RELATIONSHIP TO PHYSICAL TRAINING OF PERSONS WITH LUMBAL SYNDROME

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Abstract

Pain in the lumbar spine is one of the leading causes of temporary inability to work and is emerging as a common health problem. Studies conducted in the area of AP Vojvodina have shown that the incidence of lumbar pain is very present and is most pronounced in the population between 50 and 59 years of age (working age population). Primary prevention is predominantly geared toward appropriate (regular) exercise. In this context, particular attention should be paid to the back muscles that act to support the spinal column and play the role of maintaining its stability. In order to identify the perceptions of certain factors related to the individual attitude towards physical exercise of persons with lumbar syndrome, an empirical research was conducted in the area of AP Vojvodina. The sample consisted of persons diagnosed with lumbar syndrome (N = 202), who at the time of the interview were undergoing physiotherapy treatment in the offices of physical medicine and rehabilitation in four Vojvodina cities (Novi Sad, Subotica, Kanjiža and Backa Palanka). The applied research instrument was the Quality of Life Self-Assessment (PKZ-LS) scale, with expert judgment from physiotherapists. The results showed that people with LS have adopted habits that can be described as bad. In this context, the attitude towards regular physical exercise, as a preventive measure for the onset of LS, may also be considered inadequate.

Key words*: physical exercise, lumbar syndrome, life habits.*

Introduction

Modern kinesiological science has defined the conceptual and essential definition of physical activity as the manifestation of any movement of the body resulting from the contraction of transverse-striped muscles and leading to energy consumption (Radić, 2016). On the other hand, physical exercise (as a narrower term in the structure of physical activity) is a thoughtful, planned realization, goal-oriented and time-limited explication of various forms of physical activity.

From a research point of view, it is important to keep in mind the space in which physical activity and exercise are manifested. The so-called "population physical activity" (Lee, Blair, Manson & Paffenberger, 2009) is most dominant manifested and realized in leisure time, but also in the framework of individual work engagement, home activities, travel, etc. (WHO, 2009). The most pronounced manifestation of physical exercise is during leisure time. Physical activities that take place in leisure time are usually conditioned by the personal interests, interests and needs of individuals. So, in this context can be understood as organized, partially organized or free sports and / or sports and recreational activities, but also walking, cycling, dancing, folklore, gardening, various forms of active tourism, etc. They have in common what they bring to significant energy consumption (regardless of the possibility of varying intensity and duration) (Howley, 2001).

Some current studies (Myint et al., 2007; Međedović, Perić & Ahmetović, 2013) have pointed to the low level of physical and work ability of modern man, which as a consequence has an adverse effect on his health. The so-called causative agent has been declared so-called. A "morbogenic triassic factors" that includes: hypokinesia, obesity, and stress overload. Increasing the level of physical activity and adopting proper nutritional habits are two of the most frequently emphasized tasks in the recommendations of health and kinesiology institutions (Nesic, Peric, Ahmetovic & Zubanov, 2014). Therefore, physical inactivity (as a current problem of modern man) can basically be referred to as the absence of regular / daily physical activity. It poses a major public health problem today, both in the world and in Serbia (Blair, 2009; Kohl et al., 2012; Radić, 2016). According to World Health Organization standards, minimum criteria for regular physical activity are: 30 minutes of moderate physical activity at least five days a week, 20 minutes of intense physical activity at least three days a week, or a combination of moderate or intense physical activity of 600 metabolic equivalents (MET) per week (Radić , 2016). Unlike

the European average, where 35% of people are physically inactive (Hallal et al., 2012), in Serbia only 9% of people regularly exercise (at least three times a week) (Group of authors, 2014).

