ORIGINAL ARTICLE

Designing a Psychological Empowerment Model for Chronic Pain Management: A Qualitative Study

Violet Alipour, PhD students; Farah Naderi, PhD; Behnam Makvandi, PhD; Reza Pasha, PhD; Parviz Asgari, PhD

Department of Psychology, Ahvaz Branch, Islamic Azad University, Ahvaz, Iran

Correspondence:
Farah Naderi, PhD;
Department of Psychology, Ahvaz Branch, Islamic Azad University, P. O. Box: 61349-37333, Ahvaz, Iran
Tel: +98 9163119170
Fax: +98 61 33329200
Email: nmafrah@yahoo.com
Received: 18 July 2021
Revised: 26 August 2021
Accepted: 30 September 2021

Abstract

Background: According to the chronic pain management complexities, achieving a model for managing chronic pain psychological dimensions is very important. Hence, the current study aimed to design a psychological empowerment model in chronic pain management.

Methods: This qualitative method was conducted using a grounded theory approach; the main method of data collection was semi-structured interviews and participant observation. The participants were 15 members of the treatment team and six patients with chronic pain, selected via theoretical and purposive sampling from 2018 to 2020. Data analysis was performed concurrently with data gathering based on Corbin and Strauss's proposed method. Data validity was confirmed via Lincoln and Guba's criteria.

Results: The developed psychological empowerment model in chronic pain management consists of six constructs including "pain reasoning", "vulnerability", "pain interactions", "ailment", "facing pain", and "self-empowerment". Among them "self-empowerment" was identified as the major concept or core category. The themes of pain reasoning and vulnerability were identified as the cause and background , respectively, which affected the phenomenon of ailment. In this regard, the themes pain interactions and facing pain were also recognized as the interferers and approaches which lead to self-empowerment like the consequences, if implemented properly.

Conclusion: The developed model in this study, as a caring model, can be used for compensating the lack of attention to chronic pain psychological dimensions in chronic pain management. Its use in clinical settings requires further studies on testing the above model on patients with chronic pain.

Please cite this article as: Alipour V, Naderi F, Makvandi B, Pasha R, Asgari P. Designing a Psychological Empowerment Model for Chronic Pain Management: A Qualitative Study. J Health Sci Surveillance Sys. 2021;9(4):278-285.

Keywords: Empowerment, Psychology, Chronic pain, Qualitative research

Introduction

Chronic pain is defined as a pain lasting for more than three months with a benign or malignant origin.[1, 2] It is a hidden epidemic whose incidence rate is on the rise in many countries due to the increase in co-morbidities and underlying diseases such as obesity and diabetes, as well as the expansion of environments contributing to poor lifestyles such as lack of movement.[3] Records show that 30 to 50 percent of the world population suffer from chronic pain.[4, 5] In Iran, the six-month prevalence of chronic pain has been reported 9 to 14 percent among

adults (18 to 65 year old age group) and approximately 67 percent among the elderly population (60 to 90 year old age group).[6]

Chronic pain accounts for many other complications, leading to the loss of function and imposing much pressure on patients and their families and consequently the whole community. The cost of chronic pain and its related complications have been estimated at 560 to 635 billion dollars per year.[7, 8] This type of pain has numerous other complications and can lead to loss of functioning and jobs, a heavy burden on patients and their families, and fundamentally disruption inthe physical and psychological health and the economic welfare of patients and society. Chronic pain relief or treatment fails in most cases as the current treatments are not sufficiently effective and patients suffer from their limiting undesirable effects.[9, 10]

