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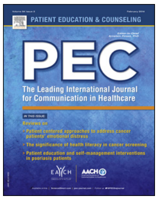

Patients' need for information provision and perceived participation in decision making in doctor-patient consultation: Micro-cultural differences between French- and Italian-speaking Switzerland

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ABSTRACT

Objectives: To explore micro-cultural differences in patients' need for information provision, perceived participation in decision making, and related concepts during the doctor-patient consultation between French- and Italian-speaking patients in Switzerland.

Methods: In 2012, 153 French- and 120 Italian-speaking patients with chronic low back pain (cLBP) were surveyed on their need for information provision, perceived participation in decision making, cLBP knowledge, psychological empowerment, and trust in their doctor. *T*-tests and regression analyses with interaction terms were performed.

Results: Results show that French- and Italian-speaking patients significantly differed in their participation in decision making, with French-speaking patients reporting higher involvement. Need for information provision was related to empowerment among French- and to trust among Italian-speaking patients. For participation in decision making, trust was the only related concept among French-, and cLBP knowledge among Italian-speaking patients. Significant interaction terms indicate a moderation of micro-cultural background.

Conclusion: Findings point towards differences in the relationships between individual patient characteristics (i.e. knowledge, empowerment) and relational doctor-patient characteristics (i.e. trust) and patients' need for information provision and participation in decision making between French- and Italian-speaking patients in Switzerland.

Practice implications: Doctors should be aware of these differences when dealing with patients of different micro-cultural backgrounds.

1. Introduction

The doctor-patient consultation is characterized by complex interpersonal relations between doctors and their patients [1]. These result from individual characteristics of both parties as well as the particular context in which they interact. Patients shape the medical consultation with their level of involvement, which may be limited to the need for information provision or extend to participation in the decision-making process [2]. There is empirical evidence that the active involvement of patients in decisions about their treatment plan improves patient satisfaction, adherence to recommended treatments, and health outcomes [3,4]. Engaging the patient in shared decision making has thus been advocated by health policy makers as the preferred model of doctor-patient consultation [2]. Nevertheless, it is important to acknowledge that not all patients desire to be actively involved during the medical consultation. Especially men, the elderly, and less educated patients seem to prefer a paternalistic model leaving decisions about their treatment and health to the medical expert [5,6]. In how far differences in the desire for patient involvement are determined by patients' cultural background, has yet to be understood [7].

The ongoing globalization process has fueled a number of studies on cultural differences and how they affect the medical consultation. Comprehensive literature reviews and a meta-synthesis have identified both quantitative and qualitative studies that examined the effect of cultural differences*within* medical consultations [8–10]. Schouten and Meeuwesen [9] conclude that ethnic minority patients are less verbally expressive and assertive within the doctor-patient consultation. But the question remains

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whether these forms of low involvement result from patients' cultural background *per se* or the fact that their cultural background differs from the one of the doctor [11–13]. Studies on cultural differences *across* medical consultations could help answer this question, but cross-cultural studies in medical settings did not yet receive noteworthy attention. In principle, two types of cross-cultural studies can be distinguished: studies that examine different patterns in the doctor-patient consultation across countries [14,15], and micro-cultural studies concerned with the same phenomenon within countries.

Studying micro-cultural differences within countries is critical as it is generally assumed that people from the same country also share the same history, language, world-views, beliefs, norms, values, and habits, all considered cultural indicators [16]. However, countries exist where these indicators do not always match. One example is Switzerland, born from the common wish of people of different mother tongue and different cultures to be united [17]. First empirical studies observed micro-cultural diversity in Switzerland in various health contexts such as organ donation, disease prevention, disease management, and health promotion [18–21]. In these studies, language is indicative of micro-cultural diversity. The consideration that language differences reflect cultural differences originates from the principle of linguistic relativity. Advanced by Sapir and Whorf, the principle suggests that language influences how people think and behave [22,23]. With this in mind, three main micro-cultures can be identified in Switzerland: the German-speaking, the French-speaking, and the Italian-speaking. Studies on micro-cultural diversity in Switzerland did not find any systematic patterns that would allow ascribing certain characteristics to its micro-cultures across health contexts.

