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Chapter 5

Performed Interpreters' Roles Related to Patients' and GPs' Control, Trust and Satisfaction

This Chapter is submitted for publication as:

Zendedel, R., Schouten, B. C. , van Weert, J. C., & van den Putte, B., (submitted). Informal Interpreting in General Practice: Are Interpreters' Roles Related to Perceived Control, Trust, and Satisfaction?

Abstract

Objective: The aim of this observational study was twofold. First, we examined how often and which roles informal interpreters performed during consultations between Turkish-Dutch migrant patients and general practitioners (GPs). Second, relations between these roles and patients' and GPs' perceived control, trust in informal interpreters and satisfaction with the consultation were assessed.

Methods: A coding instrument was developed to quantitatively code informal interpreters' roles from transcripts of 84 audio-recorded interpreter-mediated consultations in general practice. Patients' and GPs' perceived control, trust and satisfaction were assessed in a post consultation questionnaire.

Results: Informal interpreters most often performed the conduit role (almost 25% of all coded utterances), and also frequently acted as replacers and excluders of patients and GPs by asking and answering questions on their own behalf, and by ignoring and omitting patients' and GPs' utterances. The role of information source was negatively related to patients' trust and the role of GP excluder was negatively related to patients' perceived control.

Conclusion: Patients and GPs are possibly insufficiently aware of the performed roles of informal interpreters, as these were barely related to patients' and GPs' perceived trust, control and satisfaction.

Practice Implications: Patients and GPs should be educated about the possible negative consequences of informal interpreting.

Introduction

Informal interpreters are frequently used in medical settings all over the world in order to bridge the language gap between health care providers and migrant patients (Karliner, Jacobs, Chen, & Mutha, 2007). In Dutch general practice (GP), informal interpreters, who are usually family and friends of the patients, are present in circa 60% of GP consultations with first generation migrant patients (Triemstra, Veenvliet, Zuizewind, Kessel, & Bos, 2016). In contrast to their professional counterparts, who are mainly expected to perform the role of a conduit, that is, literally translate information from one language into another (Dysart-Gale, 2005), informal interpreters also perform other roles within the medical interaction.

Previous qualitative studies have shown that informal interpreters often are reported to act as patients' advocates (Green, Free, Bhavnani, & Newman, 2005), counselors (Edwards, Temple, & Alexander, 2005) and cultural brokers (Leanza, 2005) (see Table 1 for definitions of the roles). They also provide emotional support to the patients (Ho, 2008), and act as an extra information source for health care providers (Rosenberg, Leanza, & Seller, 2007). In contrast to these facilitating roles, informal interpreters are also shown to act as replacers and excluders of both the patients (Hasselkus, 1992; Meyer, Pawlack, & Kliche, 2010) and health care providers (Hatton & Webb, 1993). The mentioned roles are usually investigated via qualitative interviews with the three interlocutors (i.e., the health care provider, the patient and the informal interpreter), discussing expected and perceived roles of the informal interpreters (e.g., Hadziabdic, Heikkilä, Albin, & Hjelm, 2009; Hilder et al., 2016; Rosenberg, Seller, & Leanza, 2008; Zendedel, Schouten, van Weert, & van den Putte, 2016a).

Previous observational studies have also investigated the communicative behavior of informal interpreters, for instance by coding omissions, additions and ignoring of the patients' and health care providers' utterances (Aranguri, Davidson, & Ramirez, 2006; Leanza, Boivin, & Rosenberg, 2010). However, to our knowledge, to date there are no studies which have observationally investigated the specific roles previously mentioned in self-report literature, that is, advocate, information source, counselor, emotional supporter, cultural broker, conduit, system agent and patients' and GPs' excluder and replacer. To enlarge our understanding about whether and to what extent informal interpreters actually perform the roles which are expected from them by patients and health care providers (Hilder et al., 2016; Zendedel et al., 2016a), we conducted an observational study to measure performed roles of informal interpreters.

