

University of Groningen

Why do Patients Engage in Pain Behaviors? A Qualitative Study Examining the Perspective of Patients and Partners

Akbari, Fatemeh; Dehghani, Mohsen; Mohammadi, Somayyeh; Goubert, Liesbet; Sanderman, Robbert; Hagedoorn, Mariet

Published in:
The Clinical Journal of Pain

DOI:
[10.1097/AJP.0000000000000868](https://doi.org/10.1097/AJP.0000000000000868)

IMPORTANT NOTE: You are advised to consult the publisher's version (publisher's PDF) if you wish to cite from it. Please check the document version below.

Document Version
Publisher's PDF, also known as Version of record

Publication date:
2020

[Link to publication in University of Groningen/UMCG research database](#)

Citation for published version (APA):

Akbari, F., Dehghani, M., Mohammadi, S., Goubert, L., Sanderman, R., & Hagedoorn, M. (2020). Why do Patients Engage in Pain Behaviors? A Qualitative Study Examining the Perspective of Patients and Partners. *The Clinical Journal of Pain*, 36(10), 750-756. <https://doi.org/10.1097/AJP.0000000000000868>

Copyright

Other than for strictly personal use, it is not permitted to download or to forward/distribute the text or part of it without the consent of the author(s) and/or copyright holder(s), unless the work is under an open content license (like Creative Commons).

The publication may also be distributed here under the terms of Article 25fa of the Dutch Copyright Act, indicated by the "Taverne" license. More information can be found on the University of Groningen website: <https://www.rug.nl/library/open-access/self-archiving-pure/taverne-amendment>.

Take-down policy

If you believe that this document breaches copyright please contact us providing details, and we will remove access to the work immediately and investigate your claim.

Downloaded from the University of Groningen/UMCG research database (Pure): <http://www.rug.nl/research/portal>. For technical reasons the number of authors shown on this cover page is limited to 10 maximum.

Why do Patients Engage in Pain Behaviors? A Qualitative Study Examining the Perspective of Patients and Partners

Fatemeh Akbari, MSc,* Mohsen Dehghani, PhD,†‡
Somayyeh Mohammadi, PhD,§ Liesbet Goubert, PhD,||
Robbert Sanderman, PhD,* and Mariët Hagedoorn, PhD*

Objectives: Patients' pain behavior plays an important role in the interaction between patients and their partners, as acknowledged in operant models of pain. However, despite the considerable research attention to pain behaviors, the underlying motives of such behaviors are still unclear. The current study explores the motives to engage in pain behaviors and the possible discrepancies between individuals experiencing pain and partners' perceptions of those motives.

Methods: A qualitative study was performed, comprising semi-structured interviews with 27 patients with chronic low back pain and their partners. They were recruited through purposive sampling at 2 pain clinics located in Tehran, Iran.

Results: Patients and partners mentioned a variety of motives for pain behaviors, including protecting oneself against more pain, regulating negative emotions, informing others about the pain severity, seeking validation or intimacy, gaining advantages from pain, and expressing anger. Patients and partners revealed the most similarities in motives such as protecting oneself against more pain and informing others about the pain severity. However, partners rarely acknowledged patients' motives for seeking validation and they were more likely to mention negative motives (eg, expressing anger).

Discussion: In conclusion, partners are more likely to attribute negative motives to the patient's pain behaviors, which may lead to their hostility toward patients. The findings of this study provide new insights into motives of pain behaviors from the perspective of patients and partners, which can inform couple-based interventions in terms of effective pain communication.

Key Words: low back pain, patient, partner, pain behaviors

(*Clin J Pain* 2020;36:750–756)

Received for publication November 11, 2019; revised April 1, 2020; accepted July 15, 2020.

From the *Department of Health Psychology, University of Groningen, University Medical Center Groningen, The Netherlands; †Department of Psychology, Shahid Beheshti University, Tehran, Iran; ‡Neuroepidemiology Unit, Centre for Epidemiology and Biostatistics, Melbourne School of Population and Global Health, The University of Melbourne, VIC, Australia; §Department of Occupational Science and Occupational Therapy, Faculty of Medicine, University of British Columbia, Vancouver, BC, Canada; and ||Department of Experimental-Clinical and Health Psychology, Ghent University, Ghent, Belgium.

The authors declare no conflict of interest.

Reprints: Fatemeh Akbari, MSc, Department of Health Psychology, University Medical Center Groningen, Hanzplein 1, POB 30 001, Groningen 9700RB, The Netherlands (e-mail: f.akbari@umcg.nl).

Copyright © 2020 The Author(s). Published by Wolters Kluwer Health, Inc. This is an open-access article distributed under the terms of the Creative Commons Attribution-Non Commercial-No Derivatives License 4.0 (CCBY-NC-ND), where it is permissible to download and share the work provided it is properly cited. The work cannot be changed in any way or used commercially without permission from the journal.

