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Alterations During Medical Interpretation of ICU Family Conferences that Interfere with or Enhance Communication

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Abstract

Rationale—Many family conferences in the ICU occur with families of patients with limited English proficiency requiring a medical interpreter. Despite the importance of medical interpretation, little is known about the alterations that occur and their effect on communication.

Objectives—This study characterizes the types, prevalence, and potential effects of alterations in interpretation during ICU family conferences involving end-of-life discussions.

Methods—We identified ICU family conferences in 2 hospitals in which a medical interpreter was used. Ten conferences were audiotaped, 9 physicians led these conferences, and 70 family members participated. Research interpreters different from those attending the conference translated the non-English portions of the audiotaped conferences. We identified interpretation alterations, grouped them into four types, and categorized their potential effects on communication.

Results—For interpreted exchanges between clinicians and family, there was a 55% chance that an alteration would occur. These alterations included additions, omissions, substitutions, and editorializations. Over three-quarters of alterations were judged to have potentially clinically significant consequences on the goals of the conference. Of the potentially significant alterations, 93% were likely to have a negative effect on communication; the remainder, a positive effect. The alterations with potential negative effects included interference with transfer of information, reduced emotional support, and reduced rapport. Those with potential positive effects included improvements in conveying information and emotional support.

Conclusions—Alterations in medical interpretation seem to occur frequently and often have the potential for negative consequences on the common goals of the family conference. Further studies examining and addressing these alterations may help clinicians and interpreters improve communication with family members during ICU family conferences.

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Keywords

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INTRODUCTION

In the US, approximately 20% of deaths occur in the ICU¹. At the time that decisions are made concerning withholding and withdrawing life support, most patients are incapacitated and cannot participate in these decisions themselves. Therefore, family members and clinicians often share the responsibility of determining and carrying out patients' wishes for medical care². With 19 million people in the US who have limited English proficiency (LEP), clinicians in the ICU may be faced with discussing withholding and withdrawing life support with family members who have LEP. Little is known about the implications of LEP for communication and decision-making in the ICU setting.

Prior research has documented significant problems with the communication between physicians and patients or families with LEP³⁻⁵. LEP patients are often less satisfied with their healthcare when compared with patients who speak English as a first language^{6, 7}. In addition, patients who do not primarily speak English seem to be at risk for receiving inferior palliative care⁸. There is some evidence suggesting that medical interpreters may alleviate some of the disparities between LEP patients and English-speaking patients^{9, 10}. In addition, patients with LEP tend to be more satisfied with their care when an interpreter is used¹¹. Physicians also report better communication with patients when using an interpreter¹². However, there is evidence of important limitations in medical care for patients with LEP even if that care is provided with the aid of medical interpreters. Several studies have shown that there are a significant number of interpretation errors¹³⁻¹⁶. Given the shortcomings of medical care in the setting of LEP and the inherent difficulties of discussions about withholding and withdrawing life support even if patients' families are proficient in English, there may be important problems with clinician-family communication about withholding and withdrawing life support when families do not speak English as a first language.

Little is known about the prevalence and types of alterations in interpretation that occur during medical interpretation and none of the prior studies have examined interpretation during family conferences in the ICU. Furthermore, nothing is known about the possible effects — both positive and negative — that these alterations may have on ICU family conferences. Our goal was to identify “interpreter alterations”, or changes in words or meaning, during the process of medical interpretation in the ICU family conference setting. We explicitly do not use the term “interpreter errors” since this entails a judgment that the alteration was an error. This preliminary study aims to characterize the types, prevalence, and potential consequences of alterations in medical interpretation in ICU family conferences concerning withdrawal of life-sustaining treatment or during delivery of bad news. The goal of the study was to inform clinicians and medical interpreters about the potential alterations that may occur in this setting so that they might minimize interpretation alterations and capitalize on opportunities to improve the information and support provided to families with LEP.

METHODS

Identification and enrollment of family conferences

The study was conducted at four Seattle-area hospitals, although only two hospitals contributed interpreter conferences: a university hospital and a county hospital. Study procedures were described previously¹⁷⁻²⁴. Each weekday morning, research staff contacted the charge nurse

in each ICU to identify potential family conferences. Once these were identified, the research staff asked the attending physician for permission to approach the patient's family. The conferences had to meet the following criteria to be included: 1) the conference was scheduled to occur on a weekday; 2) the attending physician anticipated discussion of withholding or withdrawing life support or the delivery of bad news; and 3) the patient was older than 18 years of age.