Moreover, as previous research describing the different roles of interpreters is mainly qualitative (Brisset, Leanza, & Laforest, 2013), there are no studies which have related the different performed interpreters' roles to three potential communication outcomes, that is, perceived control of the consultation, trust in the interpreter and satisfaction of patients and GPs with the consultation. These outcome measures are shown to be important factors for interpreted medical communication (Brisset et al., 2013) and are related to patients' improved health outcomes (Street, Makoul, Arora, & Epstein, 2009). Linking the different roles to these communication outcomes will provide us with valuable insights about the possible positive and negative effects of the different roles of informal interpreters on communication outcomes and could be used in designing evidence-based interventions to improve interpreter-mediated interactions.

Therefore, we have conducted a mixed-methods study in which we have coded for different interpreters' roles based on audio-recordings of GP consultations with Turkish migrant patients and their informal interpreters. The coded roles were subsequently related to GPs' and patients' perceived control of the consultation, trust in the interpreter and satisfaction with the consultation, which were assessed in a post-consultation survey. Hence, the following RQs will be answered in this paper.

RQ1: Which roles do informal interpreters perform during the GP consultation?

RQ2: Are the performed roles of the informal interpreters related to patients' and GPs' perceived control of the consultation, trust in the informal interpreter and satisfaction with the consultation?

Method

Participants and procedure

This study is part of a larger research project on informal interpreting in general practice. Results of previous studies have been reported elsewhere (Zendedel et al., 2016a, 2016b; Zendedel et al., submitted). In the present study we describe the observational findings and their relation with the outcome measures.

Twelve Turkish-Dutch research assistants have collected the data in six GP practices from November 2015 to May 2016. The research assistants have been approaching all patients of Turkish origin who visited the GP in the company of another person in the waiting room of the GP practice. Inclusion criteria were that the patients should be of

Turkish origin, above 18 years and visit the GP with an informal interpreter who is a family member or an acquaintance of the patient. Of the 237 approached patient-interpreter pairs, 126 pairs agreed to participate in the study, thus a response rate of 53% was obtained, which is in line with previous findings (Ahlmark et al., 2015; Schinkel, Schouten, & van Weert, 2013). Reasons for not wanting to participate were privacy issues (n = 55), too little time (n = 26), no interest in the study (n = 21) or unknown reason (n = 9). We had to exclude 42 pairs from analysis due to different reasons, such as failed audio recordings or incomplete surveys (see Figure 1 for the flow chart of the sampling procedure). The final sample consisted of 84 patient-informal interpreter pairs who visited 26 different GPs (see Table 2 for description of the sample characteristics). All participants (patients, informal interpreters, and GPs) have given their written informed consent to the study. The study has been approved by the Ethical Commission of our University (number 2015-CW-71).

