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Effect of English Medical Education and Arabic Practice on Bahraini Junior Surgeons' Informed Consent Confidence: A Qualitative study

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Abstract

Background

In Bahrain, although the language of medical education and practice is English, patient interactions are primarily in Arabic, with clinicians alternating between languages or dialects when conversing with patients (code-switching). The process of informed consent influences decision-making in the patient treatment journey. This study explores the effect of having studied medicine in English on Bahraini junior surgeons' experiences when taking informed consent for procedures from Arabic-speaking patients.

Methods

Reflexive thematic analysis was used to analyse data collected by semi-structured interviews with 14 participants from different surgical sub-specialities practising in a hospital in Bahrain.

Results

English is essential in Bahraini hospitals, as a large number of medical staff members are foreigners and English is the *lingua franca* in medical institutions. In the interviews, the most mentioned method used to learn consent taking when having to code-switch was experiential learning. Some interviewees recommended teaching by simulation. Having senior supervising personnel present, using the language of the patient, and the patient being more educated positively affected the process. However, code-switching was a source of cognitive load for some surgeons, which could negatively affect their confidence. To most interviewees, explaining medical matters in English was easier than in Arabic. Most consent forms in Bahrain are only in English. Some new forms are bilingual, but this is still a new practice.

Conclusions

While code-switching facilitated communication and helped deliver the message fast, there was no formal teaching in this skill, something which contributed to the surgeons' stress and cognitive load. The study recommends supporting surgeons with knowledge and training to increase their confidence. The development of a new consent form that contains both languages would be a good corrective move. Clear guidelines can reduce the cognitive load associated with code-switching when taking informed consent.

Practice Points

- Bahraini junior surgeons commonly switch between English medical terminology and Arabic patient communication during informed consent.
- Most participants learned consent-taking and language switching through experiential learning rather than formal training.
- Code-switching can increase cognitive load and reduce confidence, particularly when Arabic medical terminology is unfamiliar.
- Simulation, supervised practice, feedback, and explicit teaching may improve confidence and consent-taking skills.
- Bilingual consent forms and clear institutional guidelines may enhance patient understanding and support surgeons' practice.

1. INTRODUCTION

1.1 Medical Care and Education in Bahrain

The primary language in Bahrain is Arabic, with English being the second most widely spoken language. There are 31 hospitals in Bahrain [1], three of which are government general hospitals, and they are the main teaching hospitals. Besides the government hospitals, there are 27 health centres. The administration and documentation language in the hospitals is English; however, the language of practice and dealing with patients is mainly Arabic. Most patients in these hospitals and health centres are Bahraini, and, as a result of Bahrainisation, almost all the administrative staff, laboratory technicians and pharmacists are also Bahraini [2]. Two universities provide medical education in Bahrain: the Arabian Gulf University (AGU) and the Royal College of Surgeons in Ireland – Medical University of Bahrain (RCSI-BH). As with most higher education programmes in Bahrain, both of these medical schools adopt the English language to teach medicine. Undergraduate and postgraduate training is conducted in English, while patient communication is in Arabic. Communication between healthcare professionals and record-keeping also requires a shift between Arabic and English. They often talk to the patient in Arabic but record in English.

1.2 Language and Communication in Medicine

Language concordance in the medical field means that both the doctor and the patient can speak the same language directly, without a need for a professional interpreter – something that is also called language access [3]. In a systematic review by Diamond et al. [4], it was found that concordance in the language between the patient and their doctor in the majority of cases improves outcomes, such as understanding and satisfaction. In a study conducted in the United Arab Emirates, where the first and the formal language is Arabic, [5] concluded that teaching communication skills to medical students only in English renders them unconfident in communicating using their native language for patient communication. A study conducted among final-year medical students at the AGU in Bahrain asserted that an English-taught curriculum did not affect their performance; however, the participants did not anticipate that

an English-taught curriculum would affect their future communication with Arabic-speaking patients [6]. Such limited studies on the effect of the language used on performance and confidence call for further clarification and a better understanding of this topic.

1.3 Code-Switching

Code-switching (CS) is defined as alternating between two or more languages, or even sometimes dialects, in a single conversation [7–9]. Among the many uses of CS, Albirini [7] mentioned using it when explaining a sophisticated matter. This is most probably applicable to the use of English in the field of medicine in Bahrain, despite the official language being Arabic. The switch to English happens when writing about medical matters or mentioning medical terms when speaking. Williams et al. [10] added that there is a link between CS and emotional stress, as bilinguals tend to resort to CS to reduce the cognitive load by reverting to their mother tongue.

Wood [11] documented four different types of CS specific to the medical field, which are dialect, language, tone, and lexicon. For dialect CS, he gave an example of a Black American physician alternating between Standard American English and African American English to communicate with a Black patient. As an example of language CS, Wood [11] mentioned an incident he witnessed when the physician switched between Spanish and English to lighten the atmosphere in a consultation. Wood [11] highlighted lexical CS by demonstrating multiple incidents where medical students use simpler non-medical terms to explain complex terms or actions to an educated patient. Furthermore, he [11] also explained the tone CS through giving an example of changing the voice tone to a high pitch when dealing with children to be more engaging and at the same level as the child. Wood [11] noted that the former four types of CS were used mainly to develop rapport, enhance the patient's understanding and help the patient to comply more effectively with their treatment plan.

CS in the Arabian Gulf region is familiar, particularly in Bahrain, as it is an island, and throughout history, various languages have been used and practised in different fields of life. The medical field is no exception, and from here comes the importance of addressing this issue.

In Saudi Arabia, Alhamami [12] studied the motives behind CS in healthcare facilities and found that it increases work efficiency. Hoffmann's model explains code-switching as serving ten communicative functions, including topic change, emphasis, clarification, quotation, repetition, identity expression, group solidarity, distancing, lexical need, and pragmatic effect [13]. Overall, the model highlights that code-switching is a strategic and meaningful linguistic choice, not random mixing, used to manage social relationships and discourse effectively. Alqurashi [14] studied CS by the workers in private Saudi hospitals from a socio-cultural perspective. He formulated a model for CS justification based on the Hoffmann Model, which suggested ten different functions of code-switching, which applied to his study and suggested the functions of CS as follows: facilitating communication, delivering the message fast, filling lexical gaps, repeating in order to clarify and emphasising something [13]. This model justifies CS in the medical field by the need to achieve all these nuances of patient communication [14]. Interestingly, most research addressing CS considers switching between two variants of the same form of communication, i.e., the oral form. However, in the settings examined in this study, one language is communicated orally (Arabic), and the other is used in written form. Some might argue that what is happening is the process of translation. However, what the surgeon does is not merely translate what has been said, but it is a further step also taken in a monolingual context that transfers knowledge from layman's terms to technical and professional language after excluding unnecessary information. This form of CS was described by Hadden et al. [15] in their paper that examined physicians switching between a medical register and plain language – two registers within the same language. Registers are varieties of language, each of which is "finely attuned to specific situations, audience and purpose" [16]. This means that we change our register by changing the way we speak (or write) in different situations, and accordingly there are professional registers, casual ones, academic ones and so on.

