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The professional interpreter's effect on empathic communication in medical consultations: A qualitative analysis of interaction

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ABSTRACT

Objective: To investigate how empathic communication is expressed in interpreter-mediated consultations (IMCs) and the interpreter's effect on it.
Methods: We coded 20 authentic video-recorded IMCs by using the Empathic Communication Coding System (ECCS). We compared patient-initiated empathic opportunities (EOs) and doctors' responses as expressed by patients and doctors and as rendered by interpreters.
Results: We identified 44 EOs. In 2 of the 44 EOs there was a close match in the way the EOs were expressed by the patient in the first place and in the way they were rendered by the interpreter. Twenty-four of the 44 EOs that were passed on by the interpreter to the doctor and presented the doctor with an opportunity to respond, came with a shift in meaning and/or intensity. Twenty of the 44 EOs were not passed on by the interpreter to the doctor.
Conclusion: In IMCs, EOs are subject to the interpreter's renditions and the doctor's actions during interaction.
Practice implications: Doctors and interpreters require skills to detect patient cues, assess them correctly, render them completely and in an appropriate manner (interpreters) and display communicative behaviours that take into account the intricacies of interpreter-mediated clinical communication and facilitate each other's communicative goals.

1. Introduction

Common components of the many definitions of clinical empathy in the literature include the ability to understand another's experience, to communicate and confirm that understanding with the other person, and to act in a helpful manner [1]. Empathy is a basic component of therapeutic relationships [2], it has demonstrably improved patient enablement and patient and doctor satisfaction [3,4] and it may be a precondition for patient-centred decision making [5]. Although research on empathy has revealed both positive [6–9] and negative findings [10,11], a recent systematic review of the literature concluded that overall empathy has similar positive effects as common pharmacological treatments [12–14].

The above findings have emerged from research in monolingual healthcare settings. In language-discordant consultations, where the language barrier between healthcare professionals and patients is one of the factors that undermine the quality of healthcare provision [15–18], empathy is compromised [19]. Clinicians are more verbally dominant and behave less affectively when interacting with ethnic minority patients [19]. In a bid to overcome language barriers, interpreters are called for. A few studies have addressed aspects of empathy in interpreter-mediated consultations (IMCs). However, they either take a monodirectional approach to empathy (e.g. by looking only into the doctor's utterances and how these are rendered by the interpreter) [20], or they do not establish a clear connection between the interpreter's interactional steps and empathic communication (EC) as a transactional process [21]. A recent study reporting on EC with medical students, simulated patients and interpreting students showed that EC in IMCs seems to be subject to the interpreter's delivery of interpretation [22]. To date there has been no study on EC in IMCs that has measured the effects professional interpreters have on EC in medical consultations.

Our research questions were: 1. How is EC expressed in consultations mediated by professional interpreters? 2. What is

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the professional interpreter's effect on the expression of EC in IMCs?

This is the first study that provides a comprehensive analysis of the 3 main aspects of EC in IMCs (i.e. patient-initiated empathic opportunities, doctor's responses to those, interpreter's renditions of both of them), along with a measured level of the doctor's empathy and any variations in that.

2. Method

2.1. Data

We report on 20 video-recorded authentic IMCs collected between 2008 and 2011 in an urban hospital in Flanders, Belgium. We used purposeful sampling [23], meaning that the participants and size of the sample were determined by predefined criteria (e.g. language combination, confirmed interpreter bookings) that were relevant to the study objective. The consultations were conducted in Dutch (the doctors' native language), Russian, Turkish and Arabic (the patients' native languages which at the time of the data collection were the 3 languages for which interpretation was mostly required) (Tables 1 and 2). The interpreters were trained and certified by an independent translation and interpreting agency which is funded by the Flemish government. They were not hospital employees but were hired by the hospital on a freelance basis. All interpreters provided on-site interpretation.

The patients did not speak Dutch. All participants (patients, doctors, interpreters) were recruited by the hospital social services department based on language and the hospital departments with the highest demand for interpreters at the time of the study. The topic of the consultations ranged from cardiovascular diseases, endocrine disorders, and haematological malignancies to HIV. In 6 consultations (paediatrics) communication occurred almost exclusively between the doctor and the patient's parent. These patients were not able to communicate due to their age or condition. The length of the consultation ranged approximately from 20 to 90 min. All participants were blinded to the research questions. The researchers were not in the consultation room. A high definition SONY video-camera was placed behind the interpreter and the patient ensuring their gaze could be visible. The study was approved by the hospital ethics committee (Belgian registration number: B67020095716). Participants' written informed consent was obtained. The corpus was transcribed and translated into Dutch by professional translators (native speakers of Russian, Turkish, Modern Arabic). The quality of translation was checked by native speakers of Dutch with a background in linguistics. Any comments focused on culture specific issues were included in our analysis. One transcript was produced for each consultation.

