



The relationship between pain experience with mindfulness and psychological hardiness in chronic patients

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Background and Objective: Today, chronic pain is heard as one of the main complaints of individuals, and many people who practice routine work constantly complain of their physical pains. Thus, the purpose of this study was to examine the relationship between pain experience with mindfulness and psychological hardiness in chronic patients. **Materials and Method:** The present study was a descriptive-correlational study in which 150 patients with chronic disease were selected through a sampling method from the community of patients visiting Zabol medical centers. The instrument was a McGill Pain Experience Questionnaire, Kentucky Mindfulness Scale and Psychological Hardiness test. In this research, the data were analyzed with the aid of SPSS software using Pearson correlation and multiple regression. **Findings:** The findings showed that there is a relationship between the aspects of “observation”, “performance with awareness or concentration” and “admission without judgment mindfulness”, and the components of “struggle, commitment and control” psychological hardiness with pain experience of chronic patients. Additionally, the aspects of mindfulness and psychological hardiness simultaneously predict 0.32 of the pain experienced by chronic patients. **Conclusion:** According to the results, in order to reduce pain experience in chronic patients, mindfulness and psychological hardiness comprehensive educational programs are necessary through health centers.

INTRODUCTION

Pain is one of the most common and difficult complaints among outpatient clients and is one of the most difficult and time consuming medical complaints(1). Moreover, the prevalence of chronic pain in Western societies is reported to be between 7% and more than 40%. Epidemiological studies of pain have also been emphasized on the prevalence of chronic pain. Thus, chronic pain is not only the most common problem of people who are at the age of employment, but also one of the major causes of the incapacity and disability of these people from the community and requires a closer examination. In addition, based on the prevalence of pain in Iran, the incidence of back pain, neck, pelvis, small joint pain and joint pain is increasing day by day (2). According to the International Association for the Study of Pain, chronic pain usually indicates a pain that has not been predictable for more than 6 months since its completion, except the cases that heals very slowly, such as burns, or death. These patients experience continuous pain or continually recurring chronic pain that often their illness occupy their time(3). Chronic pain, incapacitation, and disability result in many uncountable expenses and suffering for an individual with severe psychological and behavioral problems such as feeling

helpless, depression, anxiety, and drug-seeking behavior, the negative effect of pain, biological, psychological and social consequences can be regarded as incalculable in terms of mental health, job and family performance, and the threat that incapacitation and disability make for the survival of the family. Chronic pain also leads to lowering of the quality of life and negative perception of their identity in patients (4). Despite the fact that pain as a general sense has biological foundations, today, biological-psychosocial models have been developed to explain and treat pain, especially chronic pain, which do not see the incidence and persistence of pain only in biological factors, and has well-explained the contribution of psychosocial factors in this disorder. Thus, turning researchers into the study of the psychological aspects’ effect of pain on the perception of the pain and life of patients suffering from the disease has increased in recent decades (5). Today there are widespread research resources that suggest that, although psychological factors may not play a role in starting a pain, these factors play a decisive role in the continuation of pain and disability (6-8). In this regard, studies show that psychosocial characteristics can be an important factor in the duration of pain and disability, psychological factors such as stress, coping strategies, social support network and mental health can play a mediating role in initiation of pain, pain period and acute to chronic pain transfer (4). In this regard, other important variables affecting the pain of chronic patients are mindfulness. Mindfulness or the presence of mind means awareness of thoughts, behaviors, emotion, and motives so that we can better manage and

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regulate them. In other words, the mindfulness means to pay attention to a particular way. That is, the attention and concentration that the three elements interfere with: 1- Being in present 2- Being purposeful 3- Without judgment (9). Bao, Xue & Kong's research in 2015 also showed that individuals differ in mindfulness, and some people are more aware than others (10). Additionally, Narimani, Zahed and Golpour (2012) found that there is a negative and significant relationship between mindfulness with emotional-oriented coping strategies, positive and significant relationship with problem-oriented coping strategies, thus, those who have more mindfulness experience less pain with proper coping methods (11). Garland et al., in 2017, also reported during a study that chronic pain is associated with the development of mindfulness experiences (1). In this regard, other factors associated with pain experience are psychological hardiness or hardiness. Hardiness is considered as an intervening variable in modulating the relationship between stress and disease (12). Psychological hardiness has been defined as an individuality trait that prevents the negative effects of stress on health (13). Researchers believe that a hardiness individuality trait acts as an emotional/cognitive blend that provides targeted growth and learning for individuality styles. In addition, hardiness as an individuality trait can also affect psychological well-being (14). In a study by Nikbakht et al. in 2014, it was also shown that there was a negative and significant relationship between psychological hardiness and chronic pain. There was also a negative relationship between the physical-sensory aspects of chronic pain and the aspect of commitment and control, and the hardiness challenge. In fact, those who have a higher level of hardiness are more capable of coping with chronic pain (12).

