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Personal resources as predictors of health-related behaviors in nurses

BACKGROUND

The work environment negatively affects the health-related behaviors of nurses due to working in a two-shift system, exposure to professional stress, excessive psychophysical burden, and limited time for relaxation. Personal resources constitute a significant factor influencing nurses' health-related behaviors supporting their effective professional functioning. The aim of the research was to investigate the relationship between health-related behaviors and personal resources and socio-demographic variables in a group of nurses.

PARTICIPANTS AND PROCEDURE

The sample consisