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Original Article

Pain acceptance in cancer patients with chronic pain in Hunan, China: A qualitative study

Xianghua Xu^a, Qinqin Cheng^b, Meijun Ou^a, Shaping Li^c, Chanjuan Xie^c, Yongyi Chen^{c,*}^a Head & Neck Plastic Surgery, The Affiliated Cancer Hospital of Xiangya School of Medicine, Central South University/Hunan Cancer Hospital, Changsha, China^b Pain Ward, The Affiliated Cancer Hospital of Xiangya School of Medicine, Central South University/Hunan Cancer Hospital, Changsha, China^c Nursing Department, The Affiliated Cancer Hospital of Xiangya School of Medicine, Central South University/Hunan Cancer Hospital, Changsha, China

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ABSTRACT

Objective: The purpose of this qualitative study was to describe the experiences of pain acceptance in Chinese cancer patients with chronic pain.**Methods:** Twelve hospitalized cancer patients with chronic pain participated in this qualitative descriptive study from August to November 2017. In-person semi-structured interviews were conducted, recorded, transcribed, and analyzed using Colaizzi's seven-step method.**Results:** The following four main themes and 15 subthemes emerged. Theme 1 (adaptation): pain is overwhelming and pain relief is a top priority, avoidance of pain-inducing factors, and resignation; theme 2 (emotional reactions to pain): feeling misunderstood, hopelessness, frustration, irritability, and concern for loved ones; theme 3 (functional limitations): daily life activities, social communication, and work; theme 4 (coping strategies): pharmacological therapies, behavioral strategies, social support strategies, and spiritual strategies.**Conclusions:** This study provides a description of cancer patients' experiences related to the need for pain acceptance. These findings provide insight into the essential role of pain acceptance and underline the need to apply acceptance-based cognitive behavioral interventions as adjunctive non-pharmacological alternatives for chronic cancer pain.© 2019 Chinese Nursing Association. Production and hosting by Elsevier B.V. This is an open access article under the CC BY-NC-ND license (<http://creativecommons.org/licenses/by-nc-nd/4.0/>).

What's known?

- Cancer pain is a highly prevalent symptom among cancer patients.
- Cancer pain can be intense, affecting physical and social functioning, increasing emotional distress, and reducing quality of life.
- Pain acceptance is correlated with pain intensity, psychological well-being, physical functioning, and quality of life.

What's new?

- Four main themes and 15 subthemes emerged from interviews on cancer patients' experiences of pain acceptance.

* Corresponding author.

E-mail addresses: 414700595@qq.com, chenyongyi@hnca.org.cn (Y. Chen).

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- Findings in this qualitative descriptive study offer in-depth insight and understanding regarding the experience of pain acceptance in cancer patients from a Chinese perspective.
- The results highlight the need to design and apply innovative acceptance-based cognitive behavioral interventions for cancer patients with chronic pain.

1. Introduction

Cancer pain is caused either directly by the tumor (primary tumor invasion or metastases) or indirectly by cancer treatments (surgery, chemotherapy, and radiotherapy) [1]. Chronic cancer pain is defined as constant or intermittent pain lasting longer than 3 months [2]. A recent study showed that 22.5%–35.4% of cancer patients had chronic pain [3]. A literature review concluded that the rate of chronic pain is 19%–41% for short-term cancer survivors (6 months to 5 years) and 27%–35% for long-term cancer survivors (>5 years) [4]. Pain severity increases with cancer progression, and

pain is the most troublesome and intolerable symptom for cancer patients [5]. Cancer patients with chronic pain have increased depressive symptoms, increased emotional distress, decreased function, and poor quality of life, which trap them in a vicious cycle [6]. A scope review indicated patients receiving nurse-led care reported lower symptom severity, distress, and better emotional well-being [7].