One area in which CS occurs in the medical setting in Bahrain is when documenting informed consent. Levinson et al. [17] provided an extensive systematic review that concluded that surgeons spent most of their time explaining to patients about surgical procedures and treatments. The General Medical Council (GMC) in the UK bases it on seven principles [18]. These can be summarised as the right of a competent patient to conduct a dialogue with the healthcare provider, involving the decisions that they should make about their treatment and care, after the exchange of all the necessary relevant information needed to make such a decision. That information includes the benefits, risks, and possible complications of either accepting or refusing the intended treatment, within the required and appropriate time frame. This is in addition to knowing about any other alternatives, including the option of taking no action. If the patient lacks the capacity for doing so, this should be conducted via the closest person to them or someone else who can advocate for them [18].

The procedure for documenting informed consent normally happens within the same language used in speaking with the patient. It is considered an action that requires certain language abilities and technical knowledge from the surgeon. Thus, taking informed consent is not simply an act of translation, and the definition of CS better applies to the cases we are looking into in this study. A similar view was adopted by Ayuuf and Majeed [19], who studied CS in the medical register and considered the switch in medical language according to the patient's level of education and ethnic background to be a kind of CS.

1.4 Confidence

Confidence can be defined as "the perceived ability to accomplish a certain level of performance" [20]. Confidence and good performance are linked, with the latter being vital for a professional and safe physician [21]. A systematic review by Elfenbein [22] found that most studies reported low levels of confidence among surgeons. The confidence of surgeons in the process of taking informed consent was studied among orthopaedics and ophthalmologists, with both agreeing about the importance of such a trait to improve performance, in addition to suggesting the need for more training to become more confident in the practice of informed consent [23, 24].

1.5 Cognitive Load Resulting from Code-Switching

Cognitive load is defined as "the total working memory resources required to carry out a learning task", and each learner has a certain limit [25]. Managing such a load most efficiently is described in cognitive load theory [26]. Working memory can be defined as "that part of the memory system dealing with the temporary storage and manipulation of thoughts during cognitive processes' [27 p18]. Working memory has limits on the tasks that can be performed at a single time, and so overloading that memory can create cognitive load [28]. Having to code-switch between two languages might add a load on surgeons

who are seeking consent from patients to procedures using one language (Arabic) that they were not originally taught to use in such a context. Surgeons' confidence in the process of CS while taking informed consent seems to be affected by the cognitive load, as suggested by Jabali [29]. Liu et al. [30] demonstrated that there was a cognitive load exerted by CS on the cognitive function of Chinese-English bilingual participants in their study.

1.6 Problem Statement

Taking informed consent for procedures is critical in the patient care journey, as inaccuracy or patient misunderstanding may be possible sources of future litigation. In Bahrain, while the study of medicine and the reporting and documentation happen in English, communicating with most Bahrainis (and other Arab) patients is usually conducted in Arabic. In a context where physicians juggle between two languages, one for professional use and another to communicate effectively with their patients, an additional cognitive challenge can be created that consequently affects the physician's confidence. Despite being a common practice, CS between two languages is rarely studied in the field of medicine and even more scarcely in surgery [11, 14].

1.7 Research Aim and Objectives

The study aims to explore the effect of having studied medicine in English on Bahraini junior surgeons' experiences when taking informed consent for procedures from Arabic-speaking patients, with particular reference to developing their confidence.

This aim is achieved by addressing the following objectives:

- To describe how Bahraini junior surgeons use CS between Arabic and English when taking informed consent.
- To describe the developing confidence of Bahraini junior surgeons in their language use in the process of taking informed consent.

2. METHODOLOGY

2.1 The Interview

The research employed a semi-structured interview with open-ended questions to collect information from interviewees. This interview questions were designed by the authors as there was no similar study conducted before. (Supplementary file 1) The interview consisted of 18 questions, which addressed the following areas: previous knowledge of and training in taking informed consent, the language used in training, the language used in consent taking, the process of translation between two languages, the feelings of the surgeons about this process, their confidence in consent taking in two languages, factors that might impact the process and their confidence, challenges faced, teaching consent taking, and the effect of years of experience on their confidence.

The interview was conducted by the first author in English. Since CS is a specific linguistic term, the interview questions used the word "translation" to make it clearer for the interviewees rather than CS.

2.2 Recruitment of Interviewees and Data Collection

Purposeful sampling was used to select interviewees. The sample consisted of a total of 14 interviewees of R1 to R4 surgeons (i.e., surgeons who are not yet certified as specialists and not in their final year of training) from SMC.

The inclusion criteria were as follows:

- Bahraini nationality
- has a good understanding of written and spoken English and Arabic
- a surgeon (from any surgical speciality) at levels R1 to R4
- involved in the process of taking informed consent for surgical procedures

The exclusion criterion was:

- If the interviewee believes themselves to be a vulnerable adult

The interviews were conducted on the Microsoft Teams platform, which automatically produced the initial transcription. The meetings were audio recorded with the permission of the interviewee. Transcripts were reviewed and subsequently approved by the interviewee. After each interview, the transcript made by the Teams platform was reviewed manually, anonymised and cleaned before being analysed. The transcript was reviewed by the interviewee before being analysed.

2.3 Analysis Method: Reflexive Thematic Analysis

Reflective thematic analysis (RTA) by Braun and Clarke [30, 31] was employed. The coding and theme construction were undertaken by the first author. The transcribed interview data were managed and organised using the NVivo 14 application, and themes were extracted thereafter. All the data were handled and saved on the AGU office computer, which was strongly secured within a locked office, in addition to the password needed to log in to the computer account itself.

