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RESEARCH ARTICLE

Couple Therapy Based on Mindfulness to Improve the Satisfaction of Life and Pain Self-Efficacy in Patients with Chronic Pain.

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Abstract:

Background:

To manage chronic pain, in addition to medical interventions, several psychological treatments have been designed. In couple therapy based on mindfulness, in addition to the patients, their spouses, who care for the patients, were involved. The purpose of this research was to study the effectiveness of couple therapy based on mindfulness to improve life satisfaction and pain self-efficacy in patients with chronic pain.

Methods:

The present study is a quasi-experimental and clinical trial with a control group with pre-test and post-test. The research was performed at LABAFI NEJAD Hospital in Tehran on 30 patients with chronic pain and their spouses. To measure the efficacy of treatment, a short form of self-reported Pain Self-Efficacy Questionnaire (PSEQ) and the questionnaire of life satisfaction (SWLS) were utilized.

Results:

The results showed that the level of pain self-efficacy after the intervention in the experimental group increased, while in the control group, this value remained unchanged. Also, the intervention has improved the satisfaction of life among patients in the experimental group.

Conclusion:

Couple therapy based on mindfulness, an eclectic intervention, can increase social support, improve the quality of sex, and decentralize pain. Additionally, paying attention to neglected caregivers, and patients with chronic pain can rise pain self-efficacy, and life satisfaction. Finally, suggestions for future research are offered.

Keywords: Chronic pain, Couple therapy, Mindfulness, Pain self-efficacy, Life satisfaction, PSEQ.

Article History

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1. BACKGROUND

Chronic pain is one of the most significant health problems that have involved the medical system [1]. Continuous pain dwindles people's capability to carry out their daily activities, being responsible, and effective in society and family [2]. Also, this health problem creates costs for the individual, the family, and the community. At the individual level, uncontrollable pain can reduce the quality of life and level of efficiency, and increase the interpersonal problems [3]. The International Association for the Study of Pain defines pain with a sensory and undesirable experience associated with potential or actual damage to the tissue [4]. Pain efficacy is individuals' confidence in people's capability to maintain their

functions, despite the amount of pain they perceive, its role in pain alleviation is proven in numerous studies [5]. Self-efficacy represents a concept that people can increase their physical activity and extend their effort despite the pain they perceive [6 - 8]. Besides, in the face of difficulties and negative experiences (chronic illnesses), self-efficacy empowers people to tolerate pain, increase general health, and pain severity [9, 10]. The results of the research showed that the severity of pain affects the ability to endure pain and continue daily activities. Research has shown that interactions between couples can predict the physical health of spouses [11]. A large number of studies have been conducted on the efficacy of pain in patients with various kinds of chronic pain [5]. In the research references of chronic pain, pain self-efficacy has been identified as an important intermediate factor in transforming acute pain to chronic one, and ultimately pain continuation [7].

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Chronic pain related to preventable experiences, such as impeding pain thinking, feelings, memories associated with adverse experiences and emotions. Long-term avoidance behaviors disrupt interpersonal relationships [1]. In four studies, results have shown that mindfulness and pain adjustment correlated significantly with pain. Also, mindfulness can help individuals with pain to control their emotions and bolster their pain-coping while the level of the pain and pain acceptance were controlled in those experiments [12 - 15]. Mindfulness practices on couples showed that spouse acceptance and relationship satisfaction improved after mindfulness meditation. People with trait mindfulness have a more satisfying relationship [16 - 21] promoted interpersonal connection [22, 23]. A large number of clinical trials on adult populations with chronic pain have suggested that a better result can be attained in eclectic therapies [24]. Given the limitations of psychological treatments to adequately meet the needs of couples, when one of them is suffering from chronic pain, the existence of coupled psychological therapy can improve psychological flexibility (ability to be in the moment, adjustment to the environment, while maintaining values) and Relational flexibility (ability to effectively interact with one's partner). Psychological and relational flexible skills are related to satisfaction with the relationship, intimacy, adjusting with pain, and goodness [25]. The new approach is a combination of conventional couple-based therapy to improve life satisfaction and increase pain self-efficacy in patients with chronic pain and their spouses, who have a caring role. The techniques of this method are based on the combination of the most beneficial therapies for pain management [14]. This therapeutic approach consists of combining treatment approaches based on acceptance and commitment, mindfulness, mindfulness-based stress reduction, and the use of short-term cognitive-behavioral therapy techniques. The goal is to increase relational flexibility, the ability to communicate with the spouse, to be responsive to the patient's care needs. Therefore, the values and expectations of both participants in the treatment are maintained to ameliorate interpersonal relationships. In the new approach, a caregiver is also being involved. The main feature of this intervention is that couples actively participate in the treatment, and both have personal benefits and ultimately shared satisfaction [26]. To our knowledge, research has not conducted to investigate the effect of this treatment on pain self-efficacy in patients with chronic pain and their care-givers. Furthermore, any given psychological treatment in the context of different cultures affects differently. Doing such research is also helpful for researchers who seek intercultural effects.