2.2. Operational definition of empathy

We focus on EC, the interactional aspect of empathy, which is a transactional [24,25] and sequential process starting with the patient's explicit emotional expression, followed by an empathic response from the doctor [26]. This is in line with the position that medical consultations are a dynamic interactive process in which meaning and understanding are co-constructed by the doctor and the patient [15]. Regarding EC, this means that the doctor's response to the patient's emotional expression might prompt the patient to expand further on their concerns, to which the doctor responds, further progressing the discourse.

Table 1
Demographics.

Participants	Gender	Age
20 doctors	15 male 5 female	37 – 58
20 patients	13 female 7 male	18 – 75
8 interpreters	6 female 2 male	35 - 50

Table 2
Departments, languages and number of consultations.

Department	Language / number of consultations
Haematology	Russian (n = 1) Turkish (n = 1)
Gastroenterology	Turkish (n = 2)
Urology	Modern Arabic (n = 1) Turkish (n = 1)
General internal medicine, infectious diseases and psychosomatics	Russian (n = 2) Turkish (n = 1)
Cardiology	Russian (n = 2)
Endocrinology	Modern Arabic (n = 1) Turkish (n = 2)
Paediatrics	Russian (n = 3) Turkish (n = 3)

2.3. Coding

We used the Empathic Communication Coding System (ECCS) [16,25] in the way we previously adapted for IMCs [22]. The ECCS is a valid instrument for measuring EC in monolingual physician-patient encounters and operationalizes empathy as a transactional process. The tool focuses on behavioural aspects of empathy and divides patient-initiated empathic opportunities (EOs) into statements of emotion, progress, or challenge. Emotion is "an affective state of consciousness in which joy, sorrow, fear, hate, or the like, is experienced". Progress is "a positive development in physical condition that has improved quality of life, a positive development in the psychosocial aspect of the patient's life, or a recent, very positive, life-changing event". Challenge is a "negative effect a physical or psychosocial problem is having on the patient's quality of life, or a recent, devastating, life-changing event" [16]. The ECCS is used to measure EC by identifying EOs expressed by the patient and the doctor's responses to them (seven levels: Level 0–6). The tool distinguishes between different levels of empathy, ranging from Level 0 (the doctor's denial of the patient's perspective) right through to Level 6 (the doctor and the patient share a feeling or experience). This differentiation between levels of doctors' responses is interesting for our study as it allows us: i) to zoom in on the doctor's responses and to avoid treating a simple acknowledgment of an EO as confirmation (i.e. legitimization) [25]; ii) to make a close and systematic observation of the doctor's responses as expressed by the doctor and as rendered by the interpreter by comparing the level of the doctor's empathy, as expressed by the doctor and as rendered by the interpreter. For an overview of the ECCS categories, see **Appendices A and B.**

Our previous modification of the ECCS [22] allowed us to identify different levels of EC and to gauge the interpreter's effect on the expression and management of EC by noticing shifts (alterations) in the EOs. We coded the patients' and doctors' utterances in relation to the interpreters' renditions. We coded only statements that were clear and direct enough [16] and agreed upon by two researchers one of whom is an experienced clinician. We coded first the interpreter's rendition in Dutch of EO and then the doctor's response to it. The meaning of the patient's expressions was coded in the way it reached the doctor (through the interpreter) and not as it was intended by the patient. For an overview of the codes used for the interpreter's renditions of the EOs see **Appendix C.**

Two independent coders (DK and PP) coded the data, relying on the translated transcripts. In case of doubt the video recordings were consulted. The coding was calibrated by CB, who developed the original ECCS. Each coder used enhanced transcripts including the translators'/proof readers' comments. The coders had previous experience with the ECCS [16,25] and with the way it was used in IMCs [22]. The units of analysis were i) statements of emotion, challenge, progress [25] as expressed by the patients and as rendered by the interpreters, and ii) the doctors' responses to those. The length of the unit of analysis ranged between one word and longer stretches of talk.

