

Prediction of Based on the Beliefs and Perceptions of Pain Intensity and Pain Perceived Stress and Self-Control in Patients with Rheumatoid Arthritis

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ABSTRACT

Introduction: Regarding the importance of psychological problems along with the physical condition of patients in the community, especially patients with rheumatoid arthritis. **Methods:** The purpose of this study was to "predict the severity of pain based on beliefs and perception of perceived pain and perceived stress and self-control in patients with rheumatoid arthritis". The research is categorized as descriptive correlational research in terms of research methodology and it is categorized as applied research in terms of purpose. The statistical population included all women with rheumatoid arthritis who referred to Shariati and Loghman hospitals in 2016. A sample of 200 participants was selected based on Morgan's table. The instrument was Convictions and perception of pain, Perceived Stress (PSS-14), self-control and Visual Analogue Assessment (VAS). For analyzing the data, inferential statistics, stepwise multivariate regression analysis was used. **Findings:** The founding indicted that the variance of intensity of the pain was codified 34/1% of believing perception of the pain, 10/8% of self-control and 2/2% of perceived stress respectively which totally justified 47/1% of the variance of the model. Among the components of convictions and perception of the pain, the intensity of the pain was codified being mysterious 31/1% and believing in permanence of the pain 2/1% respectively. (In total 36/2%). Among perceived stress components, negative perceived stress could codified 34/8% of the intensity of the pain. Among the self-control components, prohibitive self-control could codify 28/3% of the variance of the intensity of the pain. **Conclusion:** As the result, it was indicated that in addition to effective role of these three components in predicting the pain, being mysterious and believing in permanency of the pain have more ability from conviction and perceiving the pain, perceived stress component and prohibitive self-control to identify the intensity of the pain in patients afflicted by Rheumatoid arthritis.

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Pain is considered as a sensory and emotional experience, which may be accompanied by a physical discomfort or may not be associated with a physical discomfort (Shoushi Nasab, 2011). Chronic pain is a pain that lasts longer than 3 months. In fact, this kind of pain is resistant to treatment (Pizzo et al., 2011). Chronic pain is an important medical problem throughout the world and each year millions of human beings suffer from it, but they do not receive appropriate treatment (Zuccaro et al., 2012; Tse et al., 2010). Pain varies according to the duration of the outbreak, origin and incidence of the disease. According to the division of time, the pain is divided into two types of acute and chronic (Ebrahimnia, 2007). In terms of origin, pain is divided into three main categories. Physical pain (somatic), visceral pain and neuropathic pain (Moradi Far, 2013). In terms of shape, pain is divided into two groups: fasting pain and slow pain (Ebrahimnia, 2007).

Rheumatoid arthritis or joint rheumatoid arthritis is a chronic long-term systemic disorder that affects the joint with the muscles, covering membranes and cartilage. In this disease, most of the joints in the fingers and joints of the palms, hands, wrists, elbows, legs, ankles cervical vertebrae are involved in pain (Sadouqi & Tamanani Far, 2009). This disease begins with periods of inflammation in the synovium, which causes thickening and pain in it (Chen & Wang, 2007). Rheumatoid arthritis is a debilitating autoimmune disease that affects between 0.5 and 0.1% of adults worldwide (Kvien, 2004). Women suffer from this disease 2-3 times more often than men (Handin et al., 2005). The main complaints of these patients include heart disease, disability and fatigue (Dhanani et al., 2002).

One of the psychological variables is beliefs and perception of pain. Beliefs and perception of pain are attitudes, beliefs and expectations of patients about pain. Also, cognitive distortions such as catastrophic disorder, feelings of helplessness, patients' assessment of pain and the degree of control over it, their interpretation of pain and its consequences, and generally the cognitive system and beliefs associated with pain are related to perception of pain (Turk & Gatchel, 2013). In this context, Philips describes the pattern of the impact of cognition on pain-related behavior, and emphasizes the expectations of patients about the actions and beliefs they have about controlling on pain events (Kremer & Atkinson, 1981).

Perceived stress is the body's response to a change that requires physical, mental or emotional responsiveness or response. Stress can be caused by any stressor or stimulus (Asberg et al., 2008). In fact, stress expresses the individual's inner position that has felt a threat to his or her physical condition or mental relaxation. This response is one of the most common sources for dealing with physical and disease problems (DeLongis et al., 2008). The factors influencing stress response are familiarity with stressors, predictability, proximity to stressors, optimism-pessimism, social support, and hardiness (Bond and Bunce, 2000). Environmental factors on the immune-genetic field for the development of rheumatoid arthritis are available in 34% of the population, But only 1% of them suffer from rheumatoid arthritis, which is due to the adequacy of the neuroendocrine axis (Chrousos, 1995).