Acceptance refers to a willingness to make room for and embrace an unwanted internal experience, without attempting to avoid, reduce, or fight against difficult thoughts/emotions and physical sensations [8]. From a traditional Chinese cultural perspective, acceptance is consistent with the viewpoint that emphasizes self-adaptation to obtain harmony with nature [9]. Pain acceptance is a moment-to-moment process in which the individual has a willingness to actively experience pain along with related thoughts, feelings, and actions while acting in line with their values and goals [10]. Pain acceptance is an essential contributor to the outcomes of many types of chronic pain [11]. According to McCracken et al., pain acceptance is comprised of two core elements: pain willingness (PW) and activity engagement (AE). PW refers to the adaptation to pain. Patients with persistent pain and high PW realize that the attempt to control, eliminate, and dominate pain has proven ineffective and unproductive and it therefore makes sense to accept the experience of pain and its impact on life. AE implies the pursuit of life activities despite pain, with awareness of the importance of engagement in valued life activities [12]. PW helps to reduce negative affect, whereas AE is conducive to the promoting positive affect [13]. Pain acceptance has been proposed as an approach to cope with chronic and recurrent levels of non-cancer pain [14].

Pain acceptance may help with functional adaptation to cancer pain, as in patients with chronic non-cancer pain [15]. Compared with traditional control-oriented pain management methods (such as medication use, rest, and other physical and biological approaches), acceptance-related processes can increase persistence in functional activity [16]. Pain acceptance is negatively associated with pain intensity [17] and linked with increased pain tolerance, which could enhance a coping approach that is in line with goal-driven values [18]. Pain acceptance also shows promise in improving psychological well-being; it significantly predicts decreased anxiety, depressive symptoms, and pain-related negative affect [11]. Additionally, pain acceptance has been found to be relevant to physical functioning in Canadian advanced metastatic cancer outpatients with pain [19] and quality of life in Chinese chronic nonmalignant pain patients [20]. Furthermore, pain acceptance is a mediator of many pain-related outcomes, such as perceived injustice, pain disability, opioid use, and pain intensity [21].

Many quantitative studies have revealed relationships between multiple indicators and pain acceptance, but they have mostly involved chronic pain that is not related to cancer or its treatment [22–24]. Limited attention has been paid to the potential role of acceptance in chronic cancer pain. In addition to being influenced by biological factors, cancer pain is multidimensional, with psychosocial factors playing a considerable role [25]. A cross-sectional study showed that pain acceptance in Chinese cancer patients was relatively low and varied with age, gender, marital status, pain duration, number of pain sites, duration of analgesic use, depression, and anxiety [26]. However, qualitative studies on cancer pain acceptance are scarce. As pain is an individual and subjective experience, it is insufficient to explore the perception of pain acceptance in cancer patients by only using structured quantitative data. Considering the Chinese cultural context related to Chinese society, culture, religion, and the economy [27], descriptive exploration to enrich and deepen the understanding of pain acceptance

among Chinese cancer patients is important. This could help to determine how pain acceptance can best be promoted in cancer pain management in China.

2. Methods

2.1. Design

The study involved a qualitative descriptive approach using in-depth, semi-structured interviews. This approach is based on the philosopher Edmund Husserl's view that quantitative approaches do not fully describe human experiences [28]. The researchers “set aside” various biases and assumptions to explain the counterintuitive aspects of pain acceptance in relation to cancer pain [29].

2.2. Participants

Participants were selected from among hospitalized cancer patients receiving active treatment in a provincial-level tertiary cancer hospital in China from August to November 2017. Purposive sampling was used to select patients with different ages, genders, education levels, and diagnoses. The inclusion criteria were (1) aged ≥ 18 years, (2) diagnosed with cancer based on pathology results, (3) life expectancy >3 months, (4) duration of pain >3 months, and (5) self-rated level of pain >3 on an 11-point numeric rating scale (NRS), with 0 representing no pain and 10 signifying extreme pain [30]. Patients with cognitive or verbal communication impairments, as well as those unable to understand spoken and written Mandarin, were excluded.