Figure 1. *Flow Chart of the Sampling Procedure*

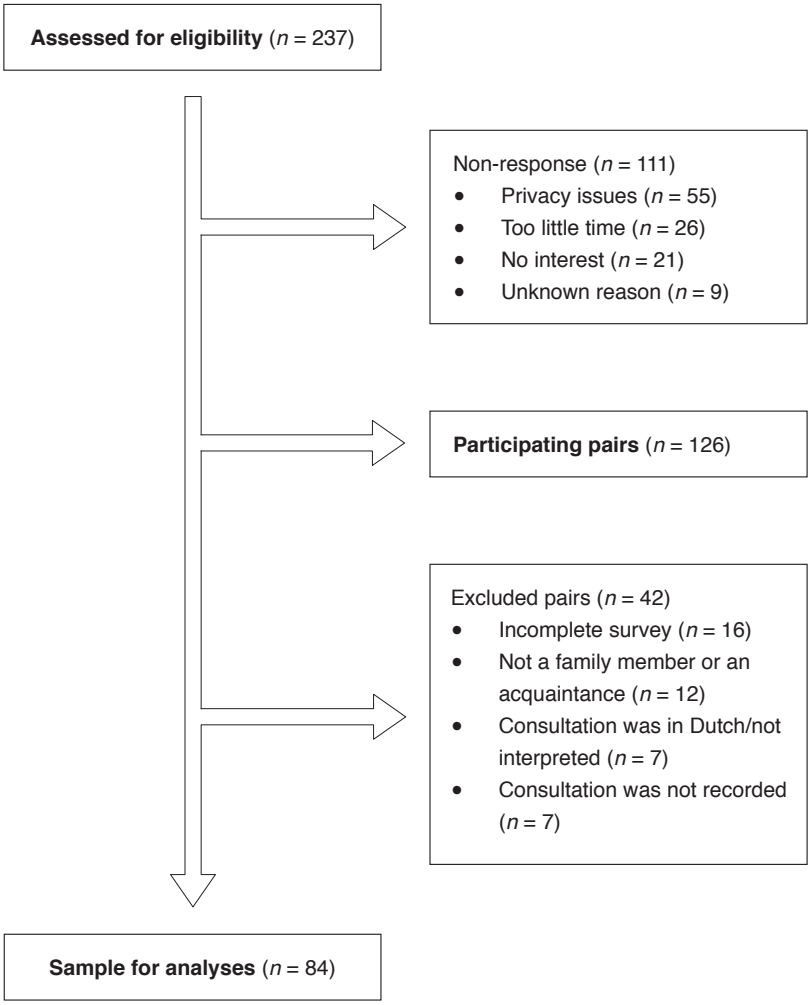

Table 1. *Sample Characteristics*

Sample Characteristics	Patients (N = 84)	Interpreters (N = 84)	GPs (N = 26)
Gender			
Men	19 (21%)	37 (44%)	7 (27%)
Women	65 (79%)	47 (56%)	19 (73%)
Age (SD)	59.53 (13.49)	39.57 (12.53)	47.54 (11.27)
Educational level	25 (30%)	0 (0%)	0 (0%)
No education	46 (55%)	13 (16%)	0 (0%)
Primary school	12 (14%)	12 (14%)	0 (0%)
High school	1 (1%)	44 (52%)	0 (0%)
Intermediate vocational education			
Higher professional education	0 (0%)	14 (17%)	0 (0%)
Academic education	0 (0%)	1 (1%)	26 (100%)
Dutch language proficiency	48 (57%)	0 (0%)	
Poor	31 (37%)	9 (11%)	
Moderate	3 (4%)	23 (27%)	
Reasonable	2 (2%)	32 (38%)	
Good	0 (0%)	20 (24%)	
Very good			
Residence time in the Netherlands			
Born in the Netherlands	0%	29 (35%)	
Mean residence time in years *(SD)*	31.96 (11.67)	31.65 (8.55)	
Interpreter's relation to the patient			
Daughter	32 (38%)		
Son	15 (18%)		
Spouse	24 (29%)		
Grandchild	4 (5%)		
Other family member	4 (5%)		
Friend of the patient	5 (6%)		

Demographic characteristics of all participants (i.e., patients, GPs and informal interpreters) were assessed before the start of the consultation. The consultation itself was recorded on audio. The research assistants handed over the recorder to the GP just before the start of the consultation and were not present in the consultation room. The GPs answered the post-consultation survey in their office after the patient left. The patients and informal interpreters answered the post-consultation survey in the waiting room of the GP practice. The informal interpreters filled in the paper and pencil questionnaires themselves in either Turkish or Dutch, while the patients' questionnaire was delivered orally in Turkish by the research assistants, as most of the patients were illiterate.

Survey measurements

Separate post-consultation surveys were constructed for patients and GPs to measure their perceived control of the consultation, trust in the informal interpreter and satisfaction with the consultation. The patient survey was translated into Turkish by a professional translation service and double-checked by two Turkish-Dutch research assistants. All questionnaires have been pilot tested among patients and GPs during a pilot-testing week in a GP practice to ensure that all items were understood by the respondents. Based on this pilot test, we have reformulated a few questions of the patients' questionnaire to make them easier to understand. The pretest data were not included in the final dataset.

Patients' and GPs' perceived control was measured with three items on a five point scale, that is: "To what extent did the person who came with you to interpret, facilitate or hinder 1) the communication, 2) reaching your goal, 3) relationship building with your doctor? (the patients' version of the questionnaire). Answers had to be given on a scale ranging from (1) *totally hindered* to (5) *totally facilitated,* which all loaded on one factor that proved to be reliable for both patients' perceived control (EV = 2.02; R^2 = .67; α = .75) and GPs' perceived control (EV = 1.99; R^2 = .66; α = .73). Thus, we have created scales of patients' (M = 4.53, SD = .75) and GPs' perceived control (M = 3.89, SD = .63) by calculating the mean scores.