Pain in the lumbar spine is one of the most common health problems of today and is considered to be one of the leading causes of temporary inability to work (Mačak-Hadžiamerović, Čustović-Hadžiimuratović & Mujezinović, 2009). Some epidemiological studies (Bozic, 2017) have shown that the incidence of lumbar pain is very prevalent in Vojvodina and is most pronounced in the population between the ages of 50 and 59 (Nešić et al., 2018). To date, many studies have addressed the issue of body posture assessment and have been conducted to detect deformities in the physical position of children and adults by selecting the best indicators and evaluating the reliability of these procedures (Skender, 2001; Skender and Kendic, 2002). Low Back Pain Syndrome (LBP) is best known for acute back pain. The main cause is a slipped intervertebral disc that exerts pressure on the nerve root but also overloads the discs and vertebrae (Pengel, Herbert, Maher, & Refshauge, 2003). The frequent occurrence of LBP is linked to the modern way of life and work. The age of modern economics and information technology has led to a decline in human movement and, in general, of physical activity, so that since Homo erectus, the present man is increasingly becoming Homo sedens (Pranjić & Maleš-Bilić, 2015). Seen in the context of professional work, it predominantly occurs in persons who perform their work mainly in a sitting position (officials, administrators, IT operators, etc.), and pain occurs as a result of pressure of the upper body on the thoracic and lumbosacral parts of the spine during sitting (due to improper long sitting position, the back muscles and intervertebral discs, and in addition the tendons and joints, are much more stressed). Insufficient physical activity is considered a major cause of muscle weakness in this region (Da Costa, 2010).

Recent studies done abroad show that at least 60% of the country's population has lumbar pain at least once in a lifetime, with relapses occurring in at least 50% of patients undergoing medical treatments (Middleton & Fish, 2009; Barkhordari, Halvani & Barkhordari, 2013). In this sense, there is almost a consensus in the professional world that lumbar syndrome, because of its negative effects on physical and mental health, is a major socio-economic problem for any society (Karahan & Bayraktar, 2004; Nešić et al., 2018).

Primary prevention of lumbar syndrome is predominantly geared toward appropriate (regular) exercise (Henewer et all, 2011). Physical deformities and motor abilities are brought into a strong negative relationship, and for the correction of certain physical deformities, it is precisely those exercises that have the strongest connection with these physical deformities (Skender, 2001). Particular attention should be paid in this context to the back muscles, which act to support the spinal column and play the role of maintaining its stability. Insufficient power of the spinal muscles (especially m. Erector spinae and m. Multifidus) can lead to the onset of lumbar pain, ie they are the cause of frequent recurrent painful conditions (Lee et all, 2012; Nešić et al., 2018; Lepet et al., 2018) .

Methods

From a methodological point of view, this research can be considered as a non-experimental empirical study. The aim of the research was to identify the perceptions of individual factors related to the individual attitude towards physical exercise of people with lumbar syndrome.

The sample of the research entities consisted of a total of 202 respondents (M = 93; F = 109), persons with lumbar syndrome, who at the time of the survey were undergoing physical therapy at the Physical Medicine and Rehabilitation Offices in four Vojvodina cities (Novi Sad, Subotica, Kanjiža and Backa Palanka).

The empirical data were collected through a survey, and the research variables that made up the construct of the first part of the questionnaire were defined through 15 items of indicators and included spaces: a) independent variables (gender, age and working status) and b) dependent variables (12 items in total) were related to the subject matter of the research and were edited as nominal attribute sizes). The second part of the instrument consisted of the Self-Assessment of Quality of Life Scale for Persons with Lumbar Syndrome (PKŽ-LS - Perceptions of Quality of Life for Persons with Lumbar Syndrome) (Nešić et al., 2018). For the purpose of this paper, 12 items from the first part of the questionnaire and four indicators of PKZ-LS scale related to the domain of self-assessment of physical health will be treated.

Statistical processing of empirical material was predominantly performed by descriptive statistical procedures adapted to the nature of the data (frequency distribution and standard deviation). For variables arranged in the form of nominal scales, a comparative contingency analysis procedure, Chi-square test (Chi Square), was applied. Spearman's rank correlation (Spearman's rho) was used to determine the correlation between the variables. All statistical inferences were derived with a significance level of 0.05 ($p <, 05$).

