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Exploring emotions and the shared decision-making process in pediatric primary care

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Abstract

This paper aims to identify conversational interaction patterns in pediatrics with a focus on the shared decision-making process and dialogue about emotions in doctor–patient relationships. We documented conversations in 163 visits by 168 children in pediatric primary care; we observed, audiorecordered, transcribed and analyzed them with specific instruments of analysis of doctor patient relationship. Our survey was conducted in four pediatric primary care practices and 15 health providers were involved. The data collection period lasted three months and was undertaken twice a week on days. We analyzed visits with Verona Coding Definitions of Emotional Sequences (VR-CoDES) and Observing Patient Involvement in Shared Decision Making (OPTION) instruments. Frequencies of emotions' signals (cues/concerns) obtained using VR-CoDES were analyzed and compared with the OPTION ratings. We documented 318 cues/concerns for parents and 167 for children. The relationship between cues/concerns and Healthcare Providers responses was strongest in dialogues between parents and pediatricians. The conversational patterns focused on the procedures of

the care, with little opportunities of dialogue about emerging emotions. We also observed limited possibilities for participant involvement, especially by children, due to several difficulties integrating dialogue about emotions and concordance processes. The conversations seemed to be characterized by rarity of shared decision making or attention to the informational value of children's emotions. It could be useful to implement psychological interventions to achieve an enrichment of the dialogue between participants, helping them to incorporate emotions into conversations and to recognize decisional competences, necessary to concordance processes.

Keywords: Exploring emotions, decision-making, pediatric primary care

Introduction

This paper analyzed doctor–patient conversation in pediatric primary care, a context in which at least three subjects interact: pediatricians, parents, and children (Freda et al., 2015; Schouten & Schinkel, 2015; Adduci et al., 2012). In this study particular attention is paid to discussions of emotions and their relationship (Mellblom et al., 2014; Vatne et al., 2011; 2010; Del Piccolo et al., 2010) with shared decision-making processes (Hamilton et al., 2015; Elwyn et al., 2016).

Primary care pediatricians follow a child's development from early childhood through adolescence and assume educational and holding roles (Bakarat & Boyer, 2008). Dialogue with patients' families seldom addresses health condition but is focused more on the child's growth in the social and family context (Quattropani et al., 2013; Lenzo et al., 2013; Haukeland et al., 2015; Dicé et al., 2015; Dicé & Freda, 2016) The pediatric context in primary care has always had at minimum a triangular relational structure, in which each protagonist is considered as an active participant who influences the doctor–patient relationship (Freda et al., 2015; Dicé et al., 2016).

We consider pediatric visits a suitable context for observing discussions of emotions and the shared decision-making process; in particular, we will refer calling it *concordance*, that is the degree of match or mismatch between health provider and patient views about the illness and treatment (Horne et al., 2010). Studies in this field mainly focus on physicians' skills

in responding to patients' concerns (Del Piccolo et al., 2015; 2010) and sharing their diagnoses and decisions about treatments (Martino & Freda 2016a; 2016b; De Luca Picione et al., 2016; De Luca Picione et al., 2015; Wiseman et al., 2016; Elwyn et al., 2016). Literature highlights how, in medical contexts, dialogue about the emotional contents and shared decisions are related to a good doctor-patient interaction and decrease risk of dropping out the treatment process (Elwyn et al., 2016; Horne et al., 2010; Bakarat & Boyer, 2008; Lyons & Chamberlain, 2006). The specific contribution of this work to this literature is a focus on interactions between participants (Freda & Esposito, 2016), with particular attention given to the role of parents, considering them as both users of medical services and interlocutors who can influence the interaction between doctors and children (Dicé & Savarese, 2014).

In this study, we analyzed the characteristics of conversations in pediatrics, focusing on discussions of the parents' emotions (Del Piccolo et al., 2015; 2010; De Luca Picione, 2015; De Luca Picione & Freda, 2016) and decision-making processes related to their child's care (Wiseman et al., 2016; Elwyn et al., 2016).

We intended to identify *conversational interaction patterns*, that are typical modalities of the dialogue, based on discussion about emotions related to the child's health condition in the interactions between pediatricians and users (parents and child) and between parents and their children.

We also analyzed the pediatricians' skill in involving parents and children in decisions *(concordance)* and the relationship between it and the expressions of emotions during the conversations, expecting that these variables were positively related each other.

