STRESSORS AT WORK AND HEALTH BEHAVIOURS OF PROFESSIONALLY ACTIVE NURSES

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ABSTRACT

Introduction: Persons performing medical professions are particularly vulnerable the occurrence of stress. Nursing, the essence of which is to help healthy and ill individuals to maintain health, regain health, alleviate suffering, and facilitate dignified dying through a wide range and specific type of personal commitment, puts an immense challenge before the person performing it.

Aim of the study: The main objective of this paper is to assess the health behaviour of nurses in the context of stress related to professional work.

Material and methods: The survey was carried out in Sucha Beskidzka among 125 nurses. The research used a diagnostic survey method, a survey technique, the author's questionnaire, Scale PSS-10, the Inventory of Health Behaviours, and the Scale of Positive Health Behaviours as tools. The relationship between variables was determined by: independence test χ^2, Spearman's rank correlation coefficient, and Kruskal-Wallis ANOVA test.

Results: Among the stressful factors the respondents most often indicated: excessive bureaucratic burden (73.6%), lack of personnel (40.8%), responsibility for human health and life (47.2%), helplessness regarding the patient's suffering (45.6%), claims from the patient (44.8%), and difficulties regarding the flow of information (36.0%). The intensity of experienced stress by the respondents was medium. The frequency of health behaviours undertaken by nurses was average. Nurses working in surgical wards had a higher level of positive health behaviours in comparison to others.

Conclusions: The health behaviours of nurses are dependent on the amount and quality of stress factors related to professional work.

Key words: nurses, health behaviours, stressors.

INTRODUCTION

The health situation of every human being is to a large extent related to health behaviours. The National Health Program, which focuses its activities mainly on promotion and prevention, sets health care professionals an important role. The nursing profession is associated with great responsibility for human health. Nurses play an invaluable role in promoting pro-health attitudes [1, 2].

Health behaviours can be described as broad measures that are focused on health goals. If these actions have a positive effect on health, they are described as pro-health, but if they are the cause of disturbances in normal human life, they are described as risky behaviours [3].

It should be emphasised that the processes of shaping health behaviours are regulated by numerous mechanisms. Difficult situations occurring in nurses' work contribute to diversified functioning on the behavioural and emotional levels. Nursing is a profession in which chronic stress results from the very nature of the profession. A nurse's work is particularly difficult because of the emotional load. Every nurse must deal with the uneasy emotions caused by everyday contact with the illnesses and difficult life situations of people, and often with the death of the patient. Nurses are also exposed to overloading of the musculoskeletal system. Many workstations are characterised by irritation resulting from the working conditions. Exposure to biological and chemical agents in the workplace, the need for constant availability, responsibility for the health and life of patients, the need to handle complicated and expensive medical equipment, and exposure to aggression from patients or their families are some of the factors causing tension and stress. In addition, the need for prolonged standing while work-

ing, the need to service patients, lifting people after a fall, or transporting heavy medical equipment – all this means that nurses are exposed to the possibility of injury and overloading of the musculoskeletal system. Often, the patient's weight cannot be estimated, which increases the risk of injuries, hand grip areas are limited, or co-operation on the part of disabled or unconscious patients is limited. The onerousness of nurses' work is undoubtedly composed of the following: a large number of patients, lack of auxiliary devices, insufficient training in the protection of one's body, e.g. locomotor system, and non-compliance with the provisions on permissible loads. There are too few nurses, and the difficult economic situation of the Health Service leads to further staff reductions. The work of a nurse in most medical entities is shift work, regulated internally. Night work should be treated as a factor favouring, accelerating, and intensifying the occurrence of many diseases [4, 5].

Nursing, the essence of which is to help healthy or ill people to maintain or regain health, alleviate suffering, and allow a dignified death through a wide range and specific type of personal commitment, puts an immense challenge before the person performing it.

AIM OF THE STUDY

The main objective of this paper was to assess the health behaviour of nurses in the context of stress related to professional work. The specific objectives were to answer the following: What stressors were present in nurses' work? What was the stress level experienced by working nurses? Which health behaviours were present in the study group? What was the relationship between experienced stress and health behaviours?

MATERIAL AND METHODS

The research used a diagnostic survey method, a survey technique, and the following tools: author's questionnaire, the Perceived Stress Scale (PSS-10), the Health Behaviour Inventory, and the Scale of Positive Health Behaviours.