Patients' and GPs' trust in the interpreter was assessed with four items on a four point scale, ranging from (1) *totally disagree* to (4) *totally agree*, each measuring another dimension of trust, that is, competence, fidelity, honesty and global trust (based on Hall et al., 2001). Competence was assessed with the following statement: "I trust that the interpreter has provided a correct translation and did not make translation mistakes". Fidelity was assessed with: "I trust that the interpreter acted in my best interests". Honesty with: "I trust that the interpreter was honest and did not disguise information"

and global trust with: "I completely trust the interpreter". Based on factor analysis, the four dimensions were split into an affective and cognitive component. Fidelity, honesty and global trust all loaded on one factor and proved to be reliable for both patients' trust (EV = 1.93; R^2 = .64; α = .64; M = 3.92, SD = .22) and GPs' trust (EV = 2.14; R^2 = .71; α = .75; M = 3.08, SD = .78), forming the affective component of trust. The competence dimension did not form a scale with the items of the affective dimension and was analyzed as a separate item, forming the cognitive component of patients' (M = 3.60, SD = .81) and GPs' trust (M = 3.02, SD = .98).

Patients' (M = 3.57, SD = .62) and GPs' satisfaction (M = 3.09, SD = .74) was measured with a single item on a four point scale (1) *totally not satisfied* to (4) *totally satisfied*, in the following way: "To what extent are you satisfied with the consultation?".

Coding procedure of observational data

All audio-taped consultations were transcribed verbatim by the first author. Turkish-Dutch research assistants have translated the Turkish parts of the consultations in Dutch; translations were double-checked by other Turkish-Dutch research assistants and a few different visions on the translation were solved by discussion. A first version of the coding-manual was developed based on the previous literature (Brisset et al., 2013; Schouten & Schinkel, 2014). In order to probe the coding manual, the first author (RZ) and the second author (BS) have individually coded several randomly selected consultations and discussed and adapted the manual until the final version. All interpreters' utterances were coded, which fitted in one of the following roles: conduit, advocate, information source, emotional supporter, cultural broker, counselor, system agent, patient replacer, GP replacer, patient excluder, GP excluder (see Table 1 for operationalizations of the roles).

We define an utterance as the smallest discernable segment of speech that conveys only one thought or relates to one item of interest (e.g., a question, an answer, a request). An utterance may vary in length from a single word (e.g., yes or no) to a complete sentence (Roter, 1991). As we were interested in triadic communication, we excluded the so-called side-talk from coding, that is, when the interpreter exchanged more than two turns with either the patient or the provider and thus turned the triadic communication into a dyadic one (Meeuwesen, Twilt, ten Thije, & Harmsen, 2010). We report the frequencies and duration of the side-talk in the results section.

Table 2. *Definitions and Operationalizations of Informal Interpreters' Roles*

Role	Definition	Operationalization (*n*) = total number of utterances per operationalization
1. Conduit	Interpreter translates without adding or omitting information	a. Literally translates what is being said, does not add or omit anything (*n* = 45) b. Provides a paraphrasing of what is being said, without adding or omitting information (*n* = 786) c. Provides an incorrect translation of what is being said (*n* = 108)
2. Advocate	Interpreter does whatever is needed to reach the patient's goal	a. Exaggerates the patients' complaints (*n* = 102) b. Disagrees with the GP (*n* = 30) c. Requests the GP to do certain things (e.g., write a prescription, examine the patient) (*n* = 22) d. Adds affective information to the patient's utterance (*n* = 20)
3. Information Source	Interpreter provides additional information about the patient's health to the doctor	a. Within translating the patient's utterance to the GP (*n* = 102) b. Within a reaction to the GP (*n* = 85) c. Incorporated in the answer to the GP's question (*n* = 81) d. Within an initiation to the GP (*n* = 39)
4. Emotional Supporter	Interpreter provides emotional support to the patient	a. By reacting to the patient with reassuring words (*n* = 18) b. By initiating a turn to the patient with reassuring words (*n* = 7) c. By adding reassuring words to the GP's utterance within a translation to the patient (*n* = 5)
5. Cultural Broker	Interpreters acts like a bridge between the patient's and the GP's world	a. Provides information to the GP about the Turkish culture within an initiation or reaction (*n* = 0) b. Provides information to the patient about the medical system within an initiation or reaction (*n* = 9) c. Adapts GP's utterance to make it understandable for the patient within a translation (*n* = 139) d. Adapts patient's utterance to make it understandable for the GP within a translation (*n* = 180)