The primary study, results of which were published previously,¹⁷⁻²⁴ excluded family conferences in which anyone present at the conference did not speak English. The current report represents an ancillary study in which we enrolled family conferences for which at least one family member did not speak English and for which a medical interpreter was involved. A criterion for eligibility was that the interpreter was a certified professional medical interpreter. In the state of Washington, a certified interpreter is a person who has passed the required Department of Social and Health Services interpreter examination. If the above criteria were met, the nurse caring for the patient asked the family if they were willing to talk with research staff. If all family members and clinicians planning to participate in the family conference agreed to participate, two audio recording devices were placed in the conference room for the duration of the conference. All participants in the family conferences, including the medical interpreters, provided signed informed consent for participation in this study. Interpreter conferences were recorded between January 2001 and November 2002. The Institutional Review Board of all hospitals approved all procedures.

Qualitative analyses

A medical transcriptionist with qualitative research experience transcribed the English portions of the audiotapes verbatim, excluding names. For each language, a state-certified, professional, medical interpreter who did not perform the conference translation and who did not know the conference interpreter, listened to the entire audio-recording (including the initial interpretation by the clinical interpreter) and translated the non-English portions of the transcripts and transcribed those passages in English. We also performed a qualitative check of the research interpretation of two of the conferences in two different languages by asking a third interpreter to check the accuracy of the research interpreters. The third interpreter confirmed our assumption that the research interpretation was accurate.

Investigators performed qualitative analyses of the transcripts focusing on identifying and categorizing the interpreter alterations in two stages. Investigators worked in pairs and each conference was assigned to one of the pairs. Both members of a pair independently coded the transcript and then compared coding results. Each pair reached consensus on the coding, and if consensus was not reached, all four investigators met to adjudicate. Investigators identified an interpretation passage, which was defined as each speech passage of a clinician or a family member from the time the clinician or family member began speaking until a different clinician or family member began speaking.

For the first stage, we used a previously published framework developed and validated by Flores and colleagues that assigns alterations to four mutually exclusive categories: additions, substitutions, omissions, or editorializations¹³. These categories of interpreter alterations constituted the first tier of classification. A description of these categories is provided in Table 1.

For the second stage, we used a limited application of grounded theory²⁵ to develop a scheme for categorizing alterations with potentially clinically significant effects based on the potential goals of the ICU family conference. Investigators judged a translation change to be potentially clinically significant if it appeared to have the potential to interfere with or enhance the generic goals of an ICU family conference. These generic goals of the family conference were adapted

from prior research developing a framework for ICU family conferences concerning withholding and withdrawing life support^{22, 26, 27}. These are intended to be a summary of common goals and may not all apply to the specific conferences under study. For the medical team, the generic goals of a conference that were examined were: 1) to relay information about the patient's diagnosis, prognosis, and treatment; 2) to learn from the family what the patient would want for treatment and devise a collaborative plan; 3) to provide the family with emotional support; and 4) to build rapport with the family. The generic goals of a conference that were examined for the family were: 1) to obtain information about the patient's diagnosis, prognosis, and treatment; 2) to act as a surrogate decision-maker for the patient; and 3) to build rapport with team. For this second tier, the categories were not mutually exclusive and passages could be assigned to more than one category (Table 1). Our goal was to characterize both potentially negative and positive effects of the alterations.

The primary assessment of the validity of these coding systems is that of face validity and coding of all transcripts by consensus by at least two investigators. However, to provide an estimate of the reliability of the newly developed classification schema, the schema, instructions, and a sample of five passages (for training purposes) were given to an investigator not involved in the original coding. This investigator initially categorized the 5 passages and reviewed them with the primary coder; this investigator then reviewed 20 additional passages in order to perform the second tier coding blinded to the primary coder's analyses. To facilitate comparison, coders for this exercise focused on the primary or most important code for each passage. The percent agreement between the two coders was 80% (16/20).

