

# Social Support and selected preventable lifestyle Determinants in People with vertebrogenic Difficulties

K. Supolová (Katarina Supolová)<sup>1,2</sup>, D. Barkasi (Daniela Barkasi)<sup>1</sup>,  
R. Barta (Richard Barta)<sup>1</sup>

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<sup>1</sup> St. Elizabeth University of Health and Social Sciences, Bratislava, Slovakia.

<sup>2</sup> National Rehabilitation Center Kováčová, Slovakia.

## E-mail address:

supolova.katarina@gmail.com

## Reprint address:

Katarina Supolová  
Bakossova 3E  
974 01 Banská Bystrica  
Slovakia

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Michael Costello  
University of Scranton school of education, USA  
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## Abstract:

**Introduction:** Up to 80% of the population has encountered back pain in some form in their life. Back pain is among the 5 most common reasons for hospitalization and is the main cause of sick leave for people over 45 years of age. This has significant consequences for the entire society.

**Research aim and objectives:** Our research included patients of the National Rehabilitation Center Kováčová who were undergoing active rehabilitation treatment due to vertebrogenic problems. All respondents had demonstrable structural changes in the area of the lumbar spine, and around 80% of respondents had already undergone one or more lumbar spine surgeries. Our goal was to determine the relationship between the mentioned difficulties and physical activity, weight as well as the perception of social support.

**Methods:** We used a self-constructed questionnaire focused

on selected socio-demographic data and identification of eating and exercise habits. In addition, we used a standardized questionnaire titled “the Multidimensional Scale of Perceived Social Support”.

**Results:** The analysis confirms that overweight, obesity and a lack of physical activity are related to structural changes and increased persistence of back pain. Inadequate dietary measures and insufficient physical activity directly contribute to this. Social support has a positive effect on enduring and coping with this difficult situation.

**Conclusion:** Back pain affects almost our entire population. Therefore, it is important to address this issue, especially if prevention is possible by optimizing weight and doing adequate physical activity. We must also not forget those who are going through a difficult life period due to long-term pain and give them a helping hand and support.

### Biography of the first author

I graduated from the Jessenius Faculty of Medicine at the Comenius University in Martin in 2012. I subsequently worked as a doctor at the KPAIM Children’s Faculty Hospital. Since 2015, I have been working in psychiatry, balneology and medical rehabilitation at the Kováčová National Rehabilitation Center. I passed the attestation exam in the given field in 2020. I am currently a doctoral student at VŠZaSP of St. Elizabeth. I regularly attend interdisciplinary conferences as an active participant.

### Introduction

Spine disorders are one of the most frequently occurring diseases. Up to 80% of the population has encountered back pain in some form in their life. Non-specific back pain with no obvious cause can be hidden under vertebrogenic problems. This makes up 90-95% of all occurrences of back pain. Incorrect movement stereotypes and associated long-term and disproportionate overloading of the musculoskeletal system contribute to their formation. If this condition persists, structural changes including disc damage, a change in position and overload, and subsequent structural changes in the vertebrae may occur.

### Preventable factors of back pain

Risk factors for back pain include individual (age, physical condition, weight), psychosocial (excessive stress, negative emotions, depressive moods) and professional causes (unilateral load-

ing, load lifting). We can modify and change some of these risk factors through our efforts. Preventable lifestyle factors include overweight and obesity, as well as individual physical activity.

**Obesity** is a chronic, preventable and relapsing disease. As for the prevalence of overweight and obesity in European countries, it is at the level of up to 50% of the adult population. With the increasing trend of obesity, the number of its complications also increases. Mechanical complications are directly related to excessive weight and the subsequent increased load on the musculoskeletal system. This increases the load on the joints from the biomechanics point of view and leads to increased depreciation. However, as Fabryová (1) states, fat tissue is a metabolically active organ, thus coagulation and fibrinolysis disorders and systemic subclinical inflammation can occur.

At present, human **physical activity** is at a low level, which affects both physical and mental health. Movement itself has a preventive effect on many diseases. In its recommendation for physical activity and sedentary lifestyles, the WHO recommends 150-300 minutes of moderate-intensity aerobic physical activity per week for adults (2). Other authors recommend a certain number of steps per day, and some prefer a step cadence. However, as the WHO emphasizes, it is important to do at least some activity, because it is always better than not exercising at all. Regular physical activity not only affects physical health and well-being, but it also has a positive effect on the mental health of the individual.