DOI: 10.1097/AJP.0000000000000868

Pain is a subjective experience. However, individuals experiencing pain convey their pain to others through pain behaviors, such as verbal communications, facial expressions, body gestures, and paraverbal cues (eg, sighs or moans).^{1,2} These pain behaviors are governed by both automatic and controlled neuroregulatory systems.³ That is, some behaviors may be uncontrollable, whereas other behaviors may be at least to some extent controllable by patients (eg, they may be able to inhibit facial expression). Also, it is conceivable that patients may sometimes purposefully engage in verbal or even nonverbal pain behaviors with specific motives in mind.^{1,4–6} That is, they may have a conscious intention to achieve a specific goal, for example, to receive understanding, recognition, and help. Little attention has been devoted to the potential intentionality of pain behavior. Furthermore, given that humans tend to explain the behaviors of others using motivational language, even automatic pain behaviors are subject to motivational analysis.^{7,8} Considering this motivational framework, expressing and interpreting pain behavior is an important component of the interactions between individuals experiencing pain and their partners. The current qualitative study aims to better understand individuals experiencing pain motives and their partners' interpretation of pain behaviors, and also explores whether there is an agreement between individuals experiencing pain and partners in terms of intended messages of pain behaviors.

Pain models (eg, communication models and operant models) acknowledge that pain behaviors have a communicative value.^{1,9} However, besides a communicative function, patients may have other motives to engage in pain behaviors. For example, patients with cancer ascribed different reasons for their videotaped pain behaviors, such as reducing pain or attaining valuable goals (eg, remaining active).¹⁰ More recently, a review by Cano and Goubert¹¹ suggested that verbal emotional disclosures of pain might be distinct from other pain behaviors (eg, facial expression, moaning, and protective behavior) because of intentionality (eg, using language to get help). In addition, they argued that such verbal behaviors may be manifested with several motives such as identifying new activities, receiving attention, and bonding with others, which have not yet been explored in a structured way.

Moreover, different pain behaviors may not be equivalent in their capacity to instigate particular responses in observers.⁴ For instance, automatic pain behaviors (eg, nonverbal expressions) are more likely to elicit a spontaneous emotional response in the observer than controlled pain behaviors (eg, verbal disclosures).^{1,4} This also suggests that pain behaviors might serve different functions apart from their communicative value.¹² Furthermore, observers' different responses to pain behaviors indicate that they might attach different meanings to pain behaviors.

Taking into account the appraisals made by both individuals experiencing pain and their partners about a pain behaviors is important as the concordance or discrepancy might be related to pain outcomes. For example, if the partner misinterprets the intended message of the individual experiencing pain behavior, then this may lead to more distress and more pain behaviors. Previous research suggests that couples' incongruent appraisals of pain experiences contribute to negative pain outcomes in couples, including lower wellbeing and quality of life.¹³⁻¹⁷ On the one hand, partners' failure to accurately perceive pain can lead to feelings of being misunderstood or invalidated in individuals experiencing pain.^{13,15,18} On the other hand, partners' inaccurate appraisals of pain experiences may influence their caregiving behavior (ie, responding overprotectively or critically), which contributes to negative pain and relationship outcomes. However, congruency among couples is mainly investigated in relation to the estimation of pain severity,^{2,15,19} pain interference, and physical functioning.²⁰ To our knowledge, the motives of different pain behaviors and the perspective of individuals experiencing pain and partners on pain behavior motives have not yet been studied. Getting more insight into intended and perceived motives of pain behaviors can help us to better understand the cognitive processes underlying individuals experiencing pain and partners' interactions.

METHODS

Participants

Patients with chronic low back pain (CLBP) and their partners were recruited through purposive sampling at 2 pain clinics located in Tehran, Iran. Inclusion criteria for the patients were having constant low back pain for > 3 months. Partners reporting CLBP were excluded. Both members of the couple should be 18 years or older, they had to speak Persian, and they should have been living together for at least 1 year. Exclusion criteria for both patients with CLBP and partners comprised having a serious mental illness, or current drug and/or alcohol abuse. A further exclusion criterion for patients was having pain caused by malignant conditions (eg, cancer and rheumatoid arthritis).

Procedure

The study proposal was approved by the Research Ethics Board of Shahid Beheshti University, Tehran, Iran. Participating pain clinics screened patients meeting the inclusion criteria over the course of 6 months from January to July 2018. Eligible patients were contacted by phone, and after a short description of the study, they were asked to participate in the study if interested. In total, 40 couples were contacted of whom 27 (68%) agreed to take part in the study. The main reasons for refusal to participate were no interest of the partner for taking part in the study, personal problems, or lack of time. Once the participants had given their informed consent, they were asked to fill out a number of questionnaires. Next, the patients and partners took part separately in the individual semistructured interviews. This approach allowed each to freely express their perspectives. One of the researchers (F.A.), a trained psychologist, conducted the interviews. The interviews took place in the pain clinic at a time that was convenient for the participants. Patients and their partners were reimbursed for their time and parking.