Patient empowerment is one of the prominent methods in controlling and managing chronic diseases, including chronic pain.[11] Patient empowerment is a multi-factorial concept that is defined as a process through which people gain greater control over decisions and actions affecting their health which can be obtained through skill development, access to information and resources, and influencing those factors that affect their health and well-being. Empowering the patient as a basic pillar of individualized medicine is a process in which patients understand their role, are given the knowledge and skills by their healthcare provider to perform a task in an environment with cultural diversities, which encourages patient cooperation. One of the most important components of empowerment is psychological empowerment, which is the result of internal motivation and can be conceptualized using five dimensions: the feeling of competence, the feeling of effectiveness, sense of meaningfulness, sense of autonomy, and feeling of trust.[12, 13] Psychological empowerment of patients is a fundamental prerequisite for achieving important targets towards healthcare sustainability, including cost reduction, better health outcomes, fewer resources wasted, more prevention, improved service quality, and patient satisfaction. Empowerment is a set of competencies in patients which improve their health literacy, control, participation, and communications capacities.[14, 15] A review of the literature reveals that not all the dimensions of empowerment are set as empowerment interventions.[16, 17]

There was no study among the reviewed research which particularly focused on the pattern of psychological empowerment in patients with chronic pain. Nevertheless, Te Boveldt et al.[18] concluded in a grounded theory study that patient empowerment was among the fundamental and central elements in successful pain management, and the aspects of empowerment were differentiated as the patient's role, professionals' role, resources, self-efficacy, active involvement, and shared decision-making. In a qualitative study by Hambraeus et al.[19] in Sweden, people reported a phenomenon that has been best described as "gained empowerment" in interventional pain management.

Given the limited knowledge on different aspects of psychological empowerment in chronic pain and the racial, ethnic, and cultural nature of the subject, similar models developed in other countries could not be used. Therefore, there was a need for a qualitative study. Accordingly, this qualitative study used the views of the members of the health care team and patients in order to design a psychological empowerment model in chronic pain management.

Methods

Data Collection

This study used grounded theory to design a psychological empowerment model in the process of chronic pain management during 2018-2020 in Ahvaz, Iran. The data were collected using semi-structured interviews and the observation of participants. Data collection began purposefully and then continued to data saturation with theoretical sampling. Theoretical sampling is a data collection method that is used in qualitative research based on the concepts and themes extracted from data. This method starts with purposeful sampling and continues until data saturation. Data saturation means that no new findings can be found in interviews and are repetitions of previous findings. Thus, according to using theoretical sampling, during the interview, 21 people were identified. This sampling method enables the researcher to explore concepts in-depth, and the choice of contributors is based on previous data collection and analysis.[20] Therefore, the researcher continuously collected, compared, coded, and categorized the data and, according to the emerging theory, decided which data to collect and where to find them. Thus, the results of the first interview and observation led to the next interview and observation. Furthermore, with further analysis, the need for further interviews and observations is evaluated.

The participants in this study included 15 members of the health care providers whose work was related to the psychological aspects of chronic pain management and 6 patients with chronic pain. The members of the health care providers included seven psychologists, three psychiatric nurses, and five psychiatrists in Ahvaz. The inclusion criteria for the members of the health care providers were adequate knowledge and experience of the topic under study

and the tendency to recount the information for all participants. The inclusion criteria for patients were 18 years of age, experience of chronic non-cancer pain, complete alertness, and the tendency to express their feelings related to the concept under study. Moreover, the participants were selected with maximum variety in terms of age, gender, marital status, and socioeconomic status. The criteria for selecting the members of the health care providers were used in data collection, and Spatio-temporal triangulation was used in selecting the participants.

For ethical considerations, the purpose of the study, confidentiality of information, and recording of interviews were explained to the participants before each interview. Considering where the participants felt comfortable, the interviewers carried out face-to-face interviews in the diagnostic medical centers, participants' workplaces, and the parks in Ahvaz. Guiding questions which were prepared based on the aims of the study were used in the interviews. The interviews with patients and the members of the health care providers began with open questions such as "What can you tell about the psychological issues affecting your pain?" and "What can you tell about psychological empowerment in the process of patient chronic pain management?" Next, follow-up questions were asked based on the provided information in order to elucidate the concept under study. The interviews lasted 30-50 minutes and were recorded via a cell phone.

During the interview content analysis, the sentences were manually transcribed verbatim in the informal language used by the participants based on the recorded voice and immediately organized and analyzed in MAXQDA v. 10 qualitative analysis software. In the observations, the non-verbal reactions, behaviors, and communications of the participants during the interviews were immediately recorded after the interview and analyzed with the aforementioned software. All the interviews and observations were conducted by one researcher.