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Perceived stress can affect the level of self-control of patients. Self-control is in fact a sort of self-management (Kaushal & Kwantes, 2006). Based on projections, chronic illnesses are the main cause of death and disability in 2020 and will account for two thirds of all illnesses. In this condition, the self-control of chronic diseases has the increasing importance (Epping-Jordan, Bengoa, Kawar & Sabate 2001; Allah Verdi Pour et al., 2006). Research results indicate that there is a negative relationship between psychological problems and self-control; in fact, people with psychological problems have lower levels of self-control and they are more exposed to high-risk behaviors; in fact, the sense of individual control reduces stress (Adabjaradottir & rafnsson, 2002; Sussman, Dent & Leu, 2003).

The results of the research indicated that the elderly who are able to accept more pain, have a better life style of pain, and have fewer pain limitations (Shirazi et al., 2016). Research results show that cognitive-behavioral group intervention in stress management is an effective method for promoting hardiness and self-control of depressed women (Ab-Nicky et al., 2015). Researchers have shown that individual and interpersonal variables have a significant mediator and moderator role in explaining the consequences of pain (Kumar et al., 2015). Researchers studying the mediating role of catastrophic pain in the relationship between pain intensity and physical disability in patients with chronic pain found that catastrophic pain is one of the factors influencing perceived disability in patients with chronic pain (Rahmati et al., 2015). The results of the research indicate that chronic pain condition is associated with weak adaptation that includes depression, stress and low self-esteem (Rezaei et al., 2009).

Researchers have argued that increased admissions and awareness of chronic pain in some patients will cause some frustration because they realize that their pain is not definitive and requires constant use of various strategies to deal with pain (Eaves et al, 2015). The results of the research indicate that there is an inverse relationship between the rate of pain acceptance and the severity of pain, which makes the incidence of pain in women less than men (Gilandres et al., 2013; Bendayan & Esteve, 2012). The results of numerous studies in the field of health psychology have shown that compatible coping strategies such as stress management in the stressful situations and negative emotions are important factors in shaping the physical and mental health of individuals (Koenig, 2012). The results of the research show that the acceptance of pain in the daily function of people with chronic pain plays an important role in the way that the acceptance of pain is related to the reduction of pain experience, psychological problems and physical disabilities and the increase in psychological well-being (McCracken et al., 2010). Research results show that although behavioral and psychological factors may not play a significant role in getting Started of pain, these factors play a decisive role in the continuation of pain and disability caused by it (Krens, Morley and Vline, 2008; Nicholas, 2010; Foster, Thomas, Bishop, Dunn & Main, 2010). Researchers found different outcomes in chronic pain conditions in a study of patients with various chronic pain (back pain, neck pain, headache, fibromyalgia, etc.). Subgroups of arthritis, back pain and neck pain showed a significant change in the severity of pain and functional limitations that Caused by pain after intervention reduce stress based on

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mindfulness (Rosenzweig et al., 2010). Research results show that better management of stress makes individuals have more committed, challenged and more manageable in their lives (Godfrey, 2004).

In this research, the following hypotheses were tested:

1. Pain intensity based on beliefs and perception of pain and its components in patients with rheumatoid arthritis in Tehran can be predicted.
2. Pain intensity based on perceived stress and its components in patients with rheumatoid arthritis in Tehran can be predicted.
3. Severity of pain based on self-control and its components in patients with rheumatoid arthritis in Tehran can be predicted.

MATERIALS AND METHODS

This research is categorized as descriptive correlational research in terms of research method and it is categorized in the field of applied research in terms of purpose. The statistical population included all women with rheumatoid arthritis who referred to Shariati and Loghman hospitals in 2016. A sample of 200 participants was selected based on Morgan's table as available sampling method. Questionnaires were used to collect data.

The Convictions and perception of pain, (Williams & Thorn, 1989), was used to measure perceptions and beliefs. The questionnaire has 16 phrases and several studies have used it as a tool to measured beliefs that associated with non-cancer chronic pain. The answer to this questionnaire is as Likert's method. The first study of factor analysis identified the following three factors in the questionnaire: 1.Mysteriousness, which believed to be mysterious and unknown of the pain; 2.Self-blaming: self-blaming about the pain and; 3.Time: Belief in the stability and continuity of pain (Williams & Thorn, 1989). The Iranian credibility coefficient of this questionnaire was reported in Cronbach's alpha, for self-criticized subscales (0.61), self-blame (0.72), belief in pain stability (0.63) and in general, it is (0.79). A higher score indicates individual's deeper belief about the topic desired (Asghari Moghaddam et al., 2002). To measure Perceived Stress, the perceived stress questionnaire (PSS-14) was used. The Perceived Stress Questionnaire was provided by Cohen et al. In 1983 and contains 3 issues of 4-10-item and 14-item that used to measure perceived general stress in a past month. This questionnaire measures thoughts and emotions about stressful events, control, overcome, coping with stress and experiencing stress, and it also evaluates the risk factor in behavioral disorders and shows the process of stressful relationships. This questionnaire has been used in different countries and therefore it has been translated into various languages and it has been used and standardized in many countries. Cronbach's alpha for the 14-item questionnaire was obtained in 0.84, 0.85 and 0.86, respectively. The range of scores is between 0 and 56, and the higher score indicating higher levels of stress (Cohen et al., 1983).