Interview Scheme

After providing the participants with a short description of the study, patients and their partners were asked to give a short overview of the pain and how it has affected their personal and social life. Then, video sequences of a patient displaying pain behaviors while performing pain-inducing activities were shown. These video sequences have been used in previous studies.^{21,22} We selected 1 male and 1 female patient based on the frequency of pain behaviors shown by them while performing 4 daily activities. The activities included (1) lying down on a bed and standing up, (2) sitting down on a chair and standing up, (3) taking a box from the ground, putting it on a table and replacing it on the ground, and (4) picking up marbles from the ground. To enhance identification of the real situation, video sequences of the male patient were shown to male patients and their partners, whereas the video sequences of the female patient were shown to female patients and their partners. In particular, the videos were used to facilitate the interview in which the videos promoted talking about the pain behaviors and helped the participants to recall their or their partner's pain behaviors.

Thereafter, the participants were provided with a checklist of pain behaviors, including facial pain expression, verbal and paraverbal, protective, and passive pain behaviors (eg, interruption or avoidance). This checklist was used to facilitate the conversation about pain behaviors. Participants were asked to identify the pain behaviors that they could see in the video and those that they or their partners show when in pain.

We applied preset questions relevant to the patients' and their partners' perceptions of the pain behavior of patients. Questions were refined as a result of concurrent analysis of early interviews (pilot study). First, in an individual interview setting, patients and partners were encouraged to talk about the pain behaviors that they had identified about the patient in the video, and then they were questioned about their own situation. Finally, we asked them what the pain behaviors they identified meant to them and we asked about the function of pain behaviors in general and in relation to each specific pain behavior. Sample questions included (eg, Do you think that you have control over these behaviors? Why do you show this behavior? What do you mean when showing these behaviors?). The interviews included a second part focusing on the partners' behaviors, which will be reported elsewhere. All interviews were conducted in Persian and took an average duration of 60 minutes for the patients and 50 minutes for the partners.

Data Analysis

The interviews were audio-recorded and transcribed verbatim. All interviews were transcribed by the interviewer (F.A.) and imported into an Atlas.ti V. 8.3.20 database. In the current study, the inductive analysis was used, which means that codes were derived from the raw data using an "open coding" methodology.²³ Two researchers experienced in assessing chronic pain patients and native Persian speakers (F.A. and S.M.) coded the interviews independently after reading the transcripts and familiarizing themselves with the content. The codebook was developed after discussing the discrepancies in coding and reaching a consensus on the first 3 interview transcripts for 3 patients and partners. The codebook was added to Atlas.ti and refined during the analysis of subsequent interviews. The coders met for a consensus process to discuss the preliminary list of

categories developed by the first coder (F.A.). The final categories were defined on the basis of the consensus between the 2 coders. Categories were evaluated by the coauthors (M.D., R.S. and M.H.) and modified to ensure that recurring codes described the extracted categories. Each coder coded the first 15 interviews independently. All coding discrepancies were discussed until consensus was reached. To increase efficiency and speed, the coding of the last 12 interviews (45%) was completed in a round-robin format, meaning that each coder coded 6 interviews independently and the second coder reviewed the codes of the initial coder. The second coder of each round tagged the codes that they thought needed to be amended and their own additional codes, all of which were discussed thereafter. After rereading the interviews, codes were renamed, merged, or split up, and categorized by themes. Participants' quotes were translated from Persian into English by the first author (F.A.).

Measures of Validity

The first author (F.A.), who conducted the interviews, has 5 years of clinical experience with patients with chronic pain, which facilitated communication with patients and partners dealing with chronic pain. Further, the first pilot interviews were conducted under the supervision of the second author (M.D.) who is an experienced psychologist working with chronic pain patients. In a further attempt to minimize the risk of bias, the interviews were analyzed by the first (F.A.) and third author (S.M.), both experienced in conducting qualitative research. The first 6 transcripts used for developing the codebook were translated from Persian to English and reviewed by the coauthors (R.S. and M.H.) to ensure that the extracted codes are representative. The coauthors validated the final list of codes used in the codebook.

RESULTS

Participants

The characteristics of 27 patients and their partners are listed in Table 1. Data saturation was reached after analyzing transcripts of 18 couples meaning that no new information was derived. Therefore, the sample size of 27 dyads was considered large enough to allow adequate depth and variety in the analysis. Patients' and partners' reflections on video sequences of pain behaviors were summarized in 2 main themes and 6 categories, which are described in detail below. For each category, data were compared between patients and partners.

Theme 1: (Un)controllability of pain behaviors. Some patients indicated that they might not have a specific motive when engaging in pain behaviors. That is, the majority of the patients mentioned that showing nonverbal pain behavior is unintentional. However, after probing further, they did present different views about the intentionality of nonverbal pain behaviors. Some patients explained that nonverbal pain behaviors might be shown solely because of pain severity. Patients who ascribed manifestations of pain behaviors to the intensity of pain usually emphasized the uncontrollability and credibility of pain behaviors. "These behaviors are because of pain intensity. When I say 'ouch,' it is related to the pain intensity. It is not feigned or in my control." [Patient 27, male, 52]. They mentioned that especially facial expressions, protective behaviors, and moaning are out of control. "When pain is shown on the face, it is because of pain. I mean action and reaction. Pain is an action and those behaviors are reactions. It is out of control."