Method

A survey was conducted in four pediatric primary care practices in Naples, a city in Southern Italy. These practices belonged to the National Health Service and focused on children aged between 0 and 14 years. The doctors performed health assessments, screening, medical visits, drug prescriptions, therapies, and, if necessary, consulted with other specialists (e.g.: cardiologists or orthopedics) or ordered laboratory analysis (e.g: blood analysis or urinalysis). Their patients came mainly from a low- to mid-level

social class. The practices studied here were selected because they were situated in densely populated areas of the city. Three or four pediatricians worked at each of these practices, visiting about 1,300 children a year.

We collected, audiorecordered, conversations which were transcribed verbatim from 163 visits. To prevent participant embarrassment (especially among children) and ensure spontaneity during the visit, we did not make video recordings. The average visit lasted 16.18 minutes. We involved 15 pediatricians (10 M, 5 F), 168 children (median age 7.03 years, ST. DEV. 3.1 years), 82 M (median age 7.45 years, ST. DEV. 3.48 years) and 86 F (median age 7.07 years, ST. DEV 3.90 years), 158 mothers and 11 fathers. In five cases, the visits concerned two brothers.

The data collection period lasted three months and was undertaken twice a week on days agreed upon by the health providers who had verbally consented to observation and audio recording of their daily visits.

Participation was required for all families seeking services, at the beginning of the medical visit. All parents accepted, except for two who refused, citing confidentiality. All parents signed written informed consent forms. The research was conducted in accordance with the ethical approval of the Biomedical Research Ethics Committee of the University of Naples "Federico II".

To analyze the conversation, we used two specific tools, both of which involve grids to be completed by the observer after each visit, to identify the characteristics of any discussions of emotions and shared decision-making processes. The *Verona Coding Definitions of Emotional Sequences (VR-CoDES)* (Del Piccolo et al., 2010; Zimmermann et al, 2011; Eide et al., 2011) is used to identify cues (expressions in which emotions are not clearly verbalized) (Table 1) and concerns (clear verbal expressions of unpleasant emotional states) expressed by patients during medical consultations, as well as the responses of health care providers to these signals. These are classified as "explicit" (E), or "not explicit" (N), and as functions that either "provides" (P) or "reduces space" (R) (Table 2).

Table 1. Cues/concerns.

CUE A	Words or phrases in which the patient uses vague or

	unspecified words to describe his/her emotions.
CUE B	Verbal hints to hidden concerns.
CUE C	Words or phrases which emphasise physiological or cognitive correlates of unpleasant emotional states.
CUE D	Neutral expressions that mention issues of potential emotional importance which stand out from the narrative background and refer to stressful life events and conditions.
CUE E	A patient elicited repetition of a previous neutral expression.
CUE F	Non verbal cue.
CUE G	A clear and unambiguous expression of an unpleasant emotion which is in the past or is referred to an unclear period of live.

Table 2. Health Providers' responses.

NON – EXPLICIT (N)		EXPLICIT (E)	
REDUCE SPACE (NR)	PROVIDE SPACE (NP)	REDUCE SPACE (NR)	PROVIDE SPACE (NP)
NRIg (Ignore)	NPSi (Silence)	ERSw (Switching)	EPCAc (Acknowledgement)
NRSd(Shutting Down)	NPBc (Back Channel)	ERPp (Post - Poning)	EPCEx (Exploration)
NRIa(Information Advise)	NPAc(Acknowledgement).	ERIa (Information Advise)	EPAAc (Acknowledgem

		ent)
NPAi (Active Invitation)	ERAb (Active Blocking)	EPAEx (Exploration)
NPIm (Implicit Empathy)		EPAEm (Empathy)

We used the classification proposed by Vatne et al. (2010) for cues/concerns among children (Table 3). Statistical analysis showed the VR-CoDES to be reliable (Cohen's K = .90).

Table 3. Children's cues/concerns.