Role	Definition	Operationalization (*n*) = total number of utterances per operationalization
6. Counselor	Interpreter provides medical advice to the patient	a. Within a reaction to the patient (*n* = 20) b. Within an initiation to the patient (*n* = 14)
7. System Agent	Interpreter acts on behalf of the system by aligning with the GP and excluding the patient's lifeworld from the interaction	a. Rushing the patient within an initiation (*n* = 5) b. Downplaying the patients' complaints within a translation of a patient's utterance (*n* = 38) c. Omitting affective cues of the patient within a translation of a patient's utterance (*n* = 11) d. Agreeing with the GP within a reaction (*n* = 12) e. Disagreeing with the patient within a reaction (*n* = 30)
8. Patient Replacer	Interpreter acts like the main interlocutor by replacing the patient	a. Answers the GP's questions within a reaction towards the GP (*n* = 435) b. Asks questions to the GP within initiations and reactions (*n* = 197)
9. GP Replacer	Interpreter takes the place of the GP	a. Requests the patients to do certain (medical) things within initiations and reactions (*n* = 24) b. Asks the patient (medical) questions within initiations and reactions (*n* = 210) c. Answers the patients' (medical) questions within reactions (*n* = 113) d. Provides advice to the GP within initiations and reactions (*n* = 8) e. Provides the patient with extra (medical) information within reactions and translations (*n* = 120)
10. Patient Excluder	Interpreter excludes the patient from the consultation	a. Shutting up the patient: within initiations and reactions (*n* = 17) b. Omitting a patient's utterance within translations (*n* = 119) c. Ignoring a patient's entire speech turn (*n* = 315)
11. GP Excluder	Interpreter excludes the GP from the consultation	a. Shutting up the GP within initiations and reactions (*n* = 0) b. Omitting GP's utterances within translations (*n* = 235) c. Ignoring GP's entire speech turn (*n* = 191)

The operationalization of interpreters' roles was based on four mutually exclusive main categories, that is: translations, reactions, ignoring and initiations. Translations referred to all GPs' and patients' utterances, which were translated by informal interpreters, either literally, paraphrased or incorrect. Reactions were coded when the interpreters' utterance was a reaction towards the patient or the GP. Ignoring was coded when the patient's or GP's entire speech-turn was ignored. Initiations were coded in utterances where interpreters initiated a new topic towards the GP or the patient. We did not code an initiation if it was immediately preceded by ignoring of the patient's or the GP's speech-turn.

Each coded role consisted of utterances based on a main code (e.g., initiations) and a subcode (e.g., omitting, adding, exaggerating; see Table 1 for exact operationalizations of each role). For instance, the role of conduit was based on the main code 'translations' and contained utterances of the GP and the patient which were literally translated (subcode 'literal'), paraphrased without adding or omitting any information (subcode 'paraphrasing') or incorrectly translated (subcode 'incorrect') by the informal interpreter. The role of patient replacer was based on the main codes 'initiations' and 'reactions' and contained 1) questions of informal interpreters to the GP (subcode 'asking questions GP') that were either a reaction to the GP (i.e., main code 'reactions') or an initiation of a new topic (i.e., main code 'initiations'), 2) or answers to the GPs' question (subcode 'answer questions GP'; main code 'reactions'). Thus, the coded roles were based on a unique combination of a main code, (i.e., translation, initiation, reaction, or ignoring) and a subcode (e.g., literal, paraphrasing, omission, addition, request, or answer to the question) (see Table 1 for all subcodes).