The present study explores yet another health context, i.e. the doctor-patient consultation, with the aim to understand in how far differences in perceived patient involvement – more precisely their need for information provision and participation in decision making – are determined by patients' cultural background *per se*. In doing so, it fills the gap on micro-cultural studies across medical consultations on the one hand, and helps consolidate findings on health-related micro-cultural diversity in Switzerland on the other hand. Furthermore, the study focuses on cultural differences between the French- and Italian-speaking populations. In contrast to the German-speaking, both populations are considered rather homogeneous because of their Romance language, yet they differ in health-related attitudes and behaviors as previous studies in other health contexts illustrated [18,21]. With regards to the context of doctor-patient consultation we therefore ask:

RQ1: Do micro-cultural differences exist in patients' need for information provision and their perceived participation in decision making in the doctor-patient consultation between French- and Italian-speaking Switzerland?

Since an active involvement in the doctor-patient consultation is key to chronically ill patients and the management of their disease [24,25], this study examines micro-cultural differences in the involvement of a specific patient population, namely chronic low back pain (cLBP) patients. To our knowledge, it is the first study that looks at micro-cultural differences in Switzerland in the context of medical consultations, and no insights are at hand. We therefore do not pose a-priori hypotheses on micro-cultural differences in patients' need for information provision and their perceived participation in decision making. It is well possible that micro-cultural diversity in patient involvement among French- and Italian-speaking cLBP patients do not exist. However, differences may exist in the relationship between patients' need for information provision, perceived participation in decision making, and both intra- and interpersonal concepts linked to these two dimensions of perceived patient involvement.

Three concepts related to perceived patient involvement have been identified in the scientific literature: patients' health-related knowledge, psychological empowerment, and trust in one's doctor. Considered a dimension of health literacy [26,27], patients' knowledge about their disease is deemed to be positively associated with information exchange and shared decision making in the medical consultation [28–31]. Likewise, feelings of empowerment – including perceptions of competence and control [32] – are thought to be related to patient participation in the doctor-patient consultation [33–35]. Eventually, trust in one's doctor is said to be linked to patient involvement during the medical consultation [36–38].

Micro-cultural differences in the relationship between patients' need for information provision, their perceived participation in decision making, and the aforementioned concepts can be of two kinds: first, the type of related concepts may be different in the two micro-cultures, and, second, the strength of the relationships may vary. We therefore furthermore ask:

RQ2: Do micro-cultural differences exist in the relationship between patients' need for information provision and their perceived participation in decision making in doctor-patient consultation on the one hand, and patients' health-related knowledge, psychological empowerment, and trust in one's doctor on the other hand between French- and Italian-speaking Switzerland?

Although previous studies showed that health knowledge, psychological empowerment, and trust in one's doctor are related to perceived patient involvement, a lack of empirical evidence and theoretical insights make us hesitant to formulate a-priori hypotheses on the moderation of micro-cultural background, i.e. whether the relationships are stronger among French- or Italian-speaking patients.

2. Methods

2.1. Procedure

To answer our two research questions, we collected data from 273 cLBP patients in the French-speaking cantons Vaud, Geneva, and Fribourg (Switzerland) and the Italian-speaking canton Ticino (Switzerland). Between January 2012 and 2013 outpatients and inpatients were recruited through their healthcare providers with different expertise (rheumatology, physiotherapy, pharmacology, and neurosurgery). Three healthcare providers collaborated in the recruitment of French-speaking patients, ten in the recruitment of Italian-speaking patients. To be eligible for the study, patients had to meet the following inclusion criteria: (i) age 18 years or older, (ii) persistent low back pain for at least three months, (iii) pain not caused by cancer, systematic inflammatory disease, or fibromyalgia syndrome, (iv) and sufficient knowledge of Italian or French respectively. All patients signed an informed consent before they completed a self-administered paper-and-pencil questionnaire. Inpatients filled out the questionnaire in the hospital during a moment convenient for them. Outpatients filled out the questionnaire in the medical practice either after the medical consultation or at another time upon appointment. A study nurse or student assistant was present to clarify any comprehension problems and to collect the completed questionnaire. This procedure was approved by the cantonal ethics committees of Vaud and Ticino and the institutional review boards of the collaborating hospitals in Geneva and Fribourg.