CUE A	No further categorization.
CUE B	1.Definition based: Emphasizing/unusualwords/unusualdescriptionofsymptom/profanities/exclamations/metaphors/ambiguouswords/doublenegations/expressions of uncertainty and hope 2. Based on comments to cue criteria and examples in the manual.
CUE C	No further categorization
CUE D	1. Issue of importance.
CUE E	No further categorization
CUE F	No further categorization

The *Observing Patient Involvement in Shared Decision Making* (Elwyn et al., 2005; 2004; Goss et al., 2007) is used to assess physicians' abilities to share treatment decisions with their patients. It consists of 12 items to which the observer assigns a score from 0 to 4 (Table 4). Statistical analysis showed that the OPTION is reliable with the following results: Cohen's K = .29 –.73, test and retest at ICC = 0.85 and 0.81 respectively, Cronbach's α = .82. (Goss et al., 2007)

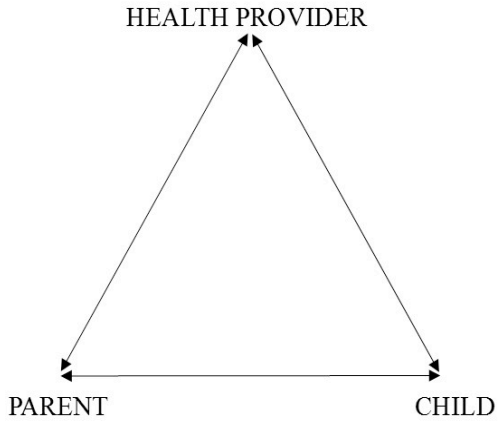
Table 4. OPTION's items.

ITEM 1	The clinician draws attention to an identified problem as one that

	requires a decision making process.
ITEM 2	The clinician states that there is more than one way to deal with the identified problem.
ITEM 3	The clinician assesses patient's preferred approach to receiving information to assist decision making
ITEM 4	The clinician lists 'options', which can include the choice of 'no action'.
ITEM 5	The clinician explains the pros and cons of options to the patient.
ITEM 6	The clinician explores the patient's expectations (or ideas) about how the problem(s) are to be managed.
ITEM 7	The clinician explores the patient's concerns (fears) about how problem(s) are to be managed.
ITEM 8	The clinician checks that the patient has understood the information.
ITEM 9	The clinician offers the patient explicit opportunities to ask questions during decision making process.
ITEM 10	The clinician elicits the patient's preferred level of involvement in decision making.
ITEM 11	The clinician indicates the need for a decision making (or deferring) stage.
ITEM 12	The clinician indicates the need to review the decision.

We collected descriptions of visits from transcripts, indicating the *Index Problem*, the reason for the visit (Elwyn et al., 2005; 2004), and the pediatricians' Prescriptions. Two independent judges analyzed the transcripts. To describe the relational context, we assumed a three-sided configuration labeled the HPC Triangle (health provider, parent, child) (Figure 1). The sides of this triangle are defined as Dialogic Interaction Axes (DIA). The side indicating the interaction between the health provider and parent is labeled HP DIA (Health provider–Parent DIA), the side indicating the interaction between the health provider and child as HC DIA (Health provider–Child DIA), and the side indicating the interaction between the parent and child as PC DIA (Parent–Child DIA).

Figure 1. The triangular configuration in pediatrics.



For HP and HC DIA, we classified the frequencies of the cues/concerns expressed by parents and children and the responses of the health providers. For PC DIA, we classified the frequencies of cues/concerns expressed by children and the responses of parents. We then used Cohen's K (Del Piccolo et al., 2010) to calculate the correlations between the two independent measurements.

To analyze the interdependence relationships between the matrix of cues/concerns and the matrix of responses, we use Sparse Canonical Correlation Analysis (SCCA) (Hastie et al., 2015; Witten et al., 2009) that computes pairs of components, one for each group of variables, by maximizing the Pearson correlation coefficient between them, while performing variable selection (Witten et al., 2009). Since our matrices are sparse, we used SCCA only to identify a subset of variables of the group of

cues/concerns mainly correlated with variables representing responses given by the pediatricians. In our case, SCCA gave us more interpretable results than classical CCA. SCCA was conducted using an R package (R Core Team, 2014) called Penalized Multivariate Analysis.

We calculated the means and standard deviations of scores recorded with OPTION on HP and HC DIA. We then used the means of the scores recorded (Elwyn et al., 2005) to compare the independent measurements. For easier interpretation of the data, scores are given on a scale from 0 to 48 (rather than a scale from 0 to 100). Weighted means have not been given because these differed little from the standard medium.

