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Research Article

COMPARISON THE LEVEL OF COGNITIVE DISTORTION AND LIFE QUALITY IN THE PEOPLE WITH CHRONIC PAIN, PEOPLE WITH NON-CHRONIC PAIN AND THE HABITUAL

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ABSTRACT
The main goal of this research is to compare the level of cognitive distortion and life quality in the people with chronic pain, people with non-chronic pain and ordinary people in residents of Hamadan. The research method is based on the causal-comparative method. The Statistical group of this research is a society of 210 people with chronic and non-chronic pains from adults (upto18) in Hamadan whom selection was based on random cluster sampling. The necessary data were gathered by field study and also using the clinical interviews about the pain kind and questionnaires of Ellis cognitive distortion and Ware and Sherburne's questionnaire of life quality. The data analyzed based on some Statistical-descriptive indices Such as frequency, Percentage, Mean, graph, Standard deviation, and deductive Statistics test of Clomograph-Smironov, MANCOVA's method, test of shefeh, Pearson correlation coefficient, and linear regression method. The results showed that there are many differences in cognitive distortion and life quality. Three groups of people with chronic pain, People with non-Chronic pain and ordinary residents. The levels of cognitive distortions of hurried conclusion, emotional reasoning, labeling other people, and personalizing the matters in the people with the chronic pain are more than the distortion in the residents. Therefore the cognitive distortion and their exaggerated generalization. All or nothing thinking, the emotional reasoning, labeling the other people and predating the matters can predict the life quality of the people.

Keywords: *Cognitive Distortion, Life Quality, Chronic Pain, Non-Chronic Pain*

INTRODUCTION
State of health is complete well-being, physically, mentally and socially (World Health Organization. Suicide rates, 2015), and the health of people is one of the most fundamental issues in any country. According to recent researches, chronic diseases will be the main cause of death and disability publicly in 2020, and will account for two-thirds of all illnesses (Epping-Jordan *et al.*, 2010) which are growing fast so that11 to 30 percent of the population will occur (Rustoen *et al.*, 2004). According to Asghari Moghaddam's research (Asghari Moghadam, 2006), in general adults population (18 to 65 years old) of Iranian, the prevalence of 6 months of continuous chronic pain, is from 9% to 14%, and in the elderly population (60 to 90 years) is about 67 percent which are in comparison to other countries high percentages.

According to the International Association of Pain (Frisch, 2002), pain is unpleasant experiences with two Sensory and emotional dimensions that may or may not be associated with specific tissue damage, and influenced by Multi-cognitive emotional and environmental coefficients. Although behavioral and psychological coefficients may not play manifest roles in commencement of pain, however, these coefficients have decisive roles in continuing pain and disability caused by the pain (Kenndall, 1981; Michalos, 1991) and the decline in quality of life.

Quality of life, the interface between the health status of an individual on the one hand and the other is the ability to pursue life goals. So the fulfillment of basic human needs and fundamental priorities plays an important role in quality of life (Orley, 1992; Park, 1995).

Nowadays, populations' quality of life is seen as a framework for allocation of services and resources tailored to different aspects of life. The importance of life quality assessment is very vital to the extent that some have cited bettering life quality as the most important goal of interventional treatments

(Katschnig and Krautgartner, 2002) that its mental aspect is in common with psychological and emotional concepts and issues such as depression, fear, anger, happiness, joy and anxiety which are (Campbell *et al.*, 1976) in patients with chronic pain seen in higher levels than others because these patients have other emotional pains that are the result of cognitive distortions.

Cognitive distortions are from coefficients which are in relationship with many of diseases.

Cognitive distortions are from a therapy based on the theory of emotional disorders and clinical and experimental studies.

This terms refers to mistakes and cognitive misunderstandings which means an approach that patients evaluate situations and psychological pressures, his vision of the world, the future, beliefs and attitudes that increased his vulnerability to emotional disorders.

