

BACK PAIN AS A FACTOR OF DISABILITY IN WOMEN OVER 50 FROM BIAŁA PODLASKA AND THE SURROUNDING AREAS

DOLEGLIWOŚCI BÓLOWE KRĘGOSŁUPA JAKO CZYNNIK NIEPEŁNOSPRAWNOŚCI Kobiet po 50 roku życia z Białej Podlaskiej i okolic

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- A. Study design/planning
zaplanowanie badań
- B. Data collection/entry
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- C. Data analysis/statistics
dane – analiza i statystyki
- D. Data interpretation
interpretacja danych
- E. Preparation of manuscript
przygotowanie artykułu
- F. Literature analysis/search
wyszukiwanie i analiza literatury
- G. Funds collection
zebranie funduszy

Summary

Background. Chronic back pain is one of the most common causes of disability. It is a civilisation disease and up to 75% of women over the age of 55 suffer from it. The aim of this study was to assess the degree of disability and limitations in the daily functioning of women with lumbar spine pain depending on socio-demographic factors. **Material and methods.** The study included a group of 274 professionally active women aged between 50 and 64 who come from Biała Podlaska, Poland, and the surrounding areas and who completed the Oswestry Disability Index. The responses showed functional limitations of the respondents during performing specific activities due to back pain. The respondents were characterised with regard to their age, place of residence, education and material status. The results were analysed statistically. **Results.** The most numerous group included women with moderate disability – 41.6%. Lower back pain intensifies when sitting, standing, walking, lifting objects and applies mainly to women from the oldest age group, women having secondary and lower education, women from the city and those whose financial situation is below the average. **Conclusions.** A socio-demographic factor that differentiates the degree of the women's disability in a significant way is their material status – the better the financial situation, the less severe the disability. Socio-demographic factors – such as age, education and material status – are strong determinants of functional limitations caused by back pain: women from the oldest age group (60-64 years old) had the biggest problem with walking; women with secondary or lower education experienced difficulty sitting and walking; women whose financial situation is below the average suffered much more difficulties while lifting objects, sitting and socialising.

Keywords: women, back pain, socio-demographic factors, the Oswestry Disability Index

Streszczenie

Wprowadzenie. Zespoły bólowe kręgosłupa są jedną z najczęstszych przyczyn niepełnosprawności. Należą do chorób cywilizacyjnych i skarży się na nie 75% kobiet powyżej 55 roku życia. Celem badań była ocena stopnia niepełnosprawności i ograniczeń w codziennym funkcjonowaniu kobiet z dolegliwościami bólowymi kręgosłupa lędźwiowego w zależności od czynników społeczno-demograficznych. **Materiał i metody.** Badaniem objęto grupę 274 kobiet aktywnych zawodowo w wieku 50-64 lat z Białej Podlaskiej i okolic, które wypełniły Kwestionariusz Niepełnosprawności Oswestry. Odpowiedzi ukazały ograniczenia funkcjonalne badanych podczas wykonywania poszczególnych czynności na skutek odczuwanego bólu kręgosłupa. Dokonano charakterystyki badanych ze względu na wiek, miejsce zamieszkania, wykształcenie i status materialny. Wyniki poddano analizie statystycznej. **Wyniki.** Najliczniejszą grupę stanowiły kobiety z niepełnosprawnością w stopniu umiarkowanym – 41,6%. Dolegliwości bólowe dolnego odcinka kręgosłupa nasilają się podczas: siedzenia, stania, chodzenia, podnoszenia przedmiotów i dotyczą głównie kobiet należących do najstarszej grupy wiekowej, posiadających wykształcenie średnie i niższe, pochodzących z miasta, i których sytuacja finansowa jest na poziomie poniżej przeciętnej. **Wnioski.** Czynnikiem społeczno-demograficznym, który w istotny sposób różnicuje stopień niepełnosprawności kobiet jest status materialny – im lepsza sytuacja finansowa tym mniejsza niepełnosprawność. Czynniki społeczno-demograficzne – takie jak wiek, wykształcenie i status materialny – są silnymi determinantami ograniczeń funkcjonalnych spowodowanych dolegliwościami bólowymi kręgosłupa: kobiety z najstarszej grupy wieku (60-64 lata), miały największy problem z chodzeniem; kobiety z wykształceniem średnim lub niższym odczuwały trudności podczas siedzenia i chodzenia; kobiety, których sytuacja materialna jest na poziomie poniżej przeciętnej, odczuwały znacznie większe utrudnienia w podnoszeniu przedmiotów, siedzeniu i prowadzeniu życia towarzyskiego.