Results and discussion

The nature of the empirical data has enabled us to analyze the results obtained through two research segments. The first, the characteristics of the sample, which allow a broader (implicit) insight into the context and possible factors of the relationship to physical exercise. And another, which explicitly refers to certain life habits that are related to the perception of importance and the immediate exercise of physical exercise.

The sample of the respondents is characterized by the fact that they are dominated by women (54%), while in terms of age, the total sample ranges from

18 to 73 years of age (average age is 47.5 years). The highest percentage refers to employed persons (62.9%), followed by pensioners (20.3%), while the lowest percentage is observed in the category of unemployed persons (16.8%) (Table 1). Among employees are also dominated by women (34.7%), while a slightly higher percentage of men (10.9%) are retired (Table 2). Such distribution of sample characteristics in the space of independent variables shows that the respondents belong to the average population of people who have health problems in the form of lumbar syndrome. These results are in correspondence with previous studies suggesting that LBP is most prevalent among the middle-aged working population as well as the elderly (Middleton & Fish, 2009; Kuijer et all., 2014; Pranjić & Maleš-Bilić, 2015) . In our study, this was confirmed by empirical data at the level of statistical significance (Sig. = .000).

***Table 1**: Sample characteristics - years of life and working status*

Working status	Age				Σ
	18-35	36-50	50-60	over 60	
Employed	37	41	42	7	127
	18.3%	*20.3%*	*20.8%*	*3.5%*	*62.9%*
Idle	14	9	9	2	34
	6.9%	*4.5%*	*4.5%*	*1.0%*	*16.8%*
Pensioner	0	0	2	39	41
	0.0%	*0.0%*	*1.0%*	*19.3%*	*20.3%*
Σ	51	50	53	48	202
	25.2%	*24.8%*	*26.2%*	*23.8%*	*100.0%*

Chi Square = 142.301 Sig. = .000

Table 2: Sample characteristics - gender and job status

Working status	Gender		Σ
	Men	Women	
Employed	57	70	127
	28.2%	*34.7%*	*62.9%*
Idle	14	20	34
	6.9%	*9.9%*	*16.8%*
Pensioner	22	19	41
	10.9%	*9.4%*	*20.3%*
Σ	93	109	202
	46.0%	*54.0%*	*100.0%*

Chi Square = 1.348 Sig. = .510

As the largest number of respondents was in the category of employees, the research variables focused on the characteristics of the workplace, that is, the predominant position that the respondents occupy during the day in performing daily activities. It was found that the majority of them perform their business activities mainly in a sitting position (43.5%), then on the move (35.1%), while 19.3% of respondents work or are engaged in a predominantly standing position daily. This points to the fact that most persons in this research coverage are daily exposed to the potential risk of developing or worsening the condition of LBS. As for persons already established for the existence of lumbar pain syndrome, no statistically significant differences were observed in the incidence of painful episodes in relation to the characteristics of physical activity during the day / work (Chi Square = 6.531; Sig. = .163).

Regarding the incidence of painful episodes, the majority of respondents (55.9%) reported occasional episodes, although the number of people with relapses often or very often did not occur. This is especially manifested in persons with this disease for a long period of time (two years or more). Which covers more than half of the survey entities (62.4%). These differences in distribution were also found at the level of statistical significance (Sig. =, 000) (Table 3).

Table 3: Sample characteristics - period of difficulty and incidence of LBP

Back pain	Period of trouble				
	less than 6 months	About a year	2-5 years	more than 5 years	Σ
Oc Ocasionally	32	32	26	23	113
	15.8%	*15.8%*	*12.9%*	*11.4%*	*55.9%*
Often	4	4	21	19	48
	2.0%	*2.0%*	*10.4%*	*9.4%*	*23.8%*
Very often	0	4	10	27	41
	0.0%	*2.0%*	*5.0%*	*13.4%*	*20.3%*
Σ	36	40	57	69	202
	17.8%	*19.8%*	*28.2%*	*34.2%*	*100.0 %*

