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Cedraschi, Christine; Girard, Elodie Laure; Luthy, Christophe; Kossovsky, Michel;
Desmeules, Jules Alexandre; Allaz, Anne-Françoise

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Primary attributions in women suffering fibromyalgia emphasize the perception of a disruptive onset for a long-lasting pain problem

Christine Cedraschi ^{a,b,*}, Elodie Girard ^c, Christophe Luthy ^a, Michel Kossovsky ^a, Jules Desmeules ^b, Anne-Françoise Allaz ^a

^a Division of General Medical Rehabilitation, Geneva University Hospitals, Geneva, Switzerland

^b Division of Clinical Pharmacology and Toxicology, Multidisciplinary Pain Centre, Geneva University Hospitals, Geneva, Switzerland

^c Division of Emergency and Liaison Psychiatry, Geneva University Hospitals, Geneva, Switzerland

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ABSTRACT

Objective: Fibromyalgia (FM) is a chronic musculoskeletal pain disorder characterized by widespread pain. This study focuses on patients' attributions of illness and of symptom onset.

Methods: Semi-structured interviews were conducted with 56 women to elicit patients' views on what triggered their FM. The transcripts of the interviews were analyzed using a classical indexing technique to identify key themes. Content analysis was performed by two independent coders.

Results: Primary causal attributions fell into five categories: psychological problems (28 respondents); somatic concerns (N = 12); violence/abuse during childhood (N = 7), gynaecological/obstetrical problems (N = 6), and fatigue (N = 3). Patients' attributions were internal and external in the same proportions, more frequently unstable than stable, and more often described uncontrollable than controllable. Participants expressed decrements in self-esteem and feelings such as self-blame or despair; global perceptions of persistent pain and long-lasting problems, evoking chronicity and hopelessness; and low perceived control over their lives as well as beliefs that nothing can be done, thus increasing a feeling of guilt and vulnerability. Patients' narratives emphasized disruptive circumstances surrounding symptom onset.

Conclusion: Attributions often referred to the psychological dimension of the events surrounding FM onset, even though some of them also had a clear somatic dimension. Many narratives mentioned successive disruptive events and suggested an increasing loss of control. Addressing these illness representations may contribute to tailor the treatment and to help patients gain self-coherency by providing means to understand pain onset but also to guide future behaviours, particularly in terms of adjustment and help-seeking.

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Introduction

Fibromyalgia (FM) is a chronic musculoskeletal pain disorder characterized by widespread pain and pain upon palpation at tender points [1,2]. A majority of patients also complain of fatigue and nonrestorative sleep, memory or concentration problems, stiffness, and mood disturbances. A number of studies also point to central sensitization in patients with FM [3,4]. Attempts have been made to elucidate etiological mechanisms underlying FM. This is important as assumptions about the nature and origin of symptoms play an important role in clinical management.

Research on psychological factors, such as the perceptions and cognitions that patients hold about their pain problem, has shown the importance of patients' illness perceptions. These perceptions provide a

coherent and empirically-based framework within a 'common-sense' model [5,6]. Such a model suggests that patients suffering FM develop personal representations about their illness and that these representations may influence what this illness means to them [6].

Causal attribution theory brings understanding into the ways patients reconstruct their illness experience. Causal attributions are the common-sense explanations people give to account for an event and their own interpretations which will guide future behaviours [7–10]. Various studies [11–13] have highlighted how much causal attributions influence cognitions and symptom experience but also contribute to determine the illness response, help-seeking behaviour, illness-associated disability as well as coping behaviour and adaptive resources in various illnesses, including heart infarction [14], somatoform disorders [15,16], somatoform disorders in patients with suspected allergies [17], orthopaedic surgery [18], chronic pain [19], fatigue [20,21] and fibromyalgia [22,23].