TABLE 1. Participant Demographic Characteristics

Characteristics	Patients (N = 27)	Partners (N = 27)
Sex		
Male	12	15
Female	15	12
Age		
Mean	49	49
Range (y)	28-76	27-74
Children		
No	2	2
Yes	25	25
Education		
University degree	15	11
High school diploma	7	13
Secondary school	4	1
Marital duration		
Mean	24.2	24.2
Range	1-53	1-53
Dyadic Adjustment Scale		
Mean	101.2	103.4
Range	64-130	57-138
CLBP duration (mo)		
Mean	128	
Range	4-504	

Participants completed a short questionnaire including demographic characteristics and Dyadic Adjustment Scale.

CLBP indicates chronic low back pain.

[Patient 20, female, 49]. However, others stated that they do have control over their facial expressions, protective behaviors, and moaning. For example, "I do not show pain on my face, I control it. When I am in pain and we have guests, I can pretend happiness in my face as if I am not in pain at all." [Patient 5, female, 52]. A few others indicated that facial expression and moaning could be both intentional and unintentional depending on how severe the pain is. "I usually moan in the presence of others, which is in my control but sometimes it happens spontaneously and is related to pain intensity." [Patient 6, female, 40]. Verbal disclosures (ie, pain talk) were considered intentional by almost all patients.

In line with patients, partners varied in their perspectives of the intentionality of pain behaviors. Some of them believed that pain behaviors are expressed automatically. "All these behaviors are out of her control. They are manifested because of pain." [Partner 8, male, 74]. "Sometimes he walks with a limp or bends over, which means that he is really in a flare-up. It is not in his control and is related to pain." [Partner 14, female, 40]. Among pain behaviors, facial expressions and protective behaviors were commonly conceived as automatic, whereas verbal disclosures but also moaning were frequently perceived as intentional. For example, "She can control moaning." [Partner 15, male, 40]. Several partners perceived pain behaviors as controllable regardless of the type of pain behavior. For example, one partner concluded that pain behaviors are in control because, from her perspective, the manifestations of the patient's pain behavior varied depending on the situation. "When we are home, he shows pain on his face and he is overly cautious about his body but when we are with friends, I cannot recognize pain on his face or he is not cautious about his body. Therefore, I guess pain behaviors are in his control." [Partner 19, female, 37]. A number of partners stated that pain behaviors could be both intentional and automatic.

They also indicated that some patients might engage in pain behaviors with a specific motive, whereas others might express them out of control. *“Pain behaviors are unconscious especially for my partner. However, some patients might engage in these behaviors on purpose.”* [Partner 23, male, 44].

Theme 2: Motives of Pain Behaviors

This theme outlines the motives that patients and partners attributed to pain behaviors. Patients and partners ascribed different motives to pain behaviors, which were divided into 6 categories of protecting oneself against more pain, regulating negative emotions, informing others about the pain severity, seeking validation/intimacy, gaining advantages from pain, and expressing anger. These motives were mentioned by both patients and partners. However, patients' and partners' perceptions of these motives revealed similarities and discrepancies.

Protecting Oneself Against More Pain

Patients associated the motives of pain behaviors with their attempts to prevent worsening their pain. Several patients indicated that they display pain behaviors, mainly protective behaviors, because they are afraid of reinjury or making the pain condition worse. Indeed, anticipating pain led them to become cautious and therefore protective of their body. *“I am afraid. I always try to be careful in the street. I walk slowly to be careful and prevent my pain from getting worse. I should always be careful about my movements. If I am not careful, my pain will get worse.”* [Patient 22, male, 42]. Another patient explicitly described how his avoidance is manifested through protective behaviors. *“When I protect my back, it is not because of pain and I might not have pain. It is about avoidance. Indeed, I predict the pain and try to prevent it by moving protectively.”* [Patient 21, male, 42]. Some others indicated that protective behaviors help them to reduce their pain. Indeed, they conceived protective behaviors as a coping strategy to relieve their pain or struggling to find the right position, which leads to experiencing less pain. *“I stretch my body or change my posture because it helps to reduce my pain.”* [Patient 17, female, 45].

Comparable with patients, partners also pointed out that patients engage in protective behaviors because they are afraid of reinjury or intend to prevent their pain from getting worse. *“When he moves cautiously, he wants to be careful. He is afraid of getting hurt or worsening pain.”* [Partner 22, female, 35]. Partners also stated that patients might engage in protective behaviors to reduce their pain though less frequently. *“He moves cautiously or his body becomes stiff to relieve his pain. These behaviors might help him to reduce his pain.”* [Partner 21, female, 36].