2.2. Measures

The questionnaire contained self-report measures, none of them originally developed and validated in French or Italian. Hence, forward and backward translation by two independent bilingual translators for each language (English/French and English/Italian) was carried out to assure linguistic validity [39,40]. The translated questionnaire was pre-tested in five cLBP patients and assessed by one healthcare provider for face and content validity, again for each language separately. The questionnaire included measures of the following concepts:

Patients'need for information provision and perceived participation in decision making in the doctor-patient consultation were assessed with four items from the patient information provision subscale and four items from the patient participation in decision-making subscale as part of the modified version of the *Patients'Perceived Involvement in Care Scale (M-PICS)* [41]. For each subscale, patients indicated their level of involvement on a 5-point scale ranging from 1 (never) to 5 (always) with higher values indicating higher levels of patient involvement. Both subscales showed acceptable internal consistency (patient information provision: $\alpha = .90$; patient participation in decision making: $\alpha = .74$), and a mean score was calculated for each subscale for further analyses.

CLBP knowledge was assessed with twelve questions from the *Low Back Pain Knowledge Questionnaire*[42] and based on cLBP information from two HONcode certified websites (www.mayoclinic.com,www.oneself.ch). Questions addressed knowledge related to symptoms, causes, treatment, and the management of cLBP. Each question was followed by a set of four response options and an "I don't know" option. Correct responses were coded as 1, incorrect and "I don't know" responses as 0. The final measure was obtained by a mean score calculation with a theoretical range from 0 (no correct response) to 1 (all correct responses).

Psychological empowerment was measured with the multidimensional *Psychological Empowerment Scale* [43]. The scale consists of four sub-dimensions, each measured with three items: meaning, competence, self-determination, and impact. The scale was adapted to the context of cLBP and its management. Patients responded on a Likert scale ranging from 1 (strongly disagree) to 7 (strongly agree) with higher values suggesting higher levels of psychological empowerment. Troublesome skewed and kurtic values were observed for all three meaning items and one competence item, indicating non-normality and lack of variance. These items were therefore dropped, and a mean score was calculated for the remaining eight items. The scale showed good internal consistency ($\alpha = .89$).

Trust in one's doctor was measured with a single item indicator from the trust subscale as part of the *Primary Care Assessment Survey Short Form (PCAS)* [44]. The Likert item "I completely trust my physician's judgments about my medical care" ranged from 1 (strongly disagree) to 5 (strongly agree).

The questionnaire also measured gender, age, educational attainment, occupational situation as well as pain history used for sample description. Questionnaire language served as a proxy of micro-cultural background, i.e. patients who were handed out the French version in the French-speaking cantons belong to the French-speaking sample, and patients who were handed out the Italian version in the Italian-speaking canton Ticino belong to the Italian-speaking sample.

2.3. Analyses

Independent samples *t*-tests served to identify differences in patients' need for information provision and their perceived participation in decision making in the doctor-patient consultation between French- and Italian-speaking patients. Furthermore, regression analyses with interaction terms were performed for each dimension of patient involvement to analyze their relationship with patients' health-related knowledge, psychological empowerment, and trust in one's doctor, and to examine the moderating role of micro-cultural background.

3. Results

3.1. Sample

The sample consisted of 153 French-speaking patients and 120 Italian-speaking patients suffering from cLBP. Of all patients, 159 were female (58%). Patients ranged in age from 20 to 89 years ($M = 50.70$, $SD = 13.94$). One hundred and eighty three (67%) held an educational degree beyond obligatory school, which corresponds to ten years of school in Switzerland. On average, patients had suffered from cLBP for ten years ($M = 9.99$, $SD = 9.99$), yet 133 (49%) indicated to be in a professional occupation outside home. As shown in Table 1, French- and Italian-speaking patients did not significantly differ either in their socio-demographic characteristics or in their pain history.

3.2. Micro-cultural differences in patients' need for information provision and their perceived participation in decision making

To identify micro-cultural differences in patients' need for information provision, perceived participation in decision making,

Table 1
Sample characteristics by micro-cultural background.