We also conducted a correlation analysis (Kendall's τ) between frequencies of cues/concerns and ratings of OPTION on MP and HC DIA and performed a correlation analysis between the different types of responses provided by VR–CoDES (EP, ER, NR and NP) and ratings of the option. Kendall's τ, the correlation coefficient between the ranks, is particularly appropriate for use with ordinal data and scores on a Likert scale. For our analysis, we used SPSS 15.0 and Xlstat 2014.

Results

The following results refer the description of the visits (Tables 5 and 6).

Table 5. Index problems.

INDEX PROBLEMS	%.
Influence	50%
Check Up	24%
Asthma	4%
Vaccine	4%
Bellyache	3%

Feeding	3%
Allergies	2%
Growing pains	3%
Other	7%

Table 6. Prescriptions.

PRESCRIPTION	%.
Drugs	70%
No Prescription	15%
Dietary	7%
Specialist visit	7%
Clinical exams	1%

The HP DIA

The following results refer to the HP DIA (Figure 2) (Table 7 and 8).

Figure 2. The HP DIA.

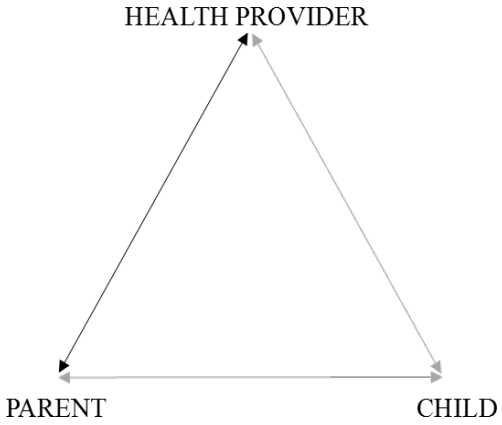


Table 7. Frequencies of parents' cues/concerns.

(K = .768)

	PE	HPE	TOT	%
CUE A	5	18	23	7%
CUE B	75	101	176	56%
CUE C	7	3	10	3%
CUE D	10	6	16	5%
CUE E	34	8	42	13%
CUE F	2	14	16	5%
CUE G	9	3	12	4%
CONCERNS	9	14	23	7%
			318	100%

Table 8. Frequencies of health providers' responses.

(K = .762.)

CATEGORIES	SUBCATEGORIES	PARTIAL SUM	PARTIAL %	TOT.
EP	EPAAc	5	1.5%	39
	EPAEm	4	1%	

	EPAEx	3	1%	
	EPCAc	6	2%	
	EPCEx	21	7%	
ER	ERIa	104	32%	**163**
	ERSw	31	10%	
	ERPp	4	1%	
	ERAb	24	7.5%	
NP	NPAc	5	1.5%	17
	NPAi	2	1%	
	NPBc	6	2%	
	NPSi	1	0.5%	
	NPIm	3	1%	
NR	NRIa	39	12%	99
	NRIg	23	8%	
	NRSd	37	11%	
				318

SCCA results (VR–CoDES) are shown in Tables 9 and 10.

Table 9. SCCA of Parents' cues/concerns.

	WEIGHT OF CANONICAL COMPONENTS	
	ξ_1	η_2
CUE A	0	**1**
CUE B	0	0
CUE C	0	0
CUE D	0	0
CUE E	0	0
CUE F	0	0
CUE G	**−1**	0
CONCERNS	0	0

Table 10. SCCA of health providers' responses.

WEIGHT OF CANONICAL COMPONENTS

	ξ_1	η_2
EPAAc	0,000	0,000
EPAEm	0,000	0,000
EPAEx	0,000	0,000
EPCAc	0,000	0,000
EPCEx	0,000	0,000
ERIa	0,000	0,000
ERSw	0,000	0,000
ERPp	0,000	**0,022**
ERAb	0,000	**0,969**
NPAc	0,000	0,000
NPAi	0,000	**0,246**
NPBc	**−0,961**	0,000
NPSi	**−0,276**	0,000
NPIm	0,000	0,000
NRIa	0,000	0,000
NRIg	0,000	0,000
NRSd	0,000	0,000

The first pair of canonical components was ξ_1, cues/concerns; and ξ_2, responses. For the former, the only variable with a weight other than 0 was CUE G (*clear expression of an unpleasant emotion occurring in the past or without a time frame*). For the latter, the only variables with weights other than 0 were NPBc (*back channel*), with a value of .961; and NPSI (*silence*), with a smaller value (.276).