Self-control questionnaire Tangney et al. (2004), was used to measure self-control. This questionnaire was designed to measure the self-control of individuals as an attribute. The reliability of the test has been reported too high: The alpha was 0.89 for the 36-item of long-form of self-control scale, also, for the self-control scale, of items-13 of short form similar

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results were obtained (alpha value is 0.83 and 0.85, respectively, in two research samples). Therefore, the questionnaires have the proper internal consistency. As we mentioned in the short form questionnaire, one of the categorizations made for the short form self-control scale consists of two sub-scales: 1- inhibitor self-control; and 2- primary self-control. The score range is between 13 and 65 where the higher scores indicates greater degree of Self-control (Tangney et al., 2004).

To measure the amount of pain Visual Analogue Assessment (VAS) was used. The visual instrument of pain measurement is the simplest tool for assessing the pain of patients that is easily understood by the patient himself. This tool is the most popular pain measurement tool in the world. In addition to the validity and reliability, the most important feature of this tool is its ease of use. This tool is a 10-centimeter criterion, the left side of which is 0 (indicating no pain) and the right side of it is 10 (indicating the most severe of pain). Giving 1 to 3 score represents mild pain, 4 to 7 score represents moderate pain and 8 to 10 score shows severe pain (Moradi Far, 2013).

All questionnaires were presented to subjects and were asked to answer the questionnaire on their own as much as possible, and then completed questionnaires, after completing the questionnaires data were obtained using SPSS version 19 right statistical method and were analyzed (descriptive statistics: graphs, frequency, frequency percentage and inferential statistics, multiple regression and Pearson's correlation coefficient).

RESULTS

Table 1: Frequency table of subjects based on demographic variables

Percentage	Frequency		
43/5	87	25 to 30 years	Age range
31/5	63	31 to 35 years	
25	50	36 to 40 years	
33	66	Fars	nationality
25/5	51	Turkish	
21/5	43	Lor	
11	22	Kord	
9	18	Other	Duration of illness
25/5	51	Under 1 year	
24/5	49	Between 1 and 3 years	
19/5	39	Between 3 and 5 years	
17/5	35	Between 5 and 7 years	
13	26	More than 7 years	

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As shown in Table 1, in terms of age range most of the subjects are 87 (43.5%) between 25 and 30 years old, However, that 63 persons (31.5%) are between 31 and 35 years old and 50 persons (25%) are between 36 and 40 years old. In terms of nationality, the majority of subjects as 66 persons (33%) are Fars, while 51 persons (25.5%) are Turkish, 43 persons (21.5%) are Lor, 22 persons (11%) are Kord, and only 18 people (9%) are from other nationality groups. For the duration of the disease, more than 51 subjects (25.5%) are under 1 year, it lasts from their illness, while 49 persons (24.5%) are between 1 and 3 years old, 39 persons (19.5%) between 3 and 5 years, 35 persons (17.5%) are between 5 and 7 years old and only 26 persons (13%) are over 7 years, it lasts from their illness.

Table 2: Descriptive statistics of research questionnaires

Stretchiness	Tilt	Standard deviation	Mode (view)	Mea n	Avera ge	Variable	questionnaire
0/005-	0/512-	2/566	0	1	1/41	Being mysterious	Belief and perception of pain
0/072-	0/136-	1/86	1	1	1/07	Blame yourself	
0/864-	0/291-	2/904	1	1	0/34	Believe in the stability of pain	
0/802-	0/017	6/22	4	3	2/82	Total score	Perceived stress
1/079-	0/224	4/34	15	17	17/52	Negative Perceived stress	
1/159-	0/32	4/47	15	16	17/28	Positive Perceived stress	
0/96-	0/284-	7/513	36	36	36/24	Total score	Self-control
1/214-	0/104	4/359	15	18	17/87	inhibitor	
1/107-	0/235	4/297	15	17	17/61	Primary	
0/897-	0/343	7/253	30	35	35/38	Total score	Severity of pain
0/021-	0/796	1/438	4	5	5/18	Total score	

As we seen in Table 2, in all variables, the average, mean and mode (view) values are close to each other. This indicates that the scores are normal, however, the values of Tilt and Stretchiness, by being between (-2) and (+ 2), confirm this.