	French-speaking patients ($n = 153$)		Italian-speaking patients ($n = 120$)		
	n	%	*n*	%	*Sig.*
Gender					*.34*[b]
Female	93	60.8	66	55.0	
Male	60	39.2	54	45.0	
Education					*.71*[b]
≤Obligatory school	49	32.0	41	34.2	
>Obligatory school	104	68.0	79	65.8	
Currently working outside home					*.40*[b]
Yes	78	51.0	55	45.8	
No	75	49.0	65	54.2	
	M	SD	*M*	SD	
Age	50.01	13.13	51.57	14.92	*.39*[a]
Pain duration (years)	10.83	10.25	8.92	9.58	*.12*[a]

[a] Independent samples *t*-test.
[b] Chi-square test.

health-related knowledge, empowerment, and trust in one's doctor, independent samples *t*-tests were performed. Results show that French- and Italian-speaking patients significantly differed in all variables except for patients' need for information provision. More precisely, French-speaking patients were significantly more knowledgeable about cLBP than Italian-speaking patients (French: $M = .66$, SD = .19 vs. Italian: $M = .58$, SD = .20; $t(271) = 3.37$, $p = .001$). On the other hand, they felt significantly less empowered than their Italian-speaking counterparts (French: $M = 4.33$, SD = 1.42 vs. Italian: $M = 4.79$, SD = 1.52; $t(271) = -2.59$, $p = .01$). Likewise, patients recruited in the French-speaking cantons of Switzerland reported to have less trust in the judgments of their doctor than patients from the Italian-speaking canton Ticino (French: $M = 2.31$, SD = 1.49 vs. Italian: $M = 4.25$, SD = 1.11; $t(271) = -11.95$, $p < .001$). Concerning our first research question, i.e. whether micro-cultural differences exist in the perceived involvement of patients during the doctor-patient consultation, a mixed picture emerged. While French- and Italian-speaking patients did not significantly differ in their need for information provision (French: $M = 3.47$, SD = 1.16 vs. Italian: $M = 3.39$, SD = 1.25; $t(271) = .56$, $p = .58$), they did so in their perceived participation in the decision-making process, with French-speaking patients reporting significantly higher involvement (French: $M = 2.26$, SD = .98 vs. Italian: $M = 2.01$, SD = .99; $t(271) = 2.09$, $p = .04$). Detailed information including mean differences between the two groups is shown in Table 2.

3.3. Micro-cultural differences in the relationship between patients' need for information provision, their perceived participation in decision making, and selected concepts

To respond to our second research question, i.e. whether micro-cultural differences exist in the relationship between health-related knowledge, psychological empowerment, trust in one's doctor, and perceived patient involvement during the doctor-patient consultation, a multiple regression analysis with interaction terms [45] was performed for patients' need for information provision and their perceived participation in decision making separately. Gender, age, and educational attainment were entered as control variables. Furthermore, cLBP knowledge, psychological empowerment, and trust in one's doctor were added to the model. Two dummy variables were created for questionnaire language (French/Italian), together with product terms for our selected concepts. They were added to the model to detect any moderation of micro-cultural background. For each dimension of perceived patient involvement, the regression analysis was run twice changing the reference group (French-speaking patients/Italian-speaking patients) to obtain the path coefficients for cLBP knowledge, psychological empowerment, and trust in one's doctor for each patient group (Tables 3 and 4).

Relationship between cLBP knowledge and patients' need for information provision as well as their perceived participation in decision making

CLBP knowledge was not significantly associated with patients' need for information provision in the two patient groups; neither did patients' micro-cultural background moderate the relationship (Table 3). A different result emerged for patients' perceived participation in decision making where we observed a significant positive relationship between cLBP knowledge and patients' self-report participation in decision making in the Italian-speaking sample ($\beta = .19$, $t(263) = 2.08$, $p = .04$), but none in the French-speaking sample ($\beta = -.09$, $t(263) = -1.10$, $p = .27$). In addition, micro-cultural background moderated the relationship between cLBP knowledge and perceived patient participation in decision making, indicated by a significant change in difference between the two language groups as cLBP knowledge increases (Table 3 and Fig. 1).