3. FINDINGS

3.1 Interviewees' Information and Demographic Data

Fourteen interviews were conducted using Microsoft Teams, ranging from 21 minutes to 38 minutes with a median of 31 minutes. They were recorded and saved on a secure computer, after each being labelled with an ID (from I1 to I14). Seven women and seven men participated in the interviews. They were between the ages of 26 and 32 (median age 28.5). They came from seven distinct surgical specialities: urology, Ear-Nose-Throat surgery, plastic surgery, obstetrics and gynaecology, ophthalmology, orthopaedics, and general surgery. Their years of training ranged from the first to the fourth year of residency (R1-R4). They graduated from seven different universities in five different countries, four of which had Arabic as their native tongue. Before enrolling in a training programme, the majority of interviewees had worked for between three months and three years and six months in service jobs.

All the interviewees were fluent in both Arabic and English. Arabic was their mother tongue, whereas they started learning English at primary school. There were differences in terms of when they started learning English, as it ranged from Grade 1 (6-year-old) to Grade 4 (10-year-old) of primary school.

3.2 Themes Observed

[Figure 1 near here]

As Fig. 1 illustrates, three key themes about the process of taking informed consent in Bahrain were observed in the interviews, namely (a) learning methods of informed consent, (b) factors and challenges of informed consent, and (c) language used in the process of consent taking. In the figure, the line indicating "link" leads to subdivisions, while the line indicating "relationship" shows that the two themes interact, as it will be evident in the elaboration below.

3.2.1 Theme 1: Methods of Learning about Informed Consent

This theme addresses how the interviewees learnt to take informed consent from patients who are scheduled to undergo surgery. It has been found that the interviewees were divided on when and where they learnt about informed consent. While nine of them learnt about it in medical school, mostly during the final two years, the other five only learnt about it in postgraduate training, mostly during internship.

"The first time, I still remember it, because I was an intern".(I7)

Sub-Theme 1: Used Teaching Methods

At the undergraduate level, the trainees mentioned that the focus was mainly on the content of informed consent, in addition to its importance and how to establish the right setting to obtain it from patients. All of that teaching in the medical school was conducted in the English language. Lecturing was the method of learning for the majority of those who were taught about informed consent at medical school. However, some interviewees mentioned observation and learning in tutorial groups as other ways of learning about informed consent.

" *I was taught that in medical school, it was in English".*

" It was like a lecture, like someone was explaining". (I8)

Moreover, one interviewee indicated assessment as a way of learning about informed consent, as medical students tend to receive training on Objective Structured Clinical Examination (OSCE), along with feedback, as a formative assessment before the actual summative assessment, the OSCE exam.

In terms of postgraduate training, there was less emphasis on the content of teaching about informed consent, as only four interviewees mentioned it. All except one who learnt about informed consent at the postgraduate level said they were taught about informed consent in English:

"It was just taught in English". (I4)

However, 13 out of 14 interviewees said there were no specific sessions to learn about informed consent in the postgraduate training:

"I want to say that there was no specific session for consent". (I2).

The one exception stated that at the beginning of her training, her consultant and the chief resident summoned her to his clinic to observe consent being taken by him, something which she considered a form of training.

Other interviewees mentioned various methods of how they learnt, either directly or indirectly, to take informed consent. Those methods were: learning by observation, learning by doing, or learning by combining both, as taught in an apprenticeship model. Meanwhile, some interviewees emphasised that learning was only by observation.

"When you started the internship, you started to observe your seniors doing it, and you learned from them". (I10)

Other methods mentioned were: lectures, learning through reading and preparing for exams, *"trial and error"* (I4), and simulation.

Sub-Theme 2: Suggestions to Enhance Teaching Methods

Teaching informed consent by observation was supported by several interviewees. The interviewees suggested multiple methods to enhance the teaching of informed consent and specified each according to the level of learners. For the undergraduate level, the interviewees suggested methods to teach informed consent, such as lectures, using simulation, a communication skills lab, teaching by observation, and including consent taking in the assessment.

"Simulation also can be used at undergraduate level, and I think it's a very important thing". (I2)

"They can incorporate it within an OSCE exam, to force them to study it"-.(I3)

An interesting suggestion based on a previous experience interviewee (I8) had, was to introduce a book or a glossary explaining the medical terms in the local (Arabic) language to assist the doctors.

"I do think that would be beneficial because when I was in medical school, we had one of the courses that was called Medical Chinese, and to this day, it's helping me if I have a Chinese patient who doesn't speak English". (I8)

In addition, they also emphasised the content of teaching informed consent. However, two of the interviewees disagreed with the idea of teaching informed consent at medical school:

"In medical school that's a little too far, everyone is too young, it will be very hard for us to recall it". (I8)

Furthermore, interviewees again emphasised the importance of the content of teaching informed consent by recommending teaching it explicitly for postgraduates.

"*If more lectures were incorporated, at least for the juniors, for the R1."* (I3)

"At leases discussion". (I6)

The same interviewee also said that it should be done in stages: first, the theoretical and ethical part, followed by practice with a trainee or actor, and finally application on a patient under the supervision of a trainer, who in turn would provide feedback and instructions for improvements. Other suggested methods for teaching informed consent at the postgraduate level were lectures, discussions, simulation, observation, teaching by doing with or without supervision, and giving feedback.

"… giving them feedback on; what did they miss? What did they do right? What do they have to change?" (I2)

3.2.2 Theme 2: Language Used in the Process of Consent Taking

The language used in the process of informed consent taking in Bahrain changed in the different stages of the process. The first step, the process of writing the informed consent form, was done in English in most forms.

"For Bahraini patients, we write the consent in English". (I1)

Some new forms that were introduced recently were bilingual, requiring surgeons to fill them in both Arabic and English. However, the Arabic part was not mandatory, and some interviewees said they skipped it.

"The Arabic part, we don't fill it". (I3)

They justified this by explaining that the nurses in charge of the cases and of preparing the patient came from different nationalities, and the common language among them was English.

The second step was explaining and discussing the informed consent with the patient, most of whom spoke Arabic. All the interviewees agreed that this is done in Arabic with Arabic-speaking patients. Interviewee (I4) said:

"It is always in Arabic. It is always in Arabic," and he justified that saying: "*because most of the patients prefer that you speak to them in Arabic, and they feel more comfortable hearing it from you in their own languages and you would avoid medical jargon. Because by default when you speak in English, you might put in some medical terms that would confuse the patients". (I4)*

The last step was documenting the whole process in the patient's file, something which was usually done in English. Some exceptions were if the case was complicated, in which case they would also write it in Arabic and request the patient to sign it in Arabic. Another exception mentioned was cases in which patients refused the procedure, when the surgeon would document that refusal in Arabic to ask the patient to sign.