The author's questionnaire consisted of four sociodemographic questions (age, sex, work experience, ward) and nine closed one-choice questions regarding stress factors, negative health behaviours, and reactions to stress.

The Perceived Stress Scale (PSS-10), by Cohen, Kamarck, and Mermelstein, was used to assess the severity of stress related to a respondents' own life situation during the last month. It contained 10 questions about subjective feelings associated with personal issues and events. For each question, the respondent answered using a five-point scale from 0 (*never*) to 4 (*very often*). The overall score of the scale, being the sum of points, had a theoretical distribution ranging from 0 to 40. After converting into standardised units, results within a sten score of 1-4 were treated as low, 5-6 as average, and 7-10 as high [6].

The Health Behaviour Inventory contained 24 statements regarding various types of health behaviour. The respondent indicates how often he/she performs health-related activities, assessing on a five-point scale: 1 – *almost never*, 2 – *rarely*, 3 – *from time to time*, 4 – *often*, or 5 – *very often*. The overall conversion rate for standardised units is interpreted according to the characteristics of the stenographic scale. Results of 1-4 stena are taken as low, 5-6 as average, and 7-10 as high. The overall rate of health behaviour is within the range of 24-120 points. The higher the score, the higher the declared behaviour. The frequency of individual behaviour is determined by the overall severity of the behaviour and the intensity of the four behavioural categories – correct eating habits, preventive behaviours, health practices, and positive mental attitudes. The inventory can be used to set trends in behavioural modifications and monitor changes in health practices [6].

The Scale of Positive Health Behaviours included 29 health-oriented behaviours grouped into five subscales: nutrition, body care, safety, psychosocial health, and physical activity. The subject determined the frequency of behaviour on a four-point scale: from *almost always* (3 points) to *almost never* (0 points) [7].

The research was carried out in accordance with the requirements of the Declaration of Helsinki. The questionnaire was carried out anonymously and voluntarily. Each person was informed about the purpose of the survey and how to complete it. The collected data was subjected to quantitative analysis. The statistical analysis used the following: independence test χ^2, ANOVA analysis of variance, Spearman's rank correlation, and Kruskal-Wallis ANOVA test, based on the Statistica v. 7.1 computer statistical package from StatSoft and Microsoft Excel 2000 and 2007 from Microsoft.

The survey was carried out in September 2017 in Sucha Beskidzka. All nurses were informed about the possibility of taking part in the study. The criteria for being included in the research were: informed consent, age over 18 years, and working at a hospital in Sucha Beskidzka. Nurses were informed of the confidentiality and anonymity of the study, that their participation was voluntary, and that they may cease to cooperate at any time during the study.

The survey included 130 people; 125 questionnaires (96%) were analysed, and five questionnaires were rejected due to missing data. The study population consisted of 125 people from different hospital wards (Anaesthesiology and Intensive Therapy, Surgery, Oncology, Neonatology, Neurology Gynaecology and Obstetrics, Cardiology, Paediatrics, Rheumatology, Urology, Intern, Orthopaedics, Dialysis Station, and the Hospital Emergency Department).

Questionnaires received from respondents were evaluated individually and checked for completeness. The data were then coded, entered into the database, and processed using IBM SPSS Statistics 20 for Windows. The relationship between variables was determined by: independence test χ^2, ANOVA analysis of variance (normal distribution), Spearman's rank correlation coefficient (when at least one of them did not have a normal distribution), and Kruskal-Wallis ANOVA test (lack of normal distribution), based on the Statistica v. 7.1 computer statistical package from StatSoft and Microsoft Excel 2000 and 2007 from Microsoft.

In terms of gender, the group consisted of 125 female nurses (98%). The estimated average age in the surveyed group was 48.7 ±8.5 years. Half of the respondents (63.5%) were persons up to 50 years of age, only 14 (11%) of them were persons up to 40 years of age, and 49 (39%) were persons in the age range 41-50 years. The remaining respondents (62.5%) were persons over 50 years of age. Less than half of the respondents (59.5%) were people with seniority in the profession of a nurse for over 30 years. The second largest group comprised surveyed persons with seniority in the occupation for 21-30 years (42.3%). In terms of seniority in the current ward, the highest percentage of respondents (37.3%) were those who had been working for over 30 years. The next largest groups were respondents with seniority for 21-30 years (30.2%) and people working for 11-20 years (27.2%).

RESULTS

Among the stressful factors associated with the conditions and organisation of work, the respondents most often indicated: *excessive bureaucracy* (92.7%) and *lack of personnel* (51.4%). Then, nurses pointed factors such as: *exposure to one's own health and safety* (46.4%), *too low pay for work* (46.4%), and *time pressure while maintaining all applicable rules* (39.3%).

There were statistically significantly fewer among those working in children's wards, who considered *exposing their own health and safety* as the most stressful factor, compared to the other surveyed people ($\chi^2 = 7.39$, $p = 0.025$). Similarly, there were fewer people among those working in children's wards, who considered *the forced physical position of the body and high workload* to be the most stressful factors, compared to the remaining surveyed persons ($\chi^2 = 6.46$, $p = 0.040$).

However, no statistically significant differences were found between the indication of *other factors related to the conditions and organisation of work* as the most stressful, and the type of ward on which the subjects worked (Table 1).

Table 1. Stress factors related to the conditions and organisation of work

Responses	Hospital ward								χ^2	*p*
	Surgical		Conservative		Children's		Total			
	n = 51	%	*n* = 56	%	*n* = 18	%	*n* = 125	%		
Low remuneration for work	19	37.2	23	41.1	4	22.2	46	36.8	2.09	0.35
Low-quality equipment	9	17.6	14	25.0	0	–	23	18.4	5.70	0.058
Lack of development prospects	6	11.8	2	3.6	0	–	8	6.4	4.43	0.11
Burden of bureaucracy	35	68.6	42	75.0	15	83.3	92	73.6	1.58	0.45
Exposure to harmful chemical and biological agents	18	35.3	26	46.4	2	11.1	46	36.8	7.39	0.025
High workload	12	23.5	16	28.6	0	–	28	22.4	6.46	0.040
No fixed meal breaks	13	25.5	12	21.4	3	16.7	28	22.4	0.65	0.72
Undertaking actions in life-threatening situations	10	19.6	6	10.7	6	33.3	22	17.6	5.04	0.080
Time pressure	16	31.4	15	26.8	8	44.4	39	31.2	1.98	0.37
Staff shortages	17	33.3	27	48.2	7	38.9	51	40.8	2.48	0.29
Others:										
work system – end of on-call time at 24:00	–	–	2	3.6	–	–	2	1.6	–	
no permanent employment contract	1	2.0	–	–	–	–	1	0.8	–	
Total responses*	156	–	185	–	45	–	386	–		

**Responses do total 100% because the respondents gave many answers*

χ^2 – chi-square test values; p – significance levels for chi-square tests

Among the stressful factors associated with the patient, the respondents most often indicated: *responsibility for human health and life* (59.5%), *helplessness regarding the patient's suffering* (57.5%), and *claims from the patient* (56.5%). Then, respondents pointed factors such as: *contact with human suffering* (44.4%) and *contact with death and dying* (39.3%) (Table 2).

There were no statistically significant differences between *stress factors associated with the patient*, and the type of ward on which the respondents worked.

Among the stressful factors associated with the patient's family, the respondents most often indicated: *disrespect of the family towards the nursing work performed* (81.7%) and *claims from family members* (67.5%). The following items listed such factors as: *the need to talk to the family of the dying/deceased* (28.2%), *not enough time to talk to the patient's family* (25.2%), and *no time to educate the patient's family* (20.2%) (Table 3).

There were statistically significantly more people among those working on children's wards, who considered the *lack of sufficient time to talk with the patient's family* as the most stressful factor, compared to the other respondents ($\chi^2 = 6.25$, $p = 0.044$).

However, no statistically significant differences were found between the remaining variables and the type of ward on which the respondents worked.

Table 2. Stress factors associated with the patient

Responses	Hospital ward								χ^2	*p*
	Surgical		Conservative		Children's		Total			
	n = 51	%	*n* = 56	%	*n* = 18	%	*n* = 125	%		
Contact with death and dying	16	31.4	16	28.6	7	38.9	39	31.2	46	0.71
Contact with human suffering	15	29.4	20	35.7	9	50.0	44	35.2	248	0.29
Helplessness regarding the suffering of the patient	23	45.1	22	39.3	12	66.7	57	45.6	4.13	0.13
Responsibility for human health and life	24	47.1	25	44.6	10	55.6	59	47.2	0.65	0.72
No improvement in the patient's state of health	11	21.6	6	10.7	1	5.6	18	14.4	3.89	0.14
Complexity of procedures and the possibility of complications during their performance	6	11.8	7	12.5	2	11.1	15	12.0	0.029	0.99
Claims from the patient	24	47.1	26	46.4	6	33.3	56	44.8	1.12	0.57
Total responses*	119	–	122	–	47	–	288	–		

**Responses do total 100% because the respondents gave many answers*

χ^2 – chi-square test values; p – significance levels for chi-square tests

Table 3. Stress factors related to the patient's family

Responses	Hospital ward								χ^2	*p*
	Surgical		Conservative		Children's		Total			
	n = 51	%	*n* = 56	%	*n* = 18	%	*n* = 125	%		
The need to talk to the dying person's family	11	21.6	10	17.9	7	38.9	28	22.4	3.50	0.17
Not enough time to talk	6	11.8	12	21.4	7	38.9	25	20.0	6.25	0.044
No time for education	7	13.7	9	16.1	4	22.2	20	16.0	0.72	0.70
Lack of respect from the family towards the nursing work	39	76.5	33	58.9	9	50.0	81	64.8	5.62	0.060
Claims from family members	26	51.0	34	60.7	7	38.9	67	53.6	2.85	0.24
Others:										
lack of interest in the patient on the part of the family	–	–	2		–	–	2	1.6	–	
Total responses*	89	–	100	–	34	–	223	–		

**Responses do total 100% because the respondents gave many answers*

χ^2 – chi-square test values; p – significance levels for chi-square tests

Among the stressful factors associated with cooperation in the therapeutic team, the respondents most often reported *difficulties in the flow of information* (45.4%). The following items were also mentioned: *lack of cooperation* (*n* = 37.30%), *unpleasant atmosphere* (36.3%), and *too little support from superiors* (34.3%). However, 11% of respondents did not indicate any stress factor that was related with cooperation in the therapeutic team (Table 4).

There were statistically significantly fewer persons among those working in surgical wards, who considered *competition among the members of the therapeutic team* as the most stressful factor, compared to the remaining subjects (χ^2 = 9.34, *p* = 0.009).

There were no statistically significant differences between *other factors related to cooperation in the therapeutic team* and the type of ward on which the studied subjects worked.

The intensity of perceived stress of the nurses examined was assessed as being on an average level (mean 19 ±5 points). It can therefore be concluded that the surveyed nurses experienced stress of average intensity (Table 5).

The health behaviours of the examined persons were rated on average as 78 ±16 points. On the sten scale, however, health behaviours were estimated on average to be 4.7 ±2.1 sten, which, according to the interpretation, defines their health behaviour as medium, bordering on low.

There was no statistically significant difference between the assessed *health behaviours* and the age of the respondents (*p* = 0.90) or seniority (*p* = 0.91) (Table 6).

There were statistically significant differences (*p* = 0.006) between the assessed *health behaviours* and the education of the subjects.

Statistically, people with higher master's education obtained a higher assessment of health behaviours in comparison to people with higher vocational education – a bachelor's degree and people with diploma education.

A statistically significant (*p* = 0.021) number of people with master's degree had a higher assessment of health behaviours in comparison to people with higher vocational education – a bachelor's degree (*p* = 0.027) and people with a registered nurse diploma (*p* = 0.034).

Table 4. Stress factors related to cooperation in the therapeutic team

Responses	Hospital ward								χ^2	*p*
	Surgical		Conservative		Children's		Total			
	n = 51	%	*n* = 56	%	*n* = 18	%	*n* = 125	%		
Difficulties in the flow of information	20	39.2	18	32.1	7	38.9	45	36.0	0.66	0.72
Competition between team members	1	2.0	12	21.4	3	16.7	16	12.8	9.34	0.009
Little support from superiors	14	27.4	15	26.8	5	27.8	34	27.2	0.010	> 0.99
Frequent conflicts in the team	5	9.8	6	10.7	3	16.7	14	11.2	0.64	0.72
Lack of cooperation	14	27.4	17	30.4	6	33.3	37	29.6	0.25	0.88
Unpleasant atmosphere	13	25.5	17	30.4	6	33.3	36	28.8	0.52	0.77
Incompetence of colleagues	5	9.8	3	5.4	1	5.4	9	7.2	0.88	0.65
No stressors	5	9.8	7	12.5	2	11.1	14	11.2	0.20	0.91
Total responses*	77	–	95	–	33	–	205	–		

**Responses do total 100% because the respondents gave many answers*

χ^2 – chi-square test values; p – significance levels for chi-square tests

Table 5. The severity of stress experienced by the surveyed nurses

Parameter	Hospital ward			
	Surgical	Conservative	Children's	Total
	n = 51	*n* = 56	*n* = 18	*n* = 125
Intensification of stress [points]				
Mean ± standard deviation	17.8 ±4.7	19.9 ±4.7	18.4 ±5.9	18.8 ±4.9
Median	18	20	18	19
Range (min.-max.)	7-28	8-34	8-32	7-34

ANOVA analysis F(df = 2, df = 122) = 2.67, p = 0.074

Table 6. The level of positive health behaviours

Parameter	Hospital ward			
	Surgical	Conservative	Children's	Total
	n = 51	*n* = 56	*n* = 18	*n* = 125
Health behaviours [points]				
Mean ± standard deviation	57.0 ±11.1	53.2 ±98	49.9 ±10.1	54.3 ±10.6
Median	56	52	51.5	55
Range (min.-max.)	29-84	37-84	28-63	28-84
ANOVA analysis F(df = 2, df = 120) = 3.58, p = 0.031				

Table 7. Health behaviours, the level of positive health behaviours, and the level of education of the subjects

Parameter	Education			
	Registered nurse	Bachelor's degree	Master's degree	Total
	n = 51	*n* = 56	*n* = 18	*n* = 125
Health behaviours [points]				
Mean ± standard deviation	77.2 ±15.7	75.8 ±14.5	89.4 ±18.4	78.4 ±16.2
Median	75.5	77	91	77
Range (min.-max.)	45-109	44-104	60-120	44-120
ANOVA analysis F(df = 2, df = 122) = 5.29, p = 0.006				
Health behaviours [sten]				
Mean ± standard deviation	4.5 ±2.1	4.4 ±1.9	6.2 ±2.5	4.7 ±2.1
Median	4	4	6	4
Range (min.-max.)	1-9	1-8	2-10	1-10
Kruskal-Wallis test H(df = 2, n = 125) = 7.77, p = 0.021				
Positive health behaviours [points]				
Mean ± standard deviation	52.5 ±10.5	53.8 ±9.0	61.4 ±13.0	54.3 ±10.6
Median	53.5	53.5	63	55
Range (min.-max.)	28-76	38-84	40-84	28-84
ANOVA analysis F(df = 2, df = 120) = 4.90, p = 0.009				

The level of positive health behaviours of the surveyed people was rated on average as 54 ±11 points (Table 7).

There was a statistically significant difference (p = 0.031) between *the level of positive health behaviours* and the type of ward on which the subjects worked. Statistically significantly, people working in surgical wards had a higher level of positive health behaviours – more points in comparison to people working on paediatric wards (p = 0.045).

There was no statistically significant difference between *the level of positive health behaviours* and the age of the respondents (p = 0.58) and their seniority (p = 0.87).

There was a statistically significant difference (p = 0.009) between *the level of positive health behaviours* and the education level of the subjects. Statistically, people with higher master's education had a higher level of positive health behaviours in comparison to people with diploma education (p = 0.007) and people with higher vocational education – bachelor's degree (p = 0.033).

There was a statistically significant relationship between the health behaviours undertaken and the intensity of stress experienced by the respondents. The Spearman's rank correlation coefficient was r_s = –0.32 (t = –4.00, p < 0.001), which indicates a negative dependence of the average degree between the variables tested. As the severity of experienced stress increased, the level of health behaviours decreased (Figure 1).

There was a statistically significant relationship between the level of positive health behaviours and the intensity of stress experienced. The Spearman's rank correlation coefficient was r_s = –0.33 (t = –3.90, p < 0.001), which indicates a negative dependence of the average degree between the variables tested. The higher the level of positive health behaviours, the greater the intensity of stress experienced.

DISCUSSION

Persons performing medical professions are highly susceptible to the occurrence of stress, which may result in professional burnout. Stress is a destructive factor affecting health, and it is present in the work of every nurse. In our own survey, the average severity of stress experienced by the nurses was measured. There was no correlation between the intensity of stress and the type of ward on which the surveyed persons work. In the group of nurses surveyed by Burba and Gotlib, the average level of experienced stress was also found, and nurses with shorter seniority significantly more often experienced stress [4]. In the studies of Grochowska *et al*., the stress level of nurses of the paediatric ward was determined as average and high. The work of paediatric nurses is associated with great responsibility, because it concerns the highest values, i.e. health and life of the child [5]. The studies of Gruszczyńska *et al*. are others in which the average level of stress intensity of the surveyed nurses has been demonstrated. The relationship between seniority and the level of stress experienced by the respondents was not confirmed. Statistical analysis also did not show a significant difference between the group with higher and lower seniority, although the level of stress was slightly higher in the group of persons who had been working for a shorter time [8].

In turn, from Perkowska and Wróblewska's research regarding nurses' professional stress, it also appears that stress is ubiquitous in this work. More than half of the respondents reported feeling it often, even though they considered themselves resistant to stress. The most frequent symptoms of stress included: nervousness, fear, sense of helplessness, insomnia, unwillingness to work, and reduced concentration. Interestingly, as many as one quarter of nurses admitted that stress caused them to feel aggressive. In addition to aggression, there was also a preported increase in RR, increased muscle tone, migraine attacks, sweating, and abdominal pain [9]. In a study conducted by Sochacka *et al*. on the perception of occupational stress by employees, the majority of respondents stated that the degree of professional responsibility is very large, which means that stress accompanies them almost always, despite the fact that they mostly like their work [10].

The research shows that among the stressors associated with the conditions and organisation of work, the nurses most often included: excessive bureaucracy and the lack of sufficient personnel, exposure to their own health and safety, too low pay for their work, and time pressure while abiding by all applicable rules. Only nurses from paediatric wards considered exposure of their own health and safety as well as forced body position and high physical workload as the least stressful factors in comparison

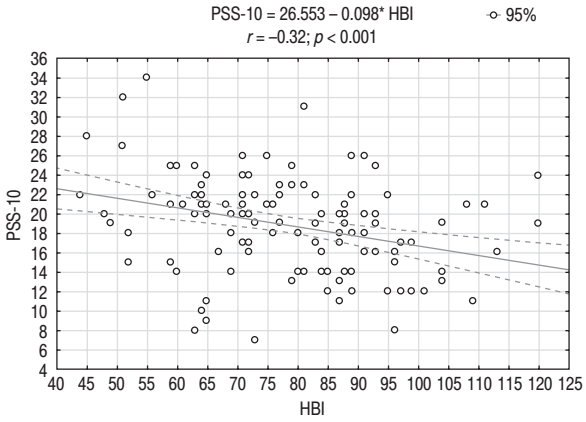

Figure 1. The relationship between health behaviors and the intensity of stress experienced

to the remaining subjects. Similar research was carried out by Skorupska-Król *et al*. The study included a group of 90 nurses employed in three different wards. These people considered bureaucracy, time pressure, understaffing during duty, and poor job position as the most stressful. The least stressful for this group were: shift work, night-time duty, lack of social facilities, inadequate career prospects, and forced body position in the performance of duties [11]. Similar results were found by Li *et al*. and McTiernan and Mcdonald [12, 13].

In the work of Sowińska, Kretowicz, and Gaworska-Krzemińska, concerning the problem of occupational burnout, it was stated that the main reason for this phenomenon are: low pay, poor working conditions, and lack of proper access to professional training [14]. Subsequent research shows low wages, high responsibility, excess duties, and understaffing on duty as the main causes of stress. The stability of employment, excessive controls, or insufficient equipment were considered the least stressful factors by the surveyed persons [15]. Kędra and Nowocień in their research showed that nurses considered the lack of medicines and medical equipment, and excessive documentation and duties to be stressful factors. It was also important for them to make quick decisions, so they reported fear of making a mistake, responsibility for human life, and the need to be vigilant and controlled [16].

In their own work, among the stress factors associated with the patient, the respondents most often indicated: responsibility for human health and life, helplessness regarding the patient's suffering, and the claims from the patients, as well as human suffering, death, and dying. Skorupska-Król's research showed similarly that for the surveyed women the most stressful were: a sense of responsibility for the health and life of the patient and helplessness in the face of suffering and death [9]. Other studies indicate

that stressful for nurses in contact with the patient were the daily contact with suffering, and the demandingness and aggression of patients [15].