2. OBJECTIVES

By doing this research, we sought to examine the extent to which the couple therapy based on mindfulness is effective in self-pain efficacy and life satisfaction of patients with chronic pain.

3. METHODS

3.1. Participants

Initially, we collected a list of patients, who referred to the pain clinic at Labafi Nejad Hospital from July to December.

The study was carried out on patients with a wide range of heterogeneous pain. From the list through phone calls, we invited patients to participate in the study and describe the possible beneficiary of the research on their marital relationship and their pain. We discussed that despite their pain, they could improve their ability to do their daily activities and be efficient in their mundane life. We made an appointment for those who agreed to participate in the study. After consulting with the executor, who was a clinical psychologist about the duration and length of the study, with their medical documentaries, they referred to an Assistant Professor of Anesthesiology, who had a fellowship in Pain Management. Both groups (Intervention, and Control) continued receiving routine medical interventions as they referred to the hospital (such as their pain alleviation, and other physical strategies to manage their pain). Just the intervention group received psychological intervention based on mindfulness. The primary difference between the two groups was that when the study was done, the executor offered psychological treatment based on mindfulness for the control group free of charge.

He examined and diagnosed patients with chronic pain, otherwise, they were excluded from the study. The sample size was calculated based on the Morgan table. The intervention and control groups did not differ significantly in socio-demographic characteristics, baseline chronic pain grade, pain duration, age, and marital status. Participants were 30 patients with chronic pain and their caregivers. The criteria for being included were: diagnosis of chronic pain, being married, and having a minimum secondary education for both couples. Exclusion criteria included having a dramatic personality disorder (categorized in cluster B) such as borderline or histrionic personality disorder or receiving other psychological treatments simultaneously. Patients had informed of the therapeutic goals before the intervention program was launched. Their satisfaction was drawn to participate in the research. They were assured of the disguise of personal information and told, whenever they want, they could leave the research process. However, no one gave up attending the treatment sessions.

One of the primary obstacles impeding patients to complete their treatments or drop out of the psychological interventions is long-term treatments [27]. Although mindfulness-based therapy is an eight-week program, in our research, the treatment is reduced (six-week plan) based on Professor Annmarie Cano's protocol [25]. This protocol can increase the extent to which patients stick to their treatment instruments.

3.2. Intervention Procedure

3.2.1. First Session

The therapist initiates rapport and obtains information about the relationship, the history of pain, through a semi-structured interview-The familiarity of each of the couples with the logic of intervention- Introducing mindfulness and action based on values.

3.2.2. Second Session

Introducing additional mindfulness skills and raising awareness of mind and bodily sensations. Identify potential values from anniversary exercise- Form values and assess the extent to which each person lives with his or her values- Introducing psychological flexibility and its meaning.

3.2.3. Third Session

Determine specific behaviors and goals in line with values- Definition of mindfulness skills by practicing being in the moment- and consciousness of thoughts. *Fourth session:* couple-based practice of mindfulness-awareness identification and problem-solving based on the values and objectives of Behavior-Adaptation of psychological flexibility skills for interpersonal interaction and practicing flexible skills that include mindful listening and response along with the transfer of positive emotions to the spouse. *Fifth session:* Detecting and solving problems based on the values and objectives of behavior-psychological flexibility skills for interpersonal relationships and practicing psychological flexibility skills that include listening with mindfulness and response along with the transfer of positive emotions to your partner. *Sixth session:* Combining the skills learned during the intervention – identifying psychological and interpersonal flexibility skills to continue practicing after the treatment has finished – problem-solving challenges that patients may encounter in continuing behaviors [25].

3.3. Pain Self-Efficacy Questionnaire

The pain self-efficacy was measured by Nicholas (The Pain Self-Efficacy Questionnaire (PSEQ)) [28]. The questionnaire is on the concept of self-efficacy of Bandura [29]. It has ten questions, in which patients were asked to rate their ability to perform a group of activities despite pain, based on a seven-part Likert scale (0 to 6). Therefore, the score of this scale varies from zero to sixty, and higher scores represented more self-efficacy. The validity and reliability of the Persian version have been measured by Asghari Moghadam [11]. The internal consistency coefficient (Cronbach's alpha) expressions equal to 0.92 were obtained from a sample of 20 patients with chronic pain, with a time interim of nine days using cross-correlation of 0.83.

The Life-Satisfaction Scale is prepared [30] consisting of five passages that measure the cognitive components of the respondent's well-being. The respondents say that, for example, they are pleased with their lives, or how much their lives are close to their idyllic life. This scale has been standardized in

Iran by Maroufizadeh [31]. The validity of this scale was 0.83 using Cronbach's alpha.