The principal investigator provided information to ward nurses about the study objectives and subsequently enrolled patients who were willing to participate after explaining the study. Patients were enrolled until data saturation occurred, i.e., until no additional information appeared and no further themes were derived from the data [31]. Consequently, 12 of 14 eligible patients were enrolled in the study, with two patients declining to be interviewed.

2.3. Interviews

A semi-structured interview guide, which was used as a checklist, was created (Table 1). A psychologist conducted the interviews in a designated room with no disturbances. All interviews were digitally recorded. Physical expressions such as sighs, frowns, and crying, along with periods of silence, were noted. The length of each interview was 30–45 min.

2.4. Analysis and interpretation

The recordings were transcribed verbatim. Data were collected and analyzed simultaneously and iteratively. Data analysis was guided by Colaizzi's seven-step method: (1) transcripts were read repeatedly, (2) significant statements on pain acceptance were extracted, (3) for important statements, meanings were formulated, (4) formulated meanings were categorized into clusters of themes, (5) findings were integrated into exhaustive descriptions of pain acceptance perception, (6) exhaustive descriptions were authenticated by obtaining participants' feedback, and (7) feedback was incorporated into the final descriptions of pain acceptance perception [32]. After developing the coding structure, two researchers independently coded the transcripts and compared the consistency of their categorizations. The codes were sorted into finalized themes and the meanings within the themes were formulated into subthemes.

Table 1

Interview guide.

Can you describe your experience of and reaction to pain outbreaks?
 When suffering from pain, what do you usually do to feel better?
 What are your worries and concerns regarding pain?
 Can you tell me the changes that pain has brought about?
 o Physical aspects
 o Psychological aspects
 o Relationships
 What are the influences of pain on you?
 o Normal daily life
 o Work engagement
 o Future plans
 How do you feel about living with pain?

2.5. Trustworthiness

Strategies were applied throughout the study to enhance trustworthiness. The research design was guided by two nursing professors in the field of qualitative study and went through many consultations and modifications. To ensure the voluntarily engagement of participants, the primary nurse explained the aims of this study to the potential patients in advance. The private interview room was very quiet with some snacks and water where the interviewees could express themselves honestly. Moreover, multiple precise readings were carried out to confirm whether the captured articulations were in accordance with the tendencies of the participants. The first and the third author analyzed and evaluated the interpretation and integrality of data with the second author specializing in pain control and the fourth author majored in psychological care. In addition, pain control and psychological specialists conducted peer review applying the generation method of concept and categories repeatedly. They assessed the adequacy and relationships between categories. To enhance the transferability, the research design adopted, the number of participants involved, the duration of the interviews, and the data collection and analysis method utilized were detailed described [33].

2.6. Ethics

Approval was obtained from the Institutional Review Board of the Affiliated Cancer Hospital of Xiangya School of Medicine, Central South University/Hunan Cancer Hospital (no. 201506). Patients received written and oral information and signed a detailed informed consent form prior to the interviews. They could withdraw from the study at any time. The researchers ensured anonymity throughout data collection, analysis, and reporting.

3. Results

The socio-demographic and clinical characteristics of the sample are outlined in Table 2. Among the patients (mean age, 55.9 ± 11.1 ; 50% male), 66.7% were graduates of high school or below, 83.3% were married, and 50% were farmers. Four patients had lung cancer, three had breast cancer, two had colon and rectum cancer, and the others had myeloma, liposarcoma, and non-Hodgkin's lymphoma. The mean pain duration was 6.4 ± 3.4 months and the pain level (scored based on an 11-point NRS) was 6.3 ± 1.9 . Most patients (75%) had multi-site pain (primarily in the chest and back), while one had pain involving the entire body.

Four major themes (adaptation, emotional reactions to pain, functional limitations, and coping strategies) and 15 subthemes emerged from the interviews, which are summarized in Table 3.