RESULTS

A total of 10 conferences between physicians and families with LEP were recorded. The average length was 26.3 minutes, with standard deviation of 13.3 minutes. The languages spoken by families in the conferences were Spanish (n=2), Russian (n=1), Vietnamese (n=2), Hmong (n=1), Cambodian (n=1), Mandarin Chinese (n=1), Somali (n=1), and Korean (n=1). Table 2 shows the demographics of the participants in the family conferences, including physicians leading the conferences, nurses, other clinicians, and family members. A total of 9 physicians led the 10 conferences, and just over three-quarters of the physicians were residents (78%). On average, one nurse and 2.6 other (non-nurse, non-physician) clinicians participated in each conference. About two-thirds of the physicians (67%) and other clinicians (62%) identified themselves as white. Seventy family members participated in the conferences, but only 22 family members completed the demographics questionnaire, in part because this questionnaire was only available in English. At least one family member spoke English in 9 of the 10 conferences.

Alterations of interpretation were common in ICU family conferences in which a medical interpreter is used. There were 583 interpreted passages, of which 480 were clinician speech and 103 were family speech. An alteration occurred during 55% (322/ 583) of all interpreted speech passages. The proportion of interpreted clinician speech passages with a translation alteration was 54% (261/480) and, the proportion of interpreted family speech passages with a translation alteration was 59% (61/103).

Explanations of first and second tier alterations are provided in Table 1. Their frequencies, average number per conference and average number across conferences are presented in Table 3. The most common type of alteration was editorialization comprising 43% (137/322) of all the alteration types. These were ubiquitous, appearing in all conferences, and in a given conference they occurred on average 14 times. Additions were the least common type of alteration (6.2%, 20/322, of all alterations), and they appeared in 7 out of the 10 conferences.

Alterations were deemed potentially clinically significant if they were judged by investigators to have the potential to interfere with or enhance the common goals of ICU family conferences, and potentially significant alterations constituted three-quarters of all alterations (77%, 249/322). Each alteration could have more than one effect on the common goals of the ICU family conference, and we identified 382 potentially significant effects on the common goals of the conferences. Of these effects, 93% (355/382) interfered with the common goals of the conference (negative alteration) and 7% (27/382) enhanced the goals of the conference (positive alteration). During clinician speech, omissions and editorializations were most likely to be potentially clinically significant (86% for omissions and 83% for editorializations). During family speech, omissions had the highest likelihood of significance (95%).

The classification of types of alterations showed that while alterations more often had potential negative effects, some interpreter alterations had potential positive effects on the goals of a family conference. In the conference containing the following passage, the interpreter omits a part of the doctor's statement which makes it sound less confrontational and could serve to improve the rapport and communication with the physician:

MD I don't know what else to say to you. I mean, I told you yesterday that he's essentially brain dead. I don't know what you expected from that. I also said yesterday that there's no recovery from this.

Interpreter (translating) I told {you} that his brain was dead and it wasn't going to recover.

However, the majority of alterations were judged to have the potential for a negative effect on family conferences. The most frequent consequence of an error was a change in the information being conveyed (Table 3). Every conference contained an error; on average they occurred 13 times in each conference. Specifically, alterations that may have negatively affected information transmission were commonly associated with changes in the description of the patient's disease or prognosis. In the following example, the meaning of the prognostic information conveyed by the physician is reversed by the interpreted speech:

MD I don't know. Um, this is a very rapidly progressing cancer.

Interpreter (translating) He doesn't know because it starts gradually.

Alterations also often had the potential to affect decisions about treatment. As with alterations associated with information, alterations potentially affecting treatment decisions occurred in every conference and they occurred frequently, with an average of 16 times during each conference. In contrast to alterations associated with information exchange, we identified only potentially negative consequences for treatment decision alterations, such as in the following passage:

MD Have you spoken to your husband about these kinds of questions before he got sick, what his wishes might be in this sort of situation?

Interpreter (translating) Did you talk to your husband before he got so sick about possible situations, what was awaiting him?

The physician is attempting to steer the discussion towards the family's knowledge of the patient's treatment preferences in order to make a surrogate decision. However, the interpreter changes the wording so that the emphasis of the question is on the patient's perceptions of the illness instead of on his preferences concerning end-of-life care. This interpretation may impair the ability of the healthcare team and the family to make a treatment decision based on the patient's wishes.

