Frequency of Spinal Pain Symptoms Among Nursing Staff

Częstość występowania dolegliwości bólowych kręgosłupa wśród personelu pielęgniarskiego

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Abstract

Introduction. Individuals working in the nursing profession are particularly prone to experiencing spinal discomfort. This is due to the nature of their work, which involves lifting and carrying heavy loads, as well as working in constrained positions. Furthermore, nurses are also exposed to stress and excessive mental health strain. All of these factors can contribute to the occurrence of overloads and injuries to the spine.

Aim. The aim of the study was to analyze the frequency of spinal pain symptoms among nursing staff.

Material and Methods. The study group consisted of 155 individuals actively practicing the nursing profession. The Polish version of the Revised Oswestry Low Back Pain Disability Scale (OLBPDS-PL) and own questions were used to conduct the study.

Results. The frequency of spinal pain symptoms among nursing staff was 96.64%. 55.6% of the respondents reported mild disability, while 16.6% reported severe disability. A correlation was established between gender (p=0.026), the number of hours spent at work (p=0.049), BMI index (p=0.020), and the frequency of spinal pain symptoms. Age was borderline to statistically significant (0.050).

Conclusions. Spinal pain symptoms affect a significant portion of the studied group. Lower back pain worsens the daily functioning of nurses, primarily in terms of pain intensity, lifting objects, standing, and social life. Mild disability was observed in over half of the respondents with lower back pain symptoms. (JNNN 2024;13(1):3–8)

Key Words: lumbar region, lumbar spine, nursing, OLBPDS-PL, spinal pain

Streszczenie

Wstęp. Osoby wykonujące zawód pielęgniarki/pielęgniара są w szczególności narażone na występowanie dolegliwości ze strony kręgosłupa. Wynika to z charakteru wykonywanej pracy, która wiąże się z koniecznością podnoszenia i przenoszenia ciężarów, a także pracą w pozycji wymuszonej. Ponadto pielęgniarki i pielęgniарze narażeni są na odczuwanie stresu i nadmiernie przeżycia zdrowia psychicznego. Wszystkie te czynniki mogą sprzyjać występowaniu przeciżeń oraz urazów ze strony kręgosłupa.

Cel. Celem pracy była analiza częstości występowania dolegliwości bólowych kręgosłupa wśród personelu pielęgniarskiego.

Material i metody. Grupę badaną stanowiły 155 osób czynnie wykonujących zawód pielęgniarki i pielęgniара. Do przeprowadzenia badania wykorzystano kwestionariusz ang. Revised Oswestry Low Back Pain Disability Scale w wersji polskiej (OLBPDS-PL) oraz pytania własnego autorstwa.

Wyniki. Częstość występowania dolegliwości bólowych kręgosłupa wśród personelu pielęgniarskiego wynosiła 96.64%. Na niewielką niepełnosprawność wskazało 55,6% badanych, natomiast 16,6% na niepełnosprawność poważną.
Introduction

Musculoskeletal system disorders are the leading cause of chronic disability, work absenteeism, reduced productivity, and significantly impaired quality of life in humans [1,2]. Musculoskeletal disorders contribute to an increase in societal costs due to reduced worker efficiency and more frequent medical treatment [3]. It is estimated that approximately 1.71 billion people worldwide suffer from issues related to musculoskeletal disorders. The health problem of lower back pain is becoming a global issue [4]. Research results indicate that during their lifetime, 75% to 85% of people experience pain symptoms in this region. Most of them subside within a few weeks, but the pain can often recur and even become chronic [5]. It can also be a leading cause of early retirement [4]. Among other, more common types of complaints, back pain (43%) and pain in the shoulder girdle, neck, and upper limbs (41%) are also mentioned [3]. This issue also affects a younger population, where among individuals under 40 years old, as many as 70% have experienced lower back pain symptoms [6].

Individuals working in the nursing profession are particularly prone to experiencing spinal discomfort. This is due to the nature of their work, which involves frequent lifting and carrying of heavy loads in constrained positions, both while standing or sitting, often with a bent or twisted torso, for extended periods of time. Additionally, nursing staff also experience high levels of stress [7–9]. All these factors significantly contribute to the occurrence of strains and injuries [10]. Research on the frequency of spinal pain symptoms among nurses indicates that this issue occurs in 79% to 100% of nursing personnel [9,11–13]. However, the frequency of lower back pain symptoms among nurses varies from 35% to 80%, with as many as 70% of nursing staff experiencing lower back pain at least once a year [14]. In the study conducted by Konopko & Kowalewska, it was observed that nurses most commonly complained of pain symptoms in the lumbar-sacral region of the spine (51%) [12]. Among the operating room staff, back pain affected the lumbar region in 90% of cases, the sacral region in 38%, and the cervical region in 47% [11]. Furthermore, back pain is increasingly prevalent among nursing students and individuals who have recently obtained a nursing degree [7], where approximately 50% of students reported experiencing back pain [15]. This highlights a significant issue in this regard, emerging even among young individuals. Therefore, it is crucial for nurses to adhere to ergonomic principles in their work and comply with the applicable standards and directives. Each task should be planned and adapted to the environmental conditions. Nursing staff in their work must ensure patient safety but should also take care of their own health and working comfort [16].