Relationship between psychological empowerment and patients' need for information provision as well as their perceived participation in decision making

While psychological empowerment was positively related to patients' need for information provision among the French-speaking patient group ($\beta = .16$, $t(263) = 2.00$, $p = .047$), no such significant relationship was evident for the Italian-speaking patient group ($\beta = .14$, $t(263) = 1.66$, $p = .10$); neither did patients' micro-cultural background moderate the relationship. Concerning patient participation in decision making as a dimension of perceived patient involvement, neither a significant association with psychological empowerment nor a moderation of micro-cultural background could be observed (Table 3).

Relationship between trust in doctor and patients' need for information provision as well as their perceived participation in decision making

Trust in one's doctor was positively related to patients' need for information provision in the Italian-speaking sample ($\beta = .65$, $t(263) = 4.86$, $p < .001$), but not in the French-speaking sample ($\beta = .13$, $t(263) = 1.50$, $p = .13$). Furthermore, micro-cultural background moderated the relationship between trust in one's doctor and patients' need for information provision, indicated by a significant change in difference between the two language groups as trust in one's doctor increases (Table 3 and Fig. 2). A significant moderation of patients' micro-cultural background was also evident for the association between trust in one's doctor and patients' participation in the decision-making process (Table 3 and Fig. 2). Within the two micro-cultures, trust in one's doctor was significantly positively related to perceived patient participation in decision making among French-speaking patients ($\beta = .45$, t

Table 2
Mean and standard deviation for all concepts by micro-cultural background.

	French-speaking patients ($n = 153$)		Italian speaking patients ($n = 120$)		Difference F–I	
	M	SD	*M*	SD	*M*	*Sig.*
cLBP knowledge (0 to 1 mean score)	.66	.19	.58	.20	.08	*.001*[a]
Psychological empowerment (1 to 7 Likert scale)	4.33	1.42	4.79	1.52	–.46	*.01*[a]
Trust in doctor (1 to 5 Likert scale)	2.31	1.49	4.25	1.11	–1.94	*<.001*[a]
Patient involvement: information provision (1 to 5-point scale)	3.47	1.16	3.39	1.25	.08	*.58*[a]
Patient involvement: participation in decision making (1 to 5-point scale)	2.26	.98	2.01	.99	.25	*.04*[a]

[a] Independent samples *t*-test.

Table 3
Multiple regression analysis with interaction terms for patients' need for information provision and participation in decision making.

	Patients' need for information provision						Patient participation in decision making					
	French-speaking patients (*n* = 153)			Italian-speaking patients (*n* = 120)			French-speaking patients (*n* = 153)			Italian-speaking patients (*n* = 120)		
	B	SE	*β*	*B*	SE	*β*	*B*	SE	*β*	*B*	SE	*β*
cLBP knowledge	.39	.52	.06	.51	.55	.08	−.46	.42	−.09	.93[*]	.45	.19
Psychological empowerment	.13[*]	.07	.16	.12	.07	.14	−.01	.05	−.01	.04	.06	.06
Trust in doctor	.10	.07	.13	.47[***]	.10	.65	.27[***]	.05	.45	−.04	.08	−.07
Micro-cultural background (MCB)[a]	−1.89[*]	.77	−.78				−.53	.63	-.27			
cLBP knowledge × MCB[a]	.12	.73	.04				1.39[*]	.60	.51			
Psychological empowerment × MCB[a]	−.02	.10	−.04				.04	.08	.11			
Trust in doctor × MCB[a]	.37[**]	.12	.50				−.31[**]	.10	−.50			
Adjusted R^2	*.10*						*.11*					

Note: models are controlled for patients' gender, age, and educational attainment.

[a] Micro-cultural background is defined by questionnaire language and included as a dummy variable. Models were run twice for each micro-culture changing the reference group. The values presented for French-speaking patients are based on Italian-speaking patients as the reference group (French = 1, Italian = 0). Changing the reference group (French = 0, Italian = 1) produced the same values and significance levels but with reverse signs and are therefore not repeated for Italian-speaking patients.