Medical interpretation alterations potentially affecting emotional support were less common, although they occurred in most conferences (8 of the 10). When they were negative, they occurred an average of 2 times per conference, and they most often had the potential to decrease the family's hope for the patient's prognosis. In this passage, the possibility of a clinician's prediction is changed from probable to certain. As a result, the interpreter's alteration could decrease the family's hope for the patient's recovery.

MD The problem with this option is that he may have to stay on this machine for the rest of his life.

Interpreter (translating) But the problem with this option is that he will have to stay on this machine for the rest of his life.

Rapport between the clinicians and patients' families was less frequently affected—either positively or negatively—by alterations in translation. When these alterations did occur, they most commonly resulted in failure to include language that encouraged a sense of collaboration in providing care for the patient, such as in the following example that occurred after the physician explained his suggestion for a treatment plan:

MD Does that sound like a good plan to you? Do you have any more questions?

Interpreter (translating) Do you agree?

The physician's request to hear the family's opinion on the plan was implied in the first question and his attempt to open the discussion to the family are lost in the alteration of his questions.

The final category of alterations involves those that had the potential to change the communication because a question being asked by the physician or family was not completely conveyed to the opposite party. Such alterations occurred on average 2 times per conference.

Family But, what we want to know is that after his lungs get better and when he wakes up will his brain suffer and affect his ability to recognize people?

Interpreter (translating) Okay, she wants to know about the lungs, when he wakes up, so about his lungs, and so, what about after, so it will not affect him?

MD Yeah. Right now, it's very, it's very interesting to us because we don't understand exactly what the problem is in his lungs, even when he's healthy and at home. It would be good for us to have a chance to look into that when he's not as sick as he is now, but my best hope is that his lungs would be as good as they were before. But they won't be better than they were before.

In this conference, the physician is never made aware of the family's desire to know about the patient's neurological status because their question is altered.

DISCUSSION

This study characterized the types, prevalence, and potential effects of interpretation alterations in ten ICU family conferences in which withholding or withdrawing life support was discussed or bad news was delivered. We first classified alterations into four types based on a scheme described by Flores and colleagues: addition, omission, substitution, and editorialization¹³. These four types of alterations were relatively common in our sample with nearly 55% of all interpretation events assessed as containing an alteration. More importantly, these alterations were judged by investigators to have the potential to significantly affect the goals of ICU family conferences over three-quarters of the time. It is important to highlight that this study could

not assess whether these alterations actually had a clinically significant effect, but rather only that the alterations had this potential.

The interpreter alterations occasionally appeared to have the potential for positive effects on family conferences by providing emotional support or clarifying medical jargon. These positive effects also had the potential to improve rapport between the physician and family. Interpreters would sometimes use liberal translations, softening the language and making clinician speech less abrupt or confrontational.

Nevertheless, the vast majority of alterations in medical interpretation were judged to have the potential for negative consequences on the goals of an ICU conference, affecting all five of the pre-defined generic conference goals. The most common potential effect that the alterations appeared to have on family conferences was to hinder the transmission of information by, for example, inadequately explaining medical terms. Interpreter alterations also appeared to interfere with communication involving treatment decisions by omitting information about the plan or the healthcare team's recommendations. Alterations in interpretation also had the potential to negatively affect the physician's ability to provide emotional support to the family when the alterations seemed to inappropriately increase or decrease the family's hope or decrease empathy expressed by the physician. The rapport between physicians and patients' families had the potential to be negatively affected by interpretation alterations when, for example, the family's appreciation for the medical team's efforts was not translated. Finally, alterations in medical translation appeared to hinder effective communication when questions asked by the physician or family were not interpreted.