The correlation coefficient for the pair was .898. This component can be interpreted as a dialogical dimension relative to pediatricians' latent tendency toward *listening*. The relationship between these two components can be interpreted as a REMINESCENT DIALOGUE. The second pair of canonical components was η_1, cues/concerns; and η_2, responses. For the former, the only variable with a weight other

than 0 was CUE A (*words or phrases in which the patient uses vague or unspecified language to describe his/her emotions*). The latter was represented by ERAb (*active blocking*), with a weight of .969; NPAI (*active invitation*), with a smaller weight (.246); and ERPp (*postponing*), with a weight of .022. The correlation coefficient for the pair was .709. This component can be interpreted as a dialogical dimension relative to the latent tendency of pediatricians to *direct the conversation*. The relationship between these two components can be interpreted as an ASYMMETRIC DIALOGUE. The following results refer to OPTION ratings (Table 11).

Table 11. OPTION ratings means.

MEAN	ST.DEV	CRONBACH'S ALPHA
4.8690	5.6669	.895

The means of the ratings for shared decision-making in dialogue between health providers and parents was low (4.8), as indicated in the OPTION manual (Elwyn et al., 2005). The following table (Table 12) shows the correlation between cues/concerns frequencies and OPTION ratings.

Table 12. Correlation.

	T	P–VALUE
Cues/concerns frequencies and OPTION ratings.	**.307**	**.000**

This significant correlation confirms that an increased expression of emotion seems to correlate with an increase in shared decision making.
Finally, the following table (Table 13) shows the correlation between the different types of response and OPTION ratings.

Table 13. Correlation between the four types of response and OPTION ratings.

	T	P–VALUE
EP responses and OPTION ratings.	.12	n.p.

ER responses and OPTION ratings	**.17**	**.010**
NP responses and OPTION ratings	**.19**	**.000**
NR responses and OPTION ratings	**.26**	**.000**

Specifically, shared decision making seems to increase when responses reduce the space for dialogue about cues/concerns or implicit responses.

The HC DIA

The following results refer to the HC DIA (Figure 3) (Table 14 and 15).

Figure 3. The HC DIA.

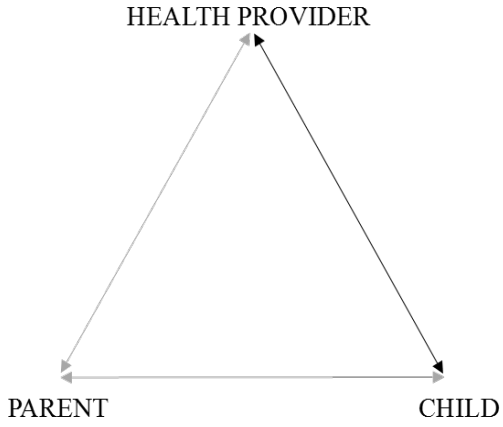


Table 14. Frequencies of children's cues/concerns.

(K = .787)				
	PE	**HPE**	TOT	%
CUE A	1	2	3	2%
CUE B	2	10	17	10%
CUE C	0	0	0	0%

CUE D	2	3	5	3%
CUE E	0	0	0	0%
CUE F	12	122	**134**	**80%**
CUE G	0	0	0	0%
CONCERNS	0	8	8	5%
			167	100%

Table 15. Frequencies of health providers' responses.

(K = .768)

CATEGORIES	SUBCATEGORIES	PARTIAL SUM	PARTIAL %	TOT.
EP	EPAAc	1	1%	19
	EPAEm	5	3%	
	EPAEx	5	3%	
	EPCAc	4	2%	
	EPCEx	9	5%	
ER	ERIa	14	8%	37
	ERSw	14	8%	
	ERPp	0	0%	
	ERAb	9	5%	
NP	NPAc	0	0%	23
	NPAi	11	7.5%	
	NPBc	1	1%	
	NPSi	11	7.5%	
	NPIm	0	0%	
NR	NRIa	15	9%	**73**
	NRIg	56	32.5%	
	NRSd	11	7.5%	
				167

SCCA results (VR–CoDES) are shown in Tables 16 and 17. For this axis, the values of Cues C, E, and G, and responses ERPp, NPAc, and NPIm are omitted because they were not detected in the analysis.