Chi Square = 50.314 Sig. = .000

When the previous tendency is viewed from the perspective of the age of persons with LBP, it is observed that the subjects with occasional painful episodes are dominated by persons between 35 and 60 years of age. Therefore, the dominant word is of the working active part population and in our research this is at the level of about 1/4 of the sample. However, the result that indicates the frequency of painful episodes at the level is often very often more pronounced (more than 1/3 of the sample) in the age range of radon active individuals. Such tendencies were also detected at a statistically significant level (Sig. =, 000) (Table 4). This finding is also supported by research data that more than half of the respondents (55.4%) repeatedly undergo treatment in appropriate physical medicine institutions

Table 4: Sample characteristics - period of hardship and years of life

Back pain	Age				Σ
	18-35	36-50	50-60	over 60	
Occasionally	42	34	23	14	113
	20.8%	*16.8%*	*11.4%*	*6.9%*	*55.9%*
Often	9	5	17	17	48
	4.5%	*2.5%*	*8.4%*	*8.4%*	*23.8%*
Very often	0	11	13	17	41
	0.0%	*5.4%*	*6.4%*	*8.4%*	*20.3%*
Σ	51	50	53	48	202
	25.2%	*24.8%*	*26.2%*	*23.8%*	*100.0%*

Chi Square = 51.225 Sig. = .000

The second part of the analysis was related to the identification of certain aspects of respondents' life habits that could be related to their relationship to the detected presence of LBP. In this regard, it was found that the majority (74.8%) during and after the physiotherapy treatment of LBP are acquainted with the techniques and principles of the application of corrective-protective kinesitherapy procedures (exercises). However, only 20.3% adhere to the doctor's instructions (regular exercise) after recovery ("healing" painful episodes). The majority of them declare that they exercise occasionally (47%) with only one shorter period after treatment (the most common interpretation is "while forgetting a painful episode"), while 1/3 of the respondents generally apply scientific corrective-preventive exercises after the end of treatment. Empirical data are also reported at a statistically significant level of distinction between categorical variables (Sig. =, 000) (Table 5).

Table 5: *Relationship to LBP prevention*

Learned kinesitherapy exercises		Regularity of application of exercise			
		Everyday	Occasionally	Almost never	Σ
	Yes	36	85	30	151
		17.8%	*42.1%*	*14.9%*	*74.8%*
	No	5	10	36	51
		2.5%	*5.0%*	*17.8%*	*25.2%*
Σ		41	95	66	202
		20.3%	*47.0%*	*32.7%*	*100.0 %*

Chi Square = 44.627 Sig. = .000

The attitude of most respondents to activities that may contribute to the prevention of LBP and / or reduce the incidence of painful episodes (thereby affecting quality of life) can be seen in the context of their life habits. More specifically, attitudes toward exercise as a regular / daily activity. It was observed that the majority of respondents (60.3%) have an inactive attitude towards physical exercise (recreation), which implies the conclusion that they do not exercise in everyday life (Table 6). Which is in correspondence with the previous finding of (not) appropriate preventive kinesitherapy exercises after the treatment stages of painful episodes of LBP.

Table 6: *Relation to an active lifestyle*

Self assessment (attitude about yourself)	**Age**				Σ
	18-35	36-50	50-60	over 60	
Antisportist	7	15	13	19	54
	3.5%	*7.4%*	*6.4%*	*9.4%*	*26.7%*
Passive sports fan	11	9	22	10	52
	5.4%	*4.5%*	*10.9%*	*5.0%*	*25.7%*
Sports type only on words	6	5	3	2	16
	3.0%	*2.5%*	*1.5%*	*1.0%*	*7.9%*
Moderate recreationalist	18	15	15	15	63
	8.9%	*7.4%*	*7.4%*	*7.4%*	*31.2%*
Strong recreational	6	5	0	2	13
	3.0%	*2.5%*	*0.0%*	*1.0%*	*6.4%*
Active athlete	3	1	0	0	4
	1.5%	*0.5%*	*0.0%*	*0.0%*	*2.0%*
Σ	51	50	53	48	202
	25.2%	*24.8 %*	*26.2%*	*23.8%*	*100.0%*

Chi Square = 32.649 Sig. = ***.005***

As a confirmation of the previous analysis, it is necessary to add the detected answers of the respondents on the exercise of regular walking, which is recommended as one of the best activities in the prevention of LBP (especially in the middle and elderly population). It is observed that most respondents (68.8%) walk very little (sometimes / only on weekends or almost never) in the context of the recommended daily "dose" of at least 60 minutes continuously (WHO, 2009). Thus, the (conditionally) negative relationship to this useful activity for the prevention of LBP appears evenly distributed in the total sample (no statistically significant difference with respect to age category; Sig. =, 550) (Table 7).