This study has several important limitations. First, the study only examined a small sample size with ten family conferences and therefore may not be generalizable to other interpreted family conferences. In addition, the majority of the physicians leading these conferences were medical residents. This is likely the case at many teaching institutions, but our small sample size makes it impossible to examine whether alterations are more or less common when conferences are led by attending physicians. Nonetheless, this is the first report of interpreter alterations during ICU family conferences and represents screening at two hospitals (as part of a larger study) for two years. If larger studies are to be conducted, they will need to involve more hospitals or be conducted in a region where interpreter family conferences are more common. Second, we examined eight different languages, and these languages were a convenience sample for family conferences occurring with a medical interpreter at two institutions. The specific languages may have affected the types, prevalence, and effects of alterations. For example, it may be more difficult to convey medical concepts in certain languages. Although including conferences in more than one language increases the generalizability to more languages, results may differ with other languages that were not included. Third, we did not include conferences in which interpretation was performed by clinicians, family members, or other *ad hoc* interpreters. Prior research suggests that errors with clinical consequences are more likely to occur with *ad hoc* interpreters and therefore our study likely underestimates the prevalence of these events in U.S. health care¹³. Fourth, we were only able to obtain most demographic information from family members who spoke English sufficiently well to complete questionnaires. Given the number of languages involved, we were not able to translate and validate our questionnaires for each language. Fifth, we developed a coding scheme to examine and classify interpreter alterations and provided some preliminary evaluation of this scheme, but further studies are needed to assess the reliability, validity, and clinical utility of such schemes and to confirm our findings concerning the frequency of interpreter alterations. Furthermore, we examined the potential clinical implications of the alterations, but this study was not designed to assess actual implications (positive or negative) on actual family understanding, clinician-family rapport, or medical decision-making. Sixth, Washington State requires that medical interpreters obtain a license

to work as medical interpreters. It seems likely that medical interpreters without formal licensure would make more errors. Finally, it is possible that some of the alterations examined in this study were in fact alterations or errors made by the research interpreter rather than the clinical interpreter. This seems less likely since the clinical interpreter must interpret real-time during an ICU family conference while the research interpreter has the opportunity to listen to tapes in a quiet setting, rewind tapes to confirm their understanding, and also had the advantage of listening to the clinical interpreter's interpretation. To examine this issue, we asked three additional interpreters to perform a qualitative check on the research interpretation of three family conferences which confirmed the general accuracy of the research interpreters. Nonetheless, this is a potential limitation and additional studies would be needed to validate this method.

Our findings suggest that alterations in medical interpretation occur frequently during ICU family conferences and, when they do occur, they often appeared to have the potential for negative consequences on the common goals of these conferences. Understanding the nature of these alterations may help clinicians and interpreters improve communication with family members during these conferences. Furthermore, the findings of this study support several suggestions for improving ICU family-clinician communication in the context of medical interpretation that were generated from a recent qualitative study examining the perspectives of medical interpreters on end-of-life communication²⁸. First, pre-conference meetings with interpreters might provide an opportunity to address some of the causes of alterations. These meetings might include a discussion of which interpretation approach would be most appropriate (e.g., strict linguistic translations or a "cultural broker" approach²⁸) as well as an opportunity to clarify topics to be discussed and the terminology that will be used. Second, by speaking slowly and using short sentences, clinicians can prevent a situation in which the interpreter has to remember large blocks of information, thereby reducing the chance the interpreter will make alterations and particularly omissions. Finally, physicians should repeat important concepts and ask the family members if they have questions about those concepts to make sure key data are accurately conveyed to the family. Future studies are needed to replicate our findings with a larger sample size and to examine the effect of these and other interventions targeting clinicians and interpreters designed to improve the accuracy and effectiveness of communication between physicians and families with LEP.

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Table 1
Description of the types of first and second tier alterations.