Attributional theories were first elaborated with reference to the locus of causality. Further studies showed the importance of two additional dimensions which may influence affective and behavioural

* Corresponding author at: Division of General Medical Rehabilitation (SMIR-BS), Geneva University Hospitals, 1211 Geneva 14, Switzerland. Tel.: +41 22 382 35 40; fax: +41 22 382 35 65.

E-mail address: Christine.Cedraschi@hcuge.ch (C. Cedraschi).

responses to stressful events: stability over time and controllability of the event [9,10,24–26]. Causal attributions can be thus classified into three dimensions: 1) locus of causality, 2) stability, and 3) controllability [26]. The locus refers to the perceived location of a cause as either internal or external to the person and will influence his/her affective experience of the event (e.g. in terms of self-blame and self-esteem); stability refers to the perceived degree of permanence/changeability of the cause over time (stable vs unstable) and is modulating expectancies for recurrence of the event; and finally, controllability refers to the differentiation between causes that are under, versus not subject to, volitional control (controllable vs uncontrollable), and may predict subsequent outcomes. A combination such as internal, unstable and uncontrollable attributions has been described as facilitating positive coping strategies which improve the management of distressing emotions and cognitions. On the contrary, stable and uncontrollable attributions have been associated with avoidant coping strategies and negative psychological adjustment [26,27]. This basic taxonomy is an aid in reconstructing assumptions that individuals have about their illness and is thus of interest in understanding illness in FM patients.

Guidelines for the management of FM stress the importance of a comprehensive assessment of the patient [28,29]. In this context, the investigation of how patients suffering FM describe symptom onset may help tailoring the treatment to the individual's needs. In this study we explored what kind of attributions women suffering FM make regarding their illness. Our purpose was to investigate FM onset using the dimensions of the attribution theory as a framework to analyze the patients' accounts of symptom onset. Drawing on a qualitative interview study, we focused particularly on the women's primary causal attributions, i.e. the cause they presented as the main or primary reason for pain onset.

Methods

Participation in the study was proposed to FM patients involved in a neurophysiological assessment [30]. Patients were recruited from the community and were referred by their physicians to the Multidisciplinary Pain Center of the Geneva University Hospitals, a public hospital which is the major primary care facility for the area. Diagnosis of FM was established by the patients' treating physicians. The inclusion criteria were fulfilling the American College of Rheumatology 1990 criteria for FM [1]. As FM mainly affects women [31], participation was proposed only to female patients. In qualitative studies, the number of participants is usually determined by inductive sampling, i.e. by the need to encompass the range of possible responses and to achieve theoretical 'saturation' [32,33]. In this study, more than three-quarters of the global sample of FM patients ($n = 56$ out of 73) were interested to communicate their experience of FM onset and accepted to participate in a semi-structured interview. Those who refused did so because of time contingencies or difficulties to respond to an interview in French. This sample allowed achieving theoretical saturation of the established analytical categories.

Participants were questioned using face-to-face semi-structured interviews [34]. Interviews [34,35] were conducted to elicit patients' views on what triggered their FM, on the possible causal explanations of their pain problem, and they were also questioned on what they considered as the main or primary reason for pain onset. The topics were not addressed in a fixed order, although the opening question was always 'Tell me about your fibromyalgia, how did it start?' As the interview progressed, issues about the causes of the symptoms were addressed ('According to you, was there any reason for pain onset?'). If the patients mentioned a set of circumstances associated to pain onset and to its early developments, they were then questioned about the main reason for pain onset. If respondents declared that they were no doctors and could not identify the causes of their FM, they were prompted to give their own opinion, and they were told that we were interested in their point of view about pain onset and

that there was no right or wrong answer. Two members of the research team trained in qualitative research procedures, a psychologist and a psychiatrist who were not involved in these patients' care, conducted the interviews. The two researchers were familiar with patients suffering from chronic pain problems and FM in particular. Interviews lasted 45–75 min. The aim was to access the range of attributions about FM triggering events or context. A qualitative methodology using open-ended questions allowed gaining access to the patient's way of thinking about the origin of pain [36–38].