Słowa kluczowe: kobiety, bóle kręgosłupa, czynniki społeczno-demograficzne, wskaźnik Oswestry

Tables: 0

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References: 37

Submitted: 2019 Oct 9

Accepted: 2019 Nov 18

Poczarska-Głós A, Sidor M, Gawlik K, Bergier B, Stępień E, Baj-Korpak J, et al. Back pain as a factor of disability in women over 50 from Biała Podlaska and the surrounding areas. Health Prob Civil. 2019; 13(4): 264-272. <https://doi.org/10.5114/hpc.2019.89950>

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Introduction

Low back pain (LBP) syndrome is a serious social problem, which due to its high incidence, is classified as a civilisation disease [1, 2, 3]. Young people complain of low back pain in the lumbosacral spine [4, 5, 6], and this ailment becomes even more common with age [7, 8]. Research carried out in Poland shows that 72% of Poles under the age of 40 have experienced spinal pain in the lumbosacral spine at least once in their life [7]. It occurs in approx. 90% of the population over the age of 40 [9]. The peak incidence falls between the ages of 50 and 60 [10].

Spine pain occurs as a consequence of an incorrect lifestyle associated with stress, low levels of physical activity and a sedentary lifestyle, and often intensifies during activities that increase the load on the spine, e.g. during a prolonged forced flexion position with a rotation component, as a result of axial load on body posture or remaining in a sitting position for a long time. Other predisposing factors resulting in the occurrence of pain are also obesity, micro-injuries of the locomotor system and body posture defects [11, 12, 13, 14].

Lisiński et al. state that there is a lack of unequivocal data proving what type of work (physical, mental) particularly predisposes to pain in the lumbar spine. They stress that overloading of spine structures can be caused by both forms of professional activity requiring high physical exertion, as well as forms often referred to as "sedentary" or "mental" [15]. Lumbosacral back pain syndrome is one of the most common reasons for temporary or long-term inability to work [16, 17]. It also poses restrictions in private and social life [18]. Research indicates that as much as 75.0% of women over the age of 55 experience chronic back pain in the lumbar spine [7], which limits their daily functioning more than it does in the case of men [19]. In available literature, there are reports on the assessment of the degree of disability according to the Oswestry Disability Index and the associated quality of life of people of different populations, mainly in terms of gender and age. Apart from age, here, the authors focus on understanding the impact of other socio-demographic factors, namely place of residence, level of education, material status, to determine the difficulties in the daily functioning of women with back pain. The aim of the study was to assess the degree of disability resulting from pain in the lumbar spine in women and to answer the following research questions:

1. Do socio-demographic factors differentiate the degree of disability?
2. Do socio-demographic factors condition difficulties in carrying out everyday activities?

Material and methods

The study was conducted among 274 professionally active women aged between 50 and 64 (the average age was 56.4 ± 4.3) who come from Biała Podlaska, Poland, and the surrounding areas. All the subjects experienced pain in the lumbar spine. In addition, the criteria for inclusion in the study group were: having good health and no chronic diseases, no spinal injuries or surgical treatment within the spine.

Based on interviews and obtained information on personal data, a division into three age groups was adopted: a) 50 – 54 years old, b) 55 – 59 years old, c) 60 – 64 years old; place of residence (the city, the country), education (secondary and lower, higher) and material status (financial standing below the average, average financial standing, financial standing above the average). The study was anonymous, participation was voluntary with the option of refusing participation at any stage.