Our own research showed that among the stressful factors associated with the patient's family, the respondents most often indicated: disrespect of the family towards nursing work, demandingness on the part of the family members, need to talk to the family of a dying/deceased patient, lack of time to talk, and lack of time to educate the family of the patient. It was also noticed that among those working on paediatric wards there were more people who found the most stressful factor to be the lack of time to talk to the patient's family. The research carried out by Skorupska-Król showed that the most stressful factor for nurses in relations with the patient's family were the lack of respect for nurses and the demanding attitude related to it. The lowest intensity of stress was caused by the situation in which they passed information about the patient's death to the family [11]. In the studies of Kędra and Nowocień it was remarked that dissatisfaction, claims of the patients and family members, interruption, and disruption of work by the families of patients were very stressful for nurses [16].

The results presented above show that nurses sometimes sense a lack of respect from the family towards their work, and this is a very stressful factor. According to the pyramid of needs by Maslow, respect and recognition are found in the fourth place, and they are the needs of a higher order, and thanks to them we fulfil our potential and we are happy [17].

The research shows that among the stressful factors associated with cooperation within a therapeutic team, the respondents most often indicated difficulties in the flow of information. The following factors were mentioned in the following order: lack of cooperation, unpleasant atmosphere, and too little support from superiors. There were also people who did not show any stress factors that were associated with cooperation within the therapeutic team. Our research also shows that the problem of competition between the members of the therapeutic team was least visible in the surgical wards. Skorupska-Król's research indicates that the most stressful factor for nurses is the impeded flow of information between members of the therapeutic team [13]. Other studies show that the majority of the respondents had good relations with their superiors, and only a small percentage said that relations with their superiors are bad [15]. In the study carried out by Kędra and Nowocień it was observed that the shortcomings of nurse-doctor cooperation and cooperation between nurses and other staff were considered the least stressful [16].

The results presented above show that an important role in work is played by the flow of information between staff, which is not ideal, and this stresses the nurses, making it difficult for them to work. It is associated with many aspects characterising the work of a nurse [18].

Stress, which we witness every day, is undoubtedly reflected in our actions, everyday activities, and health behaviours. In our own research, health behaviours by respondents based on the HBI scale were assessed as being at the medium level. People with higher education showed a high level of health behaviours in relation to the other respondents. The research of Książek, Jarznikowski, and Piotrowska showed that over half of the respondents often exhibited proper eating habits. A positive psychological attitude concerned only 3% of respondents [19].

The level of positive health behaviours of the respondents was also determined to be medium. People working in surgical wards showed a higher level of positive health behaviours compared to people working in paediatric wards. People with higher education showed a high level of positive health behaviours compared to other people.

The results presented above show that education is an important factor of care for positive health behaviours. The higher the level of education, the more frequent the occurrence of pro-health behaviours. There are two things important for a healthy lifestyle. The first is the emotional attitude towards a healthy life, the second is the tendency to reflect on your own behaviour and how it affects your health. Research shows that health issues are taken, among others in the media, rather rarely in everyday conversations; it evokes negative emotions. Interestingly, this is more than twice as common among people with a low level of education [20].

It should also be noted that in our study a statistically significant relationship was found between the level of positive health behaviours and the severity of experienced stress. The higher the level of positive health behaviours, the greater the severity of stress experienced, and vice versa. Potocka and Mościcka's research, as well as that of Nowak *et al*., on the stress and eating habits of nurses showed that in people with bad eating habits the level of stress was higher [21, 22]. There was also a statistically significant relationship between the level of positive health behaviours and the assessment of health behaviours. The higher the level of positive health behaviours, the higher the health rating was, and vice versa. The research of Remigrońska and Włoszczak-Szubzda showed that people displaying high general index of health behaviors [23].

CONCLUSIONS

Based on the analysis of the research results, the following conclusions can be drawn:

1. The severity of stress experienced by nurses was medium.
2. Different stressors determined the researched nurses health behaviours.
3. The taking up of healthy eating habits, preventive behaviours, and health practices among the researched nurses, as well as their positive psychological attitude, were significantly higher in people with higher education.
4. The higher the level of positive health behaviours, the greater the intensity of stress experienced by the researched nurses.

Disclosure

The authors declare no conflict of interest.

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