RZ coded all 84 consultations based on the finalized manual. BS coded ten randomly selected consultations and inter-coder reliability was assessed for all categories > 2% (Deveugele, Derese, & de Maeseneer, 2002). Intercoder-reliability was good (M_{ICC} =.89; SD = .10; range .61-.97)

Analyses

In order to answer RQ1, interpreters' roles were calculated based on the sum of the frequencies of the coded utterances per role (see Table 3). In order to answer RQ2, we have conducted regression analyses with interpreters' performed roles (i.e., frequency utterances per role) as predictors of patients' and GPs' perceived control, trust and satisfaction. In order to reduce the number of predictors for regression analyses, we selected the roles that at least marginally correlated with the outcome measures ($p < 0.10$).

We have controlled the models for all demographic variables that at least marginally correlated with the outcome measures, ($p < 0.10$) (see Table 4a and 4b for all regression models).

Results

Sample and consultation characteristics

Interpreters were most often the adult children (56%) or spouse (29%) of the patients. The majority of the interpreters (62%) indicated to have a (very) good Dutch language proficiency. The patients were all first generation Turkish-Dutch female patients, with a mean age of 60 years (*SD* = 13.49) The majority of the patients (57%) indicated to have a poor language proficiency in Dutch (see Table 2 for all sample characteristics).

Mean duration of all consultations was 14 min. and 08 sec. (*SD* = 5.53, range 3.2-31.75 min.). We coded a total of 3892 utterances, excluding the side-talk between the interpreters with either the GP or the patient. The informal interpreters translated 48% of patients' and GPs' utterances. 28% Of the utterances was a direct reaction of the informal interpreter towards the GP or the patient. 13% Of the utterances of the GPs and patients was ignored by the informal interpreter and 11% of the utterances was an initiation by the informal interpreter. Side-talk occurred on average four times per consultation (*M* = 3.9; *SD* = 2.66) and lasted on average 3 minutes (*M* = 3.28; *SD* = 3.16).

Which roles do the informal interpreters perform?

The conduit role was the most frequently performed role by the informal interpreters and covered 24% of all coded utterances. The role of patient replacer covered 16% of all coded utterances, followed by the role of GP replacer (12%), patient excluder (also 12%) and GP excluder (11%). The roles of the emotional supporter and of counselor were the least frequently performed roles and covered less than 1% of all coded utterances (see Table 3 for all frequencies).

Relation between performed roles and patients' and GPs' control, trust, and satisfaction

We found a few significant relationships between the interpreters' performed roles and patients' perceived control, trust and satisfaction. First, patients' perceived control was significantly predicted by the role of the GP excluder (F (2,81) = 6.26, p = .003, R^2 = .13, b^*= -.28, p = .008).

Thus, the more often the informal interpreters performed the role of the GP excluder, the less control the patients perceived. Overall, the patients perceived more control with female interpreters (b^*= .27, p = .013). Second, the role of information source was a significant negative predictor of patients' cognitive (F (2,81) = 3.85, R^2 = .09, p = .025, b^*= -.24, p = .031) and of patients' affective trust (F (3,80) = 4.11, R^2 = .13, p = .009; b^* = -.22, p = .036). Thus, the more the informal interpreters performed the information source role, the less trust in the interpreter the patients had. Patients were more satisfied with female interpreters (b^* = -.22, p = .037). Overall, higher educated patients were more satisfied with the consultation (b^* = .22, p = .043) (see Table 4a for all results).

Table 3. *Frequencies and Proportions of Utterances per Role*

	Frequency utterances per role	**Proportion utterances per role**	**Frequency utterances per consultation M *(SD)***
Conduit	939	24.13	11.18 (9.31)
Patient Replacer	632	16.24	7.52 (4.72)
GP Replacer	475	12.20	5.72 (4.58)
Patient Excluder	451	11.59	5.37 (5.23)
GP Excluder	426	10.95	5.07 (5.42)
Cultural Broker	328	8.43	3.90 (4.38)
Information Source	307	7.89	3.65 (3.10)
Advocate	174	4.47	2.09 (1.96)
System Agent	96	2.47	1.14 (1.62)
Counselor	34	.87	.40 (.75)
Emotional Supporter	30	.77	.36 (.71)
Total	3892	100%	