Each subject completed the Oswestry Disability Index (ODI) [20], which is a reliable, widely used and recommended criterion for assessing the degree of disability of people with lumbar spine pain syndrome. It contains 10 questions about the intensity of pain and the change in its intensity, and determines the daily functioning of the respondents with respect to lifting objects, walking, sitting, standing, sleeping, self-care, social life, sexual activity, and travelling. For each question, the respondents gave one of six answers defining their condition according to the following scoring: A = 0; B = 1; C = 2; D = 3; E = 4; F = 5. The answers were classified on a scale from 0 to 5. The aggregate result in the form of point values from 0 to 50 was converted into percentages from 0 to 100%, thus calculating ODI (the Oswestry Disability Index) and determining the degree of disability of the respondents and their functional limitations when performing specific activities. When classifying the severity of disability of each of the women in accordance with ODI [21], the statistical analysis uses Fairbank's interpretation of ODI: (0 – 20%) – minimal disability, (20 – 40%) – moderate disability, (40 – 60%) – severe disability, (60 – 80%) – disablement, (80 – 100%) – total disablement – a bedridden person. Statistical calculations were made in STATISTICA v 10. For qualitative variables, a percentage structure (%) was presented. Pearson's Chi-squared test (χ^2) was used to detect statistically significant differences. For quantitative variables, arithmetic means were calculated and Mann-Whitney U and Kruskal-Wallis tests were used. The significance value in all the analysed cases was $p = 0.05$.

Results

Women aged 50-54 – 43.9%, women living in the city – 61.3%, women having higher education – 58.0% and women with an average financial situation – 77.7% were the majority in the study group. The smallest number of respondents was respondents aged 60-64 – 17.3%, respondents living in the countryside – 38.7%, respondents having secondary or lower education – 42.0% and those whose material status is below the average – 6.2% (Figure 1).

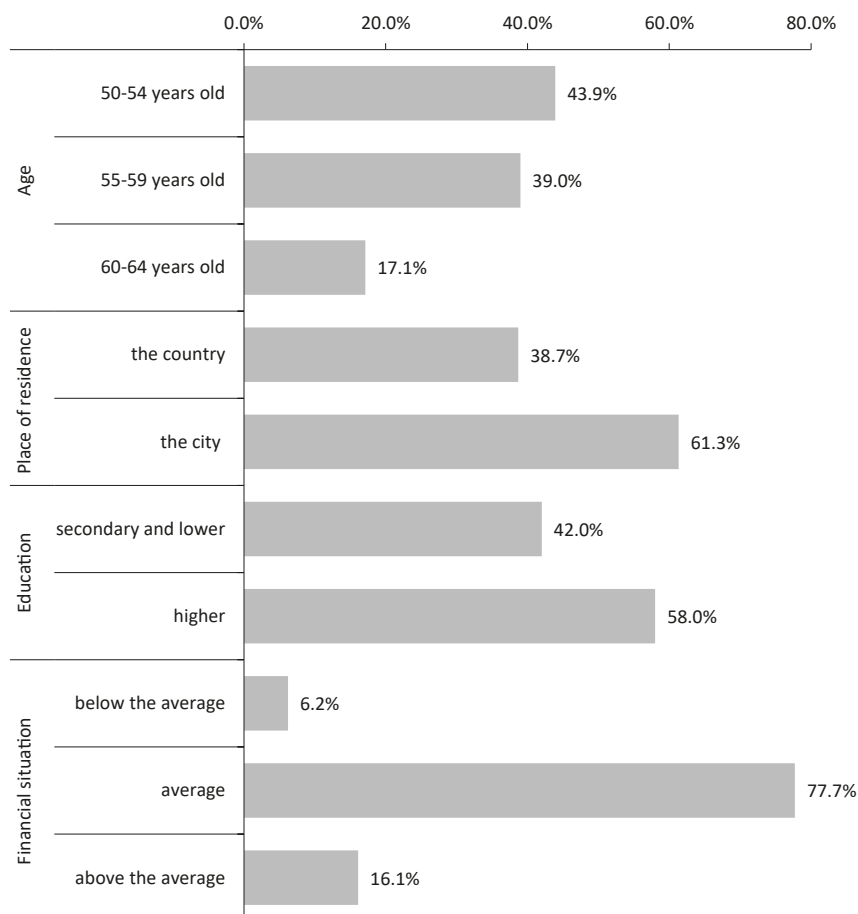
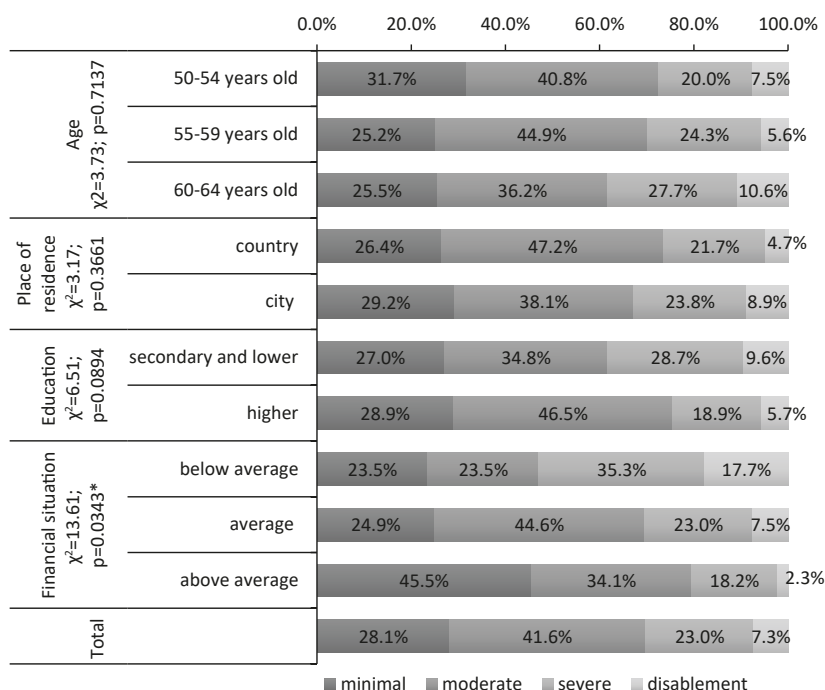