3.1. Adaptation

3.1.1. Pain is overwhelming and pain relief is a top priority

The participants focused their attention on survival and pain relief. Analgesia was the first priority. The participants believed that pain control was essential to their lives, with lack of pain being an elementary survival need.

"All I want to do is hit the wall... If only there was a panacea that could produce permanent pain relief by using it once (in a gloomy voice)!" (P2)

"I'll be okay if it doesn't hurt. I just have too much pain." (P6)

"There is no way out I am just eager to relieve it (the pain) as soon as possible." (P10)

3.1.2. Avoidance of pain-inducing factors

Participants were reluctant to be subjected to any external stimuli. They tried to avoid any triggering or aggravating factors related to pain.

"I become very annoyed when I hear a loud voice. I'll wear earplugs in that case." (P5)

"When it comes to the saddest part (cancer and impaired movement caused by liposarcoma), I will shift to other subjects." (P7)

"I can't bear any stimulation, or any small activity, thought, discussion, or movement that will trigger pain or make it worse." (P8)

Table 2

Socio-demographic and clinical characteristics.

No.	Age	Sex	Education	Marital status	Occupation	Type of cancer	Pain site	Pain duration (months)	Numeric rating scale score
1	58	Male	Senior high	Married	Carpenter	Lung cancer	Chest, back, and coccyx	3	8
2	60	Male	Junior high	Married	Farmer	Myeloma	Shoulder and back	6	7
3	51	Female	University	Divorced	Bank teller	Breast cancer	Chest and back	12	7
4	62	Female	No school	Married	Farmer	Breast cancer	Arm and chest	5	4
5	42	Female	University	Married	Civil servant	Breast cancer	Scapular region and right hand	12	3
6	75	Female	Elementary	Widowed	Farmer	Lung cancer	Back	5	8
7	55	Male	Junior high	Married	Farmer	Liposarcoma	Left lower extremity and left hip	10	8
8	67	Male	Elementary	Married	Retiree	Lung cancer	Thorax-back region	4	6
9	50	Male	Junior college	Married	Teacher	Lung cancer	Chest	6	4
10	67	Male	Junior high	Married	Farmer	Colon and rectum cancer	Hip, scapula region, and waist	8	5
11	47	Female	Junior college	Married	Merchant	Non-Hodgkin's lymphoma	Chest, back, and abdomen	3	6
12	37	Female	Senior high	Married	Farmer	Colon and rectum cancer	Whole body	3	9

Table 3
Themes and subthemes observed in cancer patients with chronic pain.

Theme	Subtheme
Adaptation	Pain is overwhelming and pain relief is a top priority Avoidance of pain-inducing factors Resignation
Emotional reactions to pain	Feeling misunderstood Hopelessness Frustration Irritability
Functional limitations	Concern for loved ones Daily life activities Social communication Work
Coping strategies	Pharmacological therapies Behavioral strategies Social support strategies Spiritual strategies

3.1.3. Resignation

Under the constant torment of pain, the participants felt resigned and powerless in the face of the reality of their pain and directionless regarding their futures.

"I'm elderly. The condition is already unsatisfactory. No plan, even if there is, it can't be completed. On the contrary, it will be a burden to my son and daughter." (P2)

"I have no plans for the future (after a moment's silence, sighed and sat up)." (P3)

"No matter, just muddle along, day by day (laughed)." (P5)

"I felt better during chemotherapy. However, the most painful time was the week just after chemotherapy. It feels more painful now. Money is spent, yet the pain remains the same. That's it. I've had it." (P7)

3.2. Emotional reactions to pain

3.2.1. Feeling misunderstood

The participants felt they were not understood and others could not perceive their pain.