## Social support

As a result of difficulties in the physical area, there is also a change in the psychological area. Limitation caused by pain can incite changes at work, causing a person to stay at home or be constrained in movement due to accentuated discomfort. Thus the social status of the individual also changes and they have to learn to function in new conditions. Social support is helping a person cope with difficult and unfavorable life situations. Social support is about giving and receiving help. Žilová (3) distinguishes the following forms of social support: emotional support - based on empathy, informational support - providing information about a new life situation, and instrumental support - providing material assistance. Some types of social support can also be provided by the management of the facilities where the individual works (4). The higher the level of social support, the easier it is for a person to manage a difficult life situation, which also has a positive effect on mental well-being.

Community activities based on the joint efforts of its members for a healthy lifestyle are beneficial for their members in terms of strengthening physical and mental resistance. Thanks to professional leadership and long-term relationships, they provide their members with a base that can potentially improve the quality of life of individual community members and ease the burden, especially when it comes to primary care (5).

## Research goal

Our goal was to highlight the relationship between physical activity and weight in people with vertebrogenic problems. We analyzed the BMI index, eating habits and the level of physical activity of people with demonstrable structural changes in the area of the lumbar spine. The chronification of pain leads to a change in the quality of life, which is why we investigated the perceived social support in these individuals.

## Collection and methodology

Our research group consisted of patients of the National Rehabilitation Center who were hospitalized in the facility during the months of August-September 2022. Two questionnaires were used. The first one was self-constructed, focusing on selected socio-demographic data, iden-

tifying eating and exercise habits, as well as the BMI value. The second one was the standardized questionnaire titled the Multidimensional Scale of Perceived Social Support that was compiled by the authors Zimet, Dahlem and Farley (1988). These were patients with vertebrogenic problems in the area of the lumbar spine. There were 30 patients in total. There were 12 female respondents, which represents 40%. 18 respondents were male, i.e., 60%. In all our patients, there were structural changes in the area of the spinal vertebrae. In 6 patients, i.e., 20%, surgical treatment had not yet been indicated. However, the remaining 80% of respondents had already completed surgery in the area of the lumbar spine. More than half of all patients (56.7%) had already undergone one surgery. And 7 patients (23.3%) had already undergone 2 or more surgeries.

## Results

Our hypothesis was that the relationship between higher weight and worse eating habits is related to vertebrogenic problems. As for eating habits, only 5 respondents (16.7%) followed a diet in order to reduce weight. 10 individuals tried to eat moderately. Up to 50% of all respondents did not follow any diet or limit their eating. When we look at the distribution of our probation group according to BMI index values, we note the following: None of the respondents suffered from malnutrition, and 9 people had a weight in the normal range, representing 30% of the participants. Almost half of our sample suffered from being overweight, specifically 13 participants, accounting for 43.4%. 6 people, that is 20%, had obesity of the first degree. 1 respondent suffered from obesity of the second and third degree. In total, around 70% of those interviewed were overweight or obese to varying degrees. When we look at the length of time the patients had suffered from pain, 9 participants (30%) had had pain for less than one year. 7 interviewees had had pain for one to five years (23.3%). 46.6%, i.e., 14 individuals, had suffered from pain for more than five years. Our respondents were divided into 3 categories based on age. There were 5 respondents aged 21-40, 11 respondents in the 41-60 age category and 14 respondents in the 61-80 age category. When we asked the participants how often they perform any form of physical activity, the answers were

as follows: Only 3 interviewees stated that they do not exercise or perform any physical activity at all. Almost half, i.e., 14 respondents (46.6%) admitted to occasionally doing physical activity. A total of 13 interviewees reported regular physical activity. Of these, 7 respondents (23.4%) indicated the frequency of physical activity as being one to two times a week. Regular exercise three to five times a week was reported by 20% of respondents, totaling 6 people. In the open question to specify which physical activity they were involved with, more than half, 18 participants (60%), mentioned walking. There were also interesting answers such as stretching, strength training, climbing and volleyball. When evaluating the effect of active rehabilitation treatment, 4 interviewees (13.4%) declared a decrease in their difficulties. 17 respondents (56.7%) described a reduction of difficulties, but they persisted at a lower intensity. 13 participants (43.3%) indicated only a partial reduction of the mentioned difficulties after completing the rehabilitation treatment.