In general, chronic pain is heard as the main complaint of individuals, and many people who work on routine jobs constantly complain of their physical pains. Nevertheless, in many studies, chronic pain is not understood by others and affects relationships and social interactions. Therefore, in general, the present research seeks to answer the question of whether there is a relationship between experience of pain with mindfulness and psychological hardiness in chronic patients.

MATERIALS AND METHODS

The present research is of applied studies and the research design is descriptive-correlational. The statistical population of this study was all chronic patients referring to Zabol treatment centers in the winter of 2017. Thus, the study was performed on patients diagnosed with chronic diseases in Amiral-Momenin Hospital and they were eligible for inclusion criteria (patients with chronic diseases confirmed by a specialist physician, patient's satisfaction regarding participation in the research), with available sampling method, 150 chronic patients was selected and evaluated. Therefore, at first, with the presence in the hospital, the license for research was obtained and in coordination, after selecting the subjects, all the subjects completed the questionnaires. Research tools included;

A) Pain Questionnaire: The McGill Pain Questionnaire is the most reliable chronic pain assessment tool that has national credibility and trust (2, 15). The questionnaire consisted of 15 items related to sensory and emotional components in two graded visual criteria: pain with a score of 0-10, and one of the five pain severity criteria (painless to tormenting painful), with a maximum score of 59. In addition to reliability and validity, the most important feature of this tool is the simplicity of its use. The Cronbach's alpha coefficient of this questionnaire is 0.85 and the reliability coefficient in all domains is above 0.80 (16).

B) The Kentucky Inventory of Mindfulness Skills Questionnaire (KIMS): The Kentucky Inventory of Mindfulness Skills Questionnaire was developed by Baer, Smith, and Allen in 2004. The questionnaire contains 39 articles and is designed to measure four components of mindfulness: Observation, description without label, performance along with awareness (concentration) and acceptance without judgment. The English form of this scale initially had 77 questions, which fell to 39 items. The questionnaire is graded in a five-point Likert scale from very rarely to most. The results of psychometric analysis on participants showed that this questionnaire had a high internal consistency (0.73), and also Cronbach's alpha coefficients of observation, description, concentration and acceptance subscales were 0.91, 0.84, 0.83 and 0.87 (17).

C) Psychological Hardiness Scale (Individual Perspective Scale): an individual opinion questionnaire has been used to measure hardiness. This scale was created by Kobasa in 1979 and contains 50 articles that each subject has to answer on a 4-point scale of 0 to 3, based on how relevant this article is to him. This test has three main components of defiance, commitment and control, each of which has 17, 16 and 17 articles, respectively. The scores of 39 items of the test are considered to be inverted. In sum, a total score for hardiness and three grades for its components are obtained separately. As much as a subject acquires a higher score on this scale, he is more likely to have more hardiness (18). The studies show that hardiness components (commitment, control, and defiance) each have reliability coefficients of 0.70, 0.54 and 0.52, respectively, and these coefficients are calculated for the total hardiness of 0.75 (19).

Finally, the questionnaires articles were compiled using descriptive statistical methods and analyzed by Pearson statistical analysis and multiple regression with the aid of SPSS 20 software. This study approved by ethics committee of Zabol University of medical science (Ethical code: ZBMU.1396.421.1).

RESULTS

Of the 150 patients examined, 11.3% of the subjects were 20 to 25 years old, 26.7% were 26-30 years old, 39.3% were 31-35 years old, 19.4% were 36-40 years old and 3.3% were 41-45 years old and the mean age of the participants was 31.47 years. Additionally, 41.3% (62 individuals) of participants were female and 58.7% (88 individuals) were male. In addition, 85.3% (128) were married and 14.7% (22 individuals) were single. Furthermore, 25.3% (38 individuals) of the participants were school dropouts, 44% (66 individuals) had a diploma and an Associate Degree, 24% (36 individuals) had bachelor degree and 6.7% (10 individuals) also had a master's degree (Figure 1).

According to Table 1, mean (M) and standard deviation (SD) of chronic patients pain experience is (M = 26.41 and SD = 4.2). Additionally, the aspects of mindfulness "Observation" were (M = 22.71 SD = 3.4), "Description without label" (M = 23.37, SD = 3.82), "concentration" (M=26.73 and SD = 3.62) and "Acceptance without judgment" (M = 24.59, SD = 4.14). Also, the mean and standard deviation of the components of psychological hardiness were "defiance" (M = 31.6, SD = 3.89), "commitment" (M = 30.13, SD = 4.88) and "control" (M= 32.39 and SD=3.88).