The coders i) coded the interpreter's renditions in Dutch of the EOs and the doctor's responses to them; ii) coded the EOs as uttered by the patient in their own language and the doctor's responses as rendered by the interpreter in the patient's language; iii) flagged any differences in the content and/or intensity of the meaning, as expressed by the patients and doctors and as rendered by the interpreters. The differences in meaning were detected first by DK who relied on standard categories used for the assessment of interpreter deliveries (e.g. omission, addition, editorialization) and who discussed them further with PP, who reviewed them against clinical relevance (e.g. whether they could possibly have any implications for the doctor's diagnostic thinking in light of the preceding stages of the consultation). The coders, who relied on translated texts, classified the codes of the shifts and the reasons that caused these shifts, upon which consensus was reached through discussion. For an overview of the code categories of the interpreter's renditions of the EOs see **Appendix C**.

2.4. Comparison of codes and shifts

The two coders compared the EOs as expressed by the patient and rendered by the interpreter and identified shifts in EOs. Similar to our previous study [22], we define shifts as changes in i) the meaning of the EO (e.g. "I feel desperate" vs. "I am worried") or ii) the intensity of expression (e.g. use of superlatives, "I am concerned" vs. "I am very concerned"), as expressed by the patient and as rendered by the interpreter, as a result of the latter's actions (such as omissions, additions, editorialization [27]).

The coders compared also the empathic responses as expressed by the doctor and rendered by the interpreter in order to identify any changes in the level of empathy in terms of the 7 ECCS levels of empathy.

3. Results

3.1. Patient-initiated empathic opportunities

We identified 44 EOs (emotion n = 0, challenge n = 36, progress n = 8) (Fig. 1).

3.1.1. Not passed on by the interpreter

Twenty of the 44 EOs (challenge n = 14, progress n = 6) were not passed on by the interpreter to the doctor. This was due to an action performed either by the interpreter (n = 15; e.g. omission of EO and introduction of a new piece of information, e.g. turn 86, Box 1) or by the doctor (n = 5; e.g. cutting the interpreter short in order to introduce a new piece of information, e.g. turn 77, Box 2).