Considering the importance of cognitive disorders and life quality and bearing pain level, in this study, life quality of patients with chronic pain, non-chronic pain and ordinary people are compared. The main question of this study asks whether there is any difference between cognitive distortion and life quality of patients and chronic pain, non-chronic pain and normal people or not?

MATERIALS AND METHODS

Current study is descriptive Causal-comparative research.

The target population included all patients with chronic pain and non_chronic pain, through an interval of three months during the spring of 2014 who visited hospitals and private clinics in Hamadan to receive health care.

The statistical population of all healthy teachers working in schools in the city of Hamadan from whom 210 people were taken through Convenience Sampling as the sample society from clients of two hospitals (Ekbatan and martyr Beheshti) and specialists' offices.

Entry requirements to the test: secondary school certificate; being at least 18 years old; not having significant psychological disorders; record of suffering six months chronic pain or more, according to initial assessment of questionnaires and their medical records in non-acute pain category.

Selecting healthy people was through random-cluster sampling amongst teachers of four educational institutions of Shariati, Haj babai, Mehdieh and Hejab. Inclusion criteria for this category are the first three conditions mentioned above and not having acute pain or illness.

The Research Tools Include

Cognitive distortion questionnaire: this questionnaire consist of 20 word which assess cognitive distortion raised by Ellis (1998) and with the aim to reach a convenient approach to understand cognitive distortion it has been is used.

Since many of our problems and unsuitable anxieties are caused by our irrational thoughts, awareness of these thoughts are pivotal and help us to liberate ourselves from the vast majority of our problems and interventions in our lives.

Based upon the scoring, anyone who acquires a higher score has better thoughts, and lower scores account for the fact that the person has used higher cognitive distortion. External reliability through Cronbach's alpha and also test-retest after two weeks, for the whole scale is r=0.74 and 0.67 and for its subscales respectively is: 0.70, 0.76 and 0.74, and its validity through correlation with subscales respectively is 45.0, 53.0 and 0.53 which all of them with 99 per confident level are significant.

Quality of Life Questionnaire SF-36:

This questionnaire is useful for applications in clinical practice, evaluating public health policies as well as general public studies, and has proven its effectiveness. 36 items by Ware and Sherbourne was developed in 1992 in America, and does not belong to a certain age-group or a specific disease (Weissman, 1997).

The questionnaire is comprised of 36 items that evaluate the eight dimensions of health thoroughly, physical (10 items);playing physical role (4 items); bodily pains (2 items); general health (5 items), fatigue or vitality (4 items); social functioning (2 items), playing emotional role (3 items)and mental health (5 items) that evaluates the quality of life (number 2 is not in any of the subscales and only must be

added to the total score). Lowest score on this scale is zero and the highest is 100. Each section's score will be defined with titles' scores in that section

Internal validity and reliability of life quality questionnaire, in the study of Asghari *et al.,* (2006) which was conducted at Shahed University on 404 students, Cronbach's alpha for the total sample reportedly varied between 70.0 and 85.0.

In order to test-retest SF-36, the test was redone one week after on the same 120 people who filled in the first questionnaires, test-retest coefficients for the whole samples were between 43.0 and 79.0.

The questionnaire survey of chronic pain: the tests has been developed by Asghari (2006), has 31 items of which the diagnosis and evaluation of patients with chronic pain and different aspects of chronic pain. The test is made up of different sections. The subjects evaluate their situations on specified multiple responses. Some areas of the test are in 10-point grading scale in which a score of zero indicates none and the maximum score is 10.

In a study by Pooladi (2008) Reliability coefficients of this test using methods of Cronbach's alpha, bisection and test-retest are respectively, 88/0, 79/0 and 78/0.

evaluation of the validity was done via asking some key questions in which correlation coefficient between questions was the criterion, and inquestionnaire of chronic pain r= 68.0 ($p<0.01$)

This questionnaire was used for initial assessment of chronic pain (questions number 7 and 8) and to acquire demographic information. For analyzing data, descriptive statistics (frequency, percentage, mean, chart, standard deviation) and inferential statistics (analysis of variance, Scheffe's test, Pearson correlation and linear regression) were used.