Statistical Analyses

Data analysis was performed simultaneously with data collection by using Strauss and Corbin's method. Data credibility was confirmed based on Lincoln and Guba's criteria. To analyze the data, three techniques of open coding, axial coding, and selective coding were employed. Then, the main categories were linked to their sub-categories based on the paradigm model, conditions and context, strategies used to control the phenomenon, mediators, and outcomes. To ensure the rigor of the data, four criteria for trustworthiness proposed by Lincoln and Guba, including credibility, confirm ability, dependability, and transferability were used.[21]

Results

This study was conducted on the groups of health care providers and patients. The health care providers consisted of 15 members, who were mainly involved in the psychological dimensions of chronic pain management and had expertise either in psychology or psychiatry. In this group, seven persons were psychologists, three were psychiatrist nurses, and five were psychiatrists (Table 1). The patient group included six patients (3 males and 3 females) with chronic pain, who were aged 20-60 years with a mean age of 49 years (Table 2).

Based on the participants' opinions and the content analysis of the data, out of the 405 primary codes, six themes of "pain reasoning", "vulnerability", "pain interactions", "ailment", "facing pain", and "self-empowerment" were specified as the main constructs forming the psychological empowerment model for chronic pain management, of which

Table 1: Demographic information of the participating medical staff (n=15)

Type of specialization	n	Gender		Age (years)	Marital status		Education		
		Male	Female	Mean±SD	Married	Single	Bachelor	Masters	PhD
Psychologist	7	4	3	32.45±5.12	4	3	1	4	2
Psychiatric nurse	3	1	2	35.30±3.65	2	1	1	2	0
Psychiatrist	5	3	2	38.62±6.20	4	1	0	0	5

Table 2: Demographic information of the participating patients (n=6)

Variables	Variable range	Frequency (number/percentage)
Gender	Male	3 (50%)
	Female	3 (50%)
Marital status	Married	3 (50%)
	Single	3 (50%)
Age (years)	20-30	1 (17%)
	31-40	2 (33%)
	41-50	2 (33%)
	51-60	1 (17%)
Education	High school education	3 (50%)
	College education	3 (50%)