Regulating Negative Emotions

Some patients described pain behaviors (mainly moaning and becoming withdrawn) as a strategy for emotional healing. They explained that they might engage in pain behaviors to release negative emotions. *“Sometimes I become withdrawn when in pain. I like to be by myself. This way I can have a free mind and concentrate on myself, which helps me to manage my pain.”* [Patient 5, female, 52]. Some others indicated that pain behaviors help them to relieve their pain. *“I moan to release myself emotionally and therefore, get relief from pain.”* [Patient 12, female, 36].

In comparison with patients, only a few partners indicated that patients might engage in pain behaviors to release

negative emotions. In addition, they ascribed the motive “emotional release” to verbal disclosures rather than other pain behaviors. *“When she verbally discloses her pain, she relieves herself to some extent. It seems as if she is releasing herself by talking.”* [Partner 2, male, 68].

Informing Others About the Pain Severity

Patients indicated that they might show pain behaviors to convey their pain to others. One patient mentioned that pain behaviors help the patients to communicate the severity of pain to others because the patient's pain severity is not visible to others. For example, *“Sometimes, I start rubbing my waist to inform others that I am in pain.”* [Patient 24, female, 54]. Although several patients ascribed this motive to pain behaviors in general, the same number of patients stipulated that they specifically use verbal disclosures to inform their partners of their pain. They thought that if they do not express their pain verbally, the partner might not notice their pain. *“When I am in a severe pain, I express it verbally. If I do not directly mention that ‘I am in pain’, he would not have any reactions.”* [Patient 11, 58, female].

Partners also indicated that patients might use pain behaviors to tell them that they are in pain or their pain is getting worse. *“I think when she is guarding, she wants to let me know that her pain is getting worse and I should take action.”* [Partner 2, male, 68]. Similar to patients, partners also considered pain communication as the main motive for verbal disclosures. *“When she verbally discloses her pain, the pain might not be that severe but she expresses it in order to make me understand that she is in pain because I do not show any reaction to other behaviors that she shows.”* [Partner 17, male, 48].

Gaining Advantages From Pain

Patients stated that pain behaviors might be expressed to manipulate others to gain advantages, such as getting others' attention, obtaining help, and escaping daily responsibilities. The following describes how one patient engages in pain behaviors to get help from others in an indirect manner. *“Sometimes I moan to ask for help. For example, I am lying in bed and others are watching TV. I hesitate to call them or shout for help. Instead, I start moaning in a way that they hear and notice, and come to provide help.”* [Patient 4, male, 53]. Although seeking attention was considered as a motive for different types of pain behaviors, it was moaning that was most often linked to this motive. Yet, patients rarely attributed their own pain behaviors to motives such as seeking attention and avoiding responsibilities. Instead, they attributed other patients' pain behaviors to such motives. *“The patient in the video was showing the pain on his face excessively. I do not do that. I think these behaviors are shown for seeking attention. They want others to be oversensitive to them.”* [Patient 7, male, 63]. *“Some patients might show these behaviors in order to make others do their tasks but I never do that. I do not like this attitude.”* [Patient 11, female, 58]. Only a few patients explicitly indicated that they show pain behaviors to convince their partners not to expect them to do some of their daily tasks. *“I talk about my pain because I want her to know that I am in pain so that she would reduce her expectations about house chores.”* [Patient 22, male, 42].

In contrast to patients, partners clearly indicated that patients engage in pain behaviors to grab their attention. They believed that patients' pain might not be genuine or severe enough to explain their pain behaviors. Therefore,

they considered the main reasons for patients' pain behaviors to be "seeking attention." Partners were also more likely than patients to link expressing pain behaviors as a way to escape performing responsibilities than patients did. Unlike patients, partners mentioned this motive for a variety of pain behaviors, including protective behaviors, verbal disclosures, moaning, and facial expressions. "*When he moans he wants me not to expect him to cooperate in household activities.*" [Partner 27, female, 51].

Seeking Validation/Intimacy

Many patients described that they might show pain behaviors to receive assurance or empathy from their partners. They indicated that they need their partners to convey acceptance and understanding of the pain experience without making judgments. This category was more often ascribed to verbal disclosures of pain rather than other pain behaviors. "*When I talk about my pain, I am seeking assurance and comfort. I always have this argument with my partner that if I am talking to you, I do not want you to judge me or even provide me a solution but I like you to show empathy and be a good listener. It relieves me.*" [Patient 2, female, 63]. For some other patients, validation was more related to physical intimacy. They described that they display pain behaviors (mainly verbal disclosures) to receive affectionate care. They said that they talk about their pain to be indulged with attention or kindness because it helped them to relieve from pain. "*I talk about my pain 'My pain is severe now'. I disclose it to obtain empathy. She shows empathy but I expect more. I like cuddling. When I express my pain verbally, I like her to cuddle me or give me a massage.*" [Patient 18, male, 39].

In comparison with patients, only a few partners believed that patients might engage in pain behaviors to obtain empathy or affection. In general, partners mentioned this motive less frequently than patients did. "*I think he displays pain behaviors because he needs affection. I mean staying beside him and cuddling.*" [Partner 4, female, 43].