The interviews were tape-recorded and transcribed. The transcripts were then analyzed using a manual data indexing technique to identify key themes [39]. The qualitative analysis was performed by two researchers (a psychologist and a psychiatrist), beginning with close readings and annotations of the interview transcripts. The systematic analysis continued throughout data collection and coding process, using the constant comparative method [40,41], which consists of analyzing the interviews by comparing one response with earlier observed responses. This was followed by a discussion and comparison of the readings of the data, which were subsequently used to establish analytical categories and themes. These categories and themes served as the basis for a final grid, which was then used independently by the two researchers to analyze the transcripts in order to maximize theoretical sensitivity and rigor [42]. Using patient-generated data via the interviews and verification of interpretation using two researchers allowed for an assessment of trustworthiness [37]. In short, as for credibility, confirmability and transferability, research methods were derived from previous comparable projects; familiarity with the culture and adequate understanding of participating groups of patients has been developed before the first data collection; and triangulation was used insofar as two investigators collected and analyzed the raw data so that findings emerged from consensus between investigators. Emergent findings were corroborated with existing theories and examined in comparison with previous research findings to assess the degree to which they were congruent with those of past studies.

Overall agreement between the two raters was assessed by means of the Kappa value. Disagreements were solved by consensus. The results of the separate analyses showed excellent between-raters agreement ($K > .85$). The final grid provided a basis for the identification of the attributions patients made regarding the onset of their pain problem. In this process, primary causal attributions were specifically identified, i.e. the cause presented as the main or primary reason for pain onset. The three dimensions of primary attributions, namely locus of causality, stability, and controllability, were characterized in terms of their internality/externality, stability/unstability, and controllability/uncontrollability.

Patients were interviewed at the site of the neurophysiological assessment and were informed that their responses would not impact on their care. Complete confidentiality was guaranteed and responses were anonymized. The protocol was approved by the local Ethics Committee and written informed consent was obtained from all participants.

Results

The 56 respondents were mainly middle-aged (51.3 years), married (64.2%), and professionally qualified (57.1%) women. The majority were either on sick-leave (23.2%) or on disability (41%). Duration of pain was > 5 years in the majority of them (66.1%). Mean present pain intensity was scored high (57.3) on a 100 mm Visual Analogue Scale (Table 1).

Primary causal attributions of illness

All fifty-six respondents expressed causal attributions for FM. Content analysis of patients' responses showed a great diversity; primary causal attributions fell into five mutually exclusive categories: 28 (50%) of the respondents mentioned "psychological problems" including 'relational problems' (e.g. divorce) in 10 patients, 'depression', i.e. feelings of sadness, hopelessness and helplessness (9 respondents), and 'death of a relative' (in 9 respondents); 12 (21%) mentioned "somatic concerns" including an

Table 1
Socio-demographic and pain characteristics

		FM patients (N=56)
Age (years)	Mean (SD)	51.3 (10)
	Range	33–76
Marital status	Single	5 (8.9%)
	Married	36 (64.2%)
	Widowed	2 (3.6%)
	Divorced	13 (23.2%)
Education (completed)	Compulsory school	26 (48%)
	Diploma	25 (44%)
	University degree	5 (8%)
Professional qualification	Yes	32 (57.1%)
	No	24 (42.9%)
Work status	Employed	12 (21.4%)
	Work at home	8 (14.3%)
	Sick leave	13 (23.2%)
	Disability pension	23 (41%)
Pain duration	6–12 months	3 (5.4%)
	1 to 5 years	16 (28.6%)
	>5 years	37 (66.1%)
Pain intensity	Mean (SD)	57.3 (18.2)

'accident' (7 respondents), a 'constitutional weakness', i.e. a weakness which started as early as the birth (in 4 respondents), or 'surgery' (1 respondent); 7 (13%) cited "violence/abuse during childhood"; 6 (11%) mentioned "gynaecological/obstetrical problems" (such as pregnancy or labour), and 3 (5%) mentioned "fatigue" as the primary cause of FM. Although all participants were able to identify causes that they considered as primary reasons, these five categories were then very often included in a set of circumstances or as in a cascade of intertwined events surrounding pain onset.