Figure 1. The characteristics of the respondents

The most numerous group of women were respondents with moderate disability – 41.6%. Minimal disability was found in 28.1% of the respondents, severe disability in 23.0%, and the highest disability rate, defined as disablement, was presented by 7.3% of all the respondents. Statistically significant differences were found in the subjective assessment of the degree of disability of the respondents depending on their material status. Among the women with a financial situation above the average, the largest group were those with minimal disabilities – 45.5%. In the group of women with an average financial situation, the most had moderate disability – 44.6%. In contrast, the highest percentage of women with severe (23%) and a high disability rate (disablement) was in the group of respondents with a financial situation below the average ($p = 0.0343$). In addition, women aged 50-54 were characterised by minimal disability – 31.7%, respondents living in the city – 29.2% and university graduates – 28.9%. A moderate degree of disability was evident mainly in older women, respondents aged 55-59 – 44.9%, women from rural areas – 47.2% and women with higher education – 46.5%. Severe disability was found among the respondents from the oldest age group (60-64 years old) – 27.7%, respondents from the city – 23.8%, respondents with secondary or lower education – 28.7%. A high level of disability (disablement) was declared by the least respondents and they were mostly the oldest women (60-64 years old) – 10.6%, respondents from the city – 8.9%, respondents having secondary or lower education – 9.6% (Figure 2).

