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# SENSE OF COHERENCE AND HEALTH BEHAVIOR AMONG NURSES
# POCZUCIE KOHERENCJI A ZACHOWANIA ZDROWOTNE PIELĘGNIAREK

**Sylwia Krzemińska[1], Magdalena Krawiec[1], Marta Polanowska[1]**

**1. Wyższa Szkoła Medyczna w Kłodzku/ Higher Medical School in Kłodzko**

Correspondence author: sylwia.krzeminska@wsm.klodzko.pl
Sylwia Krzemińska https://orcid.org/0000-0001-7695-0967
Magdalena Krawiec https://orcid.org/0009-0007-1707-4523
Marta Polanowska https://orcid.org/0009-0004-3814-324X

Streszczenie

Wstęp: Praca pielęgniarek może obciążać organizm za równo psychicznie jak i fizycznie. Pielęgniarki pracują w systemie zmianowym co w znacznym stopniu zaburza rytm dobowy, utrudnia dbanie o własne zdrowie oraz przyczynia się do występowania sztywnego poczucia koherencji.

Cel pracy: Określenie poczucia koherencji poprzez analizę zachowań zdrowotnych pielęgniarek oraz stanu zdrowia psychicznego pielęgniarek.

Materiał i metody: Badania przeprowadzono w grupie 100 pielęgniarek. W pracy wykorzystano metodę sondażu diagnostycznego przy użyciu technik ankiety oraz narzędzi tj.: SOC29, IZZ, GHQ28.

Wyniki: Z przeprowadzonych badań wynika, że wiek nie różnicuje pielęgniarek pod względem poczucia koherencji ($p > 0,05$). W odniesieniu do nawyków żywieniowych oraz poczucia koherencji odnotowano istotne statystycznie korelacje. Wraz ze wzrostem ogólnego wyniku koherencji wzrastają wyniki dotyczące zachowań zdrowotnych. Staż pracy wpływa na praktyki zdrowotne pielęgniarek. Im jest wyższy tym niższe są praktyki zdrowotne. Wykształcenie pielęgniarek nie wpływa na nie pod względem poczucia koherencji. Różnic nie stwierdzono w odniesieniu do niepokoju, zaburzeń funkcjonowania i depresji – wyniki skal nie były zróżnicowane ze względu na staż pracy.

Wnioski: U badanych pielęgniarek można zaobserwować porównywalne poczucie koherencji, biorąc pod uwagę wiek. Im wyższy jest ogólny wynik poczucia koherencji tym wyższe są wyniki dotyczące zachowań zdrowotnych. Staż pracy różnicuje pielęgniarki pod względem praktyk zdrowotnych. Wykształcenie pielęgniarek nie różnicuje ich pod względem poczucia koherencji. Występuje korelacja pomiędzy zachowaniami zdrowotnymi, a zdrowiem psychicznym pielęgniarek.

Słowa kluczowe: pielęgniarki, poczucie koherencji, zachowania zdrowotne.

Abstract:

Introduction: The work of nurses can impose both psychological and physical burdens on the body. Nurses often work in shift systems, significantly disrupting their circadian rhythm, making it challenging to prioritize their own health and contributing to the development of a rigid sense of coherence.

Objective: To determine the sense of coherence through the analysis of health behaviors and mental health status of nurses.

Materials and Methods: The study was conducted with a group of 100 nurses, utilizing a diagnostic survey method through questionnaire techniques and tools such as SOC29, IZZ, GHQ28.

Results: The research indicates that age does not differentiate nurses in terms of the sense of coherence ($p > 0.05$). Significant statistically correlations were observed between dietary habits and the sense of coherence. As the overall coherence score increases, so do the results related to health behaviors. Work experience influences the health practices of nurses, with higher experience associated with lower health practices. The education level of nurses does not affect the sense of coherence. No differences were found in terms of anxiety, functional disorders, and depression concerning work experience.

Conclusions: Nurses exhibit comparable sense of coherence considering age. Higher overall coherence scores are associated with higher scores in health behaviors. Work experience differentiates nurses in terms of health practices. The education level of nurses does not differentiate them in terms of the sense of coherence. There is a correlation between health behaviors and the mental health of nurses.

Keywords: nurses, sense of coherence, health behaviors.

## Introduction

Nursing work entails significant psychological and physical burdens. It is a multifaceted profession requiring, among others, manual skills, empathy, patience, understanding, as well as logical thinking and keen observation.

Shift work disrupts the natural biological rhythm, which may result in irritability, stress, decreased concentration, reduced physical strength, tension, anxiety, and sleep disorders. Such conditions can lead to an imbalance. The sense of coherence, which consists of comprehensibility, manageability, and meaningfulness, may be seriously impaired.

### Sense of Coherence – Three Components: Comprehensibility, Manageability, and Meaningfulness

According to Aaron Antonovsky, the creator of the salutogenic concept, whose central notion is the sense of coherence (SOC), health is not a fixed state or resource but a process of movement between health and illness [1,2]. The sense of coherence comprises three components: comprehensibility, manageability, and meaningfulness.

- Comprehensibility – refers to the extent to which a person perceives incoming information from the internal and external environment as clear, structured, and coherent. A person with a strong sense of comprehensibility anticipates being able to analyze stimuli encountered in the future or manage their organization. Even in negative situations, such as the death of a loved one, they can perceive a positive perspective [3,4].

- Manageability – indicates the degree to which a person recognizes their available resources as sufficient to cope with prevailing conditions. These resources include not only personal capabilities but also support from others willing to help overcome difficulties, such as a spouse, family, friends, nurses, or doctors—someone reliable. A

person with a strong sense of manageability does not feel like a "victim" or unjustly judged and strives to resolve problems at all costs [3,5].

- Meaningfulness – describes the extent to which a person feels that life has meaning and that suffering, at least to some degree, serves a defined purpose. Individuals with a strong sense of meaningfulness believe that problems are not merely burdens but lessons that strengthen them and help find meaning in events. Consequently, they do not fear new challenges and view the effort required to solve problems as a positive experience.

Antonovsky defined the sense of coherence as "a global orientation expressing the degree to which one has a pervasive, enduring, though dynamic feeling of confidence that: stimuli from one's internal and external environments are structured, predictable, and explicable; resources are available to meet the demands posed by these stimuli; and these demands are challenges worthy of investment and engagement" [2,3,5]. People with a strong sense of coherence exhibit high intensity in all three components [3,5]. Every individual sets personal boundaries, and what lies beyond them is irrelevant to that person. The scope of these boundaries depends on individual preferences—some are narrow, others broad. According to Antonovsky, boundary width does not equate to the level of coherence. One may have narrow boundaries yet a high sense of coherence, which depends on whether the person identifies life domains as important or less important. If such domains do not exist, strong manageability, meaningfulness, and comprehensibility are unlikely. Antonovsky identifies core areas such as close relationships, deepest feelings, main life activities, and existential issues like isolation, death, and unpredictable failures. He argues that boundaries cannot be so narrow as to exclude these areas, as they require significant personal involvement. If someone manages to exclude them, they likely have a low sense of meaningfulness [2,3]. If certain domains impose excessive demands, boundaries may be temporarily or radically tightened—except for core areas [2,3].

Antonovsky distinguished two types of coherence: strong and rigid. He believed that a person with a strong sense of coherence has a dominant life goal, a sense of continuity, can balance acquired information, and adheres to personal principles [2,3]. Conversely, individuals who panic in stressful situations, pretend to be someone they are not, fail to adapt to conditions, and lack a dominant life goal exhibit rigid coherence. One technique for identifying such individuals is qualitative research [3,5].

Health Behaviors

Health behaviors are any human activities aimed at maintaining or improving health [6]. According to H. Sęk, these behaviors can be divided into two categories: habitual and

intentional health-related actions. Habitual health behaviors are acquired through socialization and include everyday practices such as eating habits, physical activity, and hygiene activities like brushing teeth and body care. These habits can be classified as health-promoting or health-damaging. Intentional health behaviors are actions performed deliberately to achieve specific health benefits. They may arise as a result of illness or life-threatening situations [6].

Another classification of health behaviors, according to M. Ogryzko-Wiewiórowska, is based on [7]:

- Health status: behaviors of healthy individuals, behaviors of sick individuals.
- Impact on the body: behaviors that promote health, behaviors that harm health.
- Activating factor: behaviors supported by medical institutions, behaviors resulting from cultural norms.
- Subject of action: individual behaviors, group behaviors.
- Medical knowledge: behaviors of laypersons, behaviors of professionals.
- Direction of action: behaviors directly aimed at a specific population, behaviors directly aimed at health.

Each health behavior can belong to several categories simultaneously. For example, physical activity may apply to healthy individuals or patients and can be considered a behavior of professionals or laypersons [7,8].

Social and Cultural Determinants of Health Behaviors

Health behaviors depend on the lifestyle adopted by an individual. They are largely influenced by social factors and the role a person plays in society [8]. Every culture adopts certain behavioral patterns considered health-promoting or health-damaging, but their implementation is a matter of personal choice. Habits developed during socialization and the position of health in one's value hierarchy are significant. Additionally, social status and available resources often affect health behaviors [7,8]. Health-damaging behaviors are those that directly or indirectly worsen health or exacerbate disease [8,9]. The most common health-damaging behaviors include smoking, poor nutrition, alcohol consumption, and lack of physical activity.

Mental Health

Mental health is not merely the absence of mental disorders but a state of complete well-being that enables an individual to achieve goals, actively participate in society, and cope with life challenges. Mental health allows proper social functioning [10]. The maintenance of health or the onset of illness is influenced by numerous biological, social, and psychological factors. Individuals can actively influence these factors, thereby impacting their health status. According to Lucyna Gromulska, the boundary between physical health and illness is more

distinct than that between mental health and mental disorders. However, physical health factors are often studied more frequently than mental health factors [10].

Objective of the Study

The aim of the research was to determine the sense of coherence through the analysis of nurses' health behaviors and their mental health status.

Specific Objectives:

- To determine whether nurses' age and education level influence their sense of coherence.
- To assess whether the sense of coherence is higher among nurses who take care of their physical health.
- To examine how nurses' work experience and education level affect the level of health behaviors.
- To verify whether work experience and health behaviors influence nurses' mental health.

Materials and Methods

The study was conducted between February and May 2023 among professionally active nurses, students of the Higher Medical School in Kłodzko. Inclusion criteria were: work experience of more than one year and consent to participate in the study. A total of 115 questionnaires were distributed, 108 were returned, but due to incomplete responses or errors, 100 questionnaires were included in the analysis.

The study group consisted of 100 nurses working in various hospital wards in the Lower Silesian Voivodeship. The diagnostic survey method was used, employing a questionnaire technique. The following tools were applied:

- Life Orientation Questionnaire (SOC-29) – assesses the sense of coherence. The author of the questionnaire is sociologist Aaron Antonovsky, who developed 29 statements. Each statement is answered using a 7-point scale. The sense of coherence consists of three components: comprehensibility (11 items), meaningfulness (8 items), and manageability (10 items). These components do not necessarily develop simultaneously. Results are calculated using a specific key that allows for the assessment of all three components [11,12].

- Inventory of Health Behaviors (IZZ) – consists of 24 statements developed by Zygfryd Juczyński. The statements refer to health-related behaviors. The author distinguished four subscales of health behaviors: proper eating habits, preventive behaviors, health practices, and positive mental attitude. Each statement is rated on a 5-point scale. The results allow for interpretation of health-related behaviors [13].

- General Health Questionnaire (GHQ-28) – developed by David Goldberg. This questionnaire assesses the general health status of the respondent. GHQ-28 also evaluates somatic symptoms, anxiety, depressive symptoms, insomnia, and social functioning disorders. Respondents choose one of the following answers: better than usual, same as usual, worse than usual, much worse than usual. Results are interpreted using the key provided by the author [14].

In addition to standardized tools, questions regarding sociodemographic data were included.

Results

The characteristics of the study group are presented in Table 1.

Table 1. Characteristics of the Study Group

| Characteristic | | N | % |
|---|---|---|---|
| Age | 20-29 | 25 | 25 |
| | 30-39 | 31 | 31 |
| | 40-49 | 33 | 33 |
| | over 49 | 11 | 11 |
| Sex | 85 | 85 | 85 |
| | 14 | 14 | 14 |
| Maritial status | Single | 33 | 33 |
| | Married | 59 | 59 |
| | Divorced | 8 | 8 |
| Place of residence | Wieś | 29 | 29 |
| | City up to 100 thousand inhabitants | 22 | 22 |
| | City over to 100 thousand inhabitants | 49 | 49 |
| Education | Medical high school | 27 | 27 |
| | Bachelor of Nursing | 44 | 44 |
| | Master of Nursing | 29 | 29 |
| Seniority | 1-5 years | 24 | 24 |
| | 5-15 years | 32 | 32 |
| | 15-25 years | 26 | 26 |
| | Over 25 years | 18 | 18 |
| Workplace | Primary nurse | 93 | 93 |
| | Coordinating nurse | 7 | 7 |
| Type of workplace | University Hospital | 15 | 15 |
| | Provincial Hospital | 75 | 75 |
| | City Hospital | 10 | 10 |
| Do you do additional work? | Yes | 84 | 84 |
| | No | 16 | 16 |
| Self-assessment of health status | I am completely healthy | 79 | 79 |
| | I have a chronic disease - hypothyroidism | 4 | 4 |
| | I have a chronic disease - hypertension | 4 | 4 |
| | I have a chronic disease - spine disease | 5 | 5 |
| | I have a chronic disease - other | 8 | 8 |

Statistical analysis was carried out in relation to the specific objectives, using two types of tests depending on the nature of the variables examined.The first – Spearman's rank correlation coefficient – was applied to assess the relationship between two quantitative variables. In this case, the null hypothesis assumes no correlation (correlation coefficient equals zero). A statistically significant result ($p < 0.05$) allows rejection of the null hypothesis and confirms the existence of a correlation.The second – Kruskal-Wallis test – was used to compare more than two groups. The null hypothesis in this test assumes no differences between the

medians of the compared groups. A p-value < 0.05 indicates rejection of the null hypothesis and confirms significant differences between groups.

The results for sense of comprehensibility ranged from 29 to 63, with the lowest scores observed among the oldest participants (Me = 43). Similar results were noted in the 40–49 age group (Me = 44). The two youngest age groups had higher scores. However, these differences were not statistically significant (p > 0.05).For sense of manageability, medians ranged from Me = 36 among participants over 49 years old to Me = 44 in the youngest group. These differences were also not statistically significant.A similar trend was observed for sense of meaningfulness – the older the participants, the lower the scores in this component. Again, the test result was not statistically significant (p > 0.05).The same applied to the overall sense of coherence score – age did not differentiate participants in this respect (p > 0.05) (Table 2).

Table 2. Does age differentiate nurses in terms of the sense of coherence?

| | **20-29** | | | **30-39** | | | **40-49** | | | **Over 49** | | | **Kruskal-Wallis test result** |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | ***Me*** | ***Min*** | ***Maks*** | ***Me*** | ***Min*** | ***Maks*** | ***Me*** | ***Min*** | ***Maks*** | ***Me*** | ***Min*** | ***Maks*** | |
| PZR | 46,0 | 36,0 | 61,0 | 48,0 | 29,0 | 63,0 | 44,0 | 29,0 | 63,0 | 43,0 | 33,0 | 54,0 | *chi2* = 5,231<br>*df* = 3<br>*p* = 0,156 |
| PST | 44,0 | 31,0 | 59,0 | 43,0 | 23,0 | 61,0 | 43,0 | 22,0 | 57,0 | 36,0 | 19,0 | 52,0 | *chi2* = 7,676<br>*df* = 3<br>*p* = 0,053 |
| PSE | 40,0 | 24,0 | 52,0 | 36,0 | 12,0 | 56,0 | 36,0 | 15,0 | 49,0 | 33,0 | 25,0 | 44,0 | *chi2* = 4,925<br>*df* = 3<br>*p* = 0,177 |
| K | 126,0 | 93,0 | 171,0 | 122,0 | 71,0 | 174,0 | 124,0 | 66,0 | 152,0 | 114,0 | 81,0 | 142,0 | *chi2* = 6,979<br>*df* = 3<br>*p* = 0,073 |

PZR – Sense of comprehensibility; PST – Sense of controllability; PSE – Sense of meaningfulness; K – Coherence

Is There a Correlation Between Sense of Coherence and Health Care?

The sense of comprehensibility was positively correlated with proper eating habits (weak correlation), positive mental attitude (weak correlation), and the overall health behavior index

(weak correlation). The positive nature of these correlations indicates that a higher sense of comprehensibility is associated with better health behaviors.

The sense of manageability was positively correlated with proper eating habits (moderate correlation), positive mental attitude (moderate correlation), and the overall health behavior index (moderate correlation).

The sense of meaningfulness was positively correlated with proper eating habits (moderate correlation), positive mental attitude (moderate correlation), and the overall health behavior index (moderate correlation). Additionally, sense of meaningfulness was positively correlated with health practices (weak correlation).

For the overall sense of coherence score, statistically significant correlations were observed with proper eating habits (moderate correlation), positive mental attitude (moderate correlation), health practices (weak correlation), and the overall health behavior index (moderate correlation). The higher the overall sense of coherence, the higher the scores for health behaviors (Table 3).

Table 3. Correlations between the sense of coherence and health care practices.

| | | | **SOC29** | | | |
|---|---|---|---|---|---|---|
| | | | **PZR** | **PST** | **PSE** | **K** |
| IZZ | PNŻ | R | 0,266 | 0,359 | 0,387 | 0,387 |
| | | p | 0,007 | <0,001 | <0,001 | <0,001 |
| | ZP | R | 0,132 | 0,018 | 0,177 | 0,102 |
| | | p | 0,191 | 0,860 | 0,078 | 0,312 |
| | PNP | R | 0,282 | 0,430 | 0,491 | 0,466 |
| | | p | 0,004 | <0,001 | <0,001 | <0,001 |
| | PZD | R | 0,168 | 0,185 | 0,250 | 0,237 |
| | | p | 0,095 | 0,065 | 0,012 | 0,017 |
| | ZZ | R | 0,289 | 0,309 | 0,422 | 0,385 |
| | | p | 0,004 | 0,002 | <0,001 | <0,001 |

SOC29 - Life Orientation Questionnaire PZR - Sense of comprehensibility; PST – Sense of controllability; PSE – Sense of meaningfulness; K – Coherence (overall result); PNŻ – correct eating habits; ZP – preventive behaviors; PNP – positive mental attitude; PZD – health practices; ZZ - health behaviors (general indicator), IZZ - Inventory of Health Behaviors, p - statistical significance, R - correlation coefficient

After analyzing the impact of education on sense of coherence, it was found that education does not differentiate participants in terms of sense of coherence ($p > 0.05$). No statistically significant differences were noted for any of the scales or for the overall sense of coherence score.

Education also does not differentiate participants in terms of health behavior levels ($p > 0.05$). No statistically significant differences were observed for any of the scales or for the overall health behavior index (Tab. 4).

Table 4. Work experience and health behaviors of nurses.

| **IZZ** | **0-5** | | | **5-15** | | | **15-25** | | | **Over 25** | | | **Kruskal-Wallis test result** |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | ***Me*** | ***Min*** | ***Maks*** | ***Me*** | ***Min*** | ***Maks*** | ***Me*** | ***Min*** | ***Maks*** | ***Me*** | ***Min*** | ***Maks*** | |
| PNŻ | 22,0 | 10,0 | 30,0 | 20,5 | 13,0 | 30,0 | 21,0 | 10,0 | 28,0 | 18,0 | 14,0 | 25,0 | *chi2* = 6,556<br>*df* = 3<br>*p* = 0,087 |
| ZP | 20,0 | 9,0 | 30,0 | 22,0 | 9,0 | 27,0 | 20,0 | 8,0 | 29,0 | 20,5 | 14,0 | 27,0 | *chi2* = 2,487<br>*df* = 3<br>*p* = 0,478 |
| PNP | 19,5 | 12,0 | 28,0 | 19,5 | 9,0 | 28,0 | 20,0 | 8,0 | 28,0 | 19,5 | 14,0 | 28,0 | *chi2* = 0,324<br>*df* = 3<br>*p* = 0,956 |
| PZD | 19,0 | 10,0 | 26,0 | 18,5 | 11,0 | 29,0 | 19,5 | 9,0 | 28,0 | 16,5 | 8,0 | 21,0 | *chi2* = 8,774<br>*df* = 3<br>*p* = 0,032 |
| ZZ | 81,0 | 46,0 | 99,0 | 80,0 | 56,0 | 113,0 | 80,5 | 41,0 | 113,0 | 71,5 | 55,0 | 90,0 | *chi2* = 3,388<br>*df* = 3<br>*p* = 0,336 |

PNŻ – correct eating habits; ZP – preventive behaviors; PNP – positive mental attitude; PZD – health practices; ZZ – health behaviors (general indicator)

Work Experience and Nurses' Health Behaviors

The study did not reveal statistically significant differences between participants with varying work experience in terms of proper eating habits, preventive behaviors, positive mental attitude, and the overall health behavior index ($p > 0.05$).Statistically significant differences were observed for health practices. The lowest scores were recorded among participants with more than 25 years of work experience. These scores ranged from 8 to 21, with a median of Me = 16.5. In all groups with shorter work experience, the scores were higher. These differences were additionally confirmed using the Bonferroni test, which showed a result at the borderline of

statistical significance between the group with the longest work experience and the remaining groups.

Work Experience and Nurses' Mental Health

A statistically significant result was noted for somatic disorders ($p < 0.05$). Participants with 5–15 years of work experience had lower scores in this category (Me = 13.5) compared to those with more than 25 years of experience (Me = 17.5). The statistical significance of differences between groups was confirmed using the Bonferroni post hoc test. No statistically significant differences were found between the remaining groups.No differences were observed for anxiety, functional disorders, and depression—the scores on these scales did not vary by work experience (Table 5).

Table 5. Work experience and the mental health status of nurses.

| | **0-5** | | | **5-15** | | | **15-25** | | | **Over 25** | | | **Kruskal-Wallis test result** |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | ***Me*** | ***Min*** | ***Maks*** | ***Me*** | ***Min*** | ***Maks*** | ***Me*** | ***Min*** | ***Maks*** | ***Me*** | ***Min*** | ***Maks*** | |
| ZS | 14,0 | 7,0 | 24,0 | 13,5 | 7,0 | 23,0 | 14,0 | 9,0 | 23,0 | 17,5 | 8,0 | 22,0 | *chi2* = 7,975<br>*df* = 3<br>*p* = 0,047 |
| N | 14,0 | 7,0 | 26,0 | 12,0 | 7,0 | 19,0 | 14,0 | 9,0 | 23,0 | 14,0 | 9,0 | 23,0 | *chi2* = 3,703<br>*df* = 3<br>*p* = 0,295 |
| ZF | 14,0 | 7,0 | 19,0 | 13,5 | 8,0 | 18,0 | 13,5 | 8,0 | 23,0 | 14,5 | 10,0 | 20,0 | *chi2* = 3,024<br>*df* = 3<br>*p* = 0,388 |
| D | 8,5 | 7,0 | 15,0 | 8,0 | 7,0 | 15,0 | 8,5 | 7,0 | 21,0 | 8,0 | 7,0 | 20,0 | *chi2* = 0,320<br>*df* = 3<br>*p* = 0,956 |

ZS – somatic disorders; N – anxiety; ZF – functioning disorders; D - depression

Health Behaviors and Nurses' Mental Health

The score for proper eating habits was negatively correlated with all results related to mental health disorders. These correlations were weak or moderately strong. The higher the scores for proper eating habits, the lower the scores for somatic disorders, anxiety, functional disorders, and depression.

The same conclusions apply to positive mental attitude—the higher the scores on this scale, the lower the scores for somatic disorders, anxiety, functional disorders, and depression.

The score for preventive behaviors was negatively correlated with functional disorders. The score for health practices was negatively correlated with somatic disorders, anxiety, and functional disorders.

The overall health behavior index was negatively correlated with all results related to somatic disorders, anxiety, functional disorders, and depression (Table 6).

Table 6. Health behaviors and the mental health of nurses.

| | | | IZZ | | | | |
|---|---|---|---|---|---|---|---|
| | | | PNŻ | ZP | PNP | PZD | ZZ |
| GHQ28 | ZS | R | -0,270 | -0,149 | -0,308 | -0,381 | -0,349 |
| | | p | 0,007 | 0,139 | 0,002 | <0,001 | <0,001 |
| | N | R | -0,262 | -0,154 | -0,261 | -0,327 | -0,316 |
| | | p | 0,009 | 0,126 | 0,009 | 0,001 | 0,001 |
| | ZF | R | -0,325 | -0,201 | -0,359 | -0,366 | -0,410 |
| | | p | 0,001 | 0,045 | <0,001 | <0,001 | <0,001 |
| | D | R | -0,282 | -0,127 | -0,262 | -0,112 | -0,262 |
| | | p | 0,005 | 0,207 | 0,008 | 0,268 | 0,008 |

IZZ - Inventory of Health Behaviors, PNŻ - proper eating habits; ZP – preventive behaviors; PNP – positive mental attitude; PZD – health practices; ZZ – health behaviors (general indicator); GHQ28 – General health condition, ZS – somatic disorders; N – anxiety; ZF – functioning disorders; D – depression,

## Discussion

The work performed by nurses is multifaceted, which often leads to excessive strain on the body. The nature of this profession frequently makes it difficult to maintain personal health. Shift work can disrupt the circadian rhythm, which consequently results in sleep disturbances, reduced physical strength, irritability, deterioration of eating habits, and stress. In such cases, the sense of coherence may be significantly diminished.

According to the publication by Anna Kocięcka and co-authors titled *"Sense of Coherence and Health Status of Nurses"*, the sense of coherence significantly influences nurses' health. Individuals with a higher level of coherence are less likely to exhibit symptoms indicative of somatic disorders, sleep problems, depression, and feelings of anxiety and fear [1]. These findings are consistent with Aaron Antonovsky's concept, which demonstrated that individuals with a strong sense of coherence cope better with stress because they believe they can manage any situation. This contributes to maintaining inner balance and a sense of calm [2,3,5].

In our own research, statistically significant correlations were observed between sense of coherence and positive mental attitude, overall health behavior index, and proper eating habits.

A detailed analysis revealed that all components of the sense of coherence—comprehensibility, meaningfulness, and manageability—were positively correlated with proper eating habits, positive mental attitude, and the overall level of health-promoting behaviors.

In the study by Monika Binkowska-Bury and co-authors titled *"Sense of coherence and health-related behaviour among university students – a questionnaire survey"*, a statistically significant relationship was demonstrated between the sense of coherence (and its components) and internal and external factors influencing the decision to choose a field of study such as nursing or midwifery [15]. Based on these findings, it can be inferred that the level of sense of coherence plays a role in the decision to pursue a career as a nurse or midwife. It can be assumed that Binkowska-Bury's research was conducted among young individuals [15].

In our own study, it was found that the sense of coherence (including meaningfulness, manageability, and comprehensibility) was highest among the youngest participants, while it decreased with age.

Anna Walentukiewicz and co-authors, in their publication on nurses' health behaviors, indicate that the overall health behavior index in the studied group was at an average level. Respondents exhibited improper eating habits, low physical activity, and smoking. Additionally, nurses reported psychological complaints and rarely underwent preventive examinations [16]. Similar results were presented by Lewko and co-authors, who noted a low level of health-promoting behaviors among nursing students as well [17]. Muszalik et al. emphasize that despite being aware of the positive impact of physical activity on health, nurses are reluctant to engage in it [18]. In turn, research by Warchoł-Słowińska and co-authors showed that about 60% of respondents declared practicing sports, but only 6% engaged in daily physical activity. The authors point out that as many as 61% of nurses experience negative effects of stress, mainly related to their professional work. The most frequently indicated stressors include poor working conditions, contact with patients' suffering, interpersonal relations, and low remuneration [19].

In our own research, eating habits were negatively correlated with all indicators of health behaviors, with correlations being weak or moderate. The higher the scores for somatic disorders, functional disorders, anxiety, and depression, the worse the eating habits observed. It should be emphasized that the overall health behavior index was negatively correlated with the severity of somatic disorders, anxiety, functional disorders, and depression.

Conclusions

1. The age and education level of the nurses studied do not affect their sense of coherence.
2. The higher the overall sense of coherence score, the higher the scores related to health behaviors.

3. Work experience differentiates nurses in terms of health practices and somatic disorders associated with mental health.
4. There is a correlation between health behaviors and nurses' mental health.

Recommendations for Nursing Practice

Health behaviors depend on the lifestyle adopted by an individual and, to some extent, on their sense of coherence. They are largely influenced by social factors. Responsibility for one's own health rests with the individual. Nurses should be aware of the risks that may harm their health due to the nature of their profession. Health-damaging behaviors include smoking, reduced physical activity, failure to undergo preventive examinations, and improper nutrition. Health awareness should manifest through maintaining an appropriate lifestyle and promoting and adhering to behaviors that support health.

Author Contribution

Conceptualization, S.K., M.K., M.P.; methodology, S.K..; software, S.K. M.K.,; validation, S.K. and M.P.., formal analysis, S.K. M.K.; investigation, M.P.; writing—original draft preparation, M.P..; writing—review and editing, S.K.; project administration, S.K. and M.P..; All authors have read and agreed to the published version of the manuscript.

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