Table 16. SCCA of children's cues/concerns.

	WEIGHT OF CANONICAL COMPONENTS	
	ξ_1	η_2

CUE A	0	**1**
CUE B	0	0
CUE D	0	0
CUE F	**−1**	0
CONCERNS	0	0

Table 17. SCCA of health providers' responses.

	WEIGHT OF CANONICAL COMPONENTS	
	ξ_2	η_2
EPAAc	0,000	0,000
EPAEm	0,000	0,000
EPAEx	0,000	0,000
EPCAc	0,000	**0,131**
EPCEx	0,000	0,000
ERIa	0,000	0,000
ERSw	**−0,131**	0,000
ERAb	0,000	0,000
NPAi	0,000	0,000
NPBc	0,000	**0,991**
NPSi	0,000	0,000
NRIa	0,000	0,000
NRIg	**−0,991**	0,000
NRSd	0,000	0,000

The first pair of canonical components was ξ_1, cues/concerns; and ξ_2, responses. For the former, the only variable with a weight other than 0 was CUE F (*nonverbal expressions of emotions*). For the latter, the variables with weights other than 0 were NRIg (*ignore*), with a value of .991; and ERSw (*switching*), with a significantly smaller value (.131). This component can be interpreted as a dialogical dimension related to pediatricians' latent tendency *to proceed in the visit*. The relationship

between these two components can be interpreted as a MISSED DIALOGUE with a correlation coefficient of .892. The second pair of canonical components comprised η_1, cues/concerns; and η_2, responses. For the former, the only variable with a weight other than 0 was CUE A (*vague or unspecified words used by patients to describe their emotions*). The latter was represented by NPBc (*black channel*), with a value of .991; and EPCAc (*acknowledgments*), with a smaller value of .131. The correlation coefficient was .888.

This component can be interpreted as a dialogical dimension relative to the latent tendency of pediatricians *to deepen content*s. The relationship between these two components can be interpreted as an UNDERSTANDING DIALOGUE. The following results refer to OPTION ratings (Table 18).

Table 18. OPTION ratings mean.

MEAN	ST.DEV	CRONBACH'S ALPHA
1.7678	4.4498	.895

The means of ratings of shared decision-making in dialogue between health providers and children is low (1.7), as indicated in the OPTION manual (Elwyn et al., 2005).

The following table (Table 19) show the correlation between cues/concerns frequencies and OPTION ratings.

Table 19. Correlation.

	T	P–VALUE
Cues/concerns frequencies and OPTION ratings	**.18**	**.010**

The significant correlation indicates that increased expression of emotions correlates with increased shared decision making.

Finally, the following table (Table 20) shows the correlation between the different types of response and OPTION ratings.

Table 20. Correlations between the four types of responses and OPTION ratings.

	T	P–VALUE
EP responses and OPTION ratings.	.07	n.p.

ER responses and OPTION ratings	**.17**	**.020**
NP responses and OPTION ratings	.08	n.p.
NR responses and OPTION ratings	**.30**	**.000**

These findings show that an increase in shared decision making seems to correlate with responses that cut short the time for discussion of cues/concerns.

The PC DIA

Finally, we present the results for the PC DIA (Figure 4) (Table 21).

Figure 4. The PC DIA.

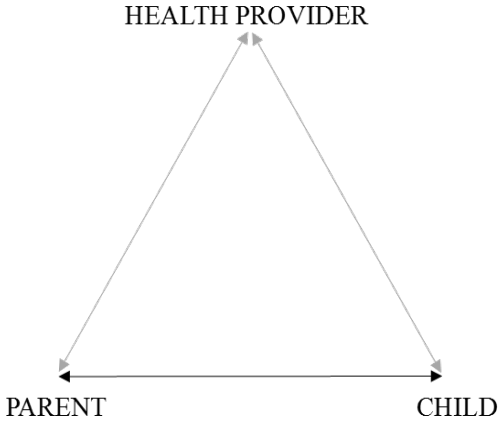


Table 14 addresses the findings on children's cues/concerns just described.

Table 21. Frequencies of parents' responses.

