

LOW BACK PAIN, INFLUENCE OF ANXIETY IN ITS TREATMENT

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(Original scientific paper)

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Abstract

Background: The low back pain is a huge problem nowadays, and it is experienced by a majority of the population during their whole life. Chronic low back pain is a state that is affected by biological, psychological and social factors that interfere among themselves and together affect each other, these factors influence increase and duration of complaining time. Material and Methods: The research was conducted in Physiotherapy Institute of Occupational Medicine (IOM) in Obiliq, Kosovo, during the period of one year, from January 2016 until the end of December 2016. The research was long-term and prospective. 63 patients participated in this research. All of them were treated with physical therapy, depending on examination and findings on patient. Results: Based on the obtained results, it can be concluded that the intensity of pain in patients before and after the treatment affects anxiety. Respectively, the patients who had high intensity pain also manifested higher level of anxiety. Conclusion: Anxiety influences the rehabilitation of low back pain, the patients who suffer from low back pain and have psychological problems such as anxiety, their level of pain prior and following the physiotherapy treatment remains without significant difference.

Keywords: *Low Back Pain, Anxiety and Chronic Pain*

Introduction

The low back pain is a huge problem nowadays, and it is experienced by the majority of the population during their whole life. Around 70-80% of the population suffers from this problem, or have experienced low back pain at least once during their life (Chou, 2017). The newest data shows that in different places of the world, more than half of the population, during a one year period, have problems with low back pain (Gourmelen J, 2007).

More than 85% of the causes of low back pain are idiopathic and the cause is unknown, and they are classified as non-specific with unknown background (Angela Searle M. S., 2015). Low back pain is known as pathology that has multifactorial etymology with characteristics (age, physical fitness), psychosocial factors (stress, anxiety and depression) plus work factors (heavy physical work, bend and twisting motions and vibration) which affect its development.(G., 2008) (Mauritz van Todler, 2002).

Management and prognosis of treatment change, and should be based on duration and symptoms (Koes BW, 2010). Most of low back pain is eliminated by conservative treatment during a certain period of time. There are some patients that experience continuous pain which does not decrease nor can be eliminated by conservative treatment, and in such cases surgery should be performed.(Chou R, 2007). Proper awareness for the relation of disability must be established until the level of pain and cognitive knowledge of the patient's profile can be used in order to come to a conclusion and to choose the treatment, and achieve better results. (Helmouhout, 2010), (Smeet, 2009). Physical activity is always recommended for the treatment of LBP (Hendrick P M. S., 2011). For the acute pain, according to the data from publications supporting walking (Hendrick P T. W., 2010), the treatment that is considered to be effective for acute LBP is McKenzie's method, but it is seen as a short term benefit and does not last forever (Casazza, 2012). There are some data which support application of hot (warm) procedures as a therapy for the acute phase and sub-acute phase of LBP. (French, Cameron, Walker, Reggars, & Esterman, 2006), but we have less data for chronic phase in relation to application of hot and cold therapy (Van Middelkoop M R. S., 2011).

Physical exercises are the most effective therapy for decreasing pain and for increasing the function for chronic LBP (DG, 2012). These exercises help to lower the chances of repetition of problem until 6 months after completing the exercise program (Smith C, 2010) and they help to increase the duration of functionality (Van Middelkoop M R. S., 2011).

The exercises are good but we cannot say which group of exercises is more effective compared to the others (Van Middelkoop M R. S., 2010).

Chronic pain, the pain is defined as “unpleasant sensoric and emotional experience which associates with acute or potential damage of a tissue” and becomes chronic when it continues to exist after the usual treatment and passes the time that belongs to acute phase of illness or injury (in general 3-6 months)(Twomey LT, 1987)(H Merkey, 1994)(Merkey, 2011). The chronic pain is a phenomenon that includes biological, psychological, social and cultural aspects (Kristina Janzen, 2016).

The studies show that patients with pain have more affinity to be affected by chronic problems such as depression and anxiety. It is often said that we should be careful during diagnostics and treatment of these illnesses. The next research should be concentrated on modalities of treatment of these phenomena with the joint pain in general.(Marloes Gerrits, 2012).

Anxiety is a general feeling in relation to a possible risk, that prepares the body to undertake back reaction. Normal anxiety is a mechanism of adaptation while pathological anxiety is characterized by excessive level of anxiety and damage of general functioning of an individual. The symptoms of anxiety are not diagnosed, they are symptoms of many mental disorders and symptoms of many different general medical illnesses (Lala, 2016).