[*] $p < .05$.

[**] $p < .01$.

[***] $p < .001$.

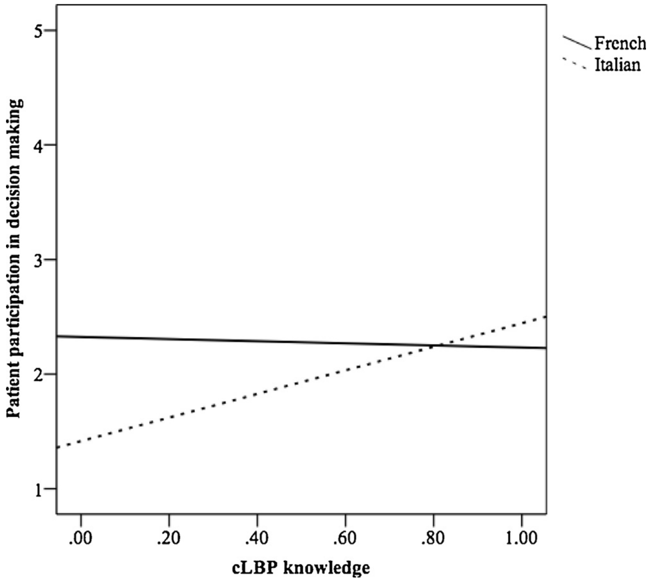

Fig. 1. Moderation of micro-cultural background in the relationship between cLBP knowledge and perceived patient participation in decision making.

(263) = 5.07, $p < .001$), while no significant association could be found in the Italian-speaking patient population ($\beta = -.07$, $t(263) = -.50$, $p = .62$).

4. Discussion and Conclusion

4.1. Discussion

Moving away from a paternalistic model of doctor-patient consultation towards a model of shared decision making [3,46], active patient involvement is considered key in doctor-patient consultations. There is empirical evidence that the active involvement of patients in decisions about their treatment plan improves patient satisfaction, adherence to recommended treatments, and health outcomes [3,4]. While patients' involvement in medical consultations has been linked to individual patient characteristics such as gender, age, and education [5,6], the role cultural background plays in determining patients' willingness to engage in information exchange and shared decision making, has yet to be understood [7]. However, cultural studies on medical consultations across countries are lacking. So do cultural studies within countries characterized by micro-cultural diversity. Switzerland is one such country with a German-, French-, and Italian-speaking micro-culture. Few studies have shown that micro-cultural differences between the three groups exist with regards to organ donation, disease prevention, disease management, and health promotion behaviors [18–21]. That said, the present study aimed to fill the gap both on research on the role of cultural background in explaining patients' perceived involvement in the doctor-patient consultation, and on health-related micro-cultural diversity within Switzerland on the other hand. We explored micro-cultural diversity by concentrating on cLBP patients from French- and Italian-speaking Switzerland. These micro-cultures are often considered homogenous because of their Romance language, yet they differ in health-related attitudes and behaviors as previous studies in other health contexts illustrated [18,21].

To study micro-cultural differences in perceived patient involvement, we distinguished between two dimensions of involvement: patients' need for information from their doctor and their perceived participation in the decision-making process [2]. This distinction is both theoretically and empirically sound. In fact, the results of our study show a different picture of micro-cultural differences for each of the two dimensions.

Patients' *need for information provision*during the medical consultation did not significantly differ between French- and Italian-speaking cLBP patients. At the same time, significant micro-cultural differences emerged for the relationship between patients' need for information provision from their healthcare provider and selected concepts studied in the context of doctor-patient-communication. The concepts looked at in the present study were patients' health-related knowledge, their psychological empowerment, and trust in healthcare providers. We observed that higher levels of psychological empowerment were associated with increased need for information provision among French-speaking patients. This is in line with results from prior studies in other cultural contexts [34]. Among Italian-speaking patients, trust in one's doctor was positively related to patients' need for information provision, underlining the importance of an ingenious and mutual doctor-patient relationship [47], in which patients feel comfortable with asking questions about their disease and treatment plan. Also, the relationship between trust in one's doctor and patients' need for information provision was moderated by micro-cultural background as the difference in the relationship