Expressing Anger

Some patients described that they display pain behaviors because they are disappointed with their prolonged pain and disability. They described how pain causes them to feel upset about their limitations and how these negative emotions are translated into pain behaviors. "*I become irritable and I am less tolerant than before because I am suffering pain for a long time. Facial expression is because of the sadness I feel inside. I used to be very efficient at work. I cannot do the activities that I used to do in the past. When I think about these things, I lose my spirit. When I am in pain, I feel sad remembering my past strength and it reflects on my face.*" [Patient 3, male, 49].

In contrast to patients, partners did not refer to illness disappointment as a reason for the patient's pain behaviors. Instead, they thought that patients might engage in pain behaviors to implicitly show irritation toward partners. For example, some partners indicated that the patient's facial expressions might not be completely attributed to their pain intensity. Instead, facial expressions might be an indication of patients' anger about marital problems or not getting the desired support. Others thought that the patient intends to blame them for the pain by showing pain behaviors (eg, become withdrawn and become irritable). "*I notice his grimacing when he enters home. His facial expression might not be completely due to pain but it might be because of our*

conflicts. When he becomes withdrawn, I think it might be slightly related to pain and more related to our relational conflicts and me." [Partner 19, female, 37].

DISCUSSION

The aim of this study was to explore the motives of pain behaviors as perceived by patients and their partners. Some patients and partners believed that pain behaviors are uncontrollable. Other patients and partners indicated different motives for pain behaviors including protecting oneself against more pain, regulating negative emotions, informing others about the pain severity, seeking validation/intimacy, gaining advantages from pain, and expressing anger. All motives were endorsed by patients and partners, yet the perceptions of patients and partners did show both similarities and differences in the underlying motives of pain behaviors. Patients and partners revealed the most similarities in motives such as protecting oneself against more pain and informing others about the pain severity. Discrepancies between patients and partners were mostly related to seeking validation, gaining advantages from pain, and expressing anger motives. In general, partners rarely acknowledged patients' motives for seeking validation and they were more likely to mention negative motives (ie, gaining advantages from pain and expressing anger).

Patients' and partners' perspectives revealed several similarities in the underlying motives of pain behaviors. Some patients and partners believed that pain behaviors are expressed spontaneously and without a specific motive. In this regard, certain types of pain behaviors (eg, facial expressions and protective behaviors) were perceived as more automatic than other pain behaviors and were considered genuine behaviors by partners. This is similar to earlier studies showing that observers perceived patients displaying facial expressions and protective behaviors as more credible and in more pain than patients displaying other forms of pain behavior.²⁴⁻²⁷ The reflexive and automatic nature of facial expression and protective behaviors might explain such interpretations. However, it is noteworthy that not all participants agreed on the automaticity of nonverbal pain behaviors. This finding is more in line with the research suggesting that chronic pain expressions are more likely to be governed by controlled neuroregulatory systems. Particularly, when pain persists, higher levels of executive processing are involved in pain expressions.^{4,8,28} That is, in the chronic stages of pain, patients might have more control over their pain behaviors. Another similarity between patients and partners was related to the "protecting oneself against more pain" motive, which was commonly associated with behaviors such as guarding and moving slowly. In other words, they attributed protective behaviors to the fear of reinjury or attempts to prevent worsening their condition. Specifically, most partners believed that physical activities may contribute to more pain in their loved one, and in the same line, they believed protective behaviors are beneficial for their loved one. This finding suggests patients and partners have a mutual understanding of motives underlying protective behaviors. However, this shared view seems maladaptive as it is mostly associated with fear-avoidance beliefs, which can negatively affect patients' pain adjustment.²⁹ Finally, both patients and partners revealed similarities with regard to the "informing others about the pain severity" motive and associated it with different behaviors especially verbal disclosures.

Although both patients and partners indicated regulating negative emotions and seeking validation as motives for pain expression, also inconsistencies were observed. In general, patients mentioned these motives more frequently than partners did. Moreover, the behaviors that were linked to regulating negative emotions differed between patients and partners. Patients often associated regulating negative emotions with moaning and becoming withdrawn, whereas partners related this motive to verbal disclosures. Furthermore, patients frequently mentioned seeking validation as a motive and mainly associated it with verbal disclosures, whereas partners rarely acknowledged this motive. These findings suggest that partners may not always perceive the intended message of patients' pain behavior, especially patients' motives for seeking validation. As a consequence, the responses that they provide might not necessarily meet the patient's need for validation. It is also notable that validation was conceived differently from one patient to the other. This finding further indicates the importance of distinguishing a patient's unique needs and motives for engaging in pain behaviors, and therefore providing individualized support on the basis of the patient's needs.