Although the term "code switching" was not mentioned neither by the interviewer nor by the interviewees, since it is a linguistic term, the interviewee described it by explaining that when they would take informed consent from a Bahraini (Arabic-speaking) patient, they would alternate between the medical English language they learnt at medical school while they read and fill the form and the Arabic language while they spoke to the patient to obtain consent for the procedure.

Sub-Theme 1: Code-switching Between Two Languages

A big part of the process of consent taking using two languages is spent in code switching between them. Since there was no formal teaching of such a process, interviewees had to decide and learn when to alternate by themselves.

"It was never taught. Translation was never taught". (I4)

They mentioned that they learned that by the following methods (listed in order of the most mentioned to the least):

- Learning by observation (i.e., from other colleagues and seniors)

- Learning by practising the consent taking or doing (i.e., trial and error)
- Basing word choices on a book they had at medical school, which contained English medical terms translated into the practised language
- Learning from some professors at medical school who mentioned the terms in both languages (English and Arabic) when talking with students during their clinical rotation.

Sub-Theme 2: Confidence

Although there was some variability, the interviewees generally expressed high confidence in their capability and approach to the process of informed consent while code-switching. The majority of interviewees rated themselves highly in terms of confidence in the process of taking informed consent with the need to CS. The rating ranged from 7 to 10 out of 10.

There were multiple factors that affected the interviewees' level of confidence. A factor that all interviewees mentioned was the experience they gained through practising.

"It changes with time, but definitely more with practise – the more you practise things, the more you get confident doing it". (I2)

Interestingly, there were two factors that had controversial effects on the confidence level, one of which was knowledge, and the other was the presence of a senior. While one interviewee asserted that gaining knowledge increased their confidence, another clarified that as he gained knowledge and realised the risks of procedures better, they grew less confident in the choices they made while CS.

The presence of a senior person alongside was described by one as a source of boosting confidence, while another mentioned that the presence of a senior person made him less confident and less willing to talk as a result of worrying about forgetting something, and thus they would let the senior do the talking and might sometimes add to what was said.

"It will give me more confidence because I know that if I'm stuck in a specific part or I'm not comfortable or if I give an inaccurate statement or if I forgot something, I have backup from someone who will correct me, someone who will add the information". (I2)

"No, actually when I'm in the presence of a senior, I would be much more careful in my words. And I'm always afraid that I'm going to forget something. So, I would give the space for the senior to talk more and to add anything that I have missed, God forbid. But yes, I'm more confident if I'm alone". (I10)

The other two factors that reduced the level of confidence were the lack of knowledge of the Arabic medical terminology and the complexity of cases, two factors which were mentioned as reasons why some interviewees rated themselves less than 10 out of 10 in terms of their confidence in taking consent.

"The terms are in Arabic, not in English. I know the terms in English, but I have to look it up in Arabic, so that's why I gave up that 3 point". (I4)

Sub-Theme 3: Dealing with Errors in Word Choice

As stated earlier by most of the interviewees, there was no official teaching of the process of CS during consent taking, which may result in more mistakes (compared to when trained to do so). When mistakes occur, the immediate response agreed upon by all the interviewees was to correct the mistake by reapproaching the patient, explaining again, and then taking a new consent. An interviewee stated that before doing anything, they would ask the patient to say what they understood, and correct the patient if they misunderstood any of the explained procedures.

Some interviewees explained that if a junior person makes a mistake in choosing the terms of expression in Arabic, they would gently interrupt without making it awkward or embarrassing. They would repeat the explanation using the correct words, and then once the patient leaves, they would just explain to the junior why they stopped them.

A repeated suggestion made by the interviewee to compensate for the lack of training was the use of online sources, such as Google Translate or any translation application. The interviewees also repeatedly affirmed that asking for their seniors' help and guidance was an important solution they would use.

Other less mentioned suggestions were: using pictures, observing other colleagues, avoiding consenting for unknown procedures, having a medical translator and studying medicine in Arabic.

3.2.3 Theme 3: Other factors impacting on the taking of informed consent

The interviewees mentioned multiple factors that could affect the process of taking informed consent whilst code switching between English and Arabic. The language used to take informed consent was considered one of the most significant factors to help communication with the patient. They found taking it in Arabic a way to be more connected to patients and to increase mutual understanding.

"We take it in the language the patient understands, so if the patient is comfortable with Arabic, we take the consent and explain it in Arabic". I2.

Other factors were: the patient's trust in the surgeon, the surgeon's communication skills, the time allocated for this process, the environment, the presence of a senior person, and the lack of familiarity with Arabic medical terms.

The majority of interviewees agreed on one significant factor, namely the patient's level of education, as it positively correlated with the ease of explaining the procedure. More educated patients often have some prior knowledge or would read about the procedure before they meet the surgeon.

Another positive factor, according to interviewees, was the fact whether the patient had undergone similar surgery in the past, as patients who underwent a similar or the same procedure were easier to communicate with.

However, having a senior person present when taking consent had a controversial effect. Some found it to be advantageous as a way to find support and help with terminology, while others found it a source of pressure, especially when the senior urged them to finish faster.

When talking about the challenges that surgeons face when taking informed consent from an Arabic-speaking patient, the interviewees mentioned the following (listed in order of the most mentioned to the least):

- Dealing with an elderly patient (in their 80s and above).
- Dealing with different dialects, including dialects from countries other than Bahrain.
- Performing a new procedure by the trainee surgeon that requires familiarising oneself with new Arabic terms and new ways to explain, in other words, the experience of the person taking the consent.
- Having to correct misconceptions of patients who have incorrect information, while thinking they know about the procedure.
- Handing scared patients who cannot decide whether to give consent or not.
- Having a family member or a visitor with the patient makes it more difficult as each would give his/her input, making it difficult for the patient to decide.
- Having a patient who is in denial.
- Translating the complications and explaining them in depth.
- The need to translate specific unfamiliar anatomical terms, and the patient was not familiar with the equivalent Arabic medical terms.
- The social level or status of the patient.

