

## TYPICAL OCCUPATIONAL DISEASES IN HEALTHCARE BASED ON A QUESTIONNAIRE SURVEY

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### Abstract

Occupational safety for healthcare workers has undergone significant changes over the centuries, shaped by advances in medical science, technological innovations and shifts in social attitudes. Current challenges in occupational health care for healthcare workers include global pandemics (e.g. COVID-19), the ageing of the medical workforce, and growing psychosocial pressure. Future developments should pay particular attention to protecting mental health, advancing protective equipment technology, and reducing workplace risks. Work in the healthcare sector is considered a highly hazardous field, and employees must face numerous risks, including biological and chemical hazards, the psychological risks arising from overload, ionising radiation, and the strain caused by physical workload and night work alike (Dudás, 2019). These risks can contribute significantly to the development of various occupational diseases. The aim of this research is to review the most common occupational diseases characteristic of healthcare workers and their risk factors, to assess the health status of employees using a questionnaire-based method, to highlight the problems arising during everyday work, and to shed light on strategies that can be applied for their prevention.

**Keywords:** occupational safety, EHS, healthcare, occupational disease

### 1. Introduction

Work ability refers to how effectively a worker is able to perform the tasks associated with their job, depending on their physical, mental and emotional capacities, taking into account workplace conditions and personal health status.

This is particularly important for healthcare workers, since high physical and psychosocial strain, the risk of infection and stress frequently affect their ability to work.

The working environment of healthcare workers is complex and dynamic, since they work in numerous different fields and professions, each carrying its own unique challenges and risks (Ministry for National Economy, 2022). The healthcare environment includes hospitals, clinics, outpatient care centres, home care and emergency care, as well as laboratory and diagnostic centres (EU-OSHA, 2024).

Assessing work ability is important for healthcare workers in order to determine how well they can cope with the challenges of their job and to what extent their health affects their ability to work. Several methods are available for this assessment, which take into account physical, mental and psychological condition alike.

The Work Ability Index is a widely used tool developed by the Finnish Institute of Occupational Health (Ilmarinen, 2009). The WAI is a questionnaire-based method that assesses a worker's overall work ability based on various factors.

Based on the score obtained, the Work Ability Index classifies workers into four categories: poor, moderate, good and excellent work ability. This tool also helps to understand, in the case of healthcare workers, how heavily their work burdens them and what interventions may be needed to maintain their work ability.

## **2. Data collection**

For healthcare workers, it is important that the assessment of work ability take into account the specific characteristics of the given job. For nurses, for example, examining the physical strain arising from moving patients is of key importance, while for surgeons fine motor skills and the effectiveness of mental focus are also important factors.

In our work, we used a questionnaire-based method to explore the work ability, health status and experiences related to occupational diseases of respondents working in healthcare.

Our research was based on two questionnaires. The first questionnaire was intended for healthcare workers in general, for all employees. A second questionnaire was compiled specifically for those working in operating theatres.

### **2.1. Method of data collection**

We chose an online questionnaire method to ask our questions, since this method is the most widespread and allows respondents to be reached quickly. We compiled our questions on the topic using the Google Forms platform. The completed questionnaire was published in various professional groups on social media.

Data collection was carried out from 10 July 2024 to 20 August 2024, during which we received 34 completed questionnaires from healthcare professionals and 92 questionnaires from those working in operating theatres. The circle of respondents was varied in terms of both gender and age-group distribution, although, given the small sample size and the voluntary, social-media-based recruitment method, the results should not be regarded as representative of the healthcare workforce as a whole. All of the questionnaires were usable for evaluation. The present article reports the analysis of the general healthcare worker questionnaire ( $n = 34$ ); the results of the operating theatre questionnaire ( $n = 92$ ) fall outside its scope and will be presented in a separate publication.

### **2.2. Types of questions**

When designing the questionnaire, we used several types of questions, depending on what type of information was needed.

- Closed questions: predefined response options were provided, from which the respondent had to choose (e.g. yes/no, scale-type questions).
- Open-ended questions: the respondent could freely express their opinion or experiences, which allowed for a deeper expression of content.
- Semi-closed questions: closed and open-ended questions were combined; in addition to the predefined answers, the respondent could also add other options or express their own opinion.

The protection and anonymity of respondents' personal data was a primary consideration, which is why we did not ask them for such data at all.

### 2.3. Characteristics of the respondents

The number of respondents who completed the questionnaires distributed among healthcare professionals was 34. In terms of gender ratio, 8.8% (3 persons) of respondents were male and 91.2% (31 persons) were female.

Regarding their age distribution, the largest proportion of respondents, 52.9% (18 persons), were between 46 and 55 years old, 20.6% (7 persons) were between 31 and 45 years old, and a further 20.6% (7 persons) were between 56 and 65 years old. The smallest proportion of respondents, 5.9% (2 persons), belonged to the 18–30 age group.