The patients that were diagnosed as sick from low back pain or at risk of this illness are more mentally upset comparing to the general population. Description of the signs of anxiety or other mental problems are more expressed in persons suffering from low back pain comparing to the rest of the population in general. (J, 2015)

The patients with anxiety disorders who come for a checkup in the primary health care service, have a high level of co-morbidity with physical medical illnesses. (Lala, 2016).

It is important that some researchers have found that anxiety can appear together with inflammatory processes in the organism in addition to depression and neuroticism, and this explains in the best way the specific influence of relationship between emotions and biological response of the organism. (Aoife O Donovan, 2010)

The new studies present that the anxiety is expressed together with appearance of chronic pain and they suggest that the patients with chronic pain should be assessed – tested with tests for anxiety, because it is caused by low back pain (Steilen, 2016). An American study of patients with chronic body pain that reported at primary health care service, confirmed that almost half of the patients, 45% of them, fulfilled the criteria of one or more disorders of anxiety (Kroenke K, 2013).

Connection of low back pain was very often presented with mental illnesses such as anxiety, and according to authors it presents a key factor for the low back pain (Karp, 2016). Psychological profile at patient with low back pain is a very important part as an indicator in therapy of spine illnesses. (Lai C, 2007).

Material and Methods

The research was conducted in Physiotherapy Institute of Occupational Medicine (IOM) in Obiliq, Kosovo, during the period of one year, from January 2016 until the end of December 2016.

The research was long-term and prospective.

63 patients, diagnosed with the acute and chronic low back pain, participated in this research. All of them were treated with physical therapy, depending on examination and findings on the patient.

All patients who applied for treatment with physiotherapy in the IOM were diagnosed with the acute and chronic low back pain and were involved in the research.

The patients were firstly informed of the reason of the research and the procedures that will be followed in order to use the data for scientific reasons, and those who accepted to take part of this research have signed the information template and the consent of involved person in the research. General data as, personal data of the patients are the initials of the name and last name, diagnose, date of birth, working experience, occupation, level of education, duration of illness, forced working position, if the pain is located along the leg, which leg, dominant side, were collected from the anamnesis of the patient. The patients were examined for the anxiety in the Psychiatric service within the IOM. The questionnaire Test Anxiety

Inventory (TAI) was used in relation to their personal assessment of how they felt in general. TAI test was developed by Spielberger (1980) (Spielberger C. D., 1980). The pain was measured with Visual Analog Scale (VAS), when starting with application of physiotherapy and after completing the first sessions for that patient. VAS was used in the manner of vertical vector with the height of 100 mm described as the highest peak or the highest level of the pain and the lowest level as the level without pain or 0 pain. Physiotherapy was applied at patients on individual basis at each patient in adopted manner depending on the needs and findings, it was based with the intention of managing the pain, increase of movement amplitude, increasing the force and flexibility of muscles, education of the patient for the prevention of repetition and techniques of raising balance in low back pain. The physiotherapy was applied according to the diagnose. The number of sessions of physiotherapy was determined by physiotherapist in cooperation with the patient. The number of session ranged from ? to ?. The physiotherapy was based according to the diagnose. In all diagnosis, the aim of the physiotherapy was for the patient to achieve performance in the best possible state, free of pain and without obstacles in all daily life activities.

The license for research was approved by the management of the IOM and afterwards by the Committee (board) for professional ethics at the Ministry of Health of Kosovo in 2016, the license holds the following number 04/2016 date 19.04.2016.

Selection criteria

To be considered for the study, patients had to have specific low back pain. If the patients had undefined low back pain or had different diagnosis, if they were pregnant, they were not considered to be part of this study.

Patients with low back pain who applied for physiotherapy at OMI and the ones who signed to be a part of research, were included in the study. Patie

Criteria to be excluded from the research

- The patients who had undefined low back pain or with differential diagnose.
- Pregnant woman,
- Illnesses of cardiac non-stability
- Vertebral fractures,
- Lumbar Arthrodesis or lumbosacral.
- Methods for statistical data processing,

For variables that in measurable intervals are compatible there will be set.