RESULTS AND DISCUSSION

Findings

This research was conducted on 210 individuals as samples; each category had 70 people (33 per) and 59 percent of the studied statistical sample were female, and 41 percent was composed of men. 19 percent from samples had school education, 30 percent had diplomas, 21 per had Associate Degrees, 24 percent had bachelor degrees and 6 present had master degrees; studied patients' mean ages were between 39 to 49 years old.

Table1: Multivariate variance analysis

Effect		Value	Value F	The degree of freedom of hypothesis	Error Degree of freedom	Significance
Category	Pillai's Trace	0.66	5.26	36	382	0.0001
	Wilk ś Lamda	0.43	5.49	36	380	0.0001
	Hotelling ś Trace	1.09	5.72	36	378	0.0001
	Roy ś Largest Root	0.82	8.73	18	191	0.0001

According to table No 1 this can be said, Wilk ś Lamda value (sig= 0.0001 and f= 5.49) which asserts the difference of cognitive distortions and life quality, measures patients suffering chronic pain, non-chronic pain and ordinary people against one another.

According to the data shown in Table 2, the cognitive distortions' values are, exaggerated generalizations (f=2.16and p =0.12); subjective filter (f=2.57and p=0.079); neglect the positive (f=2.57 and p=0.079); emotional reasoning (f=0.612 and p=0.54); magnification or minimization (f= 1.6and p= 0.21) among patients with chronic pain, non- chronic pain and ordinary people, the difference is not significant.

The cognitive distortions all or nothing thinking (f= 6.28 and p=0.002), hasty conclusions (f= 6.13 and p=0.003), the phrase should and musts (f= 8. and p=0.0001), labeling (f= 19.7 p= 0.001) and personalization (f= 13.79and p =0.0001) in patients with chronic pain, non-chronic and normal people difference is significant. For pair wise comparison, averages of groups of post hoc test were used.

Table 2: Multivariate variance analysis of intergroup effect

Change resources	Dependent variable	Total squares	Df	Mean square	Ratio f	Sig
Group effect	All-or-nothing thinking	52.01		26.005	6.28	0.002
	Exaggerated overgeneralization	20.69		10.34	2.16	0.12
	Subjective filter	20.47		10.23	2.57	0.079
	Neglecting the positive	23.89	2	11./94	2.57	0.079
	Hasty conclusion	60.58	2	30.29	6.13	0.003
	Emotional conclusion	4.52	2	2.26	0.612	0.543
	Magnification or minimization	14.44	2	7.22	1.6	0.21
	Should and musts	86.067	2	43.033	8.033	0.0001
	Labeling	68.87	2	34.43	7.19	0.001
	Personalization	128.94	2	64.47	13.79	0.0001
	Physical functioning	22898.095	2	11449.048	17/44	0.0001
	Physical health restriction	095.95363	2	47681.55	33.33	0.0001
	Emotional restriction	29756/62	2	14878.31	8.26	0.0001
	Fatigue and vitality	7438.81	2	3719.41	9.56	0.0001
	Emotional health	6693.18	2	3346.59	8.47	0.0001
	Social functioning	19260.42	2	9630.21	15.14	0.0001
	Pain	64187.32	2	32093.66	63.048	0.0001
	General health	19972.38	2	9986.19	20.84	0.0001
	Life quality	26500.98	2	13250.49	40.12	0.0001

There is a difference of cognitive distortion between patients suffering chronic pain, non chronic pain and normal people

According to table 3 data, value of distortion of all-or-nothing thinking in category of non-chronic pain, was more than normal people's distortion (p=0.002 and i-j=1.21). The difference between normal people category, chronic pain and non-chronic pain category is not significant (p>0.05).