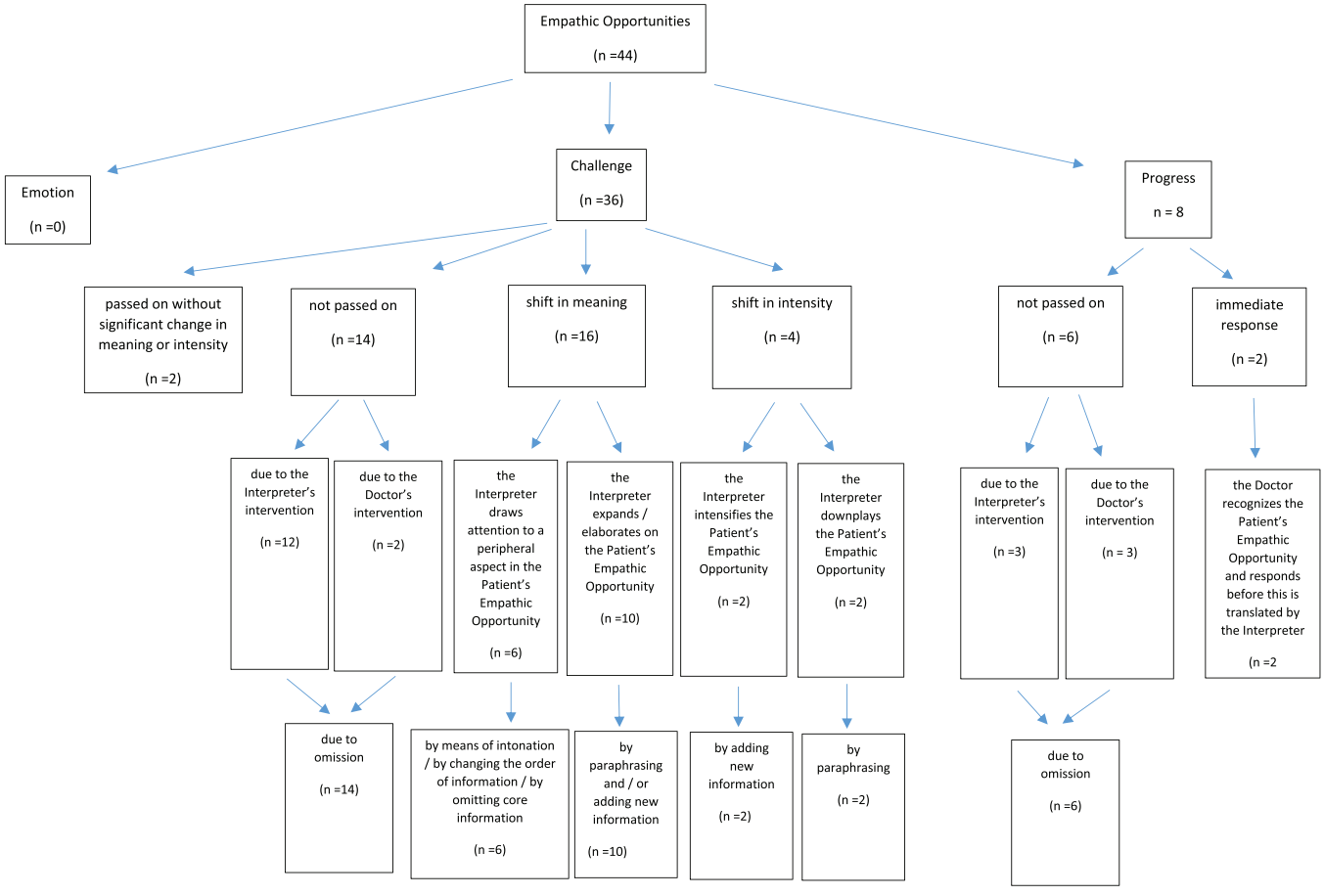

Fig. 1. Coding results.

Box 1.

Omitted EO
P: patient, D: doctor, I: interpreter
82 D: is de mutualiteit in orde?
is the insurance allright?
83 I: Мутуалитет в порядке?
is the insurance allright?
84 P: (.) Сейчас не совсем, после работы ещ не совсем наладился
Not entirely yet. Since I've stopped working it is not entirely alright.
85 D: ((typing))
86 I: Это важно потому что если он просит осмотры, это большая сумма для вас.
It is important. If he requests examination that is very expensive for you.
87 P: Надо немношко тогда подождать
Then we have to wait a little
88 D: Dus ze kan niet zeggen of haar medische verzekering nu in orde is?
So she cannot tell whether her medical insurance now is alright?
89 I: То есть вы не можете сказать что ваша медицинская страховка пока в порядке?
So you cannot tell whether your medical insurance now is alright?
90 P: (inaudible) ((the P says something but both the D and the Int ignore the P))

Box 2.

Omitted EO
P: patient, D: doctor, I: interpreter
73 D: heeft mevrouw gezwollen voeten?
Does the lady have swollen feet?
74 I: У вас ноги опухшие?
Do you have swollen feet?
75 P: Сейчас больше нет, а вообще каждый день у меня опухшие ноги
Not now anymore, but normally my feet are swollen every day.
76 I: Хорошо
Good
77 D: ((the D interrupts the I and rushes to claim the next turn at talk)) Nu haar bloeddruk nog eens meten
Now I'll measure her blood pressure.
78 I: Сейчас проверит кровь
He is now going to measure your blood

3.1.2. Passed on by the interpreter. Twenty-four of the 44 EOs were passed by the interpreter onto the doctor and presented the doctor with an opportunity to respond (Levels 0–6).

3.1.2.1. Passed on by the interpreter without significant change in meaning or intensity. In 2 of the 44 EOs there was a close match in the way the EO was expressed by the patient and in the way it was rendered by the interpreter, both in terms of meaning (content) and intensity (Box 3).

3.1.2.2. Passed on by the interpreter with shifts in meaning / intensity. In 20 of the 24 EOs that were passed on to the doctor we identified shifts in the interpreter's rendition to the doctor when compared to the EOs expressed by the patient. (Table 3)

3.1.2.2.1. Shifts in meaning

We noticed shifts in *meaning* (n = 16) between the EO as expressed by the patient and as rendered by the interpreter.

The shifts in meaning occurred because the interpreter drew attention to a peripheral aspect in the EO (reduced challenge, n = 6) or because they expanded on the EO (increased challenge, n = 10). When they drew attention to peripheral aspects of the EO, they did so by adjusting their intonation, changing the order of information or by omitting some core information (e.g. turn 178: *Then his first problem with the leg appeared* is omitted in turn 179, Box 4).

When the interpreter expanded on the EO, they did so by paraphrasing and/or adding new pieces of information (e.g. turn 130: *sometimes I have the feeling that once in a while my heart stops at this moment*, Box 5).