Table 4a: *Regression Models with Interpreters' Roles and Background Characteristics as Predictors of Patients' Perceived Control, Trust, and Satisfaction*

	Control Patient	**Trust Patient Cognitive**	**Trust Patient Affective**	**Satisfaction Patient**
	*b**	*b**	*b**	*b**
Interpreters' roles				
Advocate				-.17
Information Source		-.24 *	-.22 *	
System agent				.02
Patient Excluder				-.08
GP Excluder	-.28*			-.14
Background characteristics				
Interpreter's Gender	27 *	.21†		.22 *
Patients' Gender				-.13
Education Patient				.22*
Education Interpreter			-.20 †	
Language proficiency patient			-.20 †	-.16
R^2	.13**	.09*	.13**	.15**

Note. Variables corresponding with empty cells have not been included in the regression model. Interpreters gender: 0 = male; 1 = female. † $p < 0.10$ *$p < 0.05$; ** $p < 0.01$.

We did not find any relationships between the performed roles of informal interpreters and GPs' perceived control, trust and satisfaction. Only marginally significant positive correlations were found between the emotional supporter role and GPs' cognitive trust ($b^* = .26$, $p = .059$) and between the cultural broker role and GPs' control ($b^* = .22$, $p = .061$).

Overall, female GPs had more affective trust in the interpreter ($b^* = .29$, $p = .008$). Also, GPs had more cognitive trust in female interpreters, that is, they trusted the competence of female interpreters more ($b^* = .25$, $p = .025$) (see Table 4b for all results).

Table 4b. *Regression Models with Interpreters' Roles and Background Characteristics as Predictors of GPs' Perceived Control, Trust, and Satisfaction*

	Control GP	**Trust GP Cognitive**	**Trust GP Affective**	**Satisfaction GP**
	*b**	*b**	*b**	*b**
Interpreters roles				
Emotional Supporter		.26 †		
Information Source	.18		-.22 *	
Cultural Broker	.22 †	.03		.10
Patient Replacer	.06			
GP Replacer	-.02	-.027		
Background characteristics				
Interpreter's Gender	.19 †	.25 *		
GP's Gender			.29**	
Education Interpreter		.14	.20 †	
Language proficiency patient		-.17		
Age patient	.07	-.20		
Years living in the Netherlands patient	.10	.18		.05
R^2	.20*	.28**	.11**	.01

Note. Variables corresponding with empty cells have not been included in the regression model. Interpreters' gender: 0 = male; 1 = female. † $p < 0.10$ *$p < 0.05$** $p < 0.01$.

Discussion

From the eleven investigated roles (i.e., conduit, system agent, advocate, cultural broker, information source, emotional supporter, counselor, patient excluder, GP excluder, patient replacer, and GP replacer), informal interpreters most often performed the role of the conduit, which is not surprising, as conduit is defined to be the primary role of interpreters (Cox, 2015; Dysart-Gale, 2005). However, our findings indicate that apart from the conduit role, which covered around a quarter of all coded utterances, informal interpreters twice as often, that is in 50% of all coded utterances, acted as replacers and excluders of both patients and GPs. The performance of these dominant and excluding roles could explain

previous qualitative findings in which the GPs reported a loss of control because of the dominant behavior of informal interpreters (Fatahi et al., 2008; Rosenberg et al., 2007). In the present study, the role of GP excluder was negatively related to patients' perceived control, indicating that the patients perceive a loss of control too when the GP is excluded from the conversation. Thus, our study corroborates previous findings by showing that informal interpreters indeed perform dominant and excluding roles (Leanza et al., 2010).