"They don't feel the pain like I do (like torture). Others can't understand it... I can't stand any noise when pain occurs." (P5)

"Others just don't understand my feeling of collapse. I have no stomach for anything when receiving chemotherapy and experiencing pain. However, they (health professionals and family members) have been urging me to take the food provided." (P11)

3.2.2. Hopelessness

Some participants had a sense of hopelessness and were immersed in utter desperation and misery and thus found it difficult to cope with the pain.

"I feel like it's better to receive euthanasia when pain is extremely intense. It's meaningless to live for extra years. I prefer to die rather than live with endless pain." (P1)

"Nobody wants to die, but it's really painful, physical and mental torture... like dying by a knife (shielded his eyes with hopelessness)." (P2)

"All I want to do is to die. It hurts so much that no self-suggestions are helpful. I've collapsed...the pain is killing me, I want to give up ..."

(burst into tears when talking about her plans for the future)." (P12)

3.2.3. Frustration

Some participants were so utterly frustrated and grief-stricken that they considered that their experience was a living death, living under the fear of cancer together with intense pain.

"I could tolerate the pain that surgery and chemotherapy induced at first. But now it's too painful to endure ... It feels like pins and needles. I don't have a way to feel better." (P1)

"I can't take it (the pain) any more ... distending pain, feels like my bone is bursting open (covered her face with her hands)." (P3)

"It seems like I have a burr under my saddle. It kills me when it hurts." (P6)

3.2.4. Irritability

The participants behaved irritably and fidgeted as if they had "pins and needles." They readily became agitated and found it more difficult to control their temper when experiencing a pain episode.

"I had a good temper before, but now I get much more irritable when in pain." (P5)

"When it hurts, it's hard not to get angry. I can't control my temper and I'm getting more impatient than before. I have a feeling that I'm getting worse ..." (P7)

3.2.5. Concern for loved ones

The main concerns of the participants involve their spouse, children, and/or grandchildren. They could not put aside their worries about their loved ones. In line with the traditional Chinese family structure, the grandparents assumed the role of living with their offspring and undertaking the care of their grandchildren.

"It's not easy for my wife to take care of me. She hasn't had a good rest these days. I will clench my teeth and bear it (the pain) trying not to cry out and disturb her at night." (P1)

"When it's not painful, I want to look after my grandchildren. I hope they grow up quickly." (P4)

"What I am concerned about the most is my wife. She will be lonely and sad without me (sighed)." (P10)

3.3. Functional limitations

3.3.1. Daily life activities

Many of the participants found it hard to continue many daily life activities because they were limited in physical abilities, self-care abilities, and hobby-related activities. Some of them were forced to lie down because of the pain and they tended to be inactive when experiencing pain.

"I seldom get out of bed and have to lie in bed all day long." (P1)

"I have to abandon my square dancing hobby." (P4)

"Regrettably, I'm unable to continue my outdoor photography." (P5)

"I have been waking up five to six times at night. I have been sitting on the toilet for comfort. My yelling in pain can be heard by the whole ward (laughed with embarrassment)." (P6)

"I just lie still in bed. It hurts too much to move and walk (sighed)." (P8)

"I just can't stand straight or move freely." (P10)

"It's hard to brush my teeth or wash my face." (P12)

3.3.2. Social communication

Limited social interactions left many of the participants with a sense of isolation.

"I don't tend to share my inner thoughts with others and just carry on by myself." (P1)

"I feel stigma, depressed. I have been talking less now and am unwilling to communicate with those around me (voice grew weaker)." (P3)

"I feel frail since the cancer recurrence and don't want to go out. Particularly when someone talks about the topic of recurrence and metastasis, I want to escape (nearly on the verge of tears)." (P6)

3.3.3. Work

Participation in work among the participants decreased dramatically, and some experienced a decline in self-worth.