3.1.2.2.2. Shifts in intensity

We identified shifts in the intensity (increased / reduced challenge, n = 4) of the EOs as expressed by the patient and as rendered by the interpreter. The interpreter either *intensified* or *downplayed* the EO. The EO was intensified, because the interpreter added new pieces of information (increased challenge, n = 2) (e.g. turn 125: *but I do suffer from regular headaches*, Box 6).

The EO was downplayed (reduced challenge, n = 2) as a result of the interpreter's paraphrasing (e.g. turn 115: *my heart will probably beat faster*, Box 7).

3.1.3. Doctor's immediate response prior to the interpreter's rendition. In two of the 24 EOs that reached the doctor, the latter provided an immediate response before the EO was rendered by the interpreter. This was the case when the doctor had notions of the patient's language and could recognize some key words, such as *okul* (school) in Turkish (Box 8)

3.2. Doctors' responses to the EOs and interpreter-rendered responses

Most of the doctor's responses were coded as Level 2 and fewer as Level 4, 3, 1 and 0. We did not code any responses as Level 5 and

Box 3.

Matched EO
P: patient, D: doctor, I: interpreter
53 P: حينم شسعنن ام اميد اهذان الا
If I always take it (medication), then I cannot sleep well.
54 I: Hij zegt als hij dat neemt hij voelt dat hij slaapt niet goed.
He says that if he takes it (medication) he feels that he does not sleep well.
55 D: Hij slaapt niet goed?
He doesn't sleep well?
56 I: ؟حينم شسعنت ام
Slaap je niet goed?
You don't sleep well?
57 P: [مومهفم ريغ].
(onverstaanbaar)
(inaudible)

Table 3
Shifts in patient-expressed empathic opportunities and the interpreters' actions that caused the shifts.

Patient's empathic opportunity	Interpreter-initiated action	Example
Omitted challenge	The patient's empathic opportunity is omitted by the interpreter and is not passed on to the doctor (non-rendition). The non-rendition of the patient's empathic opportunity might be replaced by a dyadic interaction between the interpreter and the patient or doctor.	Box 1 P: *Not entirely yet. Since I've stopped working it is not entirely alright.* I: *It is important. If he requests examination that is very expensive for you.* P: *Then we have to wait a little ()* D: *So she cannot tell whether her medical insurance now is alright?* I: *So you cannot tell whether your medical insurance now is alright?*
Reduced challenge	The interpreter omits core elements of the patient's empathic opportunity and places emphasis on peripheral aspects of it. The interpreter downplays the intensity of the patient's empathic opportunity and places emphasis on peripheral aspects of it.	Box 4 P: (. . .) *In short, they rolled down the staircase. Then his first problem with the leg appeared.* I: (. . .) *yes she was carrying him actually. And then they fell off the staircase ehm they actually rolled down the staircase.*
Increased challenge	The interpreter renders the patient's empathic opportunity and adds new pieces of information that affect meaning (content) and/or intensity.	Box 7 P: *No, I'm not shaking when I'm angry, but my heart does beat faster.* I: *I am shaking but when I am nervous my heart will probably beat faster.* Box 5 P: *What I also wanted to say is that now I started feeling a stabbing pain in my chest, it is as if needles are being inserted.* I: *In me heartache has appeared and sometimes I have the feeling that once in a while my heart stops at this moment*

6. We compared the responses as expressed by the doctor with the doctors' responses as rendered by the interpreter. We did not identify any changes in the level of empathy as expressed by the doctor and as rendered by the interpreter.

4. Discussion

To the best of our knowledge this is the first study that provides evidence of the doctors', patients' and professional interpreters' interactional processes in EC and on the interpreter's effect on EC. The findings of our study provide further evidence of EOs being susceptible to shifts while being rendered by the interpreter. In contrast to our previous study with simulated IMCs [22], we identified only three main shifts in meaning and intensity (omitted /reduced / increased challenge). We did not identify any *transformed* or *twisted* EOs, which in our previous study [22] came with changes in the content of the doctors' empathic responses. Considering that *transformed* or *twisted* EOs are associated with erroneous translations, it is not surprising that these are more likely to be found in student interpreters' renditions, as in our

Box 4.