Table 7: *Level of daily hicking activity of respondents of different ages*

Daily hiking	Age				Σ
	18- 35	36-50	50-60	over 60	
Every day	9	5	9	6	29
	4.5%	*2.5%*	*4.5%*	*3.0%*	*14.4%*
2-3 times a week	10	10	6	8	34
	5.0%	*5.0%*	*3.0%*	*4.0%*	*16.8%*
Weekends only	7	7	2	4	20
	3.5%	*3.5%*	*1.0%*	*2.0%*	*9.9%*
Occasionally	17	17	27	18	79
	8.4%	*8.4%*	*13.4%*	*8.9%*	*39.1%*
Never	8	11	9	12	40
	4.0%	*5.4%*	*4.5%*	*5.9%*	*19.8%*
Σ	51	50	53	48	202
	25.2%	*24.8%*	*26.2%*	*23.8%*	*100.0%*

Chi Square = 10.759 Sig. = .550

Inadequate personal relation to physical exercise is also evidenced by the empirical data recorded in the context of the identification of exercise / fitness programs in fitness centers / clubs. It is clearly observed that there is an almost absolute negation of this type of opportunity for recreational-preventive and / or corrective exercise, since more than 2/3 of the respondents stated that they never exercise in such and similar organizational entities (72.3%). Only a minority (12.8%) use such opportunities for physical activity on a regular basis (every day or 2-3 times a week). In this regard, statistically significant differences were observed between the responses of the respondents of different criteria strata (Sig. =, 000) (Table 8). This further confirms the findings to date of poor attitudes towards regular physical exercise in the persons surveyed.

Table 8: *Using Fitness Exercise Centers in leisure time activities for respondents of different ages*

Exercising at the Fintes Center		Age				
		18-35	36-50	50-60	over 60	Σ
	Every day	10	1	0	0	11
		5.0%	*0.5%*	*0.0%*	*0.0%*	*5.4%*
	2-3 times a week	7	7	1	0	15
		3.5%	*3.5%*	*0.5%*	*0.0%*	*7.4%*
	Occasionally	15	7	6	2	30
		7.4%	*3.5%*	*3.0%*	*1.0%*	*14.9%*
	No	19	35	46	46	146
		9.4%	*17.3%*	*22.8%*	*22.8%*	*72.3%*
Σ		51	50	53	48	202
		25.2%	*24.8%*	*26.2%*	*23.8%*	*100.0%*

Chi Square = 62.124 Sig. = .000

In this contextual ambient of the attitude towards exercise, it was necessary to determine how respondents generally perceived their quality of life (taking into account the time point at which they were interviewed - the LBP stages during and immediately after the treatment of painful stages). For the purposes of this text, only part of the PKZ-LS scale (insert from the Physical Health subscale) was taken into account in the premises: the level of daily physical activity, the regularity of engaging in sports and recreational activities, physical fitness and overall health). These four subdomains of the PKZ-LS scale were (analytically) treated as a single mini scale. Based on the scalar averages (for each indicator individually, as well as the mini-scale as a whole), it can be concluded that the respondents perceive their quality of life relatively on average. What stands out, which can be considered as correspondent with the previously analyzed and observed inappropriate attitude towards physical exercise, are the results on the scale for indicators of regularity of sports and recreational activities (Sv = 4,00) and physical fitness (Sv = 5,00) showing tendencies of orientation toward low (negative) scalar intensity values. Also, the self-assessment of the level of daily physical activity can be related to the previous two indicators, since a relatively low intensity of the scalar position was observed in it (Sv = 5.58). Only self-reported health as a whole is expressed by a slightly more moderate level of positive scalar rank (6.11). On the whole, they experience their physical capacities relatively average, and this distribution is certainly caused by the fact that at the time of the research there were reduced health capacities (conditions during and immediately after the activation of LBP) (Table 9).