"It has had a huge impact on my work. I can't continue my original work anymore." (P3)

"I used to do housework, but now I contribute nothing to the family except for imposing troubles and burdens." (P5)

"I'm always here (the hospital) and can't work now. I want to do farm work if I'm able to walk without pain." (P7)

"I can't manage my household chores any more. My husband does all the grocery shopping, cooking, and cleaning." (P11)

3.4. Coping strategies

3.4.1. Pharmacological therapies

Most of the participants took oral pain medication, following the three-step analgesic ladder. Nevertheless, some of them had a bias against painkiller use.

"I take painkillers when I feel pain." (P5)

"Oxycodone hydrochloride is prescribed every 12 hours. In case of pain, I take it an hour earlier." (P7)

"I take oral analgesics. Although the doctor persuades me to take medicines according to the prescribed dose, I secretly reduce the amount to only one tablet (oxycodone hydrochloride) per day for fear of addiction and side effects to the liver and platelets." (P8)

3.4.2. Behavioral strategies

The participants adopted various behavioral strategies such as quitting bad habits and ensuring appropriate relaxation, regular massages, exercise, and healthy diet.

"I used to smoke and stay up late, but I quit those unhealthy habits now." (P1)

"I used to strive for success at work, and stayed up day and night when I had lots of heavy work ... The human body is like a machine, which shouldn't be exhausted excessively. It won't be like this in the future." (P5)

"My son will help me by rubbing and massaging with no force (with Wong To Yick Woodlock Medicated Balm, a Chinese traditional herbal oil). The gentle and rhythmic touch can calm me down." (P6)

"I often lie in bed and do Baduanjin (traditional Chinese exercise) and breathe deeply. I practice when I wake up in the evening or before dawn with pain." (P10)

"I no longer eat junk food and am emphasizing eating fresh vegetables and fruits rich in dietary fiber." (P11)

3.4.3. Social support strategies

Most of the participants desired to be with their family members. Social support, mainly from their families, was their greatest support.

"I long for the weekend, eagerly thinking about my daughter-in-law who will bring my grandson to see me. I feel better when we talk and have meals together (wiped tears away)." (P3)

"Even if I'm not understood when I talk to my children and sick friends, I do it, which leads to an encouraging attitude. I feel much better when I talk out loud (about my pain)" (P10)

"I don't have any appetite when in pain, but if my son comes along with me, I will eat more." (P11)

3.4.4. Spiritual strategies

Some of the participants found that they could achieve inner spiritual peace by chanting Buddhist sutras or listening to Buddhist music.

"My daughter went to the temple and asked for a safety symbol for me (placed a hand over it on her chest), hoping to bless me to allow escape from the suffering. She also downloaded some Buddhist sutras and music, which I stored in my mobile phone. It works when I'm restless with pain." (P4)

4. Discussion

The major themes suggest that the acceptance of chronic cancer pain entails several aspects that have been reported to be associated with the acceptance of chronic non-cancer pain [34]. The results imply a potential role for pain acceptance in the cancer pain experience. Specifically, the participants' comments reflect the two subcomponents of pain acceptance, PW and AE [12]. "Adaptation" and "emotional reactions to pain" can partially reflect the PW aspect, while "functional limitations" and "coping strategies" are partly indicative of the AE aspect.

Pain acceptance varied with demographic and clinical variables, based on the analysis and interpretation. First, the participants showed better adaptation to chronic pain with age, which is one of the main themes of pain acceptance that is consistent with previous research [35]. A possible reason is that as life experience increases with age, cancer patients begin to better understand the Chinese philosophical principle of being in harmony with nature

[36], tend to develop a peaceful attitude to help them to face the pain, and come to realize the true value of their lives. Second, as explored in the interviews, cancer patients with a longer pain duration had better pain acceptance. This is in agreement with our previous quantitative study [23]. One likely explanation could be that with more experience of pain adaptation over time, cancer patients develop a better understanding of the psychosomatic relationships, actively adopt coping strategies, and get involved in meaningful life experiences.