Reduced EO
P: patient, D: doctor, I: interpreter, (.): short pause
178 P: Нет у него euh проблема первая появились когда его отца забирали, он euh был на руках моей средней дочери и тогда они ее в панике столкнули с лестницы она стояла не лестнице ну (.) и не зайти не выйти она не догадалась а я была ну мне и зайти да не -не было потому что там человек 20 солдатов было. И они их столкнули в панике (.) ну короче покатились. Тогда у него первая проблема было с ногами.
No the first time the problem appeared was when his father was arrested. He was in the arms of my middle daughter and then there was panic and they pushed her off the staircase . . . and we could not go in or out and she did not know what she had to do, I could not get in because there was a bunch of 20 soldiers. And so they pushed her and him out of panic. In short, they rolled down the staircase. Then his first problem with the leg appeared.
179 I: Euh neen 't is eigenlijk niet ... euh zijn vader werd opgepakt hij werd weggevoerd van thuis uit, en toen die soldaten binnenkwamen dus er waren ja een man of 20 euh 't was nogal euh ja er was nogal paniek in het huis en mijn tweede dochter stond euh aan de trap en euh ja ze wist niet goed wat ze moest doen binnengaan of buitengaan, en z'is dan euh ze –ja ze droeg hem eigenlijk. En ze zijn dan gevallen van de trap euh ze zijn gerold eigenlijk van de trap.
Ehm no actually not . . . ehm his father was arrested he was taken away from home and when the soldiers came in so there were yeah approximately 20 there was ehm yeah there was panic in the house and my second daughter was standing at the staircase and ehm yeah she did not quite know what she had to do to go inside or outside, and she's then ehm –yes she was carrying him actually. And then they fell off the staircase ehm they actually rolled down the staircase.
180 D: Ja, de zus en hem.
Yes, the sister and him.
181 I: сестра и он у нее в руках был.
the sister and he was in her arms
182 P: mhm
Hmm
183 I: Ja
Yes
184 D: Ja? En hoe oud was –was hij toen?
Yes? And how old was -was he then?

Box 5.

Increased EO
127 P: Да, потому, что это, сейчас я хотела сказать, что начала чуть чуть покаловать сердце,
What I also wanted to say is that now I started feeling a stabbing pain in my chest, it is as if needles are being inserted.
128 I: //mevrouw zegt
// the lady is saying
129 D: // ik zal een keer e:
// ik will eh:
130 I: bij mij is er hartpijn opgetreden en soms heb ik het gevoel dat af en toe mijn hart stopt op dit moment
In me heartache has appeared and sometimes I have the feeling that once in a while my heart stops at this moment
131 D: ja, kijk e:: wij gaan, ja ik ga moeten kijken. Het probleem is dat ik vast zit hé? Dus e: ik "wil" haar niet onderzoeken om haar niet onnodige kosten te () ook als je een cardiografie e: kost een paar duizenden Belgische francs. Ik kan dat onmogelijk aandoen als zij totaal niet in orde is met de ziekteverzekering. Dus ik zal EERST een keer contact opnemen met de Sociale Dienst, ok?
Yes, look. eh: we'll, I'll have to check. The problem is that my hands are tied yeah? So ehm I do not want to examine her not to (cause) her unnecessary costs () also if you (do) a cardiography eh it costs a couple of thousands of Belgian francs. I cannot possibly do that if she is not entirely okay with the insurance. So FIRST I will get in touch with the Social Services department, okay?
132 I: То есть сейчас он не может не какие осмотры вам делать, потому что это (xxx)
So he cannot do any examinations now because that is too expensive. A cardiology costs for instance a few thousands of Belgian francs, which you'd have to pay yourself. Therefore he will get in touch with the Social Services department about it.

previous study [22], than in certified professional interpreters' renditions. This finding is in line with studies that suggest a lower rate of errors in professional interpreters' renditions when compared to untrained and/or non-certified interpreters [28,29].

The number of cases where there was a match in the EOs as expressed by the patient and as rendered by the interpreter was significantly lower (n = 2/44) than in [22] (n = 44/70). This might be due to the fact that training in the interpreting process allows for trained interpreters to focus more on the processing of meaning [30] than on individual words, a practice that is likely to be noticed in interpreting students' deliveries (Hartley et al) in [31]. However, training in the interpreting process still does not guarantee error-free

Box 6.

Increased EO
123 P: // Нет // я сердце () Прсото часто была у меня боль в голове, и сейчас это обследуют.
Not my heart. I simply had often headaches and that is now being looked into.
124 D: // Neen //
// No //
125 I: a:ah met mijn hart is alles perfect in orde maar ik heb wel last van regelmatige hoofdpijn
aah: with my heart everything perfectly okay but I do suffer from regular headaches =
126 D: = maar dat komt subiet. Dat komt subiet. Ja ja
= but that's for later, that's for later. Yes yes
127 I: Сейчас
In a moment (we'll talk about it)
128 D: Heeft ze ooit problemen gehad van maagzweren of maagbloedingen
Has she ever had any problems with stomach ulcers or stomach bleeding

Box 7.