In contrast to previous literature, where informal interpreters were often perceived as advocates of the patients (Green et al., 2005; Zendedel et al., 2016a), counselors (Edwards et al., 2005), cultural brokers (Leanza, 2005), extra information source (Rosenberg et al., 2007) and emotional supporter (Ho, 2008), these roles were not at all prevalent in the present study. One explanation for this discrepancy between the perceived and performed roles of informal interpreters could be the language barrier between patients and health care providers, which inhibits them from understanding the actually performed roles of informal interpreters. For instance, when informal interpreters act as patients' replacers, they answer the GP's questions and ask questions on patients' behalf. When acting as patients' advocates, the informal interpreters exaggerate the patients' complains and add affective information to what the patient is saying. It could be that the patients do not perceive the difference between these roles, because they do not understand what the interpreter is saying and thus they perceive their family interpreters, with whom they have a close relationship, as advocates, even when they are actually performing the role of the patients' replacer.

Our explanation for the absence of relationships between interpreters' performed roles and patients' and GPs' perceived control, trust and satisfaction follows the same line of reasoning. As patients and GPs might not have sufficient insight in the actually performed roles of the informal interpreters, these outcomes are probably rather based on their perceived roles of the interpreter, than on interpreters' performed roles. The findings of a previous study in which we have found significant relationships between the expected roles of informal interpreters and patients' perceived control and trust (Zendedel et al., submitted) support this idea. The findings of our present study in which the role of information source was related to patients' lower trust in the interpreter support this assumption. Namely, because the patients do not understand what the informal interpreters are saying, their trust is declining. However, informal interpreters are actually acting in patients' best interests by providing extra information to the GP. If the patients would be aware of this role of the informal interpreters their trust would probably not decline.

Apart from acting as replacers and excluders, our findings indicate that less than half of all utterances is being translated by informal interpreters, which might lead to negative clinical consequences. Although a recent study has shown that professional interpreters also often omit information (Sleptsova et al., in press), a previous study comparing professional and informal interpreters has shown that omissions by informal interpreters more often led to negative clinical consequences (Flores, Abreu, Barone, Bachur, & Lin, 2012). Therefore, patients and health care providers should be educated about possible detrimental consequences of informal interpreting, such as omission of information and dominant and excluding behavior of informal interpreters. Health care providers should be trained in how to prevent these behaviors when working with informal interpreters.

Study limitations and suggestions for further research

Our study has some limitations. First, we coded only the interpreter's utterances; thus we lack insight into which behaviors of the patients and the GPs provoke certain roles of the informal interpreter. Future research should study the interaction process of the three parties together in order to arrive at a more complete picture. Second, the codebook is developed in the Dutch context with Turkish migrant patients only and is not validated under different populations. Thus, our conclusions should be interpreted cautiously and replicated in future studies. Third, we coded only verbal communication and thus have possibly missed important non-verbal communication factors in our scheme. Thus, our codebook should be further developed based on video-recordings of real-life interpreted consultations.

Overall, it is necessary to continue investigating the relationships between the communicative behavior of different types of interpreters and outcome measures, such as understanding, recall, satisfaction, perceived control and trust in order to uncover the possible positive and negative effects of the communicative behavior of interpreters. Also, interpreters' personal characteristics, such as age, gender and relationship to the patients should be taken into account. For instance, the present study has shown that patients perceive more control and are more satisfied with female interpreters than with male interpreters and that female interpreters are also trusted more by GPs compared to male interpreters. Thus, future studies should continue to investigate the relationships between the different factors in order to move towards an explanatory model of informal interpreting and to be able to design evidence-based interventions for the improvement of the interpreter-medicated communication.

Conclusion

Besides the role of conduit, which occurred in a quarter of all coded utterances, informal interpreters often performed the roles of patients' and GPs' replacers and excluders. However, interpreters' roles were barely related to patients' and GPs' perceived control, satisfaction and trust in the interpreter, which might indicate that patients and GPs are not aware of the actually performed roles of informal interpreters. Informal interpreters translated less than half of all utterances, which might lead to the loss of important medical information and have negative clinical consequences.

Practice implications

The findings of this study could be used for education and training purposes. For instance, GPs and patients should be informed about the excluding roles of informal interpreters, which might lead to loss of information and adverse health outcomes. GPs should be trained in how to prevent the excluding behavior of informal interpreters and how to facilitate appropriate interpreting, a training example provided in a previous project (Meeuwesen et al., 2011). Informal interpreters could be educated in how to interpret in an adequate way without omission of relevant information.