Table 9: Quality of Life Self-Assessment Scale - Body Health Subscale

Indicator	N	Sv
Level of daily physical activity	202	5.58
Regularity of engaging in sports and recreational activities	202	4.00
Self-assessment of physical fitness	202	5.00
Self-assessment of health as a whole	202	6.11
Σ		5.17

The results obtained can also be interpreted in the direction of confirming the dominant positions in recent studies that talk about the link between quality of life and health as a whole in people with LBP. In our study, the association of perceived quality of life with the presence (frequency) of painful episodes was determined at the level of mean values of negative correlation (Table 10). Which suggests that the painful conditions of LBP and, in general, the presence of lumbar syndrome can affect the perception of quality of life for people. It can be argued that people with LBP more positively experience their overall quality of life (and thus their physical health) in periods without LBP problems / pain.

Table 10*: Correlation of indicators of physical health and painful conditions of LBP*

Indicator	Back pain	Sig.
Level of daily physical activity	-.251**	.000
Regularity of engaging in sports and recreational activities	-.439**	.000
Self-assessment of physical fitness	-.401**	.000
Self-assessment of health as a whole	-.377**	.000

**Spearman's rho – correlation significant at 0.01

Modern medical science has established that there is a wide variety of causes that lead to the onset of lumbar pain. It is considered that there are currently about 30 different pathogens that can be observed through widespread distribution in terms of health, social, work-ergonomic, bio-physiological and other factors that create the preconditions for

the emergence of LBP. Globally, about 80% of people are at least once in their lifetime experiencing pain in the lumbar spine (Bukvic & Jevtic, 2013). Non-physiological positions where people spend most of their time during the day, whether working or leisure (long sitting, reduced movement, driving a car, working in an office, improperly lifting and carrying loads, working in a bent) are considered to be the most dominant risk factor. position, prolonged work with arms above shoulder height, etc.), which has a negative impact on the entire locomotor apparatus (especially the spinal column) (Ostelo et all., 2008). It is important to emphasize that the problem of LBP is significantly compounded by the fact that this disease is prone to frequent relapses, so that in addition to health, it has a very high socio-economic dimension (Manchikanti et all., 2008).

When considering the problem of lumbar syndrome, it is necessary to take into account the working conditions to which persons with LBP are exposed, that is, the risk factors associated with the characteristics of the workplace. Generally, the risks in a random environment can be divided into four groups of so-called risk factors. occupational hazards: (a) physical (working conditions, especially those which cause irregular static or dynamic position of the body), (b) mechanical (caused by movements or manipulations of certain parts of the body, arising from the requirements of technological workplace processes), (c) biological (exposure to chemical-bacteriological sources of danger; workplace environments, etc.) and (d) climatic (working in warm or cold environments, in traffic, rain, sun, etc.) (Hofman et all., 2002; Al Dajah & amp; Al Daghdi, 2013; Christmas, 2017).

Since LBP is a disease that significantly impairs people's work capacities and thus affects the overall quality of life, it is necessary to have knowledge (knowledge) of ways to "combat" its occurrence. The best way, of course, is prevention. The implementation of various preventive measures should primarily focus on reducing the incidence of lumbar pain (both in the workplace and in everyday life activities), thus preventing the onset of disability and permanent impairment of work capacity. Knowledge is a key factor in the prevention space. Possessing knowledge and corresponding behaviors can have a preventative effect on the onset of pain or until it is eliminated in the painful stages of LBP (Christmas, 2017). In this context, account should be taken of: (a) primary prevention (strategies to prevent the onset of LBP predominantly based on knowledge and recognition of risk factors) and (b) secondary prevention (strategies applied during painful stages of LBP; knowledge of therapeutic measures; life and work regimes, changes in life habits, so-called protective positions, etc.) (Mačak-Hadžiamerović, Čustović-Hadžimuratović & Mujezinović, 2009; Yilmaz & Dedeli, 2012).