(k = .765)

CATEGORIES	SUBCATEGORIES	PARTIAL SUM	PARTIAL %	TOT.
EP	EPAAc	5	3%	19
	EPAEm	1	1%	
	EPAEx	3	2%	
	EPCAc	3	2%	

	EPCEx	7	4%	
ER	ERIa	37	22%	**69**
	ERSw	12	7%	
	ERPp	1	1%	
	ERAb	19	11%	
NP	NPAc	1	1%	28
	NPAi	8	5%	
	NPBc	0	0%	
	NPSi	19	11%	
	NPIm	0	0%	
NR	NRIa	2	1%	51
	NRIg	44	26%	
	NRSd	5	3%	
				167

SCCA (VR–CoDES) results are presented in Tables 22 and 23. For this axis too, the values of Cues C, E, and G and responses NPBc and NPIm were omitted because they were not detected during the analysis.

Table 22. SCCA of children's cues/concerns.

	WEIGHT OF CANONICAL COMPONENTS	
	ξ_1	η_2
CUE A	0	**1**
CUE B	0	0
CUE D	0	0

CUE F	**−1**	0
CONCERNS	0	0

Table 23. SCCA of parents' responses.

	WEIGHT OF CANONICAL COMPONENTS	
	ξ_2	η_2
EPAAc	0,000	0,000
EPAEm	0,000	0,000
EPAEx	0,000	0,000
EPCAc	0,000	0,000
EPCEx	0,000	0,000
ERIa	**−0,178**	0,000
ERSw	0,000	0,000
ERPp	0,000	**0,178**
ERAb	0,000	0,000
NPAc	0,000	0,000
NPAi	0,000	0,000
NPSi	0,000	0,000
NRIa	0,000	0,000
NRIg	**−0,984**	0,000
NRSd	0,000	**0,984**

The first pair of canonical components was ξ_1, cues/concerns; and ξ_2, responses. For the former, the only variable with a weight other than 0 was CUE F (*nonverbal expressions of emotions*). For the latter, the variables with weights other than 0 were NRIg (*ignore*), with a value of .984; and ERIa (*Information Advice*), with a significantly smaller value of .178. The correlation coefficient was .819. This component could be interpreted as a dialogical dimension relative to parents' latent tendency *to reduce crying*. The relationship between these two components can be interpreted as a SUPPORTING DIALOGUE. The second pair of canonical components was η_1, cues/concerns; and η_2, responses. For the former, the only variable with a weight equal to 0 was CONCERNS (*clear verbalization of an unpleasant emotional state*). The latter was represented by NRSd (*shutting*

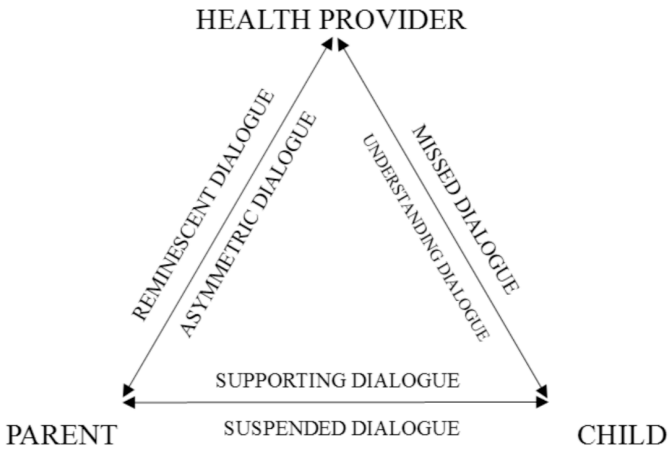
down), with a value of .984; and ERPp, (*postponing*), with a smaller value of (.178). The correlation coefficient was .630. This component can be interpreted as a dialogical dimension related to the latent tendency of parents *to hold over the support of emotions of the child*.

The relationship between these two components can be interpreted as a SUSPENDED DIALOGUE.

Discussion

The pediatric visits mainly concerned seasonal influences, allergies, asthma, and checkups, and often ended with the prescription of drugs. Although the dialogue mainly concerned the daily management of children's health conditions, analysis of the dialogue revealed a large quantity of cues/concerns (318 for parents, 167 for children). The values of canonical correlations were greater in the HP (.808 and .709) and HC (.892 and .888) DIA. This could be a reflection of how interactions with pediatricians were characterized by exchanges related to users' concerns (Figure 5).