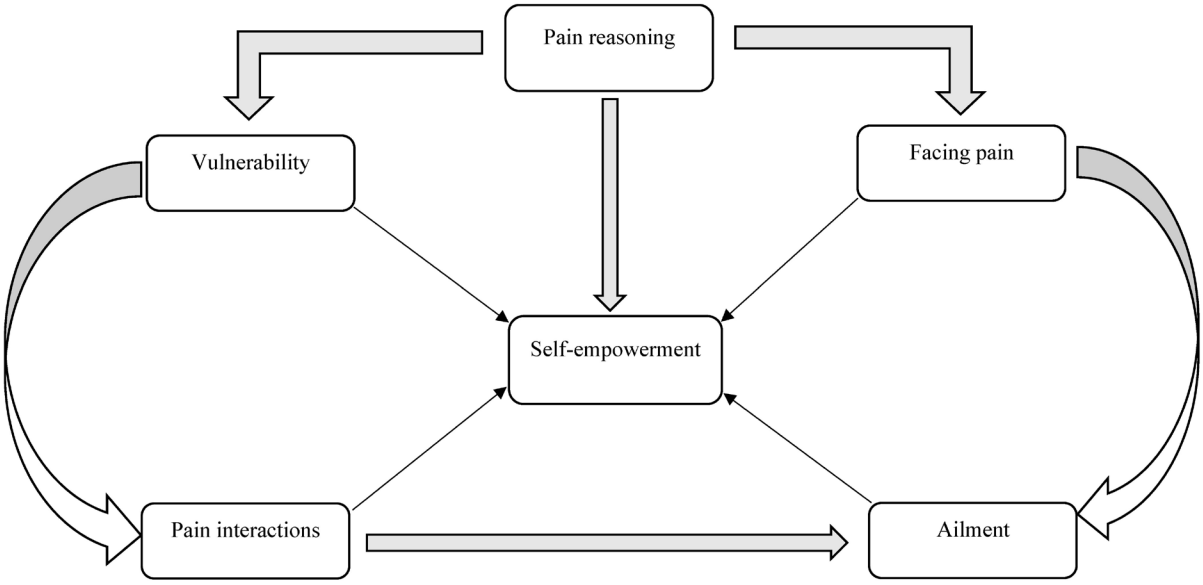

Figure 1: Psychological empowerment model of chronic pain

Table 3: The formation process of classes, subclasses, and primary classes

Main classes	Subclasses	Primary classes
Pain reasoning	Life events	Unpredictability of events
		Experience severe pain
	Ambiguities	Magnification of pain
		Pain anxiety
Vulnerability	Limitations	Individual
		Therapeutic
	Inability to manage pain	Conflicts
		Lack of pain control
Pain interactions	Positive pain interactions	Pain acceptance
		Meaning of pain
	Negative pain interactions	Emotional dysregulation
		Negative attitude to pain
Ailment	Psychological pain	The nature of psychological pain
		Adaptation to pain
	Physical pain	Temporal pattern of pain
		Pain quality
		Intensity of pain
Facing pain	Experience pain	Coping strategies
		Openness to pain
	Resilience	Tolerance of ambiguity
		Self-efficacy
Self-empowerment	Self-efficacy	Self-protection
		Striving for life
	Loving life	Protection
		Being with family

"self-empowerment" was the central theme (Figure 1). The formation process of classes, subclasses, and primary classes is presented in Table 3.

When the participants were asked about the importance of psychological empowerment in chronic pain management, most of them believed that it was essential to regard pain as a physical and psychological phenomenon. A member of the treatment team said: "Based on my experience, when special attention is paid to the psychological aspects of pain, treatment will be much more effective, patients' cooperation will be improved, and they will have a better outcome and will be more satisfied" (Participant No. 1, 35-year-old, psychologist, female).

Pain Reasoning

A major factor in the psychological empowerment for chronic pain management was paying attention to pain reasoning. One of the participants mentioned, "When the reason or mechanism underlying chronic

pain is discovered in individual patients, better planning can be made for them. When the patients know pain reasoning, they will experience less anxiety, have more reasonable expectations, and cooperate better" (Participant No. 2, 38-year-old, psychiatrist male).

Another member of the treatment team stated, "The type of accident leading to pain plays an important role in its acceptance. I mean, when pain happens after a sudden incident, like a car accident, it is more difficult to accept, tolerate, and adjust to it, and vice versa" (Participant No. 5, 33-year-old, psychiatrist, female).

Vulnerability

One of the problems acting as a contextual factor in many patients with chronic pain is their vulnerability. A member of the treatment team said, "Many of these patients have underlying diseases such as diabetes and hypertension. They also have financial problems and can't follow treatment. These factors make them more vulnerable and complicate their treatment..." (Participant No. 3, 33-year-old, psychologist, male).

Another member of the treatment team states, "One factor that can cause many problems in their treatment is their lack of motivation. Elderly patients, especially if they're single and have a poor economic status have a lower motivation to follow the treatment. We should first work on their motivation." (Participant No. 8, 32-year-old, psychologist, female).

Pain Interactions

Pain, as an interactive concept, can be affected by various factors. One of the members of the treatment team mentioned, "If we want to manage the patients' pain with a systemic method, we should know that any system that intends to operate well has certain obstacles and facilitators. We should identify these factors to succeed in what we do..." (Participant No. 7, 38-year-old, psychiatric nurse, female).

Another member of the treatment team said, "The acceptance of pain can be the first and most important step in patients' treatment. To do this, increasing their information about pain and the available treatments can change their view of pain..." (Participant No. 9, 36-year-old, psychologist, female).

Another member of the treatment team states, "Patients are usually pessimistic and hopeless about pain. They have a depressive mood. We should find the reason for this. They are often anxious or have a depressive mood when they are presented to us. If we can't control this well, we'll have difficulty in controlling the patients' pain..." (Participant No. 10, 37-year-old, psychiatrist, female).