The distortion of hasty conclusions in patients with chronic pain is more than the distortion of hasty conclusions in normal group (i_j= 1.27and p =0.004), and non-chronic pain patients (i-j=0.93and p =0.049). The difference between ordinary and non-chronic pain patients in the cognitive distortion is not significant (p> 0.05).

The cognitive distortion of labeling in patients with chronic pain and non-chronic pain are more than distortion of labeling in normal group (i-j= 1.29 and p=0.003) and (i-j= 1.13 and p =0.011). The differences between patients with chronic pain and non- chronic pain in cognitive distortion of labeling are not significant (p> 0.05).

Table 3: Scheffe test for Comparison of cognitive distortions in patients with chronic pain, non-chronic pain and ordinary people

Variables	Group (j) / Group (i)		Normal people	Non-chronic pain	Chronic pain
All-or nothing thinking	Normal people	Difference)i-j(	-	-1.21	-0.7
		Significance	-	0.002	0.13
	Non-chronic pain	Difference)i-j(	1.21	-	0.51
		Significance	0.002	-	0.33
	Chronic pain	Difference)i-j(	0.7	-0.51	-
		Significance	0.13	0.33	-
Hasty conclusion	Normal people	Difference)i-j(	-	-0.34	-1.27
		Significance	-	0.66	0.004
	Non-chronic pain	Difference)i-j(	0.34	-	-0.93
		Significance	0.66	-	0.049
	Chronic pain	Difference)i-j(	1.27	0.93	-
		Significance	0.004	0.049	-
should and musts	Normal people	Difference)i-j(	-	-1.54	-0.53
		Significance	-	0.001	0.41
	Non-chronic pain	Difference)i-j(	1.54	-	1.01
		Significance	0.001	-	0.037
	Chronic pain	Difference)i-j(	0.53	-1.01	-
		Significance	0.41	0.037	-
Labeling	Normal people	Difference)i-j(	-	-1.13	-1.29
		Significance	-	0.011	0.003
	Non-chronic pain	Difference)i-j(	1.13	-	-0.16
		Significance	0.011	-	0.91
	Chronic pain	Difference)i-j(	1.29	0.16	-
		Significance	0.003	0.91	-
Personalization	Normal people	Difference)i-j(	-	-1.9	-0.19
		Significance	-	0.0001	0.006
	Non-chronic pain	Difference)i-j(	1.9	-	0.71
		Significance	0.0001	-	0.15
	Chronic pain	Difference)i-j(	1.19	-0.71	-
		Significance	0.006	0.15	-

The cognitive distortions of personalization in patients with chronic pain and non-chronic pain is higher than the distortions of personalization in normal group (i-j=1.19and p=0.006) and (I -j=1.90 =and p=0.0001). The difference between patients with chronic pain and non chronic pain in cognitive distortions of personalization is not significant (p> 0.05).

Discussion

This study aims to compare the cognitive distortions and quality of life in patients with chronic pain, non-chronic pain and normal people. The results showed that the cognitive distortions, and quality of life in patients with chronic pain, non-chronic pain and ordinary people were different, and results of current research conform to the results of Qadri *et al.,* (Nadery *et al.,* 2013), Sarabandi *et al.,* (2012), NasiriAmiri *et al.,* (2012), Yadu'llah *et al.,* (2013), Heidarzadeh *et al.,* (2013), Carlos (2004) and Hugh, Lenin, Ecole and the mincer (Robins, 2010). Qadri *et al.,* (Nadery, 2013) showed that quality of life had a significant inverse relationship with the period of illness and drug use. Sarabandi *et al.,* (2012); score of life quality was significantly higher in people who received rehabilitation services than people deprived of the services. NasiriAmiri *et al.,* (2012) found that factors affecting quality of life in Women with ovarian syndrome in physical aspects include:Obesity, hirsutism, Hair loss,welding,menstrual disorders, and