Another discrepancy between patients and partners was related to their perception of gaining advantages from pain as a motive. Patients rarely attributed this motive to their own behavior, whereas partners clearly indicated that patients engage in pain behaviors to get their attention or avoid performing their responsibilities. Such discrepancies between patients and partners might be explained by social desirability, leading to patients' interpreting their behavior in a positive way. An alternative explanation is that partners misinterpret the motives of patients' pain behaviors and ascribe negative motives to those behaviors. Several factors might contribute to such negative interpretations. Notably, during the interviews most partners who believed that their partner with pain aims to gain from displaying pain behaviors expressed exhaustion and anger toward the patient and doubted the credibility of the patient's pain behaviors. It is possible that partners' caregiving exhaustion or anger prompts negative interpretations concerning patients' behaviors. Alternatively, partners' negative attributions might give rise to feelings of exhaustion or anger, which is in line with attribution theory and studies indicating that the more caregivers attribute the illness behaviors to the patient, the more resentful they would feel.^{30–32} This finding warrants more research on how possible contextual factors (eg, marital satisfaction and caregiving burden) influence the perception of motives underlying pain behaviors.

With regard to expressing anger, patients considered pain behaviors as a reflection of their anger toward illness, whereas partners perceived pain behaviors as an indication of patients' irritation toward them. Partners' attribution of pain behaviors to relational problems highlights the importance of the social context (eg, marital relation) and its impact on partners' interpretation of patients' behaviors. Previous research suggests that the partners' internal and negative attributions for pain behaviors of patients with pain predict high levels of partner hostility toward the patient.^{33,34} Therefore, partners' attributions of patients' behaviors to motives as gaining advantages from pain and expressing anger can lead to their provision of inadequate support and subsequent negative outcomes.

The results of the current study should be interpreted in light of its limitations. As the study was on the basis of the participants' recall of their pain-related interactions,

inaccurate recall or social desirability might have influenced their responses. Although we included a wide range of pain behaviors in the checklist of pain behaviors, the checklist might have limited the categories of pain behaviors that participants talked about during the interview. Our study was solely focused on the perspective of patients with CLBP and their partners. Future research might benefit from considering the perspective of other groups of patient-partner dyads with heterogeneous pain conditions (eg, autoimmune diseases, and musculoskeletal pain). Nevertheless, our sample was relatively large including a wide range of people in terms of gender, age, education, and marital satisfaction. In particular, our sample included both distressed and nondistressed couples. The qualitative approach used in the current study allowed us to gain insight into the context and meaning of pain behaviors from the patients' and partners' perspectives. Using videos of a patient performing pain behaviors facilitated recall of pain behaviors for patients and partners in their daily interactions.

Future research might benefit from exploring patients' motives for expressing pain behaviors in larger populations of people with CLBP. Also, future studies are needed to explore how discrepancies within couples in the perception of motives underlying pain behaviors can influence couple interaction and associated pain outcomes. It is also interesting to investigate what factors contribute to discrepancies in the perception of pain behavior motives among couples. It is possible that contextual factors (eg, internal vs external attributions about pain and marital quality) influence the motives that partners ascribe to pain behaviors and therefore shape their subsequent responses. Investigating such factors can help in developing more nuanced models of pain behaviors in which motives of pain behaviors and environmental contingencies shaping them are taken into account. Developing such models might help to move on from conceptualizing patient-partner interaction in solely behavioral terms (ie, operant models) to a more cognitive-behavioral approach.^{10,11} This new approach can aid interventions to be tailored to motives of pain behaviors rather than solely focusing on reducing overall pain behaviors. For instance, a pain behavior aimed at seeking validation might be functional and therefore not an appropriate target for diminishment.¹¹

In conclusion, motives underlying pain behaviors are diverse and related to both verbal and nonverbal pain behaviors. Findings from this study suggest that partners are more likely to perceive the underlying motives of pain behaviors negatively, which may underlie hostility toward patients that is sometimes reported.³⁴ Our findings can inform existing interventions (eg, couples communication training) in terms of effective pain communication. Increasing patients' and partners' awareness of each other's beliefs about motives underlying pain behaviors might be a crucial clinical target of such interventions. Future studies might benefit from distinguishing adaptive motives (eg, seeking validation) from maladaptive ones (eg, gaining advantages from pain) and designing more tailored and individualized interventions to improve patients' and partners' interactions. Such interventions would need to challenge negative and maladaptive attributions and replace them with more sympathetic and adaptive attributions about patients' pain behaviors.