The analysis of the responses in terms of the three dimensions of attributions showed that the patients' attributions were internal (52%) and external (48%) in the same proportions, and about two times more frequently unstable than stable (68% vs 32%); a significant majority of the attributions were uncontrollable (74% vs only 26% of controllable ones).

Locus of causality

The locus of causality refers to the perceived point of origin and is articulated either within or outside the respondent. Vulnerability and psychological repercussions were in the foreground in both internal and external attributions of causality. As expected, perception of an internal causality was susceptible to increase self-blame and a feeling of vulnerability, regarding both pain and its affective consequences: "[It started because] I worked very hard, maybe too hard, I had just created a new department within the company. At that time, I noticed that I had blackouts while until then I had a phenomenal memory, and I also started to have terrible pain. [...] Now, even if I listen carefully to something that interests me, I cannot make a summary, find the right words, whereas before I expressed myself very well ... and I cannot take pleasure in mediocrity. I cannot even choose the clothes that suit me in the store" (Respondent 38, 56 years).

Nonetheless, perception of an external causality also revealed vulnerability or psychological distress in the patients' narratives: "In 1990, I was the happiest woman in the world just after the birth of my second child. Everything was going very well until the moment I received a phone call from Spain telling me that my brother had just been killed in a car accident. Then, [...] the pain started" (Respondent 12, 50 years).

It could be presumed that the dimension of externality may provide a self-protective compromise in maintaining self-esteem; but content analysis of the narratives of this group of patients rather showed that even external attributions were inducing psychological distress in terms of feelings of decreased self-esteem and self-blaming.

Stability

The dimension of stability of the causal attribution refers to the perceived degree of changeability or permanence over time. The data showed more frequent unstable than stable causes. Events such as 'surgery' or 'accidents' are unstable; similarly, attributions such as 'relational problems' or 'fatigue' were considered as unstable, since there is a chance that it may evolve over time.

"It started two years ago... now I feel sick all the time, I've pain in the back, everywhere, I feel so tired... and stiff... Before I'd never had such pain, I was active, dynamic, smiling and all of a sudden, it's over. Now I'm exhausted and if I rest, I get very very sick. [...] Last year, the doctor gave me a rest of one week: I spent all the time in bed, sleeping... and it took me two months to recover!" (Respondent 10, 38 years). Analysis of the patients' attributions showed that nearly all unstable causal attributions, including 'fatigue' or 'relational problems', were described as having endless consequences, and thus induced negative emotional consequences.

The most prevalent stable primary causal attributions were found in the categories of "somatic concerns" expressed as 'constitutional weakness' and of "violence/abuse during childhood".

"The cause is the sexual abuse from my father. It started when I was 10 years old. [...] I thought I could forgive him but the evil was done. The rest of my life was a failure" (Respondent 15, 66 years). Attributions to such stable causes allow understanding how long-lasting difficulties can be perceived as influencing psychological adjustment to illness – and beliefs that nothing will ever change. The analysis suggested that perceived degrees of changeability or permanence over time both had negative psychological repercussions, possibly leading to feelings of helplessness and hopelessness.

Controllability

Data showed a significant majority of uncontrollable causes. 'Constitutional weakness', a clearly uncontrollable cause, was considered as the triggering factor in a number of respondents.

"As a child already I felt fragile, lacking resistance. I had a twin sister who died at birth... I weighed only 1 kg 500 and she had normal weight... I've always had problems with my digestion, diarrheas,... I was born first, feet first, so that it took me a long time to get out... my twin was in the right position but she had to wait too long and she died in the waiting... [...] I think they took too much care of me..." (Respondent 23, 51 years).