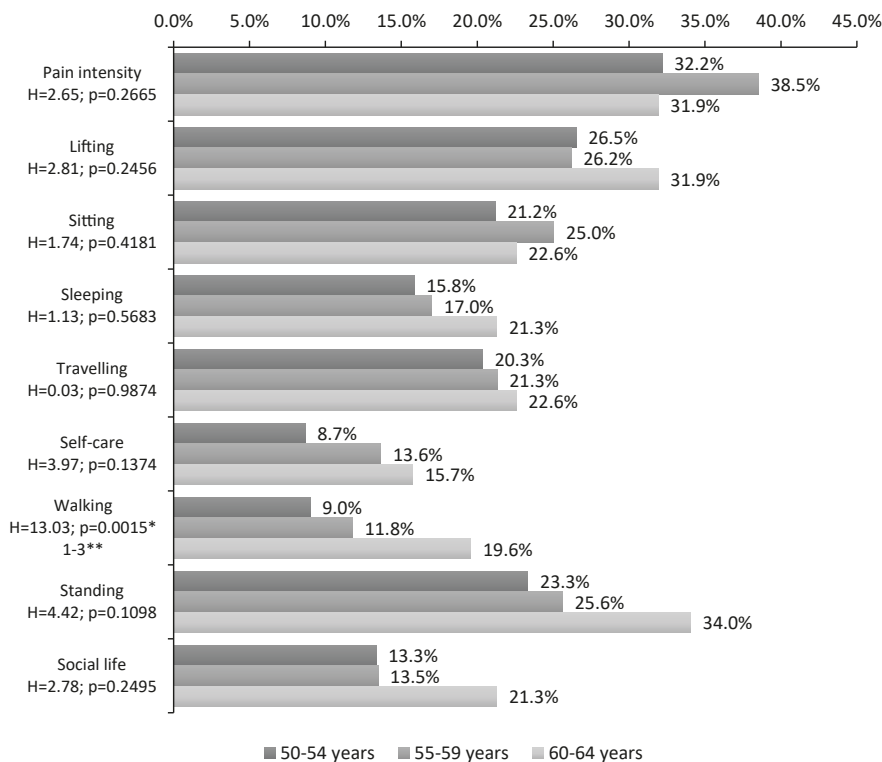


χ^2 - Result of the Pearson's Chi-squared test

*significant difference at $p < 0.05$

Figure 2. The degree of disability among the women according to ODI in terms of socio-demographic factors

Age differentiated the respondents significantly in terms of pain sensation and walking difficulties related to it. A significant difference was found between women from the youngest and the oldest age groups. Women aged 60-64 rated their difficulty walking higher – 19.6% than women aged 50-54 – 9.0% ($p = 0.0015$) (Figure 3).

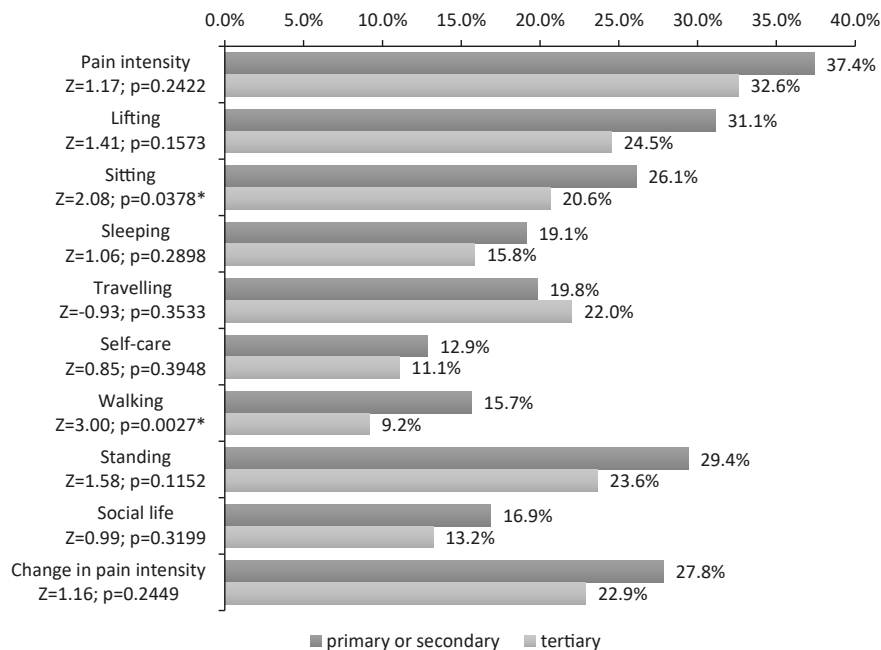


H – result of the Kruskal-Wallis test;

*significant difference at $p < 0.05$; **age groups between which there is statistically significant difference

Figure 3. Functional restrictions caused by pain in the lumbar spine in terms of age

It turns out that education differentiates the respondents significantly as far as the occurrence of pain during sitting and walking is concerned. Women with secondary or lower education had more difficulty sitting for long periods of time – 26.1% than women with higher education – 20.6% ($p = 0.0378$). Similarly, women with secondary and lower education admitted that pain in the spine limits their unrestricted movement – 15.7%, which was indicated by fewer respondents with higher education – 9.2% ($p = 0.0027$) (Figure 4).