According to Table 2, the results of Kolmogorov-Smirnov's Normality Test were not significant for at least one of the variables studied (P > 0.05). Thus, it can be said that the data were normal and the use of parametric statistics such as Pearson correlation and regression analysis is permissible.

Figure 1. mean scores of mindfulness aspects

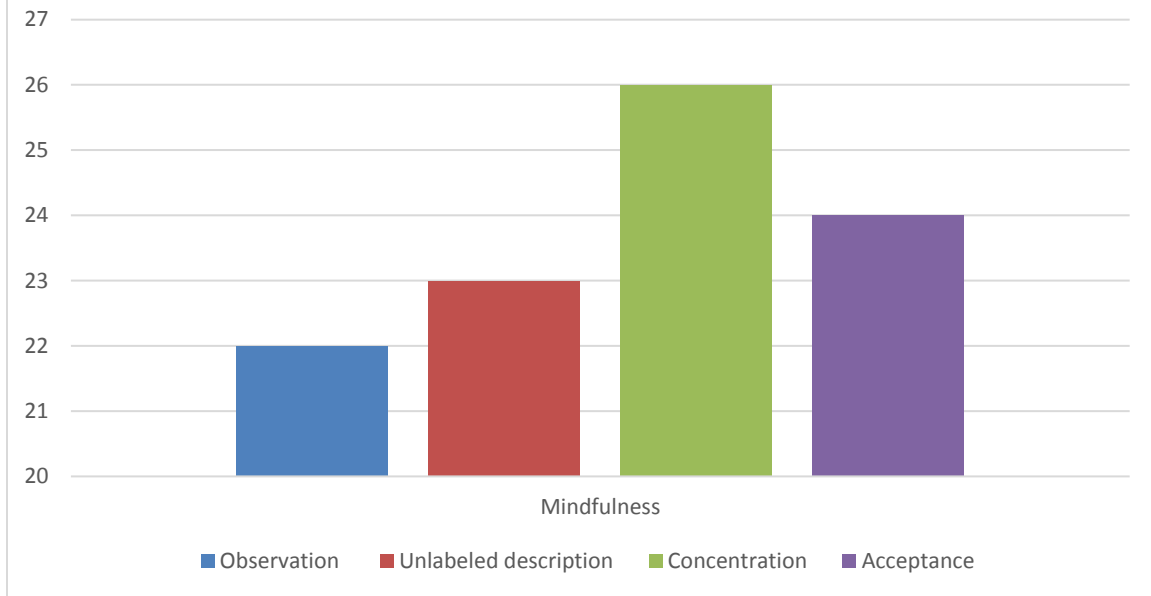


Table 1 Mean (M) and Standard Deviation (SD) of Research Variables

Statistic			
Variable	Component	mean	Standard deviation
Pain experience	Pain experience	26.41	4.2
Mindfulness	Observation	22.71	3.4
	Unlabeled description	23.37	3.82
	Performance with awareness (concentration)	26.73	3.62
	Acceptance without judgement	24.59	4.14
	Defiance	31.6	3.89
Psychological hardness	Commitment	30.13	4.88
	Control	32.39	3.88

Table 2 The results of the Kolmogorov-Smirnov test for the evaluation of the normal data of variables

Statistic			
Variable	Component	Z	Significance
Pain experience	Pain experience	0.89	0.39
Mindfulness	Observation	1.79	0.03
	Unlabeled description	1.64	0.09
	Performance with awareness (concentration)	1.43	0.11
	Acceptance without judgement	2.66	0.001
	Defiance	1.59	0.09
Psychological hardness	Commitment	1.39	0.12
	Control	1.28	0.13

Table 3 Pearson correlation analysis of pain experience with the aspects of mindfulness and psychological hardness components of subjects

Statistic			
Predicting Variable	Criteria variable	Correlation coefficient	Significance
Pain experience	Observation	0.17	0.03
	Unlabeled description	0.14	0.09
	Performance with awareness (concentration)	0.45	0.0001
	Acceptance without judgement	0.19	0.01
	Defiance		

	Defiance	-0.32	0.0001
	Commitment	-0.27	0.001
	Control	-0.34	0.0001

Table 4 Summary of multiple regression tests to predict pain experience based on the aspects of mindfulness and psychological hardiness

Criteria variable	Statistic			
	R	RS	ARS	SE
Pain experience	0.57	0.32	0.29	3.52

Table 3 shows that “pain experience” in chronic patients (from the aspects of mindfulness) with the aspects of “observation” ($R = 0.17$), at the level of 0.03, “function with awareness or concentration” ($R = 0.45$), at level 0.0001 and “acceptance without judgment” ($R = 0.19$), at level of 0.01 have a positive and significant relationship. In addition, according to the table 3, “description without label” ($R = 0.14$), mindfulness had no significant relationship with the experience of pain in chronic patients ($p = 0.09$). Furthermore, the “pain experience” by chronic patients with “defiance” components ($R = -0.32$), at 0.0001 level, “commitment” ($R = -0.27$), at the level of 0.001 and “control” ($R = -0.34$) and psychological hardiness at the level of 0.0001 has a negative and significant relationship. That is, when the psychological hardiness of the chronic patients is greater, patients will experience less pain and vice versa.