Ailment

A basic concept in the psychological empowerment of these patients is the concept and nature of pain, identified as the ailment. A member of the treatment team mentioned, "Because chronic pain is a multi-dimensional phenomenon and has physical and psychological dimensions, an interactive approach, including inter-sectorial cooperation with different specialists, like psychiatrists and psychologists, should be used to manage the psychological aspects of pain, too..." (Participant No. 11, 45-year-old, psychiatric nurse, female).

A major dimension of chronic pain was its psychological nature. Patients who succeeded in pain management adopted various problem-solving methods and were adjusted to their pain. One patient said, "I had pain in my knee and ankle for years. Form the beginning, I tried to accept my pain and find new ways to treat it..." (Participant No. 12, 48-year-old, patient, male).

Facing Pain

An important strategy for psychological empowerment in chronic pain management was facing pain. A member of the treatment team mentioned, "There are different methods of facing pain. A therapist might be specialized in one or more techniques, like ACT and CBT, and use them in controlling the patients' pain. The choice of the technique is important. Working without a technique is like fighting a battle without a sword..." (Participant No. 14, 38-year-old, psychologist, female).

Many patients who had succeeded in pain control had different experiences. One of the patients said, "Last year when the doctor said my pain had become chronic and I had to deal with it, I couldn't believe it at first. It had caused many problems for me. I realized that the only way was to befriend it and stop fighting it. I'd like to share this experience with others..." (Participant No. 15, 45-year-old, patient, female).

Self-empowerment

The use of a specific and planned method for pain control can lead to the patients' self-empowerment to control their pain. A member of the treatment team mentioned, "We should always pay attention to the outcome and result of our measures. The goal of our measure should be clear, so that we can help our patients eventually gain self-empowerment to control their pain..." (Participant No. 17, 39-year-old, psychologist, female).

The involvement of patients' opinions in selecting the treatment method was introduced as a factor that boosts their self-confidence. A member of the treatment team stated, "If the patients' opinions are involved in pain treatment, the treatment will be much more complete. Many of them have low self-confidence. We should help them make an effort,

value, and take care of themselves..." (Participant No. 3, 33-year-old, psychologist, male).

Discussion

The present qualitative study aimed to design a psychological empowerment model for chronic pain management. This study presented a psychological empowerment model for chronic pain management. This model comprised six main constructs of "pain reasoning", "vulnerability", "ailment", "pain interactions", "facing pain", and "self-empowerment" as the main factors affecting psychological empowerment in chronic pain management. Of these factors, "self-empowerment" was the central theme.

As for the construct of "pain reasoning", the majority of the participants believed that the first step to deal with these patients was knowing their life events, ambiguities, pain anxiety, and difficult experiences with pain, which will benefit the choice of a suitable treatment program. In the same vein, Polacek et al.[22] state that to fundamentally change the approach to pain, one should identify the mechanism of pain and have a comprehensive understanding of the reasons for pain. A challenge to the evaluation and determination of the cause of pain is that there could be multiple pains, such as cancer, neuropathic, and musculoskeletal, which are rarely examined separately, thereby complicating the determination of different types of chronic pain experienced by patients.[23]

Another construct forming the psychological empowerment model in pain management was vulnerability, the evaluation of which leads to psychological empowerment. On this basis, Alschuler et al.[24] concluded that vulnerability in patients with chronic pain and its relevant factors, including a depressive mood, catastrophizing, and wrong beliefs about pain, could seriously and deeply trouble the patients and affect the treatment outcomes. An obstacle to chronic pain management is the patients' vulnerability which should, therefore, be identified and managed.[25] The ailment was another construct that needed examination in this model. Almeida et al. concluded that if the treatment team members are aware of the patients' realities, strategies, and pain adjustment and coping models, they can play a relevant and effective role in pain catastrophizing management for their patients.[26] Since pain is an abstract experience, it is difficult to objectively measure. Still, to determine the most effective treatment for pain control or to evaluate the relative effectiveness of different treatments, various dimensions of pain, including its severity, quality, and duration should be measured.[27]