Basic statistical parameters arithmetic mean (X), standard deviation (SD), variability coefficient (V), minimal result (MIN), maximum result (MAX) ;

- Assymetry skewness of result distribution
- Extension, repsectively - kurtosis of result distribution;
- Method Kollmogorov-Smirnov for testing normality of distribution of results (KS)
- In remaining variables following will be applied:
- frequency;
- percentage (%);

The data will be processed with statistical packages SPSS for Windows Version 22.0 and STATISTICA for Windows Version 10.0.

Results

Table 1.Descriptive statistic and normality of distribution on variables of whole sample

Variables	N	Mini	Max	Mean	SD	CV	s.e.	Skewn	Kurtos
ITS	63	30.00	66.00	44.70	9.56	21.38	1.20	0.56	-0.64
Pain beginning treatment	63	3.00	10.00	7.65	1.81	23.61	0.23	-0.19	-0.86
Session therapy	63	5.00	21.00	10.76	3.05	28.36	0.38	1.36	3.12
Pain end treatment	63	0.00	6.00	2.14	1.78	82.91	0.22	0.37	-1.02
ITS	63	30.00	66.00	44.70	9.56	21.38	1.20	0.56	-0.64

Table 2.

	ANXIETY			Total
	NORMAL	ANXIETY	HIGH LEVEL OF ANXIETY	
HERNIATED DISC	5 71.4%	2 28.6%	0 0.0%	7 100.0%
LUMBOISCHIALGIA	19 40.4%	22 46.8%	6 12.8%	47 100.0%
CHRONIC SYNDROMELUMBAR	4 44.4%	5 55.6%	0 0.0%	9 100.0%
Total	28 44.4%	29 46.0%	6 9.5%	63 100.0%

$\chi^2 = 4.00 p = .405$

Table 2 presents the relation of level of anxiety and diagnosis of low back pain. With χ^2 test we didn't find any statistically significance.

Table 3.

	Frequency	%
NORMAL	28	44.4
ANXIETY	29.00	46.0
HIGH LEVEL OF ANXIETY	6.00	9.5
Total	63.00	100

Table 3 presents the frequency of anxiety at patients with low back pain. It is important to specified that 46% of them are qualified with Anxiety with TAI test.

Table 4.

	N	Mean	SD	F	sig
NORMAL	28	10.93	2.39	5.08	.009
ANXIETY	29	9.93	2.84		
HIGH LEVEL OF ANXIETY	6	14.00	4.77		

With the aim to establish whether the number of therapies is related with anxiety, one-factorial analysis of variance was applied. The results of the analysis of variance are shown in the Table 4. By reviewing the table, it can be seen that uni-variance statistical significant differences were established within the number of therapies and level of anxiety. (F=5.08; p=0,000).

Table 5.

(I) ANXIETY		Mean Difference (I-J)	Std. Error	Sig.	95% Confidence Interval	
					Lower Bound	Upper Bound
NORMAL	ANXIETY	.99754	.76002	.194	-.5227	2.5178
	HIGH LEVEL OF ANXIETY	-3.07143*	1.29047	.021	-5.6528	-.4901
ANXIETY	NORMAL	-.99754	.76002	.194	-2.5178	.5227
	HIGH LEVEL OF ANXIETY	-4.06897*	1.28654	.002	-6.6424	-1.4955
HIGH LEVEL OF ANXIETY	NORMAL	3.07143*	1.29047	.021	.4901	5.6528
	ANXIETY	4.06897*	1.28654	.002	1.4955	6.6424

With the aim to get additional information, the test post hoc test was applied (LSD-test) Table 5. Based on the obtained results from the test it can be seen that a group of respondents which were classified as HIGH LEVEL OF ANXIETY statistically significantly differs in average number of therapies comparing to the group defined as NORMAL and ANXIETY. Among the groups NORMAL and ANXIETY no statistically significant differences were established in average number of therapies. In the group classified as HIGH LEVEL OF ANXIETY the average number of therapies is higher comparing to the group classified as NORMAL and ANXIETY.

Table 6.