REFERENCES

1. Craig KD. The social communication model of pain. *Can Psychol*. 2009;50:22–32.

2. Hadjistavropoulos T, Craig KD, Duck S, et al. A biopsychosocial formulation of pain communication. *Psychol Bull.* 2011;137:1–24.
3. Hadjistavropoulos T, Craig KD. A theoretical framework for understanding self-report and observational measures of pain: a communications model. *Behav Res Ther.* 2002;40:551–570.
4. Craig KD, Versloot J, Goubert L, et al. Perceiving pain in others: automatic and controlled mechanisms. *J Pain.* 2010;11:101–108.
5. Prkachin KM, Craig KD. Expressing pain: the communication and interpretation of facial pain signals. *J Nonverbal Behav.* 1995;19:191–205.
6. Schneider W, Chein JM. Controlled & automatic processing: behavior, theory, and biological mechanisms. *Cogn Sci.* 2003;27:525–559.
7. Burke K. *Language as Symbolic Action: Essays on Life, Literature, and Method.* Berkeley: University of California Press; 1996.
8. Goubert L, Craig KD, Buysse A. Perceiving others in pain: experimental and clinical evidence on the role of empathy. *Soc Neurosci Empathy.* 2013:153–166.
9. Fordyce WE. *Behavioral Methods for Chronic Pain and Illness.* St. Louis: Mosby; 1976.
10. Wilkie DJ, Keefe FJ, Dodd MJ, et al. Behavior of patients with lung cancer: description and associations with oncologic and pain variables. *Pain.* 1992;51:231–240.
11. Cano A, Goubert L. What's in a name? The case of emotional disclosure of pain-related distress. *J Pain.* 2017;18:881–888.
12. Williams AC de C. Facial expression of pain: an evolutionary account. *Behav Brain Sci.* 2003;25:439–488.
13. Creameans-Smith JK, Stephens MAP, Franks MM, et al. Spouses' and physicians' perceptions of pain severity in older women with osteoarthritis: dyadic agreement and patients' well-being. *Pain.* 2003;106:27–34.
14. Franks MM, Hong TB, Pierce LS, et al. The association of patients' psychosocial well-being with self and spouse ratings of patient health. *Fam Relat.* 2002;51:22–27.
15. Miaskowski C, Zimmer EF, Barrett KM, et al. Differences in patients' and family caregivers' perceptions of the pain experience influence patient and caregiver outcomes. *Pain.* 1997;72:217–226.
16. Cano A, Johansen AB, Franz A. Multilevel analysis of couple congruence on pain, interference, and disability. *Pain.* 2005;118:369–379.
17. Riemsma RP, Taal E, Rasker JJ. Perceptions about perceived functional disabilities and pain of people with rheumatoid arthritis: differences between patients and their spouses and correlates with well-being. *Arthritis Rheum.* 2000;13:255–261.
18. Leonard MT, Issner JH, Cano A, et al. Correlates of spousal empathic accuracy for pain-related thoughts and feelings. *Clin J Pain.* 2013;29:324–333.
19. Kappesser J, Williams ACDC, Prkachin KM. Testing two accounts of pain underestimation. *Pain.* 2006;124:109–116.
20. Lyons KS, Jones KD, Bennett RM, et al. Couple perceptions of fibromyalgia symptoms: the role of communication. *Pain.* 2013;154:2417–2426.
21. De Ruddere L, Goubert L, Stevens MAL, et al. Health care professionals' reactions to patient pain: impact of knowledge about medical evidence and psychosocial influences. *J Pain.* 2014;15:262–270.
22. De Ruddere L, Goubert L, Stevens M, et al. Discounting pain in the absence of medical evidence is explained by negative evaluation of the patient. *Pain.* 2013;154:669–676.
23. Maguire M, Delahunt B. Doing a thematic analysis: a practical, step-by-step guide for learning and teaching scholars. *ISHE-J All Irel J Teach Learn High Educ.* 2017;9:3352–3364.
24. Hill ML, Craig KD. Detecting deception in pain expressions: the structure of genuine and deceptive facial displays. *Pain.* 2002;98:135–144.
25. Martel MO, Wideman TH, Sullivan MJL. Patients who display protective pain behaviors are viewed as less likable, less dependable, and less likely to return to work. *Pain.* 2012;153:843–849.
26. Craig K. *Social Influences on Public and Private Components of Pain.* New York, NY: Hemisphere; 1980.
27. Ekman P, Friesen WV. Detecting deception from the body or face. *J Pers Soc Psychol.* 1974;29:288–298.
28. McCrystal KN, Craig KD, Versloot J, et al. Perceiving pain in others: validation of a dual processing model. *Pain.* 2011;152:1083–1089.
29. Turk DC, Meichenbaum D, Genest M. *Pain and Behavioral Medicine: A Cognitive-Behavioral Perspective.* New York: Guilford Press; 1983.
30. Williamson GM, Dooley WK, Martin-Cook K, et al. Caregiver resentment: explaining why care recipients exhibit problem behavior. *Rehabil Psychol.* 2005;50:215–223.
31. Skitka LJ, Tetlock PE. Providing public assistance: cognitive and motivational processes underlying liberal and conservative policy preferences. *J Pers Soc Psychol.* 1993;65:1205–1223.
32. Weiner B. A cognitive (attribution)-emotion-action model of motivated behavior: an analysis of judgments of help-giving. *J Pers Soc Psychol.* 1980;39:186–200.
33. Burns JW, Post KM, Smith DA, et al. Spouse criticism and hostility during marital interaction: effects on pain intensity and behaviors among individuals with chronic low back pain. *Pain.* 2018;159:25–32.
34. Burns JW, Post KM, Smith DA, et al. Spouse and patient beliefs and perceptions about chronic pain: effects on couple interactions and patient pain behavior. *J Pain.* 2019;20:1176–1186.