despite widespread ELF interactions in health care contexts, due to the global migration of medical professionals (Lu & Corbett, 2012), the nature of Medical English as a lingua franca (MELF) interactions has been understudied. The present investigation examines the extent to which differing English varieties among nurses in the State of Qatar are intelligible to one another, and whether issues of intelligibility impact the quality and safety of health care delivery. Additionally, this study also investigates the intelligibility of these communications (between practicing nurses) to nursing students in the Bachelor of Nursing Program.



## LITERATURE REVIEW

### Intelligibility among Varieties of English

The global number of English users is estimated to be two billion or one-third of the world's population (Crystal, 2008). The remarkable spread of English and its role as the “default mode” for global communication (McArthur, 2002, p. 13) has led to discussions around the extent to which the many varieties of English are (un)intelligible to one another (e.g., Kachru & Nelson, 2006; Kachru & Smith, 2008; Nelson, 2011). The present study provides an opportunity to investigate this issue in the medical context in Qatar where a largely expatriate workforce, from a myriad of linguistic backgrounds, use English to communicate across different varieties of the English-language.

Defining intelligibility might begin with what Kachru (2008) terms the “Smith paradigm,” referring to Smith's (1992) division of intelligibility into three elements: intelligibility (word recognition), comprehensibility (word meaning, locutionary force), and interpretability (the meaning behind the word, or illocutionary force) (see also Smith & Nelson, 1985). Nelson (2011), in an exercise intended to aid readers in defining the above three elements of intelligibility, recounts “When I was being taught my manners, my primary caregivers made it clear to me that ‘When somebody says ‘Would you like to stay for supper?’ it’s time for you to go home’” (p. 26). In this case, comprehensibility would involve the listener's knowledge that the modal question form “would you like” means an offer or invitation, “supper” as a meal eaten in the evening, and so on. Interpretability, the illocutionary force, involves an understanding of the implications underlying the utterance: presumably, in Nelson's cultural context, a question about staying for supper was not an invitation at all, but a way of informing the guest that his or her visit was nearing an end.

Interpretability (locutionary force) is the most complex level of the three divisions in Smith's framework for intelligibility (Nelson, 2011), referring to “the recognition by the hearer/reader of the intent or purpose of an utterance, i.e., the perlocutionary effect the speaker/writer is aiming at” (Kachru & Smith, 2008, p. 63). It includes contextual familiarity, background information, and can be informed by both linguistic and extra-linguistic awareness (Nelson, 2011, p. 37). Given the broad acceptance of the Smith paradigm, its tripartite definition of intelligibility has been adopted for the analysis of MELF interactions in this study.

Studies measuring intelligibility have tended toward considerations of “native speaker” (NS) judgements regarding “non-native speaker” (NNS) speech, leaving a research gap with regard to interactions across English varieties—the focus of this present study.

Some studies have attempted to fill this void. Deterding and Kirkpatrick (2006) also drew upon the Smith framework on their analysis of recorded semi-informal conversations among English users from South-East Asia to examine whether shared pronunciation features of an emerging lingua franca interfered with intelligibility. They largely did not, and the researchers asserted that these non-standard features, when shared among speakers, served to augment intelligibility. In cases where pronunciation features were unshared, this led to unintelligibility.



Meierkord's (2004) analysis of informal ELF conversations found that at the syntactic level, interactions adhered to the grammatical patterns of standard English; thus, evidencing that L1 transfer features, along with processes of simplification, regularization and levelling, all contribute to intelligibility being achieved in such contexts.

As noted, studies of intelligibility primarily focus on the perceptions of those from English as a Native Language (ENL) contexts (UK, US, Canada, etc.), ignoring the reality of non-ENL, ELF interactions. A review of the literature on linguistic barriers in health care contexts reveals a similar propensity.

### Language Use and Patient Care

Despite the potential for practical application, the intersection between applied linguistics and health care communication has, until relatively recently, been overlooked (Candlin & Candlin, 2003). While studies have found that language barriers in health care settings create difficulties in: physician-patient interface, inhibit access to care for patients, lower their adherence to treatment, and decrease patient satisfaction (e.g., Carrasquillo, Orav, Brennan, & Burstin, 1999; Schenker, Lo, Ettinger, & Fernandez, 2008; Wilson et al., 2005); the primary foci have been interactions between NS health practitioner to NNS patient in ENL settings (Cameron & Williams, 1997; Ian, Nakamura-Florez, & Lee, 2016; Shi, Lebrun, & Tsai, 2009). For example, Staples (2015) compared the discourse features of NNS internationally-educated and NS US-educated nurses when communicating with NS standardized patients. While they found much of the language used was similar, NNS discourse differed in terms of lexico-grammatical features. US nurses were shown to have a more patient-centred discourse through means such as "expressing empathy, developing rapport, reassuring patients, and more generally therapeutic communication" (p. 134), in contrast to the internationally-educated nurses "provider-centred" orientation (p. 216). While extensive in scope, Staples' study differs from the focus of this investigation as it took place in an ENL setting rather than an ELF one, and the internationally-educated nurses in this study exhibited high proficiency in English (p. 123). Frank's (2000) study of NNS international students and NS health care staff in a university clinic encountered difficulties in overall understanding, but particularly for medical terminology; however, this also took place in an ENL setting.