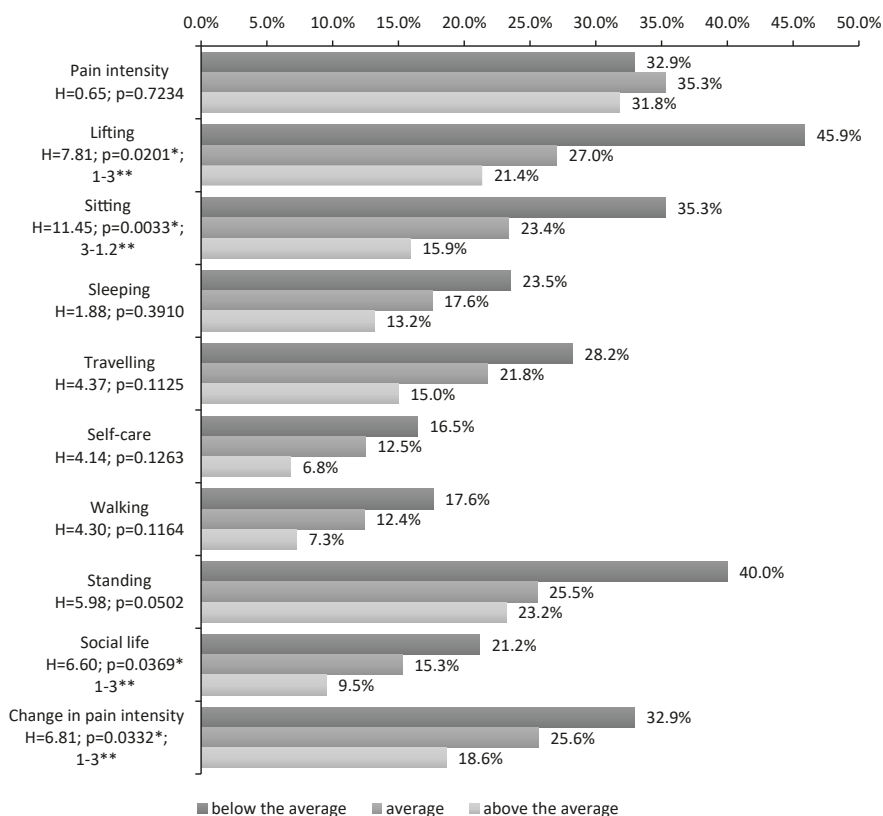


Z – result of the Mann-Whitney U test

*significant difference at $p < 0.05$

Figure 4. Functional limitations caused by pain in the lumbar spine in terms of education

Material status differentiated the respondents significantly in terms of assessing the degree of disability hindering the performance of the following activities: lifting objects, sitting, socialising and experiencing a change in the intensity of pain. In the case of all of the above-mentioned activities, women declaring their financial standing as being below the average rated the difficulties associated with their functioning the highest. As far as lifting objects is concerned, a statistically significant difference was apparent between women with the lowest material status and women with the highest material status. The former assigned a much higher value – 45.9% to restrictions connected to this activity than women with the highest material status, who rated this barrier at 21.4% ($p = 0.0201$). Spine pain prevented women from sitting to a greater extent in the case of women with an average financial position – 35.3% than the respondents with financial standing above the average who classified this restriction at 15.9%. Furthermore, the pain sensation while sitting were definitely lower in women with the best material status than in women with an average material status – 23.4% ($p = 0.0033$). Respondents with a below-average financial situation rated the difficulties associated with social life higher – 21.2%, in comparison with respondents with an above-average financial situation – 9.5% ($p = 0.0369$). Similarly, women with a below-average financial situation experienced greater changes in pain intensity – 32.9% than those with an above-average financial situation – 18.6% ($p = 0.0332$) (Figure 5).



H – result of the Kruskal-Wallis test

*significant difference at $p < 0.05$; **financial situations between which there is statistically significant difference

Figure 5. Functional limitations caused by pain in the lumbar spine in terms of material status