Code	Description
TYPE OF ALTERATIONS *	
Addition	Interpreter adds a phrase the clinician/family does not say
Omission	Interpreter omits a phrase the MD/family does say
Substitution	Interpreter uses one phrase for another that clinician/family says
Editorialization	An error that includes a combination of two or more of the three types above
POTENTIALLY CLINICALLY SIGNIFICANT ALTERATIONS **	
INFORMATION	
Positive alterations	
Increase explicitness of prognosis	Interpreter explicitly states what is implied by clinician/family regarding prognosis
Increase clarity	Interpreter changes wording of medical jargon to make it more understandable
Negative alterations	
Decrease explicitness of prognosis	Interpreter makes an explicit statement about prognosis by clinician/family implicit
Decrease clarity	Interpreter changes wording of medical jargon to make it less clear
Changes understanding	Error in information that could affect understanding of the patient's disease, treatment, and prognosis
Increase level of certainty	Interpreter error turns what clinician states as probable into certain
Decrease level of certainty	Interpreter error turns what clinician states as certain into probable
TREATMENT DECISION	
Negative alterations	
Loss of clinician view	Interpreter fails to convey the healthcare team's recommendations or goals regarding treatment
Loss of surrogate decision-making	Interpreter does not convey emphasis on doing what patient would want
Loss of family's point of view	Interpreter fails to convey the family's hopes, fears, point of view for patient care
No explanation of plan	Information about the plan is lost or altered
Increase hope	An error that could increase family's hope or optimism about treatment
Decrease hope	An error that could decrease family's hope or optimism about treatment
EMOTIONAL SUPPORT	
Positive changes	
Increase empathy	Interpreter alters what clinician says so that more empathy is conveyed
Negative alterations	
Decrease empathy	Interpreter alters what clinician says so that less empathy is conveyed
Loss of emotional nuance	While information is not lost, emotional content which could be useful to the clinician to gauge family's feelings or reactions is lost
RAPPORT	
Positive alterations	
Increase clinician authority	Interpreter incorrectly conveys that clinician does know a piece of information or has a likely successful therapy to offer
Less harsh	Interpreter error makes clinician's/family's comment sound less harsh or offensive
Negative alterations	
Decrease clinician authority	Interpreter incorrectly conveys that clinician does not know a piece of information or does not have a likely successful therapy to offer
More harsh	Interpreter error makes clinician's/family's comment sound more harsh or offensive

Code	Description
Loss of sense of collaboration	Interpreter fails to convey language that would encourage a sense of shared decision-making or responsibility
Loss of appreciation	Interpreter leaves out the clinician's/family's appreciation for the other party
INTERPRETATION OF QUESTIONS	
Negative alterations	
Loss of question	Interpreter fails to convey the family's/clinician's question

* First tier categories are mutually exclusive and adapted from reference ¹³.

** Second tier categories are not mutually exclusive.

Table 2

Demographics of study participants

	Physicians (n=9) n (%)	Nurses (n=10) n (%)	Other clinicians (n=26) n (%)	Family (n=70)* n (%)
Mean number/conf	1.0	1.0	2.6	7.0
Male	7 (78)	4 (40)	14 (54)	32 (46)
	Physicians (n=9) n (%)	Nurses (n=10) n (%)	Other clinicians (n=26) n (%)	Family (n=22)* n (%)
Race/Ethnicity				
White	6 (67)	10 (100)	16 (62)	2 (9)
African American	0 (0)	0 (0)	1 (4)	1 (5)
Hispanic	0 (0)	0 (0)	1 (4)	1 (5)
Asian/Pacific Islander	2 (22)	0 (0)	8 (31)	17 (77)
Other	1 (11)	0 (0)	0 (0)	1 (5)
Relationship				
Spouse	--	--	--	1 (5)
Adult child	--	--	--	10 (45)
Sibling	--	--	--	1 (5)
Other relative	--	--	--	5 (23)
Other	--	--	--	5 (23)
Resident	7 (78)	--	--	--
	Mean (SD)	Mean (SD)	Mean (SD)	Mean (SD)
Age in Years	32 (4.1)	34 (5.8)	39 (12.2)	33 (9.1)
Years in Practice	5 (4.6)	6 (5.2)	3 (2.8)	--

* There were 70 family members who participated in the study, but race/ethnicity and relationship to the patient are based on 22 questionnaires filled out by family members who could read English

Table 3

Frequencies, average number per conference, and average number across conferences of first and second tier codes.

Code	# of Alteration Codes	# of Conferences with these Alteration Codes (n=10)	#Alteration Codes per Conference
TYPE OF ALTERATIONS			
Addition	20	7	2
Omission	100	10	10
Substitution	65	9	6.5
Editorialization	137	10	13.7
POTENTIALLY CLINICALLY SIGNIFICANT ALTERATIONS			
INFORMATION			
Positive alterations	16	6	1.6
Negative alterations	129	10	12.9
TREATMENT DECISIONS			
Negative alterations	157	10	15.7
EMOTIONAL SUPPORT			
Positive alterations	5	3	0.5
Negative alterations	23	8	2.3
RAPPORT			
Positive alterations	6	5	0.6
Negative alterations	24	8	2.4
INTERPRETATION OF QUESTIONS			
Negative alterations	22	9	2.2