This study identified a few additional subthemes that differ from pain acceptance in non-cancer patients [37,38]. The subtheme “resignation” refers to the attitude of being resigned to one’s fate that cancer patients can develop when pain is untreated or poorly treated. A possible explanation may be that the pain increased over time, and so patients’ initial hopes of pain relief faded and a sense of fatalism developed. This “resignation” view is a traditional Eastern perspective, though it may be universal among dying cancer patients [39]. “Concern for loved ones” highlighted that most of the elderly patients could not put aside their worries about their children and grandchildren. This concern was particularly strong given the traditional Chinese family structure, but it is not specific to China [40].

It was noteworthy for healthcare providers that many of the cancer patients adopted traditional Chinese conditioning exercises such as Baduanjin to achieve beneficial body-mind regulation. Buddhism is the dominant religion in China. For those with religious faith, Buddhist sutras and music were deemed useful to help provide comfort, which supports the notion that pain has spiritual dimensions [41]. This focus on religious rituals is also a global phenomenon [42].

Ambivalence in participants’ responses, involving both laughing and crying, was often observed. Some patients were in so much pain that they suddenly collapsed and cried during the interviews. When it came to grief issues, suffering, and even death, some patients actually laughed, which was unexpected. Laughter might be a “protective” behavior, reducing the uncomfortable and distressing aspects of pain and cancer [43] or a type of “self-mockery” related to the inability to control pain.

5. Strengths and limitations

First, due to the limited previous information on the perception of the chronic cancer pain acceptance experience, this study provides a comprehensive view of pain experience in cancer patients who report persistent pain. As far as we know, this is the first qualitative study that describes pain acceptance in Chinese cancer patients. This study provides an evaluation of cancer pain in a naturalistic setting, thus potentially providing an externally valid description of cancer pain-related behaviors and cognitions. However, because a single tertiary cancer center was involved, the generalizability of the results is unclear. Further research on the pain acceptance of cancer pain at other cancer hospitals in China and globally is warranted. Finally, the patients expressed their experiences in Mandarin, and the authors translated the comments into English. While translation can dilute meaning, much of the reported experiences are similar to those reported in many studies on other types of pain conducted in various different languages [34,44].

6. Implications for practice

This study highlighted that pain acceptance is an aspect of the experience of cancer patients with chronic pain. Based on the insights offered by our findings, acceptance of cancer pain may be a general mechanism by which individuals are empowered to reduce

unsuccessful attempts to avoid or control pain, focus on participation in valued activities, pursue personally relevant goals, and improve functioning and other important outcomes. Nurses should be aware of the significance of pain acceptance and they should play a vital role in enhancing the level of pain acceptance.

It is noteworthy that non-pharmacological relief of pain (including emotional, spiritual, and psychosocial suffering) is as important as painkillers [45]. The first step of many non-pharmacological interventions is to take responsibility for the pain, face it directly, and accept it. The adoption of contextual acceptance-based Cognitive Behavioral Therapy (CBT) approaches, such as Acceptance and Commitment Therapy (ACT), which aim to enhance the pain acceptance of cancer patients with chronic pain [46], may help to reduce much of the distress that can exacerbate pain and functional changes, thus providing an adjunct to pharmacological interventions for cancer pain.

7. Conclusion

Despite the different sociocultural context in China compared to those in other societies, this in-depth qualitative descriptive study observed commonalities underlying the pain acceptance perceptions of cancer patients in China and other countries. The cancer patients differentiated their pain acceptance experiences into four themes and 15 subthemes that are similar to the experiences of non-cancer pain reported in other parts of the world [47]. The themes found in this study provide useful information for future studies on pain acceptance for cancer patients. Effective acceptance-based CBT interventions could serve as creative non-pharmacological interventions to improve cancer patients’ endurance of chronic pain.

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Conflicts of interest

No conflict of interest is declared by the authors.

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Appendix A. Supplementary data

Supplementary data to this article can be found online at <https://doi.org/10.1016/j.ijnss.2019.09.011>.

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