public health problems; Psychological, emotional, cognitive and social, aspect including: depression, frustration, fear and anxiety, moodiness, introversion, low self-esteem, feelings of shame and embarrassment, humiliation, and self-contempt toward peers, and etc. Yadu'llah *et al.,* (2013) showed that based on a positive human health perspective, one can change the feelings and views and emotions in a positive direction and set it in that motion, in an approach in accordance on religious concepts; an individual based on inner growth, and understanding of himself and his creator in accordance with finding the meanings, gains a true description of his experiences and based on inner richness and under paying attention to God, the person leads his emotions in a direction to improve his life quality. Heo *et al.,* (2009) in a study on patients with cardiovascular disease on quality of life, concluded that about half of patients with heart failure had reported a high quality of life. Karls (Carels, 2004) study showed that the quality of life in patients with cardiovascular disease, reduce social protection of these patents. In explaining these results, it can be said that it is an important factor to understand and comply with truth and become aware of the positive aspects of life.Ignorance and false knowledge in analysis of what happened surrounding a personm is leads him and makes him fall. Adjustment and maladjustment in society take a very important role and can affect all life.Satisfaction and dissatisfaction, and one's major conditions are associated with person's reasoning. Different people act differently in similar situations, since they have different emotions. In all forms of cognitive errors, one tries to read or guess the minds of others, feelings and ideas while his guessing ability is not certain.

Family and friends of people with chronic pain due to prolonged illness, pain during the illness and related issues are acquainted with them and often their lives are affected by these diseases. Patients also are distressed by these conditions; they are usually sensitive to the reactions and behaviors of family members about the disease, and about the feelings and opinions of others regarding this; they try to read their minds and make a guess about them and make judgments that are often mistakes which psychologists call cognitive distortions. The condition causes chronic pain and non-chronic pain patients experience more cognitive distortions than normal people. The quality of life must be said: as defined by the World Health Organization (2015) quality of life is the individual's perception of his situation and living conditions, which is influenced by cultural and value system, accordingly, goals, expectations, standards and wishes are widely influenced by physical, psychological, level of independence, social relationships and his beliefs. People with long-term and severe disease (with chronic pain and chronic pain), due to the diseases and conditions have different understanding of life than the average person, and consequently their objectives, expectations and demands are different; they are anxious about their lives and recovery, and upset about putting others in trouble, their independence is threatened, according to their condition, the type of recreation, exercise and nutrition they have are different from the general population.

These factors can cause their quality of life to differ from ordinary people. To accurately classify patients with chronic and non-chronic pain and standardized a diagnostic test for chronic and non-chronic pain are of the limitations of this research.

In addition, these findings can be generalized to those patients who were seen as outpatients at the hospitals and clinics in order to evaluate the effectiveness of this approach. It is suggested in the future, effect of educational modifications of cognitive distortions on quality of be investigated.

Conclusion

The results of this study provide important information in the field of cognitive distortions and quality of life among the three groups of patients, patients with chronic pain; non-chronic pain and healthy people. Cognitive distortion of hasty conclusions; emotional reasoning; labeling and personalization in patients with chronic pain distortions is higher than ordinary people.

Patients without chronic pain show higher cognitive distortions namely distortion of all or nothing thinking; should and musts; labeling and Personalizing than the ordinary population.

Chronic pain patients show higher result in hasty conclusion than patients without chronic pain, and patients without chronic pain show higher result in distortion of should and musts than patients with chronic pain.

Ordinary people compared to patients with chronic pain and non-chronic pain patients are higher in all subscales of quality of life. Non-chronic pain Patients, physically function better and bear more pain than chronic pain patients.

All 10 cognitive distortions categories have negative association with patients' quality of life (chronic pain and non-chronic pain), and cognitive distortions of exaggerated generalization; all or nothing thinking; emotional reasoning; labeling and personalization, have the ability to predict quality of life.

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