Reduced EO
P: patient, I: interpreter, (.) : short pause
114 P: Yok, titreme yok da (.) kalp atışı (.) Hızlanıyor o durumda.Ama titreme yok.
No, I'm not shaking when I'm angry, but my heart does beat faster.
115 I: ik heb beven maar als ik nerveus ben zal mijn hart waarschijnlijk sneller kloppen
I am shaking but when I am nervous my heart will probably beat faster.

Box 8.

Immediately responded EO (before the interpreter's rendition)
285 P: Şimdi tekrar okula dönüyorum
Now I am going back to school
286 D: Aah, da's goed!
Ah, that's good!

renditions. The interpreter's focus on the processing of meaning (allowing for more flexibility in renditions) when combined with the interpreter's inability to correctly assess the communicative function of patients' statements of emotion might have significant practice implications possibly leading to the patients' 'lifeworld' being muted. Interpreter renditions of this kind are more likely to be eliminated by longer periods of training [27], preferably by means of interprofessional education [32], ideally complemented by post-consultation talk with the doctor in the workplace.

In this study and our previous work [22], the interpreters adapted the doctors' empathic responses. In this study we found that they adapted the EOs too. However, the shifts we identified in EOs were not accompanied by a change in the level of empathy, unlike in our previous study [20]. This seems to provide further evidence of the co-construction of EC being a complex interactional phenomenon that is not subject only to the interpreter's close renditions (renditions that are very close, if not identical, in form and meaning, to the original utterances) [33]. Indeed, there is an array of interactional dynamics, (e.g. the interpreter's ability to coordinate talk [34]), that when combined successfully might be able to sustain EC. Renditions that are not close and might be adapted by the interpreter do not necessarily entail reduced EC, as our findings have shown. It could be argued that close renditions alone are not a guarantee for EC to be sustained. It could also be argued that the same finding seems to provide further evidence of the professional interpreters' orientation to obtaining and rendering information formulated in the 'voice of medicine' [18] and compromising the patient's account of the 'lifeworld' [35]. This is in line with previous studies that have shown trained interpreters keeping the consultation in the biomedical domain [19].

Equally important is that unlike in our previous study [22], we did not code any statements of *emotion*. This might be due to the fact that migrant patients' expression of emotions seems to be subject to factors, such as culture and assimilation to a new culture where patients express their emotions [17]. The lack of direct access to the doctor does not encourage the patient's self-expression [18,19]. The mere presence of a third party in the consultation might inhibit patients from expressing emotions. Yet, there is evidence that patients are more likely to discuss emotions in the presence of a professional interpreter than a family member acting as an interpreter [36]. The absence of expressed emotions is not unique to IMCs. Monolingual consultations might be marked by the absence of emotional utterances, too [37,38].

The high number of EOs that were not passed on to the doctor by the interpreter (n = 14 challenge, 6 progress / 44 EOs) is in contrast with our previous study [22], where all EOs were passed on by the student interpreters. It can be argued that the student interpreters were vigilant for complete renditions, as completeness in interpretation is –next to accuracy- a key assessment criterion in interpreter education. In certification procedures due attention is paid to the interpreter's ability to process the meaning of incoming information. However, our study findings suggest that professional interpreters might not always be able to assess EOs correctly, resulting in the latter at times being omitted and not passed on to the doctor. Our findings seem to lend support to an earlier assumption, namely that interpreters do not have accurate assessment about others' emotions [39].

Contrary to our previous study [22], the doctors performed actions (e.g. cutting the interpreter short in order to introduce a new topic) and at times even responded to the EOs before these were translated. Doctors' own time constraints and at times their inability to allow for interpretation [40,41] resulted in EOs being left untranslated. This finding confirms that many doctors have not received any training on how to hold IMCs [42]. It also highlights the need for interprofessional education for medical and interpreting students on interpreter-mediated clinical communication

where both groups of students learn about, from and with each other and become acquainted with the interactional practices and communicative goals attached to each other's profession [32].