Another construct of this model was pain interactions, which is a mediator in the use of this model and can serve as an obstacle and facilitator. In line with this result, Abrahams et al. stated that the lack of a comprehensive view of treatment and insufficiency of the existing treatments could cause problems in patient empowerment.[28] On the other hand, emotions can act as a coping belief; after presenting information and training about pain, the patients may believe that their pain is more affected by their emotional state.[29] The difference between these findings and the results of the present study can be attributed to the difference in the sample and various psychological dimensions in the two studies.

Moreover, awareness and reinforcement of facilitators, including positive interactions with pain, pain acceptance, and discovery of meaning can help the formation and continuation of psychological empowerment. The more awareness the patients with chronic pain have about the type and nature of pain and the ways to deal with it, the better they will achieve healthy acceptance, which means accepting life with a certain degree of pain.[30]

The construct of facing pain was another factor specified as the strategy required to implement psychological empowerment. Consistent with these results, Gentili et al. concluded that resilience in patients with chronic pain was of utmost importance; patients with a lower level of resilience expressed more pain and had more dysfunction.[31] Recent experimental studies have demonstrated the positive effect of identifying and reinforcing the sources of resilience on adjustment to chronic pain. Resilience as a personal resource enhances the patients' capacity for effective pain management. In this way, despite having chronic pain, a resilient person can experience positive feelings and maintain a higher level of functioning.[32]

Another construct specified as a central category was self-empowerment that can be achieved by attaining self-efficacy, loving life, and all-encompassing support. Daruwalla et al. reported thatin patients with chronic pain, empowerment is essential in improving autonomy, self-control, and cooperation in positive pain management outcomes. Three additional outcomes of empowerment in this context can be cost reduction, better health outcomes, and higher system efficiency.[33]

So far, no clear model has been presented on the psychological empowerment of patients with chronic pain. Still, various strategies have been used for their empowerment in the domain of clinical measures. Previous models and studies only focused on the treatment provided by the doctor or the patient's active involvement but did not include the cooperation of both factors, while both are essential in patient empowerment for pain control.[18]

In line with this, the basis of Te Boveldt et al.'s

two-cycle conceptual model is the patients' active involvement and interaction between the patients and the healthcare team. This model was designed based on the nature of pain and other features that remain constant over time, and the other psychological aspects of empowerment were not included. It mostly encompasses the physical aspects of empowerment, whereas the model proposed in the present study specifically focuses on the psychological aspects of empowerment in patients with chronic pain.[18]

Another model proposed for chronic pain management is the bio-psychosocial model which is widely accepted as a beneficial approach to understanding and treatment of chronic pain. This evidence-based model is highly recommended for chronic pain management.[34] Nevertheless, this model is not extensively implemented, and its application in clinical settings is difficult and faces certain obstacles, including those related to different cultures and societies, differences in the level of care regulations, obstacles related to treatment services, problems in inter-cultural credibility in terms of self-report tools, barriers related to the treatment and service provision team members, and patients' health literacy.[35] On the contrary, the model proposed in the present study properly covers various aspects of empowerment, and its use in other clinical studies can identify the problems, resolve the dearth of systematic attention to the psychological aspects of chronic pain, and help chronic pain management.

Limitations

Since the participants were exclusively selected from one geographical setting, the generalizability of the study findings is limited. However, various sampling strategies were used to control this limitation, which included a spatial and temporal integration method and observing diversity in the selection of participants and data collection methods.

Conclusion

For better pain management among patients with chronic pain, special attention to the cognitive dimensions of chronic pain is essential. In this regard, using the psychological caring model will be effective. The developed model in this study as a psychologically caring model can be used for compensating the lack of attention to chronic pain psychological dimensions in chronic pain management. Using a comprehensive investigation of the phenomenon of pain as "ailment" that is affected by etiology of pain as "pain reasoning" is the first part. Secondly, the vulnerability of patients must be assessed. Using interventions which include pain interactions and implementing appropriate strategies through pain can lead to the outcome of the model which is self-empowerment. The use of this model in clinical settings requires further studies to be tested on patients with chronic pain.