Discussion

Pain, referred to as an unpleasant, subjective sensation associated with tissue damage, has a significant impact on the daily functioning of humans [22]. Movement restrictions resulting from the sensation of pain lead to a deterioration in the quality of motor functions and body function. Back pain is a problem of a social nature, the number of people suffering from low back pain syndrome is increasing rapidly [23, 4]. Analyses by Dep et al. confirmed that the indicator that determines the level of disability in people with back pain is age [24]. Their study shows that back pain is very intense during performing particular activities in women aged 60-64. Age predisposes to many diseases, the symptom of which is pain, especially in the musculoskeletal system. Apart from discomfort, pain reduces physical activity and affects basic activities of everyday life in a considerable way. Currently, back pain is an epidemic in societies with a high degree of civilisation development. Lorencowicz and colleagues demonstrated that chronic pain in the lumbar spine disrupts functioning in almost all spheres of life in a significant manner. 60.4% of nurses were shown to suffer from back pain while sitting for prolonged periods of time [25]. People with low back pain syndrome have problems with daily activities involving bending the torso forwards [26, 27]. In this study we determined the limitations of daily functioning in the participants. Among the assessed activities, the biggest problem for the respondents was lifting heavy objects, standing, sitting, travelling, sleeping, walking and self-care. Cichońska et al. obtained a similar result confirming that most people have a problem with standing whereas sitting in any position for more than 10 minutes is almost impossible. The pattern is similar in the case of walking and, to a lesser degree, sleeping. Lack of healthy lifestyle habits and knowledge on how to move and lift objects in a correct way causes weakening of the spine, which in turn leads to pain [3]. Our analysis showed that women residing in the city experienced pain more frequently. This is probably related to the type of work that they performed and their lifestyle. Some researchers indicate that study participants usually spend their free time watching TV, listening to the radio, talking to their neighbours and visiting their relatives. Their social life, participation in senior clubs or interest/support groups is also low [25, 28]. However, Repka and Wordliczek’s study shows that the place of residence does not have much influence on the degree of pain and that respondents living in the urban environment felt less pain than people from rural areas [29]. Similarly, studies by Michalika et al. showed a higher number of hospitalisations of adults due to low

back pain among the inhabitants of rural areas than cities [30]. The authors of other studies have shown that the inhabitants of rural areas assess their health condition more negatively than urban residents. This is associated with additional negative determinants related to more difficult living conditions in the rural environment [31, 32]. The physical nature of work is an important factor contributing to the occurrence of overload changes in the lower spine and the occurrence of pain [33]. Solecki's study showed that farmers experience pain in the lower spine more often than white-collar workers [34].

According to Peđich, the condition of general health also depends on other variables such as education, lifestyle, and environmental factors [32]. Education is another demographic factor that affected the degree of pain sensation. Repka points out that respondents with primary and vocational education experienced the strongest pain [29]. The findings presented here confirm that the intensity of pain, especially when sitting and walking, in the case of women with secondary and lower education is higher than in the case of women with higher education. By contrast, studies by Lee et al. suggest that education plays a limited role in the modification of pain intensity [35]. Gajewski et al. emphasise that people with lower education more often express dissatisfaction with their health, and the level of satisfaction increases with the level of education [36]. Not only does the physiology of the body affect the intensity of pain, but also family and financial situation. That is why the support of loved ones, both emotional and financial, is so important. Treatment of back diseases requires ever-increasing financial outlays. Refunds by the National Health Fund are not sufficient compared with the demand. Patients wait for treatment for several years. Yet, patients who can afford commercial treatment, choose to pay for it [31]. The findings we describe indicate that women whose financial situation was below the average had more difficulty lifting objects and sitting because of back pain than women with high material status. In addition, back pain was a barrier for them to lead a regular social life. The reduction of spinal dysfunction enabling leading a normal family, social and professional life is one of the basic therapeutic and nursing tasks [37, 32]. People are usually happy with their lives, but the factor that reduces life quality is pain, which, according to research studies, occurs very often. Numerous reports emphasise that pain affects the well-being of respondents negatively, hence leading to disorganisation of life [32]. Therefore, it is crucial to educate society about the awareness of the causes of back pain syndrome, methods of treatment and, above all, preventive actions aimed at minimising pain and thus improving the quality of life.

Conclusions

1. A socio-demographic factor that differentiates the degree of women's disability in a significant manner is their material status – the better the financial situation, the lesser the disability.
2. Socio-demographic factors – such as age, education and material status – are strong determinants of functional restrictions caused by back pain:
 - women from the oldest age group (60-64 years old) had a significantly larger problem with walking than the youngest women (50-54 years old);
 - women with secondary or lower education had more difficulty sitting and walking than women with higher education;
 - women whose material status is above the average were more sensitive to changes in the intensity of pain compared with women whose material status is below the average. They also found socialising and moving objects to be less problematic. Sitting was less onerous than in the case of women with an average or below-average financial situation.

Disclosures and acknowledgements

The results presented in the paper are part of the research carried out within the framework of the research project entitled "Lifestyle and chosen aspects of physical state of professionally active women aged 50-64 years old" financed with the grant funds for own research at Pope John Paul II State School of Higher Education in Biała Podlaska, Poland.

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