Based on the evaluation of the social support questionnaire, the level of perceived social support was at a relatively high level. The minimum value was 18, and the maximum was 84. On average, the total level of perceived social support was at the level of 72.5. The perception of social support based on the duration of the difficulties was also interesting, where the highest social support was perceived by individuals who had suffered from pain for less than a year (79.8). However, when the pain had persisted for 1-5 years it dropped to 72.6, and when the pain had persisted for more than 5 years, there was a re-increase in the perception of social support to 74.9. When choosing the group from which the respondents perceived the highest level of social support, the first place was represented by family (6.3), followed by friends (5.95) and finally significant others (5.85). Regarding the level of perception of social support according to marital status, married people (76.4) had a significantly higher rate compared to widowed (65.1), single (59) and divorced people (49).

## Discussion

Vertebrogenic problems largely contribute to a reduction of the quality of life. Our effort should be to prevent them as much as possible.

Even if we do not influence psychosocial and occupational factors, we can work on our lifestyle in a way that we influence the weight and correct movement stereotypes through our efforts and adequate and correct physical activity.

Gúth (6) states that problems with the spine are the main cause of sick leave at work in people over 45 years of age. They represent one of the most common reasons for visiting a specialist, and among all patients coming to the rehabilitation clinic, up to 70% have problems with the spine. In our sample of participants, we can observe that problems with the spine do not exclude any age category, as some of the patients were in the age group from 21-40 years old. However, 83.3% were patients over 40 years old. 70% of our respondents were overweight or obese. Harag and Kozák (7) classify obesity as an individual risk factor, and obesity significantly contributes to chronic pain. That is why it is advisable to maintain an adequate weight, something that 50% of respondents from our group realized. In its recommendation for physical activity and sedentary lifestyles (2), the WHO suggests 150-300 minutes of moderate-intensity aerobic physical activity per week or at least 75-150 minutes of high-intensity activity per week for adults aged 18-64, as well as strengthening the main muscle groups 2x per week (WHO guidelines on physical activity and sedentary behavior, 2020). One of the most well-known physical activity recommendations is 10,000 steps a day. However, as stated by Tudor-Locke et al. (8), this threshold is low for children and adolescents, while on the contrary, high for older individuals. Different countries also have different recommendations. They start at 3,000 steps for a sedentary lifestyle and go to 11,000 for an active person. Regarding the number of steps, the authors recommend: basal activity 2500 steps/day, limited activity 2500-4999 steps/day, low activity 5000-7499 steps/day, adequate (more or less) activity 7500-9999 steps/day, active individuals 10,000-12499 steps/day, and very active individuals >12500 steps/day. However, they also emphasize walking intensity and step cadence, where the limit of 100 steps per minute is a guideline for medium intensity walking. Among our respondents, 46.6% admitted to performing occasional physical activity, and another 23.4% moved regularly but with insufficient intensity. Only 20% of our

participants met the criteria of regular physical activity 3-5 times a week. What is encouraging is that around 60% of the respondents mentioned walking as their main physical activity, which complies with the recommendation of the authors of Tudor-Locke et al. (8). Rapčan and Martuliak (9) report a confirmed connection between obesity and radicular pain when an anatomical change is found by examination. It is also certain that obesity significantly affects the treatment and reduces the chances of good results. Among our respondents, of whom around 70 were overweight and obese, we can observe a relatively high percentage, 43.3%, who reported only a partial effect of active rehabilitation treatment.

Levická (10) highlights the importance of social support with regard to health conditions when she recommends that members of the client's/patient's social network be included in complex care, as it enhances coping with stressful situations. We can observe that despite the high percentage of participants who had suffered from chronic pain for more than 5 years (46.7%), their perception of social support is at a high level (74.9).

## Conclusion

Vertebrogenic problems greatly change a person's quality of life. Quality of life is one of the indicators of a patient's experience and perception of the disease (11). The connection between structural changes of the spine and obesity is evident. It is therefore necessary to maintain a healthy and active lifestyle, as the WHO has been calling for in recent years. This applies not only to the young generation, but to individuals of every age. Weight reduction, adequate physical activity and a social network formed by our loved ones and friends will not only improve our physical condition, but our mental condition as well. Our reward will not only be the reduction or disappearance of back pain, but also a good feeling that we ourselves are contributing positively to our own health.

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