Figure 5. A graphical representation of results



The interaction between health providers and parents seems to be characterized mainly by discussion addressing past emotions.
MOTHER: "Oh, yesterday I was so scared! I thought that he (the child) had a high temperature, once again!"
HEALTH PROVIDER: "Mh."
However, once these emotions were shared, further discussion of these emotions was brief, with the parents conceding the topic for discussion of the child's care.
MOTHER: "My doctor, I'm so stressed!"
HEALTH PROVIDER: "Oh, my lady! Did you give him his medicine?"
However, the dialogue between health providers and children focused on preventing strong displays of emotion, such as crying. These are, in fact, very common behaviors during visits (particularly those involving vaccines, syringes, or other invasive analysis) and are probably not a cause for concern or further investigation.
CHILD: (crying)
HEALTH PROVIDER: "How strange this cotton is! It is like paper."
However, children also express ambiguous emotions. In this case, health providers seem to recognize their informational value and take the necessary time to understand their conditions.
HEALTH PROVIDER: "So, how do you feel now?"
CHILD: "Good."
HEALTH PROVIDER: "So what?"
In the dialogue in the third axis, parents also seem concerned about controlling their children's crying during visits.
CHILD: (crying)
MOTHER: "Come on, it's ok."
CHILD: (still crying)
MOTHER: "Okay doctor, so I will continue to give her the same medicine."
Dialogue about emotions, especially about daily problems, seemed to be perceived as slowing down the visit. The efficiency of the visits was maintained by a strong alliance between health providers and parents. Indeed, they used similar conversational tactics to reduce time focused on children's emotional outbursts or crying. Such attitudes helped preserve the prescriptive structure of the visit and focus the conversation on the contents of the the clinical management of the child. On rare occasions, these can be

integrated with topics related to emotions and how these are related to their informational value. Thus, emotional outbursts are quickly suppressed to enable the visit to continue as planned. In these cases, the health provider lets the parent handle the outbursts and avoids holding the child after the visit.

Furthermore, we saw limited possibilities for participant involvement, particularly for children. In fact, along all axes, *concordance* increased if expression of emotions increased as well, but it seemed necessary to limit the time spent on emotions to move the conversation on the procedures of the clinical care.

The patterns observed seem to reflect a cultural model shared by pediatricians and parents that oriented them toward giving and receiving a prescription as quickly as possible, at the lowest cost and with the greatest possible efficiency (Freda et al., 2015), with less consideration of the child as a source of meaningful information.

This model seems to be the basis for maintaining the prescriptive structure of primary care visits. It is also linked to the users' need to delegate decisions to pediatricians, considered the only parties capable of alleviating typical family anxieties about care management (Freda et al., 2015; Freda et al., 2014).

Conclusion

SCCA allowed us to identify the *conversational interaction patterns* in pediatric primary care. The focus on the triangular configuration emphasized the dual role of parents as both consumers of medical care and caregivers of their children.

Our findings are consistent with those in existing related literature (Elwyn et al., 2016; Quattropani et al., 2013; Lenzo et al., 2013; Del Piccolo et al., 2010; Bakarat & Boyer, 2008; Lyons & Chambarlain, 2006), which showed, along all axes, wherein the interactions in dialogue about emotions and processes of *concordance* are integrated only with difficulty (Horne et al., 2010). These earlier works also showed health discussions were dedicated primarily to cognitive topics that rarely addressed the informational value of the child's emotions or shared decision-making processes. This focus ensured quick medical visits with an asymmetrical structure in which

pediatricians delegated the management of children's daily care to the parents.
These findings suggest the need for research aimed at helping health providers and parents recognize and understand the role of emotional content in their conversations. This could be useful for integrating emotional and cognitive topics in their interactions, promoting a subjectivation of the experience, and developing the skills needed for shared management of medical care.
We think that it could be useful to implement specific interventions (Freda et al., 2015; Freda et al., 2014) in pediatric primary care, in a multidisciplinary approach with pediatricians and psychologists, to allow participants to achieve an enrichment of their dialogue.
These interventions, in the health psychology's field, could help partecipants recognize the informative value of emotions and incorporate them into conversations. Furthermore, they could provide support for the identification and use of the participants' decisional competences about the child's care, developing new processes of concordance.

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