While evaluating the returned questionnaires, we found that most responses came from healthcare professionals (91.2%, 31 persons), 5.9% (2 persons) from those working in administrative positions, and 2.9% (1 person) from a biologist.

Regarding the educational attainment of respondents, 54.5% had a vocational secondary school qualification, 39.4% had a college degree, and 6.1% had a university degree.

Of the responding employees, 52% (18 persons) work day shifts, 35.3% (12 persons) work rotating shifts, 2.9% (1 person) works night shifts, and 8.8% (3 persons) work in a daytime on-call system.

## 3. Results

### 3.1. Occurrence and types of occupational diseases

When evaluating the questionnaire (see Figure 1), 44.1% (15 persons) of employees stated that they had already experienced work-related illnesses. A larger percentage of respondents, 52.9% (18 persons), had not experienced any illness that they could attribute to their work. One person did not wish to answer this question.

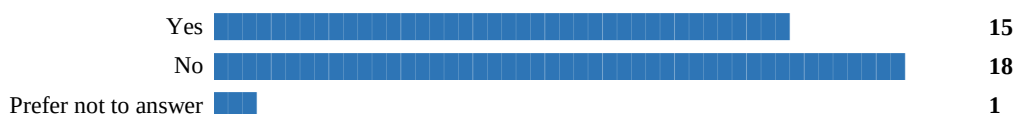


**Figure 1.** Occurrence of work-related illness or injury (source: authors)

The questionnaire included an open-ended response option regarding the nature of work-related illnesses or injuries experienced. The 15 respondents listed the following:

lower back and back pain; infectious diseases; cut my hand while opening an ampoule; herniated disc; stress; irregular eating habits resulting in colon cancer; wrist and lower-back pain; diabetes; ophthalmological problems; musculoskeletal problems; cartilage detachment; muscle tear; herniated disc; sleep disorder; frequent respiratory infections; COVID infection.

A large proportion of responding employees, 35.3% (12 persons), have worked in healthcare for more than 30 years, while a further significant percentage, 29.4% (10 persons), have been in the profession for 21–30 years. 17.6% (6 persons) have worked in healthcare for 11–20 years, 14.7% (5 persons) for 1–10 years, and 2.9% (1 person) for less than 1 year.

Regarding overtime work, 61.8% (21 persons) of respondents regularly take on overtime, while 38.2% (13 persons) do not.

Employees experience the symptoms identified in the questions asked with the frequency shown in the figure below (see Figure 2).

52.9% (18 persons) of respondents believe they do not have, while 47.1% (16 persons) believe they do have, a persistent, chronic illness attributable to health damage arising from their work.

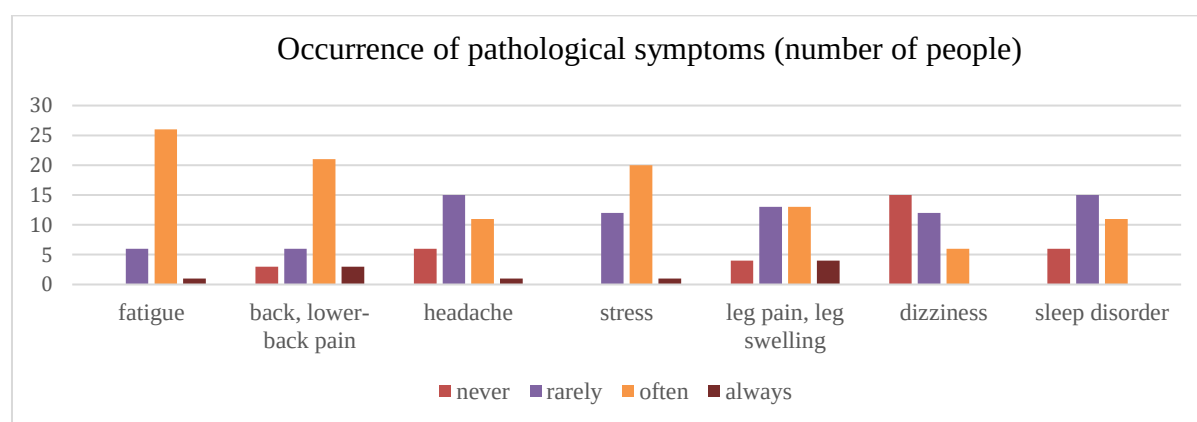


**Figure 2.** Frequency of occurrence of pathological symptoms among respondents (source: authors)

Those respondents who believe they have a persistent, chronic illness answered the question of what kind of illness it is in the proportions shown below (see Figure 3). Musculoskeletal disorders stand out, occurring in 50% of cases (Jacquier-Bret and Gorce, 2023).