Acknowledgment

This article was extracted from a part of the PhD dissertation of Violet Alipour in the Department of Psychology, Ahvaz Branch, Islamic Azad University, Ahvaz. For ethical considerations, the researchers received written consent from the participants for participation in the research. The study was approved by the Ethical Committee of Islamic Azad University-Ahvaz Branch (code: IR.IAU.AHVAZ.REC.1399.071). The researchers wish to thank all the individuals who participated in the study.

Conflicts of interest: None declared.

References

1 Bonezzi C, Fornasari D, Cricelli C, Magni A, Ventriglia G. Not All Pain is Created Equal: Basic Definitions and Diagnostic Work-Up. Pain and Therapy. 2020; 9(1):1-15.

2 Mathieson S, Wertheimer G, Maher CG, Christine Lin CW, McLachlan AJ, Buchbinder R, et al. What proportion of patients with chronic non cancer pain are prescribed an opioid medicine? Systematic review and meta-regression of observational studies. J Intern Med. 2020; 287(5):458-74.

3 Rajappa H, Hayes C. People, medicine, and society: An overview of chronic pain management. Archives of Medicine and Health Sciences. 2020; 8(1):68-74.

4 de Souza JB, Grossmann E, Perissinotti DMN, de Oliveira Junior JO, da Fonseca PRB, Posso IP. Prevalence of chronic pain, treatments, perception, and interference on life activities: Brazilian population-based survey. Pain Res Manag. 2017; 2017:4643830.

5 Alighias M, Tavafian SS, Niknami S. psychological intervention and pain severity among a sample of iranian nurses suffering from chronic low back pain: A randomized clinical trial. Int J Musculoskeletal Pain Prev. 2016; 1(1):1-5.

6 Taghipour-Darzi M, Hosseini SR, Kia K, Abbaspour M, Ghadimi R. Prevalence of musculoskeletal pain and it's correlation to functional disability in elderly. Knowledge Health. 2013:8(2):76-83.

7 Dorner TE. Pain and chronic pain epidemiology: Implications for clinical and public health fields. Wien Klin Wochenschr. 2018; 130(1-2):1-3.

8 Smith TJ, Hillner BE. The cost of pain the cost of pain was more than that of heart disease and cancer treatments. JAMA Netw Open. 2019; 2(4):e191532.

9 Park R, Ho AM, Pickering G, Arendt-Nielsen L, Mohiuddin M, Gilron I. Magnesium for the management of chronic noncancer pain in adults: protocol for a systematic review. JMIR Res Protoc. 2019; 8(1):e11654.

10 Yongjun Z, Tingjie Z, Xiaoqiu Y, Zhiying F, Feng Q, Guangke X, et al. A survey of chronic pain in China. Libyan J Med. 2020; 15(1):1730550.

11 Devan H, Hale L, Hempel D, Saipe B, Perry MA. What works and does not work in a self-management intervention for people with chronic pain? Qualitative systematic review and meta-synthesis. Phys Ther. 2018; 98(5):381-97.

12 Bailo L, Guiddi P, Vergani L, Marton G, Pravettoni G. The patient perspective: investigating patient empowerment enablers and barriers within the oncological care process. Ecancermedicalscience. 2019; 13:912.

13 World Health Organization. A European policy framework and strategy for the 21st century World Heal Organ 182 .2013.

14 Small N, Bower P, Chew-Graham CA, Whalley D, Protheroe J. Patient empowerment in long-term conditions: development and preliminary testing of a new measure. BMC Health Serv Res. 2013; 13:263.

15 Marshall Rio J. Understanding motivation and emotion. Mohammadi SY. (Persian). Tehran: Virayesh Publication; 2017.

16 Kaveh M, Zare S, Ghahremani L, Nazari, M. Quality of life in diabetic patients: the predicting role of personal resources. J Health Sci Surv Sys. 2018; 6(3):142-148.