The results summary of the regression analysis is presented in Table 4; aspects of mindfulness and psychological hardiness components simultaneously explain and predict 0.32 of the changes in the “pain experience” in chronic patients.

DISCUSSION

The purpose of this study was to investigate the relationship between pain experience with mindfulness and psychological hardiness in chronic patients. In general, according to the results, “the pain experience” in chronic patients with aspects of “observation”, “performance with awareness or concentration,” and “acceptance without judgment,” was positively correlated, and among the aspects of mindfulness, the aspect of “description without label” was not related to the pain experience of chronic patients. Thus, when chronic patients experience more pain, they will score higher in observation, performance with awareness and acceptance without judgment, and vice versa. Thus, according to the results, it can be said that the first hypothesis of the study was that the relationship between pain experience and the aspects of mindfulness of chronic patients was confirmed. This finding is consistent with the results of various studies that have shown that there is a relationship between the pain experiences with the mindfulness (1, 20-22). These studies have shown that exposure to various pain is influenced by important factors such as mindfulness and the experience and feelings of pain depend on the amount of mindfulness about it. In explaining these results, it can be argued that the mindfulness means attention in a particular way, in which three elements are involved: 1. Being at present, 2. Being purposeful, 3. Without judgment, thus, since at the time of the chronic patients’ pain, the attention and focus of the affected individual is focused on his pain, thus, in particular one thinks about his experience and this experience, due to being involved in physical and mental health, without mediation, will be with consciousness and without judgment, and the patient will accept this feeling, which is the present study, namely, found the existence of a relationship of pain experience with Observation aspects, performance with awareness and acceptance without judgment. This

explanation and the result of this hypothesis were not consistent with Narimani et al. (2012) research findings, which showed that those who have more mindfulness, experience less pain with appropriate coping methods (11). Undoubtedly, the emotional and problem-oriented coping strategies of chronic patients can play an indirect and mediating role in the experience of pain and mindfulness. In this regard, Azkhosh and Nobkaht (2016) believe that, since the mindfulness as a feature is relatively constant throughout the life of the individual, it can be used as a preventive approach so that individuals use more problem-oriented coping strategies, which can reduce the pain of chronic patients (23).

Other findings of the study showed that the “pain experience” of chronic patients with the components of “defiance”, “commitment” and “control” had a negative relationship with psychological hardiness. Thus, when the psychological hardiness of the chronic patients is greater, patients experience less pain and vice versa, when the chronic patients have lower scores in defiance, commitment and control, they will experience more pain. The results of various studies have shown that the experience of pain is related to the psychological and individuality traits of the subjects, and are consistent with the results of this study (7, 8, 24). In explaining the results, it can be said that psychological hardiness as a individuality trait preventing the negative effects of pain on health (13) serves as an emotional/cognitive blend in experiencing pain in chronic patients. In this way, the components of defiance, commitment and control as a individuality trait lead to endurance and resistance of the individual to various injuries and illnesses, in these features, when an individual is infected with a chronic illness, for the sake of defiance, one is struggling to overcome the various pain that the individual is experiencing, and one is committed to this resistance and defiance. In this process, individual’s sense of control increases and feels less pain. In relation to experience of pain and psychological hardiness, various elements can also be effective. For instance, Amiri et al. (2016) found that biopsychosocial patterns and their relation to chronic pain can provide useful insights on the psychosocial aspects of chronic patients (25). Thus, psychosocial characteristics can be a significant factor in the duration of pain and disability. Psychological factors such as stress, coping strategies, social support network and mental health can act as mediators at the onset of pain, period of pain and acute to chronic pain transition.

CONCLUSION

In general, the results of this study showed that there is a relationship between the aspects of “observation”, “performance with awareness or concentration” and “acceptance without judgment mindfulness”, and the components of “defiance, commitment and control” psychological hardiness with pain experience of chronic patients. Thus, chronic patients should be more concerned with mindfulness and psychological hardiness. Thus, in order to reduce pain experience in chronic patients, comprehensive mindfulness education and psychological hardiness training programs are necessary through health centers. According to the

results, recognizing the psychological problems and factors affecting the mental and physical health of chronic patients and paying attention to reducing their pain severity, requires the aid of the Ministry of Health regarding treatment programs of the psychological team, at the hospital level. Thus, in order to reduce the pain of chronic patients, it is suggested that research on interventional subjects should be placed on the research priority of the students.

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