First hypotheses: Pain intensity based on beliefs and perception of pain and its components in patients with rheumatoid arthritis in Tehran can be predicted.

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Table 3: The correlation is related to the severity of pain and the predictor variables in the first hypothesis

3	2	1	Variable
0/528 ^{xx}	0/395 ^{xx}	0/557 ^{xx}	Severity of pain
Predetermine variable			
0/636 ^{xx}	0/607 ^{xx}	1	1. Being mysterious
0/445 ^{xx}	1		2. Blame yourself
1			3. Believe in the stability of pain

****P<0/01**

As we seen in Table 3, there is a direct correlation at a significant level of 0.01, between the variables, the intensity of pain and mysterious (0.557), between the intensity of pain and belief in pain stability (0.528) and between the intensity of pain and self-blame (0.349). All predictor variables (mysterious, belief in pain stability and self-blame) have a moderate (0.445) to strong (0.636) correlation at a significant level of 0.01.

Second hypotheses: Pain intensity based on perceived stress and its components in patients with rheumatoid arthritis in Tehran can be predicted.

Table 4: The correlation is related to the severity of pain and the predictor variables in the second hypothesis

2	1	Variable
-0/199 ^{xx}	0/62 ^{xx}	Severity of pain
Predetermine variable		
-0/458 ^{xx}	1	1. Negative Perceived stress
1		2. Positive Perceived stress

****P<0/01**

As we seen in Table 4, there is a weak reverse correlation at a significant level of 0.01, between the variables, the intensity of pain and negative perceived stress (0.62), and between the intensity of pain and perceived positive stress (-0.19). There is the mean reverse correlation is at a significant level of 0.01, between predictor variables such as negative and positive perceived stress (-0.458).

Third hypotheses: Severity of pain based on self-control and its components in patients with rheumatoid arthritis in Tehran can be predicted.

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Table 5: The correlation is related to the severity of pain and the predictor variables in the third hypothesis

	2	1	Variable
	-0/317 ^{xx}	-0/532 ^{xx}	Severity of pain
			Predetermine variable
	0/406 ^{xx}	1	1. inhibitor Self-control
	1		2. Primary Self-control

****P<0/01**

As we seen in Table 5, there is a weak to moderate inverse correlation at a significant level of 0.01, between the variables, the intensity of pain and inhibitor self-control (-0/532), and between the intensity of pain and primary self-control (-0.317). There is a direct correlation is at a significant level of 0.01, between predictor variables such as inhibitor Self-control and Primary Self-control (0.406).

DISCUSSION AND CONCLUSION

The present study confirms the results of research by Wicksell et al., (2009). Based on this study, pain reception is associated with better social, physical and psychological functions. On the other hand, the level of pain acceptance can, in addition to predicting the amount of pain in the daily life and the level of physical and psychological health, also can predict the severity of pain; In the research of Davoudi et al., (2011), which was reviewed the relationship between pain disaster, pain anxiety, neuroticism, social support and functional disability coping strategies in rheumatoid patients, the results of stepwise regression analysis showed that accordingly, the catastrophic pain, neuroticism, Social support and one of the coping strategies remained in the equation. These variables explained 38% of variance in functional disability.

In general, the results of this study were compared with the results of Shirazi et al., (2016), Ab-Nicky et al., (2015), Rahmati et al., (2015), Kumar et al., (2015), Davoudi et al., (2011), Rezaei et al., (2009), Eaves et al., (2015), Gillanders et al., (2013), Bendayan & Esteve (2012), Krens, Morley and Vline (2008), Nicholas (2010), Foster, Thomas, Bishop, Dunn & Main (2010), McCracken et al., (2010), Rosenzweig et al., (2010) and Godfrey (2004).

In general, it can be said that with the occurrence of medical disorders in a person, it is accompanied by psychological disturbances, because the person, while confronted with chronic pain, he loses his social and economic functions too. This is where the patient encounters various stresses and disasters of life, so stress and psychological stress are both the underlying cause of pain and the agent of pain, of course, we should not ignore the role of the person's beliefs and perceptions that can be derived from his attitude of the individual towards his illness, These beliefs, if emphasized on pain-related disability, can be effective in increasing the pain rate in patients. But in that meantime, the individual's self-control is also

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important, because this psychological variable makes it impossible for the person to fight the disease and not easily harm his body and his future life.

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Conflict of Interest

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