In recent years, there has been a growing correlation between kinesiology and medical science in terms on the role consent and importance of physical activity. Primarily regarding LBP prevention, but also in the treatment and rehabilitation processes of patients. It has been found that daily physical activity of moderate intensity for 30 minutes can prevent the onset of lumbar syndrome (Yip, 2004). Regular physical exercise (especially with the use of stretching exercises), among other things, increases the mobility of the spinal column, strengthens the corresponding muscle regions of the spine, and thus prevents the occurrence of painful episodes. Some research (Tavafian et all. 2007; Ribeiro et all. 2008) shows that regular exercise of specially created exercise programs can effectively influence the prevention of LBP. These are programs aimed at employees and aimed at strengthening the lumbar extension and basic spinal stabilizers (m. Transversus abdominis, m. Oblique abdominal, m. Multifidus, m. Quadratus lumborum and m. Erector spinae). In this sense, the statement can be made that the primary prevention of lumbar syndrome is, in the first place, directed towards adequate regular physical exercise (Henewer et all, 2011), that is, adopting lifestyle habits that are classified as active lifestyles (Nešić et al., 2014). Preventive measures are, in essence, the simplest and most economical form of "fighting" with LBP. Unfortunately, in practice, it is noticeable that the majority of people who have lumbar spine problems do not adhere to them (despite explicit instructions from a physiatrist during and after treatment). Also, patients use the services of qualified practitioners for physical training and / or kinesitherapy very little. Failure to exercise or self-initiated exercise without proper planning, dosing and control most often seems counterproductive (Lepet et al., 2018; Nešić et al., 2018).

Conclusion

The results of this research can be considered as being quite consistent with recent data on the health status of the population of Serbia (Stojadinović et al., 2013). Viewed in the context of one of the determinants of health (physical activity), there is a clear similarity with the general population in terms of attitudes toward physical activity and exercise. Specifically, public data indicate that only 8.8% of Serbian residents engage in regular physical activity (at least three times a week), and only about 11% exercise at least 90 minutes during the week with fitness or other forms of recreation. In addition, only 4.8% of the citizens of Serbia exercise physical exercises aimed at strengthening their muscles. In such an environment of life habits, it should not be surprising that people with LBP have, it is safe to say, an inadequate attitude towards physical exercise. In our study, this was identified by a high percentage (60.3%) of those who do not recognize regular and continuous physical activity in their life habits. As a consequence of this attitude, an inappropriate attitude towards physical exercise as a measure of prevention from the onset of painful conditions of lumbar syndrome is noticeable. In

support of the negative context is the research data that the majority of patients after physiotherapy treatment (79.7%) do not continue on their own with regular exercise of the recommended kinesitherapy exercises.

In the opinion of experts in the field of physical medicine and rehabilitation (consulted during this study), the main factors influencing the presence of LBP (in Vojvodina population) are based on the following facts from medical practice:
- that among patients with diseases of the locomotor apparatus are dominated by people with LBP (about 70%);
- the most dominant causes of lumbar syndrome are the characteristics of the workplace and poor living habits;
- the most risky part of the population is the working-age population (predominantly persons above the age of 40);
- that the percentage of patients dominated is: 70% of working age versus 30% of pensioners;
- that the incidence of relapse occurs in most patients, and that the acute form of LBP most often becomes chronic;
- that the basic cause of relapse was recognized by non-adherence to medical advice and continuation of old (bad) life habits, as well as inconsistency in the regular application of learned corrective-preventive exercises;
- that apart from individual (isolated cases) there is no cooperation at all between physiotherapy offices and fitness clubs (or experts in kinesiology).

In the light of these findings, it can be concluded that the keyword (which can initiate positive shifts in the population of Vojvodina in terms of lifestyle change and thus prevention of LBP) refers to knowledge. That is, constant education and informing about healthy lifestyles, especially attitive lifestyles.

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