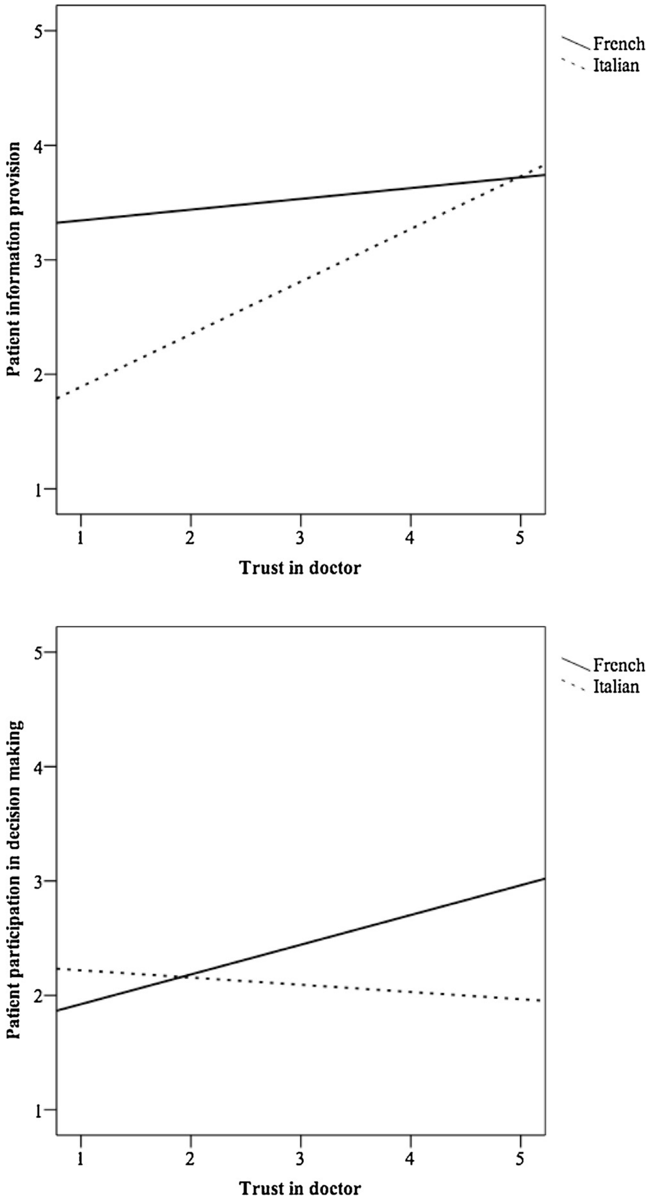

Fig. 2. Moderation of micro-cultural background in the relationship between trust in one's doctor and patients' need for information provision/perceived patient participation in decision making.

decreased significantly between French- and Italian-speaking patients as trust in one's doctor increased.

Contrary to patients' need for information provision, their *participation in decision making* during the medical consultation did significantly differ between the two micro-cultures. French-speaking patients reported higher involvement in the decision-making process than their Italian-speaking counterparts did. The question arises why. A comparison of the two patient groups showed that Italian-speaking patients felt more empowered than French-speaking patients. However, psychological empowerment did not turn out to be significantly related to patients' perceived participation in decision making in the doctor-patient consultation in any of the two micro-cultures. In fact, among patients from French-speaking Switzerland, only trust in one's doctor was significantly positively associated with perceived patient participation in decision making mirroring our findings on the positive relationship between trust in one's doctor and need for information provision among Italian-speaking patients. Among patients from Italian-speaking Switzerland, cLBP knowledge was the only concept positively related to perceive patient participation in decision making confirming findings from previous studies on the positive link between health knowledge as a dimension of health literacy and participation in shared decision making [29,31]. Finally, we could observe a moderation of micro-cultural background both for trust in one's doctor and cLBP knowledge and their relationship with perceived patient participation in decision making during the doctor-patient consultation. In both cases, the difference in the relationship increased between the two micro-cultures as cLBP knowledge and respectively trust increased.