4. RESULTS

Table 1 presents the demographic characteristics of patients with chronic pain based on gender, age, and education. The mean age of the subjects in the experimental group was 52.38 and in the control group was 54.86.

As shown in Table 1, out of a total of 16 test groups, 6 had education less than a diploma, 6 had associated degrees, 4 had bachelor's degrees, and 1 had a master's degree. Also, a total of 16 controls among participants, which underwent the intervention (8 individuals) were men, and 50% of those were women. Considering gender proportion, among patients in the waiting list, 36.4% (9 individuals) were women, and 73.5% (5 individuals) were men.

Table 2 shows the mean and standard deviation of life satisfaction scores in two stages of pre-test and post-test.

As shown in Table 2, the mean life satisfaction scores in the trial group in the pretest was 11.87 and the post-test 19.62, while the mean life satisfaction scores in the control group were in the pre-test 12.64, and in the post-test 12.78.

Table 3 shows the mean and standard deviation of pain self-efficacy scores in two stages of pre-test and post-test. As shown in Table 3, the mean scores of pain self-efficacy in the experimental group were in the pre-test 21.25 and the post-test 33.31, while the mean scores for self-efficacy of pain in the control group were in the pre-test 23.71, and post-test 22.5%.

The significance levels of the Shapiro-Wilk test and Levene's Test for all variables are higher than 0.05, so the assumption of normalization, and homogeneity of variances are confirmed for all variables.

Table 4 shows the results of multivariate covariance analysis (ANCOVA) on the mean score of post-test life satisfaction in the studied groups with pre-test control.

As shown in Table 4, with the results obtained for life satisfaction scores ($F = 59.82, P \leq 0.01$), the difference in life satisfaction between groups of the research is meaningful. This means that the average score of life satisfaction in the trial group significantly increased, and the effectiveness of the coupled psychological treatment on improving life satisfaction in chronic pain patients was effective ($P \leq 0.01$).

Table 5 shows the results of multivariate covariance analysis (ANCOVA) on the mean scores of the pre and post-test of self-efficacy of pain in both intervention and control.

Table 1. Demographic characteristics of patients with chronic pain.

Intervention	Control	Sub-variables	Variables
8 (50%)	9 (64.3%)	Woman	Gender
8 (50%)	5 (35.7%)	Man	-
(11.11)52.38	(11.1)54.86	-	Age
6 (37.5%)	7 (50%)	L.D	-
6 (37.5%)	2 (14.3%)	A	Education
4 (25%)	4 (28.6%)	B.D	-

(Table 1) contd.....

Intervention	Control	Sub-variables	Variables
0 (0%)	1 (7.1%)	M.A	-

L.D = less than diploma, A = associated degree, BD = bachelor's degree, M.A = master degree.

Table2. The mean and standard deviations of life satisfaction scores in the studied groups.

Post-test	Pre-test	Groups	Variables
M±SD	M±SD	-	-
19.62±2.63	11.87±4.6	Intervention	Satisfaction with Life
12.78±3.55	12.64±3.87	Control	-

Table 3. The mean and standard deviation of pain self-efficacy scores in the studied groups.

Pre-test	Post-test	Groups	Variables
M±SD	M±SD	-	-
33.31±7.57	21.25±7.57	Intervention	Pain Self-Efficacy
22.5±8/32	23.71±8.25	Control	-

Table 4. Summary of ANCOVA on the mean score of post-test life satisfaction in the studied groups with pre-test control.

Average Difference	ETA	P	F	Mean of S.S	D.F	Sum of Squares	Scales
1	0.70	0.0001	59.82	380.78	1	380.78	Groups
-	-	-	-	-	29	617.37	Total

Table 5. Summary of ANCOVA's analysis on the mean score of post-test of self-efficacy of pain in the studied groups with pre-test control.

Average Difference	P	P	F	Mean of SS	D.F	Sum of Squares	Scales
1	0.67	0.0001	53.58	1196.49	1	1196.49	Groups
-	-	-	-	-	29	2633.87	Total