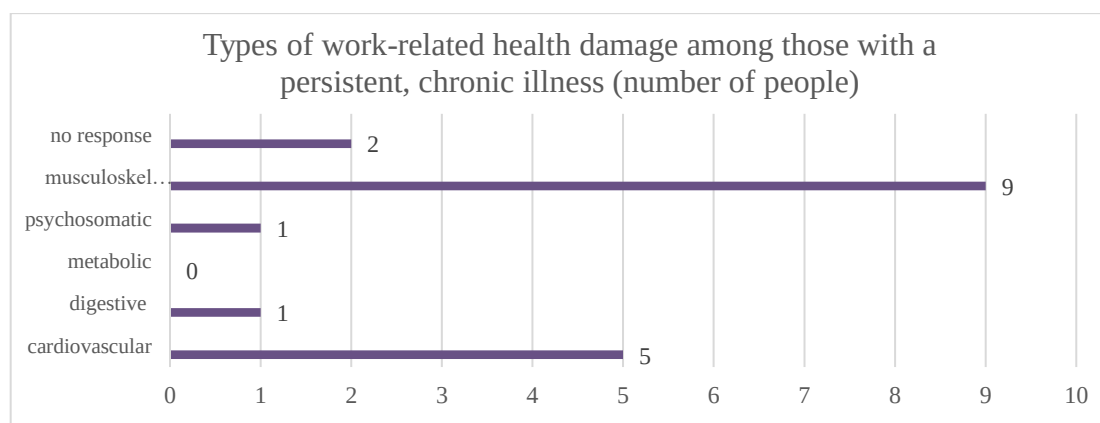


**Figure 3.** Types of work-related health damage among respondents with a persistent, chronic illness (source: authors)

### 3.2. Relationship between musculoskeletal disorders and physical strain

A primary consideration in compiling the questionnaire was to explore the extent to which healthcare employees who work at the bedside can make use of tools and assistance that ease their work and reduce their physical strain. Since the previous section's survey demonstrated that a large proportion of employees have a work-related musculoskeletal disorder, in analysing this topic we examined what causes might lead to this fact: whether workers are aware of the tools available to ease their work, and, if such tools exist, whether they actually use them.

When asked whether there was any kind of patient-lifting device available at their workplace, 88.2% (30 persons) of respondents answered no. A patient-lifting device was available in the workplace for 2.9% (1 person), and 8.8% (3 persons) of respondents did not wish to answer the question.

Long, exhausting physical strain, as well as workers' physical condition and fitness, can also influence the risk of injury and illness. A lack of adequate muscle strength and flexibility predisposes workers to this problem.

Among our questions was whether the employer provided employees with the opportunity for physiotherapy at their workplace. 78.8% (27 persons) of respondents answered no, and 21.2% (7 persons) answered yes. 93.8% (31 persons) of employees would welcome the opportunity for free physiotherapy sessions, while 6.2% (3 persons) would not be interested.

### 3.3. Psychosocial factors and mental health

In this section we analysed healthcare workers' exposure to workplace stress, burnout, and other psychosocial factors (Woo et al., 2020).

It is clear from the examination of the earlier sections that employees frequently experience significant stress during their work.

When asked how they relieve workplace stress, employees responded as follows (see Figure 4).

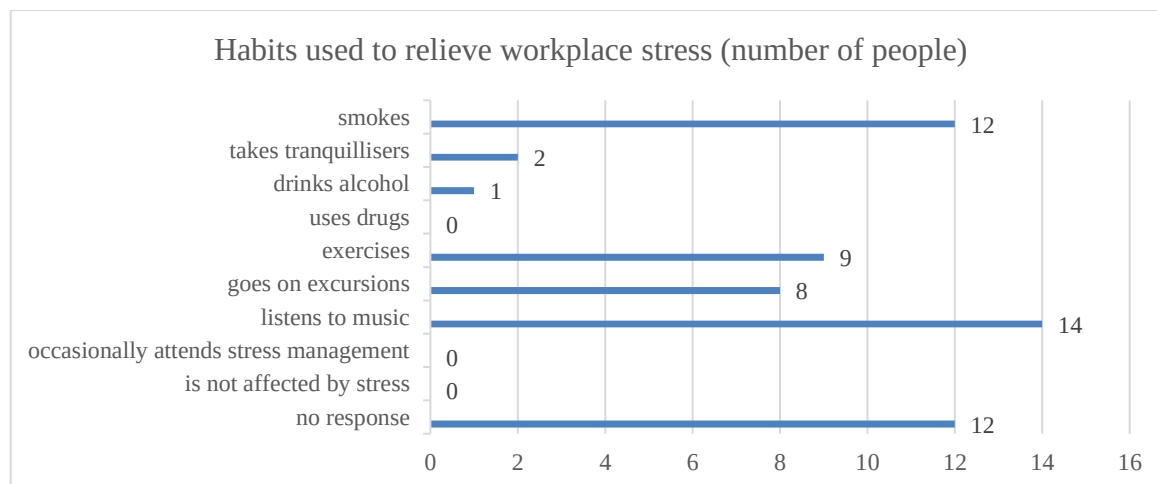


**Figure 4.** Habits used to relieve workplace stress (source: authors)

Point 10 of the National Occupational Safety Policy 2024–2027 publication addresses the more effective assessment and management of risks occurring in the healthcare sector. It focuses in particular on protection against exposure to “hazardous drugs”. In our view, the use of sedatives and tranquillisers

should also be classified as hazardous drugs in this context. Attention is therefore required to the fact that, because of their work, healthcare employees can easily access these drugs, and can do so should they feel the need. The question is to what extent they actually do so. Our questionnaire also covered the examination of this topic.

When asked whether they use sleeping pills or tranquillisers, 86.2% of respondents answered no, while 13.8% said they use sleeping pills to manage their sleep disorders. To relieve workplace stress, 5.9% of respondents said they use tranquillising medication. Given the ease of access, a further question concerned how employees obtain such medication, if they use it.

Among those who take sleeping pills, 40% have the medication prescribed by a physician colleague, another 40% obtain it through their GP, and 20% obtain it by other means. The proportions were different for obtaining tranquillisers: 25% through a physician colleague, 25% through their GP, and 50% by other means.

Workplace conflict situations contribute significantly to the development of stress, which is why we also examined this topic. 81.8% of employees have already had a conflict with a colleague, 15.2% have not, and 3% did not wish to answer the question.

47% (16 persons) managed to resolve the conflict themselves, but there were cases where this was not successful (26%, 9 persons), or where a supervisor had to be involved in clarifying the situation (3%, 1 person). No one was referred to conflict-management training. Naturally, some respondents also did not wish to answer this question (9%, 3 persons). 15% (5 persons) indicated that they used some other method, but did not wish to specify it.

26.5% of employees have already participated in conflict-management training, while 73.5% have not. We believe that a good workplace atmosphere is important at every workplace, but especially so in healthcare, since it can also affect patients' recovery and well-being. Examining this topic yielded the following responses. Half of the respondents, 50% (17 persons), consider the atmosphere at their workplace to be good, 35.3% (12 persons) consider it merely tolerable, 5.9% (2 persons) consider it bad, and 2.9% (1 person) consider it very bad (see Figure 5).

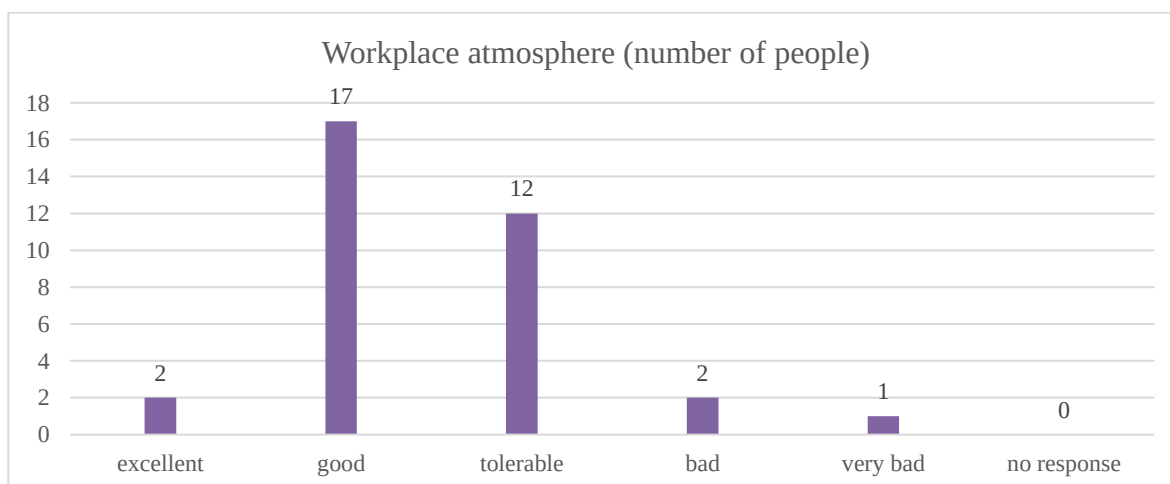


**Figure 5.** Workplace atmosphere (source: authors)

To improve the workplace atmosphere, 26.5% of employees hold team-building events at least once a year, 11.8% hold them several times a year, 41.2% — almost half of respondents — do not hold such events at all, and 14.7% do not currently hold them but would gladly take part in one.

In the course of their work, healthcare workers frequently encounter patients in poor condition or in a terminal stage of illness, both adults and children. The suffering and death of patients, and other situations of grief, all represent an emotional burden that can lead to psychosomatic problems. Our research also covers the examination of employees' psychological burden. When asked how heavily the serious condition or possible death of patients weighs on them emotionally, 26% (9 persons) said it affects them very strongly, 47% (16 persons) said it affects them, 15% (5 persons) said it affects them a little, and 12% (4 persons) said it does not affect them.

### 3.4. Effectiveness of PPE in prevention

Healthcare work carries a great many risks, many of which can be eliminated or removed through the use of personal protective equipment. It is the employer's duty to provide this equipment to employees. In our employee questionnaire we wanted to examine whether employees always receive adequate, sufficient protective equipment. Unfortunately, we found, to our dismay, that only 56% (18 persons) of respondents — only a little more than half — have access to protective equipment. 19% (6 persons) feel that it is not always sufficient, and 22% (7 persons) do not have access to protective equipment at all. 3% (1 person) did not wish to answer the question (see Figure 6).

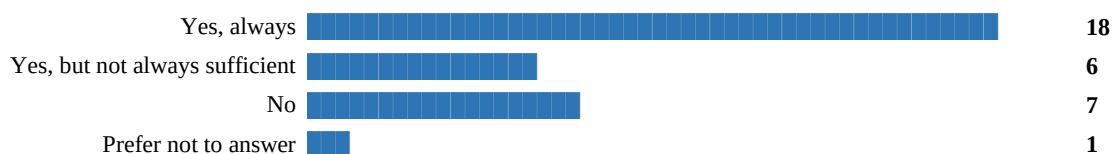


**Figure 6.** Access to necessary personal protective equipment (persons) (source: authors)

The use of protective equipment, and awareness of its use, is essential among healthcare workers. Neglecting this can even cause serious infectious diseases. Workers in the healthcare sector are exposed to viruses and bacteria such as influenza, hepatitis B and C, HIV, tuberculosis and other pathogens that spread easily in the hospital environment.

When asked whether there had been a case where they did not use personal protective equipment and contracted some kind of infection as a result, 47% (16 persons) of employees answered yes and 53% (18 persons) answered no. Regarding the nature of the infection, they gave the following answers:

influenza, COVID, Clostridium infection, hepatitis A, hepatitis B, skin allergy.

### 3.5. Risk awareness among healthcare workers

Risk awareness among healthcare workers is extremely important for several reasons: more aware employees are able to identify potential risks and prevent accidents, injuries or infections, thereby protecting both their own health and that of their patients (Alhumaid et al., 2021).

In our employee survey, 76% (26 persons) of employees feel well informed about workplace risks, while 24% (8 persons) feel they are not sufficiently informed.

50% (18 persons) obtained information about risks through occupational safety training, 17% (6 persons) acquired it from a more experienced colleague, 11% (4 persons) gained their knowledge

through their studies, and 14% (5 persons) do not seek out such information at all. 8% (3 persons) did not wish to answer.

The majority of employees consider protective equipment to be very important: 74% (25 persons) rated it as such. Respondents could answer this question on a scale of 1 to 5, where 1 meant “not important at all” and 5 meant “very important” (see Figure 7).

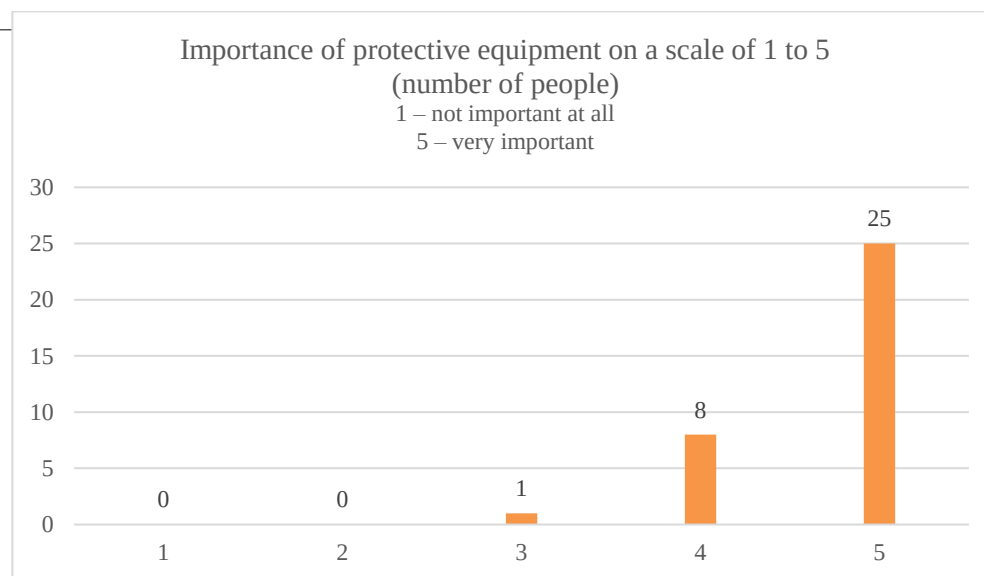


**Figure 7.** Importance of protective equipment, on a scale of 1 to 5 (source: authors)

79% (27 persons) of employees regularly use protective equipment, 21% (7 persons) do not always use it, and 0% never use it. Those who do not always use it gave the following reasons: there is not always a sufficient quantity available (e.g. gloves, masks); it is uncomfortable and makes it difficult to work; there is not always time to put it on; it has an alarming effect on patients; out of habit.

## 4. Findings, conclusions and recommendations

### 4.1. Most common occupational diseases and their frequency

Research question: which occupational diseases are most common among healthcare workers, and how frequently do they occur?

From the questions asked, we found that the most frequently reported work-related health damage among healthcare employees was of musculoskeletal origin. This may be related to the age of those working in the profession examined, as the great majority of healthcare professionals have worked in this field for more than 30 years. The “ageing” of the profession, combined with physically demanding work carried out over many years, is likely to place particular strain on the musculoskeletal system. In addition to musculoskeletal disorders, cardiovascular diseases also appear to a significant extent. Frequent fatigue and lack of sleep may be associated with multi-shift work schedules and long, 12-hour shifts. Healthcare workers often stand or perform physical work for long periods, which can place a strain on the muscular system and joints (Jacquier-Bret and Gorce, 2023).

**Recommendations:**

In our view, more effective screening for occupational diseases among healthcare workers should be considered.

- Extended health check-ups: in addition to the existing mandatory screenings (chest X-ray, laboratory tests), fitness-for-work examinations should be extended with additional tests at least once a year. It would also be important to pay attention to mental and psychosocial health.
- Assessment of risk factors: special attention should be paid to identifying risk factors arising from the working environment, including the screening of physical strain, stress and ergonomic problems.
- Mental health support: regular assessment of psychological state, for example through anonymous questionnaires or interviews, in order to identify signs of stress, anxiety or burnout.
- Ergonomic assessment: ergonomic assessment of the working environment and training of employees in correct posture and movement to reduce the risk of musculoskeletal problems developing.
- Education and increasing awareness: organising regular training sessions and workshops focusing on the prevention of occupational diseases, stress management and a healthy lifestyle.
- Establishing support systems: strengthening workplace support, for example through the availability of mental-health counsellors or the establishment of support groups for employees.
- Data collection and analysis: creating a database for monitoring occupational diseases, which can help identify problems and trends in order to improve workplace health.
- Feedback system: regularly collecting feedback from employees on the working environment, stress levels and general well-being, in order to continuously improve working conditions.

These recommendations can help with the early detection and prevention of occupational diseases among healthcare workers, thereby improving their working environment and overall well-being.

**4.2. Physical strain and musculoskeletal health**

*Research question: how does the physical strain arising from the job affect the musculoskeletal health of healthcare workers?*

Processing the questionnaire suggested an association between the physical strain arising from the job and the musculoskeletal health of healthcare workers.

Musculoskeletal disorders among healthcare workers may be related to several factors. Healthcare workers often stand or perform physical work for long periods, which can place a strain on the muscular and joint systems. Incorrect posture and heavy loads while lifting, moving or positioning patients can contribute to injuries. Repetitive movements, such as administering infusions or injections, can likewise lead to muscle tension and pain. Walking the long hospital corridors several times a day may also place a strain on the knee and hip joints. The high stress levels common in the healthcare sector can contribute to tension and musculoskeletal problems. Disregarding ergonomic considerations, such as poorly designed workplaces and equipment, can increase the risk of injury. Workers' physical condition may also affect the risk of illness; a lack of adequate muscle strength and flexibility can predispose them to these problems.

**Recommendations:**

To eliminate musculoskeletal disorders among healthcare workers and improve their physical condition, we would recommend introducing the following methods:

- Creating an ergonomic working environment: redesigning workspaces based on ergonomic principles. This includes height-adjustable beds and chairs, and the use of appropriate equipment when moving

patients. This recommendation follows directly from our findings: 88.2% of respondents reported that no patient-lifting device was available at their workplace, which we consider one of the most concrete and readily actionable targets for intervention identified in this study.

- Regular exercise: employees are recommended to engage in regular physical activity, such as stretching, strengthening exercises or aerobics, which help prevent musculoskeletal problems. Employers should provide the opportunity for physiotherapy, since the questionnaire evaluation revealed that there is demand for this among employees.
- Organising education and training: holding training sessions on correct lifting techniques, posture and the prevention of musculoskeletal problems. In addition, education on stress management and relaxation techniques is also important.
- Rest and break periods: introducing mandatory breaks during working hours that allow employees to refresh themselves and rest their muscles.
- A supportive workplace culture: supporting the work environment and promoting a healthy lifestyle, including the organisation of workplace sports programmes and health days.
- Physiotherapy and rehabilitation: those who have already experienced musculoskeletal problems can receive physiotherapy treatment to improve their condition and perform rehabilitation exercises.
- Stress-management techniques: teaching employees various stress-management techniques, such as breathing exercises, meditation or mindfulness, to reduce their stress levels.
- Targeted, regular medical screenings: regularly conducting screening examinations for the early detection of musculoskeletal problems, allowing preventive measures to be introduced at an early stage.
- Introducing new protective equipment: we would recommend introducing compression stockings as personal protective equipment to prevent leg pain and swelling and to improve circulation. Another recommendation is to provide suitable, comfortable work shoes. Respondents mentioned in their individual comments on the questionnaire that it would be good if the employer provided these for them.

In our view, introducing these measures would help reduce the incidence of musculoskeletal disorders and improve the physical condition of healthcare workers, thereby increasing work efficiency and employee satisfaction.

#### **4.3. Workplace stress, emotional strain and mental illness**

*Research question: to what extent do workplace stress and emotional strain contribute to the development of mental illness among healthcare workers?*

Workplace stress and emotional strain appear to be closely associated with mental health difficulties among healthcare workers. From processing the questionnaires, we drew the following conclusions.

Several factors may underlie nurses' psychosomatic illnesses and mental health. High workload and overtime can cause stress and tension, which can also manifest in physical symptoms. The suffering and death of patients, and other situations of grief, all represent an emotional burden that can lead to psychosomatic problems. If employees do not have adequate stress-management techniques, accumulated tension can lead to physical complaints. Low morale, lack of support and conflicts in the workplace can contribute to psychological and physical problems. Employees often feel a great sense of responsibility for their patients' health, which can lead to anxiety and stress. Due to a lack of adequate rest, the body and mind may not regenerate sufficiently, which can increase tension and susceptibility to illness. If employees do not receive sufficient training on maintaining mental health, they can easily encounter psychosomatic symptoms.

**Recommendations:**

To improve the mental health of healthcare workers and prevent illness, we would recommend considering and introducing the following measures:

- A supportive workplace atmosphere: it is important for the workplace to provide a supportive atmosphere in which employees can express their feelings and ask for help.
- Mental health programmes: providing accessible mental-health services, such as psychological counselling, where employees can seek help anonymously.
- Stress-management training: holding regular training sessions and workshops focusing on stress-management techniques such as breathing exercises, mindfulness and meditation.
- Social support: forming support groups where nurses can share their experiences and help each other cope with challenges.
- Education and increasing awareness: raising awareness of the importance of mental health and providing information about various mental health problems.
- Wellness programmes: workplace wellness programmes focusing on physical activity, healthy eating and other wellness activities can also contribute to improving mental health.
- Flexibility in scheduling: managing working hours and shifts more flexibly can reduce stress and the risk of burnout.
- Recognition and reward: recognising and rewarding nurses' efforts can be important for their motivation and mental well-being.
- Continuous development opportunities: providing opportunities for professional development and further training can help nurses build confidence and reduce stress.

These measures can contribute to improving nurses' mental health, fostering better working conditions and a higher standard of patient care.

**4.4. Effectiveness of personal protective equipment**

*Research question: how effective is the use of personal protective equipment in preventing infections and other occupational diseases among healthcare workers?*

In the absence of protective equipment, nurses can be exposed to various illnesses and health problems, including infectious diseases. Processing the questionnaires revealed that nearly half of employees do not use protective equipment in every case, most often due to insufficient equipment being available. In the course of their work, healthcare workers are exposed to viruses and bacteria such as influenza, hepatitis B and C, HIV, tuberculosis and other pathogens that spread easily in the hospital environment. Frequent hand washing and hand disinfection can cause irritation, dry skin, eczema or other skin problems. In the absence of protective masks, nurses face a greater risk of respiratory infections and other respiratory problems. Contact with various substances, such as chemicals and medications, can cause allergic reactions if adequate protective equipment is not available. The use of protective equipment is essential for safe work and for preserving health in the nursing profession.

**Recommendations:**

It would be important to raise awareness among employees of the importance of using protective equipment. Several possible solutions can be recommended to improve this:

- Organising education and training: organising regular training on the correct use, benefits and importance of protective equipment. Interactive workshops involving protective-equipment supply companies. These can help increase employee awareness.

- Information campaigns: producing posters, brochures and digital materials that emphasise the benefits of using protective equipment. These materials should be placed in clearly visible locations in the workplace.
- Feedback systems: collecting employees' opinions and experiences regarding the use of protective equipment, so that any problems can be detected and processes improved.
- Promoting cultural change: transforming the workplace culture so that the use of protective equipment becomes the norm. This also includes the commitment of managers.
- Motivational programmes: developing reward systems for the correct use of protective equipment, for example in the form of "best practice" awards or recognitions.
- Role-play and simulations: exercises and simulations in which employees can use protective equipment in realistic situations, thereby gaining experience.
- Health days and events: organising events on the topic of health and safety, which also focus on the use of protective equipment.
- Support among colleagues: encouraging employees to motivate one another to wear protective equipment and work safely.

These methods can help promote the use of protective equipment, thereby improving the safety and health of healthcare workers.

#### **4.5. Risk awareness and occupational disease prevalence**

*Research question: what is the level of risk awareness among healthcare workers, and how does this affect the occurrence of occupational diseases?*

In assessing the risk awareness of healthcare workers, we drew the following conclusions. In most cases, responding employees are able to assess the dangers facing them, although there are employees who, fearing nothing, do not comply with the rules. They consider the use of protective equipment to be important. There are employees who have worked in the field for a long time and may therefore be inclined to stick to their accustomed working methods, even if these are not safe. A lack of, or insufficient, training on the correct use of protective equipment can also contribute to a decline in risk awareness.