In short, *individual* patient characteristics i.e. health-related knowledge and psychological empowerment showed to be positively associated with perceived patient involvement. However, we need to differentiate between the two sub-dimensions of patient involvement: 'need for information provision' and 'participation in decision making' as well as the two micro-cultures. Likewise, *relational* doctor-patient characteristics, i.e. trust in one's doctor, is positively related to perceived patient involvement, again dependent on its sub-dimension and the micro-culture under investigation. These findings confirm micro-cultural differences across medical consultations in Switzerland. But they do not allow generalizing that the perceived involvement of patients from French-speaking Switzerland are primarily linked to individual characteristics and of patients from Italian-speaking Switzerland by relational characteristics or vice versa.

5. Conclusion

Based on the results of the present study, we can conclude that micro-cultural differences in perceived patient involvement in the doctor-patient consultation exist between French- and Italian-speaking patients in Switzerland, although only concerning their participation in the decision-making process. Furthermore, micro-cultural differences exist in the relationship between intra- and interpersonal concepts such as health-related knowledge and trust in one's doctor and patients' need for information provision and their participation in decision making.

Our conclusions should, however, be understood with caution as this study is not free from limitations. From a conceptual perspective, it should be noted that language is only a rough indicator of micro-cultural background. Although we based our conceptualization and assessment of micro-cultural background on the principle of linguistic relativity, the consideration of multiple cultural indicators including beliefs, norms, or values would allow for a more comprehensive analysis of micro-cultural differences in the context of medical consultations. Furthermore, the study of (micro-) cultural differences in the context of health requires the selection of appropriate samples, which is often challenged by limited access to study populations, time, financial resources, or complex recruitment procedures. This applies to our study, too, which does not include a pure Swiss sample for each of the two language regions but also residents and daily commuters from neighboring countries France and Italy. It would, thus, be interesting to see if a replication of this study with only Swiss-French and Swiss-Italian patients produces the same results. Concerning the measurement of perceived patient involvement, we used an alternate version of the patient information provision subscale as part of the modified version of the *Patients'Perceived Involvement in Care Scale (M-PICS)* [41] by dropping the fifths item. Our decision was conceptually driven as the fifth item assesses healthcare provider's facilitation rather than patients' need for information provision, which was one of the core concept of the present study. Also, primarily due to space constrains, we used a single item indicator of trust from the *Primary Care Assessment*

Survey Short Form (PCAS) [44]. Since the data at hand point towards differential effects of trust in one's doctor on patient involvement, the use of a multi- instead of a single-item indicator would provide stronger findings to conclude on micro-cultural differences. From a methodological perspective, we have to acknowledge that all self-report data may be subject to social desirability and poor self-evaluation biases. This is, for instance, evident in the measure of meaning as a sub-dimension of psychological empowerment where skewed and kurtic values (most patients regarded the management of their cLBP as highly meaningful) led to the exclusion of this dimension in our analyses. We, thus, used an alternate version of the validated *Psychological Empowerment Scale* [43]. When it comes to the generalizability of our findings, two additional limitations should be acknowledged. We assessed health knowledge and psychological empowerment with regards to a specific health condition since both concepts may vary dependent on the context under investigation [26,48]. That said, the generalization of our findings across health conditions other than cLBP should be made with caution. Eventually, we did not collect information on characteristics of our collaborating healthcare providers such as training or professional autonomy known to influence patient involvement [49]. Therefore, we were unable to assess whether or not these characteristics may have confounded our findings on micro-cultural differences. This limitation can, however, be alleviated as we collaborated with multiple healthcare providers in the French- and Italian-speaking parts of Switzerland with the aim to generalize across healthcare providers within the two micro-cultures.

5.1. Practice implications

This study on micro-cultural differences in patient involvement and related intra- and interpersonal concepts across patient populations of seemingly similar cultural backgrounds provides useful insights on the different mechanisms associated with patients' needs and participation in the doctor-patient consultation. In micro-cultures like French- and Italian-speaking Switzerland, doctors should be aware of these mechanisms when dealing with patients of different micro-cultural backgrounds to facilitate a successful and satisfactory doctor-patient relationship.

Conflicts of interest

There is no conflict of interest of the authors.

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