The analysis of the responses in terms of the controllability/uncontrollability often underlined a successive cascade of disruptive events. Even though the various events described in the patient's responses may have been controllable, their cascade seemed in turn completely out of control. In the following example related to "gynaecological/obstetrical problems", the question of controllability/uncontrollability is in the foreground:

"It started after the labour of my last child fifteen years ago. I felt as if my genital organs had shrunked... [...] I refused to have sexual intercourse [...]. Two years after, I was not on the pill because I refused to have sex... but I got pregnant... and I had a miscarriage. In fact it was an abortion; I didn't feel ready to carry it to the term... Then after two years, I got pregnant again and I had another abortion... then I had sterilization [...]" (Respondent 8, 46 years).

Pain onset was described as related to a disruptive event, or a series of events, in many of the respondents. Participants' narratives pointed to various types of psychological or somatic consequences in relation with these events. The description of these events often evoked emotionally painful, distressful, or shocking, experiences. Various aspects of life referring to both the psychological and the somatic dimensions such as pregnancy or labour as in the above-mentioned examples, or work-related fatigue associated to mobbing, psychological shock due to the death of a relative, were particularly salient in the narratives.

Discussion

This study investigated the principal attributions related to perceived pain onset using a qualitative analysis of the discourse of women suffering fibromyalgia. The results indicated that attributions were often referring to the psychological dimension of the events mentioned by the participants (such as relational problems or death of a relative), even when the events also had a clear somatic dimension, such as violence during childhood, accident, or gynaecological/obstetrical problems. These results corroborate estimates of patients' psychological distress observed in other studies [43,44] with approximately 60% of patients expressing psychological attributions for various symptoms. Other studies on causal attributions also emphasized the importance of psychological attributions although multiple causal attributions may coexist [16,19].

Three-dimensional analysis was the framework to define causal attributions in a comprehensive perspective, i.e. as permitting to understand patients' adjustment to illness. Participants expressed decrements in self-esteem and feelings such as self-blame or despair. Even though it could have been presumed that externality may protect from a decreased self-esteem, narratives globally tended towards the expression of a negative and depressive undertone, uncovering psychological suffering. Similarly, concerning the perception of changeability or permanence over time, unstable attributions could be expected to increase the use of successful cognitive coping strategies [12]. Results rather showed that narratives stressed global perceptions of persistent pain and long-lasting problems, thus evoking chronicity, helplessness and hopelessness. Regarding the dimension of controllability, uncontrollable attributions were clearly prevalent. The participants expressed low perceived control over their lives as well as beliefs that nothing can be done, thus increasing a feeling of guilt and vulnerability.

Multiple events and attributions were frequently mentioned in the context of pain onset; these attributions often called upon distressful experiences and/or were expressed in terms of successive disruptive events. Such contents were prominent in all five categories of primary causal attributions, referring to various emotional and somatic distressful events. Sexual abuse, violence, the threat or the witnessing of either, which have been mentioned in some of our respondents have also been described as causes of psychological trauma. Other authors found a high prevalence (>30%) of sexual and physical abuse in women with FM and reported higher rates of abuse in these patients as compared with a group of women without FM [45–47]. However, still other authors questioned the association between sexual abuse and FM onset [48–50].