#### **Recommendations:**

Developing risk awareness among healthcare workers is key to reducing the number of occupational diseases. Below are some options worth introducing:

- Training programmes: holding regular, interactive training sessions focusing on risk awareness, hazard identification and preventive measures.
- Presenting case studies: presenting real cases showing what risks employees faced and how the problems could have been avoided.
- Information: providing informational materials, posters and digital content that continuously remind employees of possible risks and methods of prevention.
- Building a supportive culture: fostering a workplace atmosphere in which employees can confidently express their concerns and experiences regarding risks.
- Mentoring programmes: involving more experienced colleagues who can help new employees develop their risk awareness.
- Feedback systems: creating platforms where employees can provide feedback on risks and the working environment, enabling problems to be identified and addressed more quickly.
- Risk-assessment exercises: conducting regular risk assessments that help identify potential hazards and develop appropriate preventive measures.

- Health and safety days: organising events and professional days where employees can take part in workshops and presentations aimed at improving risk awareness.

These measures can help increase risk awareness among healthcare workers, which helps reduce the number of occupational diseases and create a safer working environment.

## 5. Limitations

This study has several limitations that should be taken into account when interpreting the results.

First, the relatively small sample size ( $N = 34$ ) limits the statistical power of the analysis and constrains the generalisability of the findings to the wider healthcare workforce.

Second, the results are presented as descriptive percentages without confidence intervals or formal significance testing; consequently, differences between subgroups should be interpreted with caution rather than as statistically confirmed effects.

Third, the questionnaire relied on ad hoc, Likert-type items rather than validated, standardised instruments such as the Work Ability Index questionnaire, the Nordic Musculoskeletal Questionnaire or the Maslach Burnout Inventory; the use of such instruments in future research would strengthen the methodological rigour and comparability of the findings.

Fourth, the cross-sectional, self-report design does not allow causal conclusions to be drawn; the associations described in this article, particularly in Section 4, should therefore be understood as correlational rather than causal.

Finally, the study did not include a comparison or control group (e.g. employees from other sectors), which limits our ability to determine whether the patterns observed are specific to healthcare work or reflect broader occupational trends.

## 6. Summary

Our work is entitled “The Reduction in Work Ability Caused by Occupational Diseases in the Healthcare Sector and the Possibilities for Their Prevention in Occupational Safety”.

Using a questionnaire-based method, we explored the most common occupational diseases among professionals working in the sector, sought to identify the causes triggering these diseases, and attempted to address the possibilities for their prevention and solution.

Analysis of the questionnaires confirmed that the most common occupational disease among employees in the healthcare sector was musculoskeletal disorders. 50% of the employees who took part in the research have an illness of musculoskeletal origin. Employees’ musculoskeletal health appears to be associated with the physical strain arising from their job, as well as, in terms of age distribution, the high proportion of “ageing” professionals. Employees are often tired and overburdened, and due to financial difficulties they are frequently forced to take on a second job or overtime work.

Occupational diseases among healthcare workers have a significant impact on their work ability, which is a concerning phenomenon from several perspectives. Musculoskeletal disorders can result in a reduction in work ability.

Back, lower-back and leg pain may directly affect employees’ performance. Pain and fatigue can reduce work efficiency, and employees are often unable to perform their duties at their usual level.

Overload, frequently excessive working hours and stress also appear to contribute to the development of occupational diseases. Healthcare workers frequently experience high levels of stress and mental strain. Continuous stress may contribute to the development of psychological problems such as anxiety and depression, which could further impair work ability.

The reduction in work ability associated with occupational diseases may extend beyond the individual level to affect the workplace atmosphere as well. Tension caused by reduced performance and the deterioration of relationships between colleagues can further increase stress.

Unfortunately, we identified shortcomings in the area of workplace protective equipment: such equipment is not always provided in sufficient quantity and quality. Providing protective equipment is the employer's obligation, while wearing it correctly is the employee's obligation — neither can be neglected! The lack of such equipment, and failure to use it, cannot be permitted in this sector. We would strongly recommend raising awareness of, and providing education on, the importance of this issue for both employers and employees alike.

The examination of employees' risk awareness confirmed that more aware employees who are conscious of the risks are more likely to comply with preventive measures, such as using protective equipment and applying correct working techniques. Among employees who, unafraid of the risks, defy the use of protective equipment, infectious diseases occur at a higher rate.

Risk awareness among healthcare workers plays a key role in preventing occupational diseases. By increasing awareness, providing appropriate training and establishing a supportive workplace culture, the occurrence of these illnesses can be reduced, thereby improving employees' health and the quality of patient care.

Healthcare institutions need to take important steps to prevent these illnesses. This includes regular health check-ups, the ergonomic design of the working environment, stress-management programmes, and support for mental health.

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