The aim of this study was to analyze the frequency of spinal pain symptoms among nursing staff.

Material and Methods

This was a cross-sectional observational study. A convenient sample was utilized for the purposes of this research. The study was conducted from June to September 2022. The study group consisted of 155 individuals actively practicing the nursing profession for at least 12 months. The survey questionnaire in Polish was created using Google Forms. The survey was distributed to respondents electronically through social media. Participants provided their consent to participate in the study before proceeding. At any stage, individuals taking part in the research could withdraw from it without specifying a reason. The inclusion criteria for the study were employment as a nurse, actively practicing the nursing profession for at least 12 months, and providing informed consent to participate in the study. The collected data were confidential and used solely for the purposes of this research.

The survey questionnaire consisted of two parts. In the first part, the study group was characterized by determining sociodemographic variables, which included: gender, age, length of employment, workplace, average number of hours spent at work, and the calculation of the BMI index. We also assessed the frequency of spinal pain symptoms.

In the second part, the OLBPDS-PL questionnaire [17] was used, consisting of 10 single-choice statements related to lower back pain symptoms (lumbar and sacral
This study was predominantly comprised of women (90.1%), and a statistically significant difference was also observed between women and men (p=0.026) regarding the level of pain symptoms. However, this result should be interpreted with caution due to the small proportion of men in the study, which accounted for 9.9%. The majority of participants in the study were in the age group of 41–50 years (43%). Statistical significance regarding the age of the participants was not demonstrated, but the result was borderline significant (p=0.050). The majority of the participants had work experience ranging from 21 to 30 years (49%). The largest number of individuals spent ≤160 hours at work. The majority of participants (67.5%) had a normal body mass index (BMI), while 30.5% were overweight. Statistically significant differences were observed in terms of the BMI index (p=0.020), where individuals with overweight and obesity experienced more intense pain symptoms. Another statistically significant result pertained to the number of hours spent at work (p=0.049), where the most severe pain was reported by individuals who spent 161–200 hours at work (24.5%) (Table 1).

Among the surveyed group (N=155), 96.64% (N=151) of nurses declared experiencing lower back pain symptoms. Respondents reported that they most frequently experienced pain several times a month, accounting for 40% of the responses. Once a month, spinal pain symptoms occurred in 16.41% of respondents. Those who complained of this type of pain once a week accounted for 13.33% of the respondents. Daily spinal pain was experienced by 2.56% of the participants.
Less frequently than once a month, spinal pain symptoms were reported by 9.23% of the respondents (Table 2).

Table 2. The frequency of experiencing lower back pain among the respondents (N=151)

<table>
<thead>
<tr>
<th>Parameter</th>
<th>N</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Every day</td>
<td>4</td>
<td>2.56</td>
</tr>
<tr>
<td>Several times a week</td>
<td>20</td>
<td>13.3</td>
</tr>
<tr>
<td>Once a week</td>
<td>28</td>
<td>18.46</td>
</tr>
<tr>
<td>Several times a month</td>
<td>60</td>
<td>40.0</td>
</tr>
<tr>
<td>Once a month</td>
<td>25</td>
<td>16.41</td>
</tr>
<tr>
<td>Less often than once a month</td>
<td>14</td>
<td>9.23</td>
</tr>
</tbody>
</table>

N — number of observations; % — percent

Analyzing the level of disability among the participants, 55.6% of them indicated mild disability (M=8.41; SD=2.47), while 16.6% reported severe disability (M=18.24; SD=2.49). Further details can be found in Table 3.

Table 3. The degree of disability according to the ODI (Oswestry Disability Index) (N=151)

<table>
<thead>
<tr>
<th>Degree of disability</th>
<th>The total points according to the ODI questionnaire</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>N</td>
</tr>
<tr>
<td>No disability (0–4)</td>
<td>41</td>
</tr>
<tr>
<td>Mild disability (5–14)</td>
<td>84</td>
</tr>
<tr>
<td>Moderate disability (15–24)</td>
<td>0</td>
</tr>
<tr>
<td>Severe disability (25–34)</td>
<td>25</td>
</tr>
<tr>
<td>Total disability (35–50)</td>
<td>1</td>
</tr>
</tbody>
</table>

N — number of observations; % — percent; M — average; SD — standard deviation; Min — minimum value; Max — maximum value

Spinal pain symptoms constitute a significant social problem, particularly within the nursing profession [18]. Individuals in this profession are exposed to harmful and hazardous factors that can have an adverse impact on their health. Despite the existence of legal regulations in Poland aimed at governing working conditions, including gender-based distinctions and the nature of work, they are not always adhered to by those employed, and working conditions in many institutions significantly deviate from the established standards [19]. This is highlighted by the study conducted by Tworek, in which it was observed that only 35% of nurses were aware of the standards in accordance with Polish regulations concerning lifting and carrying heavy loads by women [18].