Previous studies have also identified potential risks to patient safety through language barriers, but again, mainly in ENL contexts. For example, Wilson et al. (2005) found that physicians who spoke the same language as patients ("language concordant") "reduced reports of adverse medication effects and confusion with medication instructions" (p. 803). Another ENL-specific study, of nurse-patient cross-cultural communication in a surgery ward, examined perceived barriers in language and culture that, in the views of nurses, hindered "safe and effective care" (Boi, 2000, p. 387). Similarly, the nurses interviewed by Graham, Gilchrist, and Rector (2011) recounted language barriers as "challenging, frustrating and even dangerous" (p. 117), but were describing NS nurse - NNS patient interactions. A similar focus on ENL settings has been characteristic of studies on the teaching of English for Nursing Purposes (ENP), and scant attention has been paid to ENP communications in countries where English functions as an official language



among other first languages, or where it is taught as a foreign or international language (Bosher & Stocker, 2015). Even less is known about ENP instruction in lingua franca contexts.

## RESEARCH QUESTIONS

This study investigated two questions:

1. In a MELF interaction, to what extent did miscommunications occur between two nurses? Further, in the judgement of nursing instructors, to what extent could issues of intelligibility observed during the scenario affect the quality of patient care?
2. To what extent was the above MELF interaction intelligible to other nurses and nursing students?

## MATERIAL AND METHODS

### Research Setting

This study takes places at a nursing education institution in the State of Qatar offering undergraduate and graduate nursing degrees with English as the medium of instruction. The student body at the time of writing comprised 39 different nationalities, representing multiple linguistic backgrounds. The Bachelor of Nursing Program consists of two study tracks: the Post-Diploma (PD) track, for nurses who have previously completed diplomas and are practising in the local health care system, and, the Regular Track (RT) for students who do not have any previous credentials or experience in the field.

### Health Assessment Scenario in a MELF Context

Assessment scenarios have been utilized in nursing education for the development of integrative and critical thinking skills (Carter & Dickieson, 2010; Wales & Skillen, 1997), while minimizing strain to students and avoiding risks to patients (Zunzarren & Rodriguez-Sedano, 2011). Scenarios in nursing education can range from advanced use of technology in simulating “high-fidelity” to real-life conditions (Maneval et al., 2012, p. 125) through to constructed “dialogic exchange” based on scenario cards (Carter & Dickieson, 2010, p. 66). The content of this particular scenario (see Appendix A) was created with the assistance of a senior nursing faculty member, and was designed to be such that linguistic unintelligibility within the situation would impact patient care, and would also employ syntactical forms that nurses would regularly encounter in the course of hospital ward duty. The scenario’s focus was an end-of-shift handover of a patient from Nurse A, finishing a shift, to Nurse B, starting a shift.

The scenario was shown to two female student volunteers from an upper-year undergraduate nursing course. Both students, enrolled in the PD program, were experienced nurses currently practicing in the local health care system, and would have completed such patient handovers routinely as part of their responsibilities. Student A was given a description of the scenario, including her role as outgoing nurse and necessary patient information to be explained to her



colleague. Student B, meanwhile, previewed only her role description as the recipient of the end-of-shift report. Student A described her L1 as Tamil, Student B as Arabic: both had met the university's entrance requirements in terms of English proficiency.<sup>ii</sup> As seen in Table 1 below, Nurse A [L1 Tamil] displayed linguistic features of pan-Indian English (Sailaja, 2009, 2012), such as non-distinction between /w/ and /v/, the absence of the /eɪ/ diphthong, and a preference for progressive verb forms. Nurse B, [L1 Arabic] meanwhile, assigned the role of the incoming shift nurse receiving the report, demonstrated speech characterized by (lack of) do-support questions. Their discussion was recorded as a 3:08 minute digital audio file.

Scenario Role	Played by	Self-identified 'mother tongue'	Selected linguistic feature	Examples
Hospital nurse going off-shift	Student A	Tamil	/w/ and /v/ non-distinction	He has /wɒm.ɪtɪd/ twice today
			absence: /eɪ/ diphthong	He's also stating that he's feeling funny and um feeling /hə.ləʊs/ around the lights
			preference for progressive verb forms	I wonder maybe he's crazy something he's telling that way
Hospital nurse coming on-shift	Student B	Arabic	lack of do-support in question forms	You not take blood sugar? No any interferon? This refer the file?

Table 1: Summary – Health assessment scenario discussion

### Opinions Regarding Potential Miscommunications and Health Care Impact

The health assessment scenario recording was played to three senior nursing instructors at the institution. All possessed multiple years' experience at both clinical and instructional disciplines of nursing and were familiar with the multilingual context in the clinical settings in which they and the student participants work. All held advanced degrees, were female, and were speakers of Canadian English (Walker, 2015), reflecting the institution's instructor profile. A semi-structured interview explored their views on whether issues of intelligibility in the recorded discussion might impinge upon patient care. Interview questions were constructed following Wengraf's (2001) tripartite question divisions of central research, theory and interview (see Appendix B). Interviews were recorded as digital audio files and coded for analysis. A thematic analysis approach (Braun & Clarke, 2014) served as a framework for examining the interview data in a manner consistent with the "bottom up" orientation of grounded theory (Corbin & Strauss, 2008).

Additionally, the researcher was cognizant of the need for interviews to probe a distinction between nursing practice *content* (Did the nurse in the recorded scenario lack the knowledge or experience in nursing practice to assess the patient?) and *language* (Was patient assessment hindered by pronunciation, unfamiliar grammatical forms, inaccurate vocabulary, inability to access necessary vocabulary, etc.?). In each assertion of inadequate health assessment then, the



interviewer probed further to ensure the nursing instructor differentiated between these two areas, as illustrated by the following extracts.