4. DISCUSSION

The practice of CS demonstrated in this study findings was not a surprise. CS seems to facilitate communication and help deliver the message fast, as confirmed by Alqurashi [14] in his study in Saudi Arabia. This study's interviewees asserted the same in their discussion about the effect of the language as a significant factor in the process of consent taking. This may have been possible and effective only because the interviewees were taught both languages (Arabic and English) early in their lives, something which might have contributed to their practical fluency in both.

Moreover, in Saudi Arabia, Alhamami [12] also studied the motives behind CS in healthcare facilities and found that it increases work efficiency, which aligns with what the interviewees mentioned in the present study.

However, how surgeons learnt about and used CS was unique. As stated by the majority of interviewees, there was no formal teaching in this skill. Similarly, receiving teaching in consent taking in Arabic and practising it in English was found to be the second most common barrier to obtaining informed consent in Saudi Arabia, which shares a similar healthcare system with Bahrain [23]. On the other hand, those interviewees who claimed to have learnt the skill of CS used self-teaching methods that can be linked to experimental learning, such as reflective observation in Kolb's Cycle [33]. However, no matter how trivial this may have seemed when the interviewees mentioned it, CS was still considered a source of cognitive load because almost every surgeon studied in English, to the extent that some did not even know the names of all organs in Arabic.

This difficulty can contribute to the surgeon's stress and cognitive load, as suggested by Liu et al. [30] in their study on the cognitive function of Chinese-English bilingual participants.

In this study, the interviewees divided their learning about informed consent into two stages in their medical career: undergraduate and postgraduate. For each stage, the methods used differ, which is similar to Breslin et al.'s [34] view of the medical teaching system in the UK. At medical school (undergraduate training), the focus was mostly on the content of informed consent, as mentioned by the interviewees – for example, the procedure that the patient is undergoing, the benefits of the procedure, its risks, side effects, possible complications and alternatives, and the outcomes. This aligns with Anderson et al.'s [35] findings, where they identified six components of consent: introduction, patient autonomy, risks, benefits, alternatives and closing. Similar to their study, most of the interviewees in the present study identified the introduction part (which contains the details of the procedure) and the risks. This was also similar to the study by Alomar [23], with little attention given to the other components of informed consent, such as alternatives to the procedure. Discussing the alternatives to the procedure with the patient was also identified as being deficient by the participants in the study by Alomar [23] in Saudi Arabia. Saudi Arabia and Bahrain are neighbouring countries, which could suggest that there might be common teaching and practice between the two countries. For example, there are common postgraduate training programmes in both countries, the Saudi Board and Arab Board.

Learning the components of informed consent might be sufficient at the undergraduate stage of learning. However, Eftekhari et al. [24] were unsure whether the teaching of informed consent at undergraduate level would provide sufficient details of the different specialities and their specific needs, and therefore the authors suggested specific teaching for each subspeciality at the postgraduate level. This was debated specifically by two of our interviewees, who stated that knowledge learnt about informed consent at the undergraduate level was very difficult to recall later at the postgraduate level, albeit something specialised. Nevertheless, obtaining basic knowledge of informed consent early at medical school aided the students in establishing initial schemata, which might consequently lessen the cognitive load later on in their career [36].

Moreover, in other countries – like Germany in Schleicher et al.'s study [37], and Canada in McClean and Card's study [38] – there was obvious variability in the time of teaching informed consent and the methods used. Such variability was also observed in this current study in Bahrain. The variability in the teaching methods mentioned by some interviewees is a good sign, as there was no single teaching method that proved to be more effective for one

interviewee than another. However, having consistent teaching methods may have contributed to a more measurable effect and may facilitate future studies to compare their effect in general and their effect on confidence specifically.

Having formal teaching for informed consent taking was lacking among most of the interviewees in the present study, similar to Alomar [23], where less than one-third received formal teaching or training on the subject. This raises an opportunity for improvement in medical training in the region of the Arabian Gulf and calls for changes, which will take time to be instituted. However, reinforcing a formalised teaching method for taking consent that is already being used, known and appreciated by the trainees is encouraged and can help temporarily; this reinforcement should be in the form of experimental learning. Experiential learning was attributed, indirectly, to be the main way the interviewees learnt the process of consent taking, when they stated they learnt it through practising or observation. According to Kolb, reflective observation is an important step of his cycle of experimental learning, and it is mainly responsible for making sense of the experience faced [33]; this is what our interviewees were applying unintentionally. When it comes to applying such a skill, even if the surgeons were well trained in it, there were still challenges, as stated by the interviewees. One of the major factors was the education level of patients. In a systematic review by Burks and Keim-Malpass [39], it was found that health literacy is associated with reduced comprehension of informed consent in clinical trials and can impact the ability to have an effective consent taking – this is something that seems to be transferable to surgery's informed consent in general, and more specifically to cultures where health education is imported and taught using non-native language. Moreover, in a study conducted in the USA about the effect of a patient's educational level and language (other than English) on the informed consent taken for participation in a research project, it was found that both can decrease comprehension and affect satisfaction, something which calls for further training in communication skills [40]. In addition, some of the factors and challenges previously mentioned might not be directly related to the patient themselves, such as the presence of relatives, and this adds another dimension to the process of CS, besides dealing with the patient only.

There was also less emphasis on documenting the consent in the patient's language by some of the interviewees. This raises some concerns. This is because having concordance in the language used when dealing with the patient has paramount importance in patient outcomes and satisfaction, as suggested by Diamond et al.'s [4] systematic review. The development of a new consent form that contains both languages (Arabic and English) is a good corrective move towards concordance of language with the patient. However, more emphasis on adherence to such a practice should be stressed in the teaching of surgeons and in the guidelines and policies.

The sense of responsibility of all the interviewees is apparent when talking about their experiences in consent taking and CS. However, the findings suggest a need for clear policies and guidelines on how to deal with such encounters and all the challenges mentioned, along with a need for proper teaching sessions on how to negate and deal with them, as stated by Breslin et al. [34]. This can be fortified by obliging hospitals to have clear policies and guidelines to regulate such encounters, something suggested by Schildmann et al. [41]. Further collaboration is needed between the governing bodies to ensure the institution of such guidelines.

Another vital component in teaching informed consent is having a senior trainer or supervisor, as asserted by the interviewees in the present study. This study suggests this component to be of paramount importance, similar to both Knowles' and Dewey's belief that it is vital in the process of experiential learning [33]. In addition, this was also suggested by Eftekhari et al. [24] in their study to assess a trainee's competence, and it was named as one of the preferred ways of training in informed consent by participants in the study by Alomar [23]. The role of a supervising senior needs to be clarified further to gain the full benefits of experimental learning. This clarification can be done by providing seniors with clear roles and duties toward the trainees, once they reach the level needed to supervise trainees. Interestingly, some interviewees considered having a senior with them as a source of pressure and also described certain unhelpful traits of their senior. This emphasises the importance of the quality of the senior rather than merely their presence. Such practice can be avoided and changed to its original positive effect with the proper training of seniors and the introduction of clear guidelines and policies on their role. This can further help the practice of receiving good feedback, which is essential in the learning process, as suggested by El Boghdady and Alijani [42], Schildmann et al. [41], and Alomar [23].

Furthermore, the interviewees suggested that teaching informed consent can be enhanced by recommending the use of simulation, learning by observation, incorporating assessments as a way of consolidating the skill of consent taking and using feedback to enhance it. Similarly, this was suggested by Schleicher et al. [37] in Germany, where there is no structured teaching for such vital skills. Schleicher et al. [37] suggested a method that involves a mixture of simulation, lectures and feedback to the students. The importance of feedback in learning about informed consent was also emphasised by Alomar [23].

All the aforementioned suggest the need for developing the current curriculum, and having a specific module on the process of consent taking is a must. In the UK, the GMC has taken a firm stance in developing clear policies and guidelines to develop this skill and ensure patient satisfaction and safety [18]. Alomar [23] stated that although the Ministry of Health in Saudi Arabia has issued clear guidelines on the information to be shared with patients before taking informed consent, the majority of the study's interviewees asserted that they did not receive such guidelines from their institutions. This highlights the importance of good communication between all governing authorities in the health sector and calls for similar initiatives in Bahrain. Having clear guidelines and policies can also reduce the expected cognitive load through deliberate and clear instructions.

The confidence of Bahraini surgeons in their language use when taking informed consent was also interrelated with the process of CS and the steps of informed consent in Bahrain. The interviewees were quite confident in their skills of taking informed consent. A similar acceptable level of confidence was found among orthopaedic trainees by Alomar [23]. Multiple factors could have played a role in developing the confidence of surgeons in our study.

Currie [43] stated that knowledge and training can reflect on confidence, something which applies to the interviewees of this study. Moreover, mastering the steps by repetitive applications, as stated by the interviewees, also played a vital role in developing confidence, and this conforms to Alomar's [23] observation of confidence increasing while progressing in seniority. In addition, specific, formal, structured teaching sessions to teach informed consent are recommended, similar to Breslin et al. [34] and Alomar [23].

Having previous knowledge of the medical procedure in question is thought to be a source of improvement in the efficacy of the process of consent taking [34], something which was believed to be a source of confidence by an interviewee in the present study. However, knowledge seemed to have a contrasting effect on one of the interviewees – in their opinion, the more they knew, the less confidence they had. This may reflect the maturity of that interviewee as they had more practical experience, which started before starting training.

Confidence, nevertheless, could also be hindered by other factors. To start with,

a lack of Arabic medical terms was stated as another factor hindering the interviewees' confidence and adding a burden to the process of consent-taking. This could be improved, as suggested by some interviewees, by introducing glossaries of medical terms in Arabic or infographics and leaflets to aid this process.

Surprisingly, none of the interviewees noted whether their supervisors or trainers influenced their confidence. However, interviewees mentioned that the presence of a senior can be helpful and disregarded its effect on their confidence. This does not support the findings of Hecimovich and Volet [44], who emphasised the value of supervised practice in building professional confidence.

4.3 Implications of the Study

- There was a clear gap between education at the undergraduate and postgraduate stages when it came to teaching consent taking, which should have been a continuum of the learning process. This suggests that the universities in Bahrain and the bodies in charge of postgraduate training should reach a clear agreement on the curriculum to complement each entity's mission.
- Those who write policies and guidelines in Bahrain and other countries with similar CS settings are urged to consider creating local policies and guidelines for educators, something that would give them clear instructions on supporting juniors and thereby lower the cognitive load needed from trainees.
- It is advisable to involve more healthcare specialties, such as nursing and physiotherapy, in the region that experiences CS in order to add more perspectives to this phenomenon, as they work closely with surgeons and face the same challenges.
- The development of a new consent form that contains both languages is a good corrective move. Clear guidelines can reduce the cognitive load associated with code-switching when taking informed consent.

5. CONCLUSION

This study has explored the effect of having studied medicine in English on Bahraini junior surgeons' experiences when taking informed consent for procedures from Arabic-speaking patients. The study has employed a qualitative method and deductively analysed 14 interviews with surgeons at junior level (R1-R4).

A thematic analysis of the interviews has shown that having senior supervising personnel present, using the language of the patient and the patient being more educated positively affected the process. However, code-switching was a source of cognitive load for some surgeons, which could negatively affect their confidence. English is essential in Bahrain hospitals since a large number of medical staff members are foreigners, and the *lingua franca* in the medical institution is English. Most interviewees find explaining medical matters in English easier than in Arabic. Most consent forms in Bahrain are only in English. Some new forms are bilingual, but this is still a new practice.

As the medical field evolves towards a more multidisciplinary approach, CS should be studied from different angles, which include, but are not limited to, the perspectives around CS of patients, relatives and other health personnel in the process of informed consent.

Abbreviations

Arabian Gulf University (AGU)

Code-switching (CS)

General Medical Council (GMC)

National Health Regulatory Authority in Bahrain (NHRA)

Objective Structured Clinical Examination (OSCE)

Royal College of Surgeons in Ireland- Bahrain (RSCI-BH)

Reflexive thematic analysis (RTA)

United Kingdom (UK)

United States of America (USA)

Declarations

Ethics approval and consent to participate

This study was approved by the Research and Ethics Committee (REC) at AGU (Ref. no. E24-PI-01-24) and the Research Committee for Government Hospitals (Research approval serial no. 14-310124). All procedures performed in this study were conducted in accordance with the ethical principles of the Declaration of Helsinki and relevant institutional guidelines and regulations.

Consent for publication

All participants provided written informed consent before participation, including consent for the publication of anonymized study findings. The study was conducted in accordance with approvals from the Research and Ethics Committee (REC) at AGU (Ref. no. E24-PI-01-24) and the Research Committee for Government Hospitals (Research approval serial no. 14-310124).

Availability of data and materials

The datasets generated and analysed in the current study are not publicly available because they consist of confidential interview data. Access may be considered by the corresponding author on reasonable request and in accordance with the approvals of the relevant ethics committees.

Competing interests

The authors report there are no competing interests to declare.

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Declaration of generative AI use

The authors report generative AI was not used in their research or preparation of this manuscript.

Authors' contributions

AIM: Conceptualization, Methodology, Investigation, Analysis, Writing – Original Draft and Reviewing.

LA: Visualization, Data Curation, Writing – Review & Editing

RJY: Writing – Review & Editing

SS: Supervision, Writing – Review & Editing

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References

1. NHRA (National Health Regulatory Authority). NHRA annual report 2022. 2022. [cited 23 August 2024] Available from: https://www.nhra.bh/About/AnnualReport/MediaHandler/ImageHandler/documents/About/Annual%20Report/NHRA%20Annual%20Report%202022n.pc
2. Ministry of Health. Health improvement strategy (2015–2018). Kingdom of Bahrain. 2015. Available from: https://www.moh.gov.bh/Content/Files/Health_Improvement_Strategy (2015–2018).pdf [cited 23 August 2024].
3. Ruiz AM, Allar BG, Fernandez A, et al. Speaking the same language: Improving language-concordant care in surgery. Ann Surg. 2022;275(5):e671–2. 10.1097/SLA.0000000000005217.
4. Diamond L, Izquierdo K, Canfield D, et al. A systematic review of the impact of patient–physician non-English language concordance on quality of care and outcomes. J Gen Intern Med. 2019;34(8):1591–606. 10.1007/s11606-019-04847-5.
5. Mirza DM, Hashim MJ. Communication skills training in English alone can leave Arab medical students unconfident with patient communication in their native language. Educ Health (Abingdon). 2010;23(2):450.
6. Tayem Y, AlShammari A, Albalawi N, et al. Language barriers to studying medicine in English: Perceptions of final-year medical students at the Arabian Gulf University. East Mediterr Health J. 2020;26(2):233–8. 10.26719/2020.26.2.233.
7. Albirini A. The sociolinguistic functions of codeswitching between Standard Arabic and Dialectal Arabic. Lang Soc. 2011;40(5):537–62. 10.1017/S0047404511000674.
8. Poplack S. Code switching: Linguistic. International encyclopedia of the social & behavioral sciences. Elsevier; 2001. pp. 2062–5. 10.1016/B0-08-043076-7/03031-X.
9. Nilep C. Code switching. In: Sociocultural linguistics. Colorado research in linguistics. Vol. 19; 2006. https://doi.org/10.25810/hnq4-jv62
10. Williams A, Srinivasan M, Liu C, et al. Why do bilinguals code-switch when emotional? Insights from immigrant parent–child interactions. Emotion. 2020;20(5):830–41. 10.1037/emo0000568.

11. Wood NI. Departing from doctor-speak: A perspective on code-switching in the medical setting. J Gen Intern Med. 2019;34(3):464–6. 10.1007/s11606-018-4768-0.
12. Alhamami M. Switching of language varieties in Saudi multilingual hospitals: Insiders' experiences. J Multiling Multicultural Dev. 2020;41(2):175–89. 10.1080/01434632.2019.1606227.
13. Hoffmann C. Introduction to bilingualism. 1st ed. Routledge. https://doi.org/10.4324/9781315842035; 1991.
14. Alqurashi H. Investigating the code switching phenomenon in private medical workplaces: A case study of some private hospitals in Saudi Arabia. J Lang Ling Stud. 2022;18(4):344–61.
15. Hadden K, Coleman C, Scott A. The Bilingual Physician: Seamless Switching From Medicalese to Plain Language. J Grad Med Educ. 2018;10(2):130–3. 10.4300/JGME-D-17-00473.1.
16. Thorat S, Salunkhe P. Comparative study of linguistic register between two region: A review. Int J Sci Res Sci Technol. 2024;11(2):703–6. 10.32628/IJSRST52411280.
17. Levinson W, Hudak P, Tricco AC. A systematic review of surgeon–patient communication: Strengths and opportunities for improvement. Patient Educ Couns. 2013;93(1):3–17. 10.1016/j.pec.2013.03.023.
18. General Medical Council. GMC guidance for doctors: Consent. 2020. [cited 8 September 2024] Available from: https://www.gmc-uk.org/-/media/documents/GMC-guidance-for-doctors---Consent---English-2008---2020_pdf-48903482
19. Ayuuf HHM, Majeed S. Sociolinguistic analysis of code switching in medical register. Linguist Cult Rev. 2024;8(Suppl 1):22–44. 10.21744/lingcure.v8nS1.2296.
20. Feltz DL. Self-confidence and sports performance. In: Smith D, Bar-Eli M, editors. Essential Readings in Sport and Exercise Psychology. Champaign, IL, USA: Human Kinetics; 2007. pp. 278–94.
21. Gottlieb M, Chan TM, Zaver F, et al. Confidence-competence alignment and the role of self-confidence in medical education: A conceptual review. Med Educ. 2022;56(1):37–47. 10.1111/medu.14592.
22. Elfenbein DM. Confidence crisis among general surgery residents: A systematic review and qualitative discourse analysis. JAMA Surg. 2016;151(12):1166–75. 10.1001/jamasurg.2016.2792.
23. Alomar AZ. Confidence level, challenges, and obstacles faced by orthopedic residents in obtaining informed consent. J Orthop Surg Res. 2021;16(1):390. 10.1186/s13018-021-02531-1.
24. Eftekhari K, Binenbaum G, Jensen AK, et al. Confidence of ophthalmology residents in obtaining informed consent. J Cataract Refract Surg. 2015;41(1):217–21. 10.1016/j.jcrs.2014.11.005.
25. Sweller J. Cognitive load during problem solving: Effects on learning. Cogn Sci. 1988;12(2):257–85. 10.1207/s15516709cog1202_4.
26. Sweller J, Sweller S. Natural information processing systems. Evol Psychol. 2006;4(1). 10.1177/147470490600400135.
27. Brooks DW, Shell DF. Working memory, motivation, and teacher-initiated learning. J Sci Educ Technol. 2006;15(1):17–30. 10.1007/s10956-006-0353-0.
28. Young JQ, Van Merrienboer J, Durning S, et al. Cognitive load theory: Implications for medical education: AMEE Guide 86: AMEE Guide 86. Med. Teach. 2014;36(5):371–84. 10.3109/0142159X.2014.889290.
29. Jabali O. Language of medical instruction in Palestine: A mixed method approach of students' perceptions. BioMed Res Int. 2022;2022:8999025. 10.1155/2022/8999025.
30. Liu H, Liu Z, Yuan M, et al. The effect of cognitive load on code-switching. Int J Biling. 2024;28(3):513–30. 10.1177/13670069231170142.
31. Braun V, Clarke V. Using thematic analysis in psychology. Qual Res Psychol. 2006;3(2):77–101. 10.1191/1478088706qp063oa.
32. Braun V, Clarke V. Reflecting on reflexive thematic analysis. Qual Res Sport Exerc Health. 2019;11(4):589–97. 10.1080/2159676X.2019.1628806.
33. Yardley S, Teunissen PW, Dornan T. Experiential learning: AMEE Guide 63: AMEE Guide 63. Med. Teach. 2012;34(2):e102–15. 10.3109/0142159X.2012.650741.
34. Breslin S, Bell PR, Cullen JR, Consent. Teaching how to give and take. Ulster Med J. 2012;81(3):155–6.
35. Anderson TN, Aalami LR, Lee EW, et al. Perception and confidence of medical students in informed consent: A core EPA. Surgery. 2020;167(4):712–6. 10.1016/j.surg.2019.11.012.
36. Sweller J. Academe, what is learned, and how is it learned? Curr. Dir Psychol Sci. 2015;24(3):190–4. 10.1177/0963721415569570.
37. Schleicher I, Van Der Mei SH, Mika J et al. Chirurgisches Aufklärungsgespräch in der studentischen Lehre. Der Unfallchirurg [Teaching medical students informed consent].;121(3):216–22. 10.1007/s00113-016-0298-6
38. McClean KL, Card SE. Informed consent skills in internal medicine residency: How are residents taught, and what do they learn? Acad. Med. 2004;79(2):128–33. 10.1097/00001888-200402000-00006.
39. Burks AC, Keim-Malpass J. Health literacy and informed consent for clinical trials: A systematic review and implications for nurses. Nurs : Res Rev. 2019;Volume(9):31–40. 10.2147/NRR.S207497.
40. Breese PE, Burman WJ, Goldberg S, et al. Education level, primary language, and comprehension of the informed consent process. J Empir Res Hum Res Ethics. 2007;2(4):69–79. 10.1525/jer.2007.2.4.69.
41. Schildmann J, Cushing A, Doyal L, et al. Informed consent in clinical practice: Pre-registration house officers' knowledge, difficulties and the need for postgraduate training. Med Teach. 2005;27(7):649–51. 10.1080/01421590500138747.
42. El Boghdady M, Alijani A. Feedback in surgical education. Surgeon. 2017;15(2):98–103. 10.1016/j.surge.2016.06.006.
43. Currie K. Linking learning and confidence in developing expert practice. Int J Nurs Educ Scholarsh. 2008;5(1):Article31. 10.2202/1548-923X.1597.

44. Hecimovich M, Volet S. Development of professional confidence in health education: Research evidence of the impact of guided practice into the profession. Health Educ. 2011;111(3):177–97. 10.1108/09654281111123475.

Figures

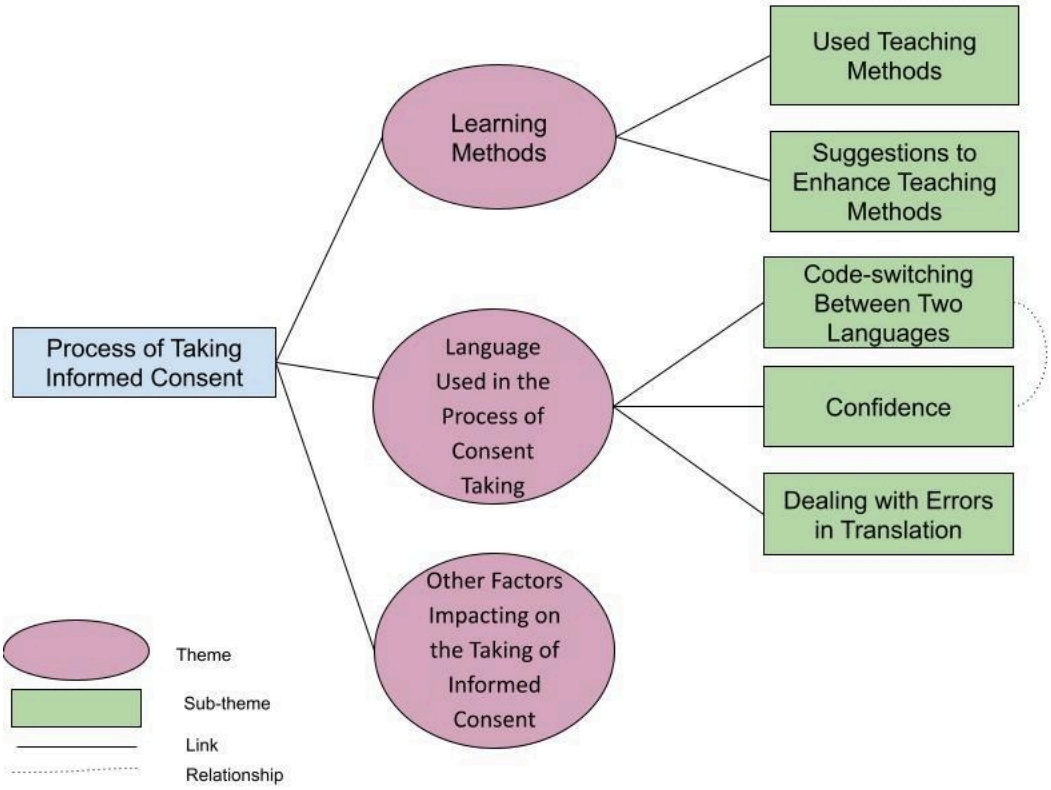


Figure 1

Themes and Sub-themes Identified in the Interviews about Consent Taking

Supplementary Files

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- Interview.docx