In our study, spinal pain was experienced by a significant majority of respondents (96.64%), with pain occurring most frequently several times a month (40%), once a month (16.41%), once a week (18.46%), and several times a week (13.33%). Terpiłowska presented higher results than those obtained in our study, where 100% of the participants confirmed experiencing spinal pain symptoms, with the most common complaints being once a week (36%) or several times a month (29%) [7]. However, according to reports by Stypułkowska et al., 79% of anesthetic nurses and instrument nurses complained of spinal pain symptoms, most commonly occurring daily or several times a week (41%) [11]. In Tworek’s study, 62% of nurses experienced daily pain symptoms [18].

Meanwhile, every pain makes it difficult to perform basic human activities, but it also limits the fulfillment of work duties. This affects work efficiency and in the case of nurses, it can lead not only to a lack of job satisfaction but also to the provision of unsatisfactory medical services, both for the patient and the employer.
Researchers from Serbia indicated that as many as 60% of individuals in their study had reduced work capacity due to lower back pain, and in the last 12 months, 93.95% of nurses suffered from these symptoms [21]. Among Italian nurses, the lifetime prevalence of lower back pain was 90.2%, in the last year it was 80%, in the last week it was 44.5%, and the risk of lower back pain mainly affected females [22]. Brusini provides valuable information in their report, pointing out several key risk factors for the occurrence of lower back pain, including insufficient training and the lack of adequate equipment to ensure the safety of nurses during patient care activities. In this review, it was shown that the annual incidence of lower back pain among nurses ranged from 17% to 63.7% [23].

According to the results obtained in our study, among the majority of nurses experiencing lower back pain symptoms (55.6%), we observed a slight disability, while in 16.6% of respondents, there was a significant disability. Lower results in terms of the average level of disability (8.33%) were obtained by Baumgart and others, while in that study, 65% of respondents were found to have slight disability [10]. According to reports from other researchers, 32% of nurses stated that they perceive their symptoms related to lower back pain as low disability pain, while 68% of respondents indicated that they perceive their symptoms as high disability pain [24].

In our study, women, older individuals, those with longer work experience, those working overtime, and those with a higher BMI were more likely to complain about lower back pain. Partially, our results are consistent with the meta-analysis conducted by Sun et al., where factors such as gender, work experience, and overweight were positively associated with the frequency of lower back pain [25]. Similar conclusions have been reached by other authors, where factors such as obesity [23,26] and age [23] were predictors of spinal pain. Undoubtedly, individuals with a higher BMI may experience greater strain on their spine, which can exacerbate pain-related issues in this part of the body. However, Mekonnen & Yenealem showed that women, those working overtime, and individuals over 35 years of age most frequently sought healthcare due to lower back pain. In our study, individuals aged ≥51 and ≤30 years reported more frequent complaints [24].

To reduce the risk of physical strain among healthcare workers, employers ought to provide essential equipment that should be used during patient transfers or lifting [16]. Nursing staff should be trained and familiarized with the instructions for the proper use of equipment and should use it according to its intended purpose [9]. In addition to knowing legal standards and implementing them, it is important to adopt the correct body position and posture while performing nursing tasks, which can significantly reduce the incidence of spinal problems [20]. It is important for nurses not to forget about maintaining their own physical condition and regularly engage in physical exercises. During their free time from work, nursing staff should prioritize relaxation and create suitable conditions for it [27].

Conclusions

Back pain symptoms affect a significant percentage of the studied group. Lower back pain had a negative impact on the functioning of the respondents, primarily due to the intensity of pain experienced, as well as in daily life during activities such as lifting objects, standing, and social activities. More than half of the respondents with lower back pain symptoms were observed to have mild disability, and nearly one-fifth of the respondents had significant disability. Lower back pain symptoms among nursing staff constitute a significant medical and social problem. Therefore, there is a need for preventive programs in this group aimed at improving ergonomics in the workplace.

Implications for Nursing Practice

In summary, in preventing the development of issues related to spine pain among nursing staff, it is of utmost importance to adhere to proper ergonomic practices at work, maintain the correct body posture during nursing tasks, and have the ability and willingness to use assistive equipment. Undoubtedly, the frequency of spinal pain issues is influenced by several other factors, such as perceived stress, individual susceptibility to spinal problems, healthy eating habits, and participation in physical activity in daily life. On the employers’ side, providing appropriate equipment and adapting the workplace in accordance with the applicable regulations also play a significant role. Therefore, nursing staff should take care of their physical health by ensuring time for rest, relaxation, sleep, and fully adhering to ergonomic principles in their work.

References

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