CONCLUSION

The present study showed that patients-care givers couple-based therapy could improve the self-efficacy of chronic pain patients and increase the level of life satisfaction. Hoffman *et al.* [32] investigated a psychological intervention in a meta-analysis to improve the physical and psychological symptoms of patients with pain. They found that, regardless of which therapeutic methods were applied, studies using the control group yielded more accurate results. In a study by Hung and his colleagues in 2016, they inspected the relationship between family support, pain, and depression among patients with chronic arthritis pain. In this study, the results disclosed that the symptoms of depression among the families, who supported patients were drastically reduced, and satisfaction increased [33]. Therefore, the findings of this study are consistent with the support of couples from one another to reduce their negative emotions and improve their sense of satisfaction. The results also showed that the symptoms of depression in the family, and those who had sympathetic spouses, were significantly reduced [18]. Also, the depressive patients are more vulnerable to criticism or anger. Besides, female patients and male patients with depressive symptoms are more vulnerable to criticism or anger. As a result of negative communication patterns, the target for treatment

interventions in this vulnerable group can be addressed [34]. The results of a study on patients with knee pain and their spouses showed that the change in physical function was steady in the follow-up of 18 months, as well as the sign the response of patients whose partners showed sympathetic responses showed a better physical performance over time than those who had less empathetic responses. In a study conducted by GU and his colleagues in 2018, they studied the interpersonal relationship in pairs with chronic pain. The results have shown that couples' interactions can predict caregiver's health [35]. The results also showed that interactions between couples could predict the behavior and mental health of caregivers. It should also be noted that the main difference between the treatment and what is known as a coupled treatment is that in the classical couple, the purpose of the patient's treatment is to treat the patient solely and utilize the spouse as a trainer who can instruct the instructions of treatment at home. In several studies that have used this kind of couple therapy, they have been reported to be of low benefit or even unremarkable benefit, while the new innovative couple therapy has involved both partners (patient and caregiver) in the therapeutic sessions and benefits being attained for both the patient and the partners. Finally, it improves life satisfaction and increases pain self-efficacy. In this study, the findings of the present study showed that patients with chronic pain in the

experimental group had a significant increase in the post-test scores of pain intake and compared with the control group that was evaluated in the pre-test. The results showed that the post-test in the control group had been constant and no increase was observed. People with chronic pain have a low level of pain self-efficacy, as a result of long-term unmet needs, and results indicating low scores on this scale. The findings of this study are consistent with studies that measure the pain self-efficacy of patients with chronic pain. The results of this study are consistent with empirical evidence of social psychosocial patterns suggesting that psychological factors are effective in experiencing pain intensity. Also, a study conducted by Souza and her colleagues in 2011 [36] evaluated patients with spinal cord injury. The results showed a strong negative correlation between self-efficacy, severity, and duration of pain. In this study, they suggested that arranging a coherent program to reduce pain, and increase the self-efficacy of patients with chronic pain, is mandatory. According to what was obtained during treatment and monitoring of the patients and the caregivers, these patients experience pain catastrophizing, which is accountable for malfunction and continuing pain. Patients also expressed futile beliefs about managing pain, and had a noticeable impact on the reduction in self-efficacy. People with chronic pain usually stock in a vicious cycle of unproductive beliefs about managing pain. They relate the amount of pain they perceive with doing some specific tasks. These people usually correlate a series of activities that are accompanied by pain (although in many cases there was no logical correlation between pain and these activities). Avoiding behaviors over time affect their self-efficacy. This study has proven that caring caregivers, re-examine the correlation of pain with specific tasks, and refine their steady cognitive knowledge to ameliorate interpersonal relationships. By annihilating the detrimental vicious circle, which encompasses pain catastrophizing, fear of avoidance, and hopeless belief about having any control over pain, we upgrade pain self-efficacy level and improve marital satisfaction as well. According to the results, couple-based therapy could improve life satisfaction and pain self-efficacy. This finding suggests that dealing with deep psychological problems requires more sessions. Six sessions of the treatment have had a positive effect on psychological factors such as satisfaction with life, which could lead to better marital satisfaction and as a consequence, less conflict. The results suggest that longer intervention is needed for further effect. The limitation of this research is the absence of a follow-up period and participants who were involved in this research were modest. It is suggested that future research be conducted with follow-up and more contributors to make the results more reliable to expand them to larger populations. For future research, it is suggested to emphasize cultural aspects that enhance marital relationships. Each culture has special features to enhance couples' ability to fight chronic pain. For example, rich literature in our country, with practical and meaningful advice, increases the capacity of individuals to cope with pain. It is also suggested that therapeutic techniques be adapted to the age group of the elderly, who are more likely to be associated with multiple-morbidity and continuing pain experience.

ETHICS APPROVAL AND CONSENT TO PARTICIPATE

The trial was approved by shahid beheshti University of Medical Science, Iran. Approval code IR.SBMU.RETECH.REC.1398.075 ethnics.research.ac.ir.

HUMAN AND ANIMAL RIGHTS

No animals were used in this research. All human research procedures were followed in accordance with the ethical standards of the committee responsible for human experimentation (institutional and national), and with the Helsinki Declaration of 1975, as revised in 2013.

CONSENT FOR PUBLICATION

Written informed consent was obtained from all the participants.

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None.

CONFLICTS OF INTEREST

The authors declare no conflict of interest, financial or otherwise.

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Declared none.

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