Lastly, although the interpreters adapted the EOs both in terms of content and intensity, they did not act as overt agents of empathy as they did in another recent study [20] where they included self-initiated statements of encouragement ("don't worry") or supportive phrases ("I know it can be overwhelming"). This is probably because the interpreters in our study were not staff of the hospital, as they were elsewhere [20], but were hired on a freelance basis. Their professional status and job description, along with their code of conduct [43], in which interpreters are portrayed more as linguistic conduits than as fully-fledged participants in interaction, might have shaped their behaviour.

4.1. Limitations

Although the expressions of six basic emotions (happiness, sadness, anger, fear, disgust, and surprise) are universal [44], members of the same national or ethnic group may be more able to identify these facially-expressed emotions [45]. The ECCS did not allow for coding non-verbally expressed emotions. Future research should explore the process of the co-construction of empathy in authentic IMCs by incorporating non-verbal cues and studying them through the lens of multimodal interaction analysis. It would be worthwhile to triangulate the findings of interaction analysis with video-stimulated recall interviews and investigate whether and how doctors and patients combine the interpreters' verbal renditions with the patients' non-verbal expression of emotions in their attempt to co-construct EC.

The small sample of participants does not allow our findings to account for interpreter-mediated clinical communication as a whole, nor for healthcare professionals' and interpreters' professional performance. The analysis of comparable sets of data is required in order to test the representativeness of our findings.

We used well-defined 'a priori' categories that can be typically associated with quantitative methods. Due to disproportionate distributions between the categories kappa was not reliable. Codes and shifts in meaning and intensity were discussed among coders until consensus was reached. This is a limitation that future studies should consider.

We coded only translated transcripts. Future studies should try to include coding in the original language.

The presence of the camera might have affected participants' behaviour.

4.2. Conclusion

EC is a process that involves both receptive and expressive capacities [46]. In IMCs EC might be compromised. Doctors and interpreters require skills to detect patient cues, assess them correctly, render them completely and in an appropriate manner (interpreters) and display communicative behaviours that take into account the intricacies of interpreter-mediated clinical communication and facilitate each other's communicative goals. This means that interpreters should pay due attention to the implications arising from their renditions and their effect on the co-construction of EC. This should be done by taking into account the communicative goals that are attached both to the EOs (e.g. seeking acknowledgment when expressing a statement of challenge) and the doctors' empathic responses (e.g. acknowledging the EO and seeking further clarification). Interpreters should also attend to the complete and accurate delivery of the EOs and doctor' empathic responses, in terms of meaning and intensity, as well as to the implications arising from changes in the order of information, intonation or paraphrasing and their effect on EC. The successful combination of accurate renditions that serve communicative functions as intended by the doctor and the patient, along with the accurate coordination of the interaction should be emphasized in interpreter education. Doctors should attend to the interactional complexity of IMCs (e.g. interlingual triadic interaction, power asymmetries, time lag between the doctor's / patient's utterances and the interpreter's renditions) and to the pitfalls that might arise from inferencing, understanding and rendering one's utterances into another language by a third participant in interaction (interpreter). This can be achieved by providing interprofessional education for medical and interpreting students so that both groups can collaborate in a complementary manner as part of an interprofessional team.

Although simulations may serve well as a means to test methodologies and might open up new research trajectories, research findings reporting on them should be treated with caution as they might significantly deviate from professional practice. Curricula on interprofessional education in interpreter-mediated clinical communication should be informed by findings reporting on the communicative practices and interactional behaviour of professionals.

4.3. Practice implications

The co-construction of EC in IMCs requires skills that go beyond the principles of completeness and accuracy in interpretation. Doctors should *together* with interpreters acquire skills that allow them to explore and attend to the patients' EOs. Professional interpreters should become part of the extended healthcare team. Collaborative practice between doctors and interpreters is anticipated to be conducive to effective co-construction of EC in IMCs.

4.4. Points of attention for professional practice

Doctors and interpreters can work in a collaborative circle of trust in which together they encourage patient participation and investigate patients' covert emotions, concerns and challenges. This calls for interprofessional communication in the workplace where doctors and interpreters work as a team. Codes of conduct in favour of an invisible interpreter should be in keeping with the actual professional practice.

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Ethical approval

The study was approved by the hospital ethics committee.

Contributors

DK conceived of the study. DK and PP analyzed the data. CB calibrated the coding of the data. DK wrote the first draft of the manuscript. All authors contributed to interpretation of the data, edited the manuscript, and approved of the final manuscript. DK and PP had final responsibility for the decision to submit for publication.

Appendix A. Supplementary data

Supplementary material related to this article can be found, in the online version, at doi:https://doi.org/10.1016/j.pec.2019.09.027.

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