Our findings demonstrate the pervasiveness of distressful illness perceptions in patients with FM. This salience in the patients' narratives questions their ability to cope with distressing emotions but also confronts clinicians in their own ability to deal with pain problems inserted in such a context. The expression of psychological attributions raises the question of a possible contradiction between the emphasis on these issues and patients often described reluctance to address the psychological dimension of pain. Addressing this dimension may raise the fear of symptom psychologisation [51,52]. Psychological accounts of somatic symptoms can be perceived as referring to personal weaknesses and thus create a tension in the patient-therapist relationship because the therapist may assimilate narratives of psychological events to emotional disturbances. Practitioners' recognition of psychological symptoms and distress is not always self-evident [53]. Practitioners' resonance with the patient's expressed experience is an important component of the therapeutic alliance and is known to represent a key tool of the patient-practitioner relationship. By investigating causal attributions, practitioners promote a dialogue about pain complaints and about psychological distress, thus possibly allowing for a better detection of psychological suffering in primary care. Although time-consuming, this patient-centred type of investigation also allows disclosure of patient's illness perceptions and representations, which may in turn contribute to tailor the treatment to the individual's needs and help patients gaining self-coherency by providing means to better understand pain onset. Discussing patient's illness perceptions involves the development of communication skills that is one of the essential components of good clinical practice, along with knowledge base, problem-solving ability and physical examination. These skills involve 'what' to communicate, but also 'how' and 'to whom' in order to improve the patient's support. Clinical implications are summarized in Table 2. In this sense, it would have been of interest to check the associations between the patients' responses to an interview about FM onset and their responses to a self-administered questionnaire. Indeed, in the clinical setting using questionnaires appraising illness perceptions, including the patients' views about the causes of their symptoms, may help the clinician discussing these issues with the patients suffering FM and assess their possible importance in the treatment [54–56].

Limitations

A selection bias may have occurred as patients were selected from treatment programs and individuals who were not receptive to interviews may have expressed other beliefs about symptom onset. This raises the question of the transferability of the results to other patients and contexts. The data showed variations but content analysis allowed reaching theoretical saturation. Furthermore, the sample characteristics in terms of pain intensity and duration make it likely that the results can be transferred to other clinical settings addressing patients possibly eligible for self-management programs. Indeed, the sex, age, and symptom duration of the participants in these studies were comparable to those of the patients evaluated in other self-management programs

Table 2
Clinical implications

Promoting the investigation of patients' causal attributions
– Is a way to legitimize patients' complaints and psychological distress as it also allows taking into account the patients' needs to reduce the uncertainty related to FM symptoms.
– Helps recognizing and detecting psychological suffering and allows further psychological interventions and multidisciplinary work.
– Provides means to explain and understand the world 'as it occurred in the past' from the patient's perspective, and also to guide future behaviours, particularly in terms of adjustment and help-seeking behaviours.
– Whatever the perception of pain onset, taking into account expressed illness experiences and perceptions at time of consultation is a key component of a patient-tailored clinical management.
– A patient-centered investigation of illness perceptions, including causal attributions, may contribute to improve clinical care and foster self-management strategies by helping patients in gaining self-coherency and understanding about pain onset.

[57,58]. A recall bias should be considered since symptom onset was >5 years in the majority of the patients. Furthermore, they had all experienced various types of treatments, including medication, physiotherapy, and psychotherapy which may have changed their illness perceptions. However, in clinical practice, the overall illness perception of the patient at the time of the treatment is probably more relevant for both the patient and the therapist than the 'real' event or the patient's experience at the time of pain onset and/or since symptom onset.

Conclusions

Attributions often referred to the psychological dimension of the events surrounding FM onset, even though some of them also had a clear somatic dimension. Perceived distressful events were multiple. Many narratives mentioned a cascade of disruptive events, suggesting an increasing loss of control. Addressing patients' illness attributions may contribute to promote patient-tailored treatment and to guide future behaviours, particularly in terms of adjustment and help-seeking.

By including attributions and their connotations in the clinical approach, the therapist shows the patient that he/she cares for him/her globally. Taking an active interest not only in the clinical history but also in the patient's narrative, the therapist may then identify the patient's strengths and weaknesses. This may in turn help constructing a shared workspace and preventing disappointment and powerlessness related to refractory chronic pain. The renewed interest of the therapist for the patient's history allows opening discussion to try and avoid therapeutic misunderstandings and failures.

Conflict of interest

The authors have no competing interests to report.

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