17 Murphy K, Casey D, Devane D, Cooney A, McCarthy B, Mee L, et al. A cluster randomised controlled trial evaluating the effectiveness of a structured pulmonary rehabilitation education programme for improving the health status of people with chronic obstructive pulmonary disease (COPD): The PRINCE Study protocol. BMC Pulm Med. 2011; 11:4.

18 Te Boveldt N, Vernooij-Dassen M, Leppink I, Samwel H, Vissers K, Engels Y. Patient empowerment in cancer pain management: an integrative literature review. Psychooncology. 2014; 23(11):1203-11.

19 Hambraeus J, Hambraeus KS, Sahlen KG. Patient perspectives on interventional pain management: thematic analysis of a qualitative interview study. BMC Health Serv Res. 2020; 20(1):604.

20 Corbin JM, Strauss AL, Basics of qualitative research: Techniques and procedures for developing grounded theory: Sage Publications, Inc. 2008.

21 Polit DF, Beck CT. Nursing Research: Principles and Methods (Nursing Research: Principles & Practice) 7th Edition; Publisher: Lippincott Williams & Wilkins; 7th edition. 2003.

22 Polacek C, Christopher R, Mann M, Udall M, Craig T, Deminski M, et al. Healthcare professionals' perceptions of challenges to chronic pain management. Am J Manag Care. 2020; 26(4):e135-e9.

23 Australian Institute of Health and Welfare. Chronic pain in Australia. Canberra: AIHW; 2020.

24 Alschuler KN, Kratz AL, Ehde DM. Resilience and vulnerability in individuals with chronic pain and physical disability. Rehabil Psychol. 2016; 61(1):7-18.

25 Shirazi M, Manoochehri H, Zagheri Tafreshi M, Zayeri F, Alipour V. Testing of comprehensive chronic pain management model in older people. Journal of Anesthesiology and Pain. 2016; 7(1):49-62.

26 Almeida B, Capela A, Pinto J, Santos V, Silva CG, Rosa MCN. Relationship between the perceived social support and catastrophization in individuals with chronic knee pain. BrJP. 2019; 2:55-60.

27 Kumar P, Tripathi L. Challenges in pain assessment: Pain intensity scales. Indian Journal of Pain. 2014; 28(2):61-70.

28 Abrahams N, Gilson L, Levitt NS, Dave JA. Factors that influence patient empowerment in inpatient chronic care: early thoughts on a diabetes care intervention in South Africa. BMC Endocrine Disorders. 2019; 19(1):133.

29 Bostick GP, Carroll LJ, Brown CA, Harley D, Gross DP. Predictive capacity of pain beliefs and catastrophizing in Whiplash Associated Disorder. Injury. 2013; 44(11):1465-71.

30 McCracken LM, Eccleston C. Coping or acceptance: what to do about chronic pain? Pain. 2003; 105(1-2):197-204.

31 Gentili C, Rickardsson J, Zetterqvist V, Simons LE, Lekander M, Wicksell RK. Psychological Flexibility as a Resilience Factor in Individuals with Chronic Pain. Front Psychol. 2019; 10:2016.

32 Ramírez-Maestre C, de la Vega R, Sturgeon JA, Peters M. Editorial: Resilience Resources in Chronic Pain Patients: The Path to Adaptation. Frontiers in psychology. 2019; 10:2848.

33 Daruwalla Z, Thakkar V, Aggarwal M, Kiasatdolatabadi A, Guergachi A, Keshavjee K. Patient Empowerment: The Role of Technology. Stud Health Technol Inform. 2019; 257:70-4.

34 Koechlin H, Locher C, Prchal A. Talking to Children and Families about Chronic Pain: The Importance of Pain Education-An Introduction for Pediatricians and Other Health Care Providers. Children (Basel). 2020; 7(10).

35 Sharma S, Breckons M, Brönnimann Lambelet B, Chung J-W, List T, Lobbezoo F, et al. Challenges in the clinical implementation of a biopsychosocial model for assessment and management of orofacial pain. Journal of Oral Rehabilitation. 2020; 47(1):87-100.