#### Extract 1

**Interviewer:** That – so that the fact that there wasn’t information, that was an issue with nursing, not a language issue.

**Nursing Instructor X:** It’s a content issue.

**Interviewer:** A content issue.

#### Extract 2

**Interviewer:** So do you feel that that’s related to it being a second language or do you

**Nursing Instructor Y:** I don’t know. Sorry. Umm [pause] Yeah, I don’t know, I don’t – I think I would have the same concerns about an English speaker who said yeah, he’s acting crazy. I think I would still have to push them to say what does – describe that.

The next section begins with an overview of the findings, followed by specific examples.

### **Listening Comprehension Task for Nursing Students**

For the final phase of the research, the recorded health care assessment scenario was played for Bachelor of Nursing students at the institution. Simultaneously, students completed 10 listening comprehension questions (Appendix C). These were developed, in consultation with a senior nursing instructor, to verify that the listening comprehension questions reflected areas of critical import for patient care in the context of the specific scenario. Further, construction of the comprehension questions followed Buck’s (2001) “default construct” for listening in that tasks were designed to involve the processing of realistic spoken language in real time, and the comprehension of both equivocally and unequivocally stated content (p. 114). Items in the first section (Questions 1-6) followed the order of discussion progression, and targeted content comprehension over attention to extraneous detail, a central feature of listening construct validity (Rost, 2002). A second section (Questions 7-10) asked listeners to reflect on perceived intelligibility; it included closed and open-ended items to allow for collection of unanticipated information (Wiersma & Jurs, 2009). Items were intended to gauge respondents’ perceived intelligibility of the health assessment scenario recording. The perception of understanding is of central concern in health care interactions, in that gaps in interactional understanding can have serious consequences for patient safety.

Participants were also asked to identify their “strongest language,” a term chosen to reflect the reality in Qatar of an “unbalanced multilingualism” (Cenoz, 2013, p. 6), where individuals typically differ in proficiency levels across two or more languages. Respondents were also asked to indicate programs of study (degree or diploma) and gender, but for purposes of confidentiality asked not to provide any further identifying information.





A total of 14 BN students completed the listening comprehension section of the study. The sample reflected the student population of the institution, with participants being predominantly female (14), a mix of RT and PD students (5 and 6, respectively, with 3 not indicating study track), and a variety of “strongest languages” (5 - Arabic; 3 -Tagalog; 2 - Farsi; 2 - Malayalam; 1 - Indonesian; 1 - Yoruba).

## RESULTS

### Senior Nursing Instructors’ Opinions Regarding Health Care Impact

Several themes emerged from the interviews with the senior nursing instructors, summarized in Table 2.

Theme	Nursing Instructor X	Nursing Instructor Y	Nursing Instructor Z	Comments
Expressed concern that English language ability could affect patient safety	Yes	Yes	No	Z identified imprecise expression (see Extract 9) as a threat to patient care, but not necessarily safety
Expressed concern regarding intelligibility of medications list	Yes	Yes	No	Z noted her background in cardiac care might have enabled inference
Expressed concern regarding intelligibility of phonological or syntactic features	No	Yes	No	Y noted differing pronunciations but expressed comprehension
Expressed concern that imprecision in expression could affect patient safety	Yes	Yes	Yes	

Table 2: Semi-structured interviews – Summary of responses

### *Patient Safety*

First, two of the three nursing instructors (pseudonyms X and Y) explicitly stated that language-based miscommunications between the interlocutors could negatively affect patient safety. While the third instructor (Z) did not explicitly link any single miscommunication as jeopardizing patient safety, she did express concerns about miscommunications affecting patient care. The extracts below provide examples illustrating patient safety concerns expressed by nursing instructors.





Extract 3

**Interviewer:** In your opinion, were there areas of language, not nursing practice but language, that could affect patient safety, in this example?

**Nursing Instructor X:** Uh, yes, I think so, and I think it goes back to the the terms she used before: “funny” and “crazy” because those can be very umm, you know, funny what does that really mean, you know, is he unconscious umm , you know is he responding to verbal umm commands, to painful stimuli, like those all impact umm patient care. And she did mention that the potassium was high, so that would lead me to be believe that these were more serious concerns than acting funny. And that nursing umm other nursing intervention should be taken immediately, instead of just you know making a referral at some point in time.

Extract 4

**Nursing Instructor Y:** But I think there’s more - I think there’s cardiac issues going on and we might be overdosing them on potassium, right now. And that could be so the beginning of the confusion we might be sending him into a delirium which I didn’t hear anything about. But that would be my immediate thought, umm if I was diagnosing.

***Medications***

Two interviewees (X and Y) indicated concern about intelligibility in the reports of administered medications. Z felt she understood the list of medications the patient was receiving, but added that her background in cardiac care might have assisted with inferring the medication names and dosages. What she could not comprehend, however, was the type of fluid being administered to the patient intravenously.

Extract 5

**Nursing Instructor Y:** I didn’t get the names of all the medications. I got Lasix 20, didn’t get the frequency of it, didn’t get I think there were 3 meds, I didn’t get the next medication at all, and then I got potassium 20 millequivalents qd. I got that this patient vomited twice, pulse, I’ve got a question mark, I’m not sure if said they took the pulse, or they didn’t get the pulse . . . umm . . . I’m not sure what acting funny looks like? Umm , and not quite sure how that connects to seeing halos around the light.

**Interviewer:** So uh - so these - the fact that you didn’t get the medications -

**Nursing Instructor Y:** Huge issue!

***Pronunciation and/or Grammar***

While nursing instructors noted areas of pronunciation from the two recorded interlocutors where comprehension was a challenge, none directly linked these to patient safety. Nursing Instructor X noted differing vowel articulations of two terms (C-difficile and Lasix) but indicated comprehension of both, while Instructor Z indicated a lack of comprehension surrounding the type



of intravenous solution. The pan-Indian or Arabic linguistic features noted in Table 1 were not remarked upon by any of the three nursing instructors. None of the instructors mentioned grammar issues as a barrier to comprehension.

### *Precision in expression*

All three nursing instructors indicated concerns that a lack of precision in expression evidenced in the scenario might negatively impact patient safety. In the recording, for example, Nurse A attempts to describe the patient's mental state of disorientation, and does so with the patient's own words "feel[ing] funny" and her own description "he's crazy". Instructors X, Y and Z all conveyed views that this indicated a lack of precision in expression necessary for effective nursing practice.

#### Extract 6

**Nursing Instructor X:** She she stumbled over her words, right? It wasn't it the articulation wasn't clear what I would expect it to be, You know she seemed hesitant over umm the information that she was conveying, like she didn't I didn't feel that she had a sense of confidence about what she was talking about umm you know that there she didn't have really a umm a clear plan about what she wanted the next nurse to do. It was kinda left up in the air. Umm...

**Interviewer:** And are those problems of language, do you think?

**Nursing Instructor X:** I do, because maybe she probably couldn't umm find the words to articulate what she said. So I don't know if it it could be a content issue, maybe the person speaking didn't know the content? But it could also be that they didn't have the words to verbalize what they wanted to say.

#### Extract 7

**Interviewer:** And just to be clear, so I'm clear ... they that uh that being unclear to the next nurse, you're saying it could be a language issue, she may not know the words to say?

**Nursing Instructor X:** Right. So in my own personal experience, you know if I keep probing students, I can sense that they you know that they know kind of the content, but they're not able to find the words. And if they translate what they're saying into their native language, and that other person tells me what they were saying then it makes more sense. But here I don't know if she really had the language to express what she wanted to say. Maybe she did do with her own cardiac assessment, and she didn't have the knowledge, right? She talked about things like (pitting) edema, but umm she couldn't clearly articulate you know the objectivity behind it, you know (pitting) edema plus one plus two plus three umm that kind of thing so umm perhaps she doesn't have the the language ability to umm to portray that information.

#### Extract 8

**Nursing Instructor Y:** So then she talked about air entry, she talked about a moist cough. I would be concerned about this patient because of the KCL, and the high potassium . . . umm . . . And



then so the other confusing part about this was that they said that this person is disoriented, but they're responding well. So I don't know what they're responding well to. If they're disoriented, and they're crazy, and they're acting funny, then to me, responding well is a bit of a misnomer.

Interviewer: Would would someone being a native speaker of English use responding well in an unclear kind of way?

**Nursing Instructor Y:** I don't - I would hope not.

**Interviewer:** So it might be language?

**Nursing Instructor Y:** It might be language. I think maybe they're responding well physically, but they've got a whole other psychodynamic going on here, that I'm concerned about. And if their potassium is creeping up, then they're not actually responding well, you need to attend to the potassium (be)cause that could kill them.

#### Extract 9

**Nursing Instructor Z:** Crazy – that was a little off for me, yeah.

**Interviewer:** Off.

**Nursing Instructor Z:** When I heard that word uh that's not a word I would use. Or I would hear a nurse use. So I don't know what she meant by that. But then when they went on I assumed that she was talking about him being orientated or disoriented. So I I don't what she meant, if she meant that his mental status wasn't quite where it should be and I think that's where the other nurse might have been pushing she asked had his blood sugar been tested which would be a normal thing for a nurse to think about because a person could be disoriented if their blood sugars were high or low? Um but they hadn't checked that. The other nurse said they hadn't checked that. So um yeah the crazy part was something I didn't really care to hear. We you wouldn't hear that that's not something you hear a nurse say. It doesn't mean anything um medical it doesn't reflect assessment a nursing assessment. So that part was a little bit maybe she was struggling with language to describe what it was she was trying to say that that was one part, yeah. That wasn't great.

**Interviewer:** That might be language?

**Nursing Instructor Z:** Well, maybe it's maybe she didn't know the right word to use? Because crazy's not a word you hear in nursing assessment language, or medical language by a physician, nurse, anybody. It's just, it's a it's a lay term, you know, it's a it's not a word that we would use.

### Listening Comprehension Task for Nursing Students

#### *Listening Comprehension Responses*

Of the six listening comprehension questions, participants demonstrated little difficulty answering three correctly, while the remaining three proved challenging. A list of comprehension items and the number of correct/incorrect answers for each is provided in Appendix C. Table 3 below shows selected examples of variance in listener comprehension for the three problematic items.



Question #	Information given in recorded discussion	Number of incorrect responses /14	Incorrect response (number)
Q1: How old is the patient?	'84 years old'	4/14	unanswered (3) 40 (1)
Q4: The patient's pulse is 92. Is there any other information given about the pulse?	'irregular'	13/14	regular (13)
Q5: How is the patient's blood sugar?	'blood sugar, not take'	5/14	normal (3) within normal (1) good (1)

Table 3: Variance in listener comprehension – Selected examples

### *Perceived Intelligibility*

Questions 7 to 10 gauged respondents' perceived intelligibility of the health assessment scenario recording. Variable responses characterized listener perception of the recorded health assessment scenario, but overall, participants expressed confidence that they had understood the discussion. Thirteen of the 14 listeners, for example, indicated they understood 70% or more; only three felt inaccurate pronunciation interfered with meaning. Speech rate and interlocutor accent was reported as a barrier to comprehension by just over half of listening participants (9/14 and 8/14, respectively). Table 4 below summarizes participant responses.

Question 10 was an open-ended item which gave listeners opportunity to add any other remarks on the recorded discussion. Ten of 14 listeners provided comments, and these followed varied themes: four comments noted fast speech; four referred to accent as a comprehension barrier; and two comments used the phrase 'easy to understand'. Some examples:

In general was OK, not very difficult, but the way they pronounce and the accent is little bit made the word meaning to change, but because we had a lot of experience in working with Indian nurse so it became a habit to hear it and I feel it's OK and easy to understand. [Sic] ["strongest language": Farsi]

Her spoke too quickly and needs to improve her accents. [Sic] ["strongest language": Arabic]

The hand over was clearly communicate between them. It was easy to understand patient condition and what the nurse did for the patient. [Sic] ["strongest language": Farsi]

No, only some litters that are going from nurse mouth is littel difficult to understand because all indina staff have this problem e speaking. [Sic]. ["strongest language": Arabic]



‘It will be difficult for people who has no knowledge about medications to understand what nurse A said especially when it comes to medical words. [Sic] [“strongest language”: Indonesian]

Question #	Responses (14 listeners)
Q7: How well did you understand the patient’s condition and symptoms?	easily (7) understood, but with some difficulty (7)
Q8: How much of what the nurses said did you understand?	90% or more (6) 70-89% (7) 50-69% (1)
Q9: Say whether you agree (A) or disagree (D): (a): The nurses’ <b>accents*</b> made it difficult to understand the patient’s condition and symptoms. (b): The nurses <b>spoke too quickly</b> for me to understand the patient’s condition and symptoms. (c): The nurses <b>wrongly pronounced</b> some words, so I <b>couldn’t</b> get the meaning. (d): The nurses <b>wrongly pronounced</b> some words, but I <b>could</b> still get the <b>meaning</b> . (e): The nurses spoke <b>Standard English</b> .	Agree (8) Disagree (6) Agree (9) Disagree (5) Agree (3) Disagree (11) Agree (7) Disagree (6 ) No Answer (1) Agree (5) Disagree (8) No Answer (1)

Table 4: Perceived intelligibility – summary of responses

\*bold type in original

## DISCUSSION

Concerns over patient safety with respect to communication issues in an ELF context (Bladd, 2008) were echoed in this present study. According to the three nursing instructors who listened to the recorded assessment scenario, patient safety was threatened by issues of language intelligibility. With the 14 nursing students who listened to the recording, a high degree of perceived intelligibility generally aligned with actual intelligibility; however, areas of misalignment were on matters of critical import to the patient’s condition.

The “Smith paradigm” and its three-part division of intelligibility served as a framework for discussion in regard to the areas of (un)intelligibility evidenced in this study.



## Intelligibility

### *Nursing instructors*

Word recognition difficulties with medication and its administration were highlighted in the semi-structured interviews. The effect on patient safety of misunderstanding in this area of nursing care, could be, as emphatically stated by Instructor Y, a “Huge issue!” All three instructors referenced difficulties in understanding medicines and/or administration, noting unintelligibility of the actual names and amounts and frequency of dosage.

### *Nursing students*

Despite nursing student listeners’ perceptions about the effect of accented pronunciation, word recognition overall accounted for minor impact on intelligibility of the recorded scenario, as evidenced by comprehension instrument responses. Disconcerting, however, was the pervasive misrecognition of the patient’s irregular pulse (13 of the 14 heard “regular”), and that while the patient’s blood sugar level had not been tested, over one-third of the respondents (5/14) understood it to be “normal” or “good”.

## Comprehensibility

### *Nursing instructors*

It is in the area of locutionary force, in particular, where instructors noted the adverse effects of language ability on nursing care. The descriptors “funny” and “crazy”, uttered as Nurse A presumably searched for more precise nursing lexis like “disoriented”, were considered a threat to patient safety by the instructors. As mentioned by Nursing Instructor Y, imprecise terminology could delay diagnosis of a potentially dangerous issue, such as an overdose of potassium chloride (see Extract 4).

### *Nursing students*

Unlike their instructors, who noted with alarm the imprecise use of the terms, the student listeners did not remark upon the use of “funny” and “crazy”. Certainly, although a precondition for inclusion in this study was completion of the institution’s health assessment course, the student nurses are not expected to demonstrate the same level of assessment skills as the instructors. Still, this may be a case of “they don’t know what they don’t know” – or, the failure to note the importance of precise terminology may perpetuate imprecisions.

## Interpretability

From the standpoint of patient safety, it may be encouraging to note that the recorded health assessment scenario evidenced interpretability as indicated by nursing instructor comments and as measured by nursing student responses to listening comprehension questions.



### *Nursing instructors*

Instructors demonstrated use of situational and contextual knowledge to apprehend the recorded scenario. Instructor Z described drawing inferences from her background in cardiac care, while Y noted differing vowel renderings but still correctly identified the condition and medications. Both X and Y noted that they would press for clarification if this were an actual hospital setting (e.g., Y: “Well, if I’d been sitting on this report, I would have pushed this nurse to say ‘Tell me what funny looks like to you.’”)

### *Nursing students*

Respondents described a process that is likely very familiar to them in an environment where English is used as a lingua franca—drawing upon both linguistic and extra-linguistic contextual knowledge to gain meaning.

A nursing student who identified her “strongest language” as Farsi noted that “the way they pronounce and the accent is little bit made the word meaning to change, but because we had a lot of experience in working with Indian nurse so it became a habit to hear it and I feel it’s OK and easy to understand”. [Sic]

Another student listener (“strongest language” – Indonesian) thought Nurse A’s speech would be “difficult for people who has no knowledge about medications” [sic]; however, this student’s correct answers on the listening comprehension section indicated that she did possess the required background knowledge.

However, a note of caution needs to be sounded alongside these positive assessments of interpretability. Consider the following extract from the recorded assessment scenario discussion, and the nursing students’ responses.

#### Extract 10

**Nurse B:** Okay, why you um, take your uh, take the blood sugar? The uh the blood sugar, uh, it’s high?

**Nurse A:** Blood sugar, not take.

**Nurse B:** You not take blood sugar?

**Nurse A:** No.

**Nurse B:** Not diabetic, not diabetes.

Question 5 asked the nursing student listeners, “How is the patient’s blood sugar?” 11 of the 14 listeners correctly answered that the blood sugar levels had not been taken. However, three answered “normal”, one “within normal” and one described the levels as “good”. This example of interpretability misunderstanding serves as a reminder that critical care situations in general





require an unusually high degree of communicative precision, with the possibility of heightened difficulties where a lingua franca language is vehicular.

## LIMITATIONS

A number of limitations need to be taken into account when considering the wider implications of this study. The first limitation is one common to many studies of listening: the “packaging” of a fundamentally interactive activity into a more static exercise. Conversational universals like backchannel signals for listener-speaker feedback and repair systems to restore comprehension (Goffman, 1974) are absent for listeners hearing a recorded discussion. While all listening is inherently interactive communication, Buck (2001) delineates listening assessment constructs based on a continuum of interactive collaboration. As noted previously, this particular study measured comprehension on a non-collaborative communication task in that the research construct gauged listening in a non-interactive context. In order to extend understanding of ELF interactions in health care settings, future research is needed in observing interactive contexts where listeners attempt to formulate meaning collaboratively.

When considering the broader applicability of the findings, it is also important to note the small sample size in the study. Future research might consider larger numbers of participants, representing even further linguistic variation; such a line of inquiry extends the range of possibilities in probing areas of (un)intelligibility. Consistent with the makeup of the institutional context, the nursing instructors evaluating the recorded scenario for patient safety in this study all listed English as their “strongest language”. A future study might broaden the sample to include similarly qualified instructors from other linguistic backgrounds to gauge their take on MELF interactions in the context of patient safety.

With the above limitations considered, we now turn to the implications for English language teaching’s intersection with nursing education, and how (M)ELF might contribute to belonging, identity and the development of medical professional practice in migrant destination regions.

## IMPLICATIONS FOR ENGLISH LANGUAGE TEACHING IN NURSING EDUCATION

Several implications for nursing education in ELF contexts present themselves from these findings. First, linguistic preparation of nursing students for whom English is an additional language will look differently in ELF contexts than in ENL ones. The teaching of listening skills should aim not just for comprehension of a single “standard” accent, as is often the pedagogical focus in ENL settings, but also effective comprehension across a wide variety of Englishes. Effective listening pedagogy should seek to enhance listening skills that are interactional in nature, which can be achieved by expanding upon the traditional listening task constructs to include more active listening techniques, like clarification, summarizing, etc.—thus, veering from a “receptive orientation” toward a “collaborative” or “transformative” one (Rost, 2002, pp. 2–3). Pronunciation pedagogy should, similarly, deemphasize NS accents as the preferred target, in favour of being understood in MELF environments where the future nurse practitioners will find themselves in. Research-



informed speaking pedagogy should also investigate and catalogue target areas for enhancing intelligibility in such contexts.

Scholars have emphasized the goal of communicative effectiveness—as opposed to a strict attention to accuracy—in ELF interactions (Björkman, 2011). As Jenkins (2007) argued, in an international communication context, “the ability to accommodate to interlocutors with other first languages than one’s own is a far more important skill than the ability to imitate the English of a native speaker” (p. 238). Firth (1996) found that lingua franca interactions used a number of means to make unusual interactions appear more “normal”, such as a “let it pass” approach (waiting until an unclear meaning became clear) and “make normal” strategies (producing formulations of marked speech) (pp. 243-247). Other means of circumventing misunderstandings in ELF interactions include repetition, clarification, self-correction, direct questions, and error repair (Kwan & Dunworth, 2016). Nursing curricula for MELF contexts would do well to include explicit teaching of such strategies.

Second, the important role of the range and depth of nursing-specific lexis was highlighted by this study. Precise description is at the heart of effective health assessment, and providing such precision in a vehicular language adds an additional challenge. The formation of frequency-based nursing corpora (Shimoda, Toriida, & Kay, 2016) provides new opportunities for lexis-based pedagogical approaches in nursing education.

Third, listening has been considered an undervalued and under-taught area of language teaching, the “Cinderella of the four macro-skills” (Flowerdew & Miller, 2005, p. xi). This present study underscores its importance, even centrality, for the language teaching curriculum in MELF contexts. The findings suggest that listening needs to be extended from its traditional role as a static, receptive activity to a much more interactive one; the importance of authenticity and genuineness (Rost, 2002) are emphasized by the need for exceptional precision required in patient assessment. Fortunately, authentic and genuine opportunities for interactive listening is often already incorporated into many nursing programs in the form of the simulation laboratory. Simulation training, a mainstay of nursing curricula, provides “a unique educational strategy to facilitate the development of skills, competencies and clinical judgement that are mandatory to provide safe, quality patient care” (Decker, Caballero, & McClanahan, 2014, p. 2). In many cases, however, English language instruction is seen only as a precursor to participation in nursing programs, and not incorporated into nursing program simulations. This results in a largely underutilized pedagogical opportunity for “real-world” listening situations nursing students will encounter in future practice.

## IDENTITY AND BELONGING WHERE ENGLISH IS A LINGUA FRANCA

As a migrant worker destination, the states of the Arabian Peninsula are of special interest for the study of (M)ELF interactions, given the L1 language contact environment where English serves as a second or third language for many in the large expatriate workforce. In discussing the UAE, Boyle (2012) describes an environment where migrants accelerate language change, given the tendency to lessen enforcement of linguistic norms in such settings, and predicts language change to be



observable not only in English, but Arabic and South Asian languages like Urdu and Malayalam, and in other languages which are represented in the UAE's migrant workforce (p. 328).

ELF in this way provides an avenue for identity and belonging in an environment where permanent residence is highly unlikely, if not impossible (see Economist Intelligence Unit, 2009, for an explanation of residence/citizenship policies in the Arabian Peninsula). Migrant destinations like the Arabian Peninsula present a rich opportunity for researchers to consider whether ELF will not only stabilize, but become a norm-providing variety of English, rather than its current norm-dependent orientation, with a convergence of grammatical/lexical systems. Maurenen (2012) describes language users who, interacting over time, will eventually synchronize to norms. Might we envision a day when what is now ELF in the Arabian Peninsula will converge into a series of norms (and then eventually be codified and taught)? On several occasions, for example, we have been asked in Arabian Peninsula coffee shops, by migrant workers from the Philippines, for our "good name," a feature associated with South Asian English (Kachru, 1993, p. 382), perhaps an illustration of ELF norm convergence in the region. This may exemplify the process described by Mauranen (2012), who predicting a regulation of speech norms over time, and the forming of discourse communities (Swales, 1990). The data in this study suggest that a MELF discourse community may already be in development. As noted previously, one nursing student (L1 Farsi) described her comprehension of an Indian nurse (L1 Tamil) in a patient handover: "the way they pronounce and the accent is little bit made the word meaning to change, but because we had a lot of experience in working with Indian nurse so it became a habit to hear it and I feel it's OK and easy to understand." [Sic]

The notion of community/communities of practice (COP) Lave & Wenger, 1991; Wenger, 1998) has been drawn upon by ELF theorists to describe the nature of such speech communities (Mackenzie, 2014), and may be of particular relevance to MELF users. A COP depicts the inherently social nature of learning, framing the process as one of a learner participating in the social world, and contrasting with portrayals of the individual learner in isolation, depending on cognition exclusively. Mutual engagement, a joint enterprise and a shared repertoire characterize the social learning of the COP (Wenger, 1998). Utilization of the knowledge created by COP in organizations—often overlooked because of their informal nature (Boud & Middleton, 2003)—presents an opportunity for institutions that educate health care professionals to generate MELF linguistic resources, which transcend the limited term contracts of expatriate workers.

## CONCLUSION

This study examined intelligibility of a health assessment scenario among different varieties of English, in a health care context where English is a lingua franca. As in all hospital settings, exceptionally accurate communication is necessary for patient safety, but the findings here underscored its importance in MELF contexts. The results point toward the inclusion of interactive and authentic listening, and frequency-based vocabulary instruction, as critical components of English language curricula as it intersects with nursing education for MELF contexts. As the findings of this study suggest, the neglect of communicative precision in MELF instructional contexts is done at patient peril.



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## APPENDIX A - HEALTH ASSESSMENT SCENARIO

### Health Assessment Scenario 1 – NURSE A

Shift Change: You are giving shift report to the ongoing staff.

Mr. Saddi is an 84 year old male with congestive heart failure, who has developed pulmonary edema and has also acquired C-difficile in hospital and has become dehydrated. Medications include furosemide (Lasix) 20 mg PO qd, digoxin 125 mg PO qd, potassium chloride (K-Dur) 20 mEq PO qd. He has vomited twice today, and you are not sure he kept his pills down. He is also stating that he “feels funny and I’m seeing halos around the lights – I wonder if I am going crazy”.

You report on the following:

- admitting diagnoses
- report vital signs (BP 180/82, P 92 R 26)
- urinary output hourly over the last eight hours
- auscultation: diminished air entry with inspiratory crackles throughout (review what this could be)
- cough is wet and non-productive
- tachycardic
- pulse irregular
- recent lab values show potassium level increasing
- disorientation
- patient opening eyes in response to touch

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### Health Assessment Scenario 1 – NURSE B

Shift Change: You are the incoming nurse during shift change.

Listen to the outgoing nurse and the information they give you about a patient.

You are a participant in the conversation, so feel free to ask questions or do anything else you might want until you are comfortable you have the information necessary.



## APPENDIX B – INTERVIEW QUESTIONS

Central Research Question (CRQ), Theory Questions (TQ), and Interview Questions (IQ) (Wengraf, 2001)

CRQ(1): To what extent do issues of intelligibility among users of different varieties of English threaten safe and effective patient care?

TQ(1): Are there linguistic misunderstandings that might threaten safe and effective patient care?

IQ(a): How well did you understand this shift report?

IQ(b): What things made it difficult to understand the report?

IQ(c): In your opinion, are there possibilities for misunderstandings in language that could affect patient safety?

IQ(d): In your opinion, are there possibilities for misunderstandings in language that could affect the overall quality of patient care?



## APPENDIX C – STUDENT NURSE RESPONSES

Language	Female / Male	BNR T PDB N	Q 1 C/I	Q 2 C/I	Q 3 C/I	Q 4 C/I	Q 5 C/I	Q 6 C/I	Q 7 a-d	Q8 %	Q9(a) A/D	Q9(b) A/D	Q9(c) A/D	Q9(d) A/D	Q9(e) A/D	Q10
TG01 <sup>1</sup>	F	BNR T	C	C	C	I	C	C	A	90 +	A	A				
TG02	F	BNR T	C	C	C	I	I	C	B	50-69	A	A	D	A	D	<sup>2</sup>
TG03	F	BNR T	C	C	C	I	I	C	B	90 +	A	A	A	A	D	
YA01	F	BNR T	I	C	I	I	C	I	B	70-89	A	A	D	D	A	<sup>3</sup>
AC01	F		I	C	I	I	C	I	A	70-89	A	A	D	D	D	<sup>4</sup>
AC02	F	PDB N	C	C	C	I	I	I	B	70-89	D	A	D	D	D	
AC03	F	PDB N	C	C	C	I	C	C	B	90 +	A	D	D	A	D	<sup>5</sup>
AC04	F		I	C	I	I	I	C	A	70-89	A	D	D	A	D	<sup>6</sup>
AC05	F		I	C	I	I	I	C	A	90 +	D	A	D	D	A	
FI01	F	PDB N	C	C	C	I	C	C	A	70-89	D	D	A	A	D	<sup>7</sup>
FI02	F	PDB N	C	C	C	I	C	C	A	90 +	D	D	D	A	A	<sup>8</sup>
IN01	F	BNR T	C	C	C	C	C	C	B	70-89	D	A	D	A	D	<sup>9</sup>
MM01	F	PDB N	C	C	I	I	C	C	A	90 +	D	A	D	D	A	<sup>10</sup>
MM02	F	PDB N	C	C	I	I	C	C	B	70-89	A	D	D	D	A	<sup>11</sup>

## NOTES:

- 14 respondents
- In Q1-6, no answers were scored as Incorrect (I).
- Comments (see footnotes) are reproduced unedited, as written by the participants.

1: TG – Tagalog; YA – Yoruba; AC – Arabic; FI – Farsi; IN – Indonesian; MM – Malayalam

2: The nurse A was quite a fast talker and seems like she's out of breath.

3: There is too much information during the endurment. I think endurment suppose to be concise.

4: Her spoke too quickly and she needs to improve her accents.

5: It was not proper English language.

6: No, only some litters that are going from nurse mouth is littel difficult to understand because all indina staff have this problem e speaking.



7: In general was OK, not very difficult, but the way they pronounce and the accent is little bit made the word meaning to change, but because we had a lot of experience in working with Indian nurse so, it become a habit to hear it and I feel it's OK and easy to understand.

8: The hand over was clearly communicate between them. It was easy to understand patient condition and what the nurse did for the patient.

9: I think the nurse A spoke too fast, so it was a little difficult to understand or catch up with the conversation; especially when nurse A tried to explain about the medications. It will be difficult for people who has no knowledge about medications to understand what nurse A said, especially when it comes to medical words.

10: Spoke too quickly.

11: The explanation was OK, but it was mixed so difficult to understand.

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<sup>i</sup> We are hesitant to wade into use of the terms “native speaker / non-speaker” for the purposes of our article, given the terms’ often social, rather than linguistic, construction. We prefer to conceptualize our discussion with the recognition (and affirmation) of varieties of English. In countries where English has a long history, and plays many official functions in government, the media and education (India, for example), it is often problematic to identify who/who isn’t a “native speaker.” In such environments, many multilinguals may be hard-pressed to tell you which language is their L1. We therefore prefer to frame our discussion in this article by referring to someone as a speaker of a particular English: Indian English, or Nepali English, for example. We use the term “English users,” following Deterding and Kirkpatrick (2006). It is important to us to both avoid the imprecisions in the terms NS/NNS, and to be consistent with the unbalanced multilingualism dominant in the research context, and so we have used the term “self-identified” L1 where we had asked study participants to identify their “strongest language.”

<sup>ii</sup> Institutional requirements: Foundation entrance requires TOEFL iBT 40, IELTS 4.0; degree entrance requires TOEFL iBT 80, IELTS 6.0.