	N	Mean	SD	F	Sig
Pain beginning treatment					
NORMAL	28	7.96	1.77	.764	0.470
ANXIETY	29	7.38	1.92		
HIGH LEVEL OF ANXIETY	6	7.50	1.38		
Total	63	7.65	1.81		
Pain end of treatment					
NORMAL	28	1.11	1.17	15.792	0.000
ANXIETY	29	2.69	1.71		
HIGH LEVEL OF ANXIETY	6	4.33	1.37		
Total	63	2.14	1.78		

With the aim to determine whether the level of anxiety affects the intensity of pain in patients before and after physiotherapy treatment, one-factorial analysis on variance was applied. In Table 6, it can be seen that before the treatment there were not established statistically significant differences on level of anxiety and intensity of pain. In the Table x, it can be seen that after treatment there were established significant statistical uni-variance differences on variable intensity of pain. (F=15.792; p=0.000).

Discussion

Trend and tendency in treatment of pathologies requires multidisciplinary approach, Kamper SJ, et al. the cases when treatment of low back pain fails due to uncoordinated approach between health professionals, hence conservative treatment fails as well. They recommend multidisciplinary approach for adequate rehabilitation of problems with the low back pain (Steven J Kamper, 2014). Low back pain is a heterogeneous condition, their treatment may give significant improvement results, whereas the similar clinical syndromes will be determined as appropriate treatment guideless. (Hamilton Hall, 2009).

Low back pain is one of the leading causes of limitations of daily activities (disabilities), in comparison to other **conditions**. With the aging population, the importance of urgent research becomes more apparent in order to have an approach for the low back pain in various directions (Damian Hoy, 2014).

The anxiety influences the treatment of the patients with low back pain, according to William Shaw the conclusion is that based on the consistency of the study with valid measurements they represent the consistent data that psychological anxiety is increased in acute low back pain (William Shaw, 2016). These data are presented by Gatchel R, et al. where the conclusion is that psychosocial disability factors are linked to employee's injuries, injuries that influence the onset of low back pain (Robert Gatchel, 1995).

Karp J, et al. in their paper present the need of testing with specific tests for each patient with low back pain, given that the early link based on records must be placed in daily routine of application of these anxiety tests (Jordan F Karp, 2016). The same information is shown in our results where anxiety was present in patients with low back pain, the level of pain was visibly higher in the end of physiotherapy treatment, in addition to those whose level of anxiety was normal, the level of pain was much lower in the end of physiotherapy treatment for this pathology.

(Silje Endresen Reme, 2011) reached the conclusion that 31% of the population that have low back pain complaints fulfill the criteria that they had at least once a psychological disorder during the diagnostic examination. Whereas our results show that only 44,4% (according to TAI testing for anxiety) give the normal condition results, while 46.0 % as anxiety level and 9.5% as high level of anxiety. Thatjana O'Trocoli et al presents similar results to ours, out of all examined patients 41.5 % present condition without anxiety (normal), 24.6% present level of anxiety and differently from us they present the information that 33.9% present with high level of anxiety (Thatjana O'Trocoli, 2015). In their paper Gerrits Marloes et al. prove that patients with chronic pain are more prone to depression and anxiety problems (Marloes Gerrits, 2012). Aoife O'Donovan et al. in their paper present the effect of anxiety on inflammatory process and

reach the conclusion that the anxiety influences inflammatory activity and envisages the pathway through which anxiety increases the risk for inflammatory diseases (Aoife O Donovan, 2010), where acute low back pain is associated with inflammation of the surrounding tissue.

On the other hand, Kristina Janzen et al. in their paper cannot prove the influence of anxiety on low back pain, so they present that anxiety does not have any influence on low back pain (Kristina Janzen, 2016).

We have proven that the patients that have normal level of anxiety (NORMAL) show statistically lower values of pain intensity in comparison to the patients that have anxiety or high level of anxiety. Also, the interviewees with anxiety show lower statistical values of pain intensity in comparison to the interviewees that have high level of anxiety.

The rehabilitation process was easier in the patients with the level of anxiety, during their testing, with normal values, in addition to those with increased level of anxiety. Our main hypothesis is proven in our results that anxiety influences the rehabilitation of patients with low back pain.

Mareike R. in his research comes to a conclusion that psychological aspect of terminating employment contracts due to stress, presents high risk of developing the diseases and influences health (Mareike Reimann, 2017).

Conclusion

Anxiety influences the rehabilitation of low back pain, the patients who suffer from low back pain and have psychological problems such as anxiety, their level of pain prior and following the physiotherapy treatment remains without significant difference.

The patients who had positive signs of anxiety disorder, the level of pain description was much higher in comparison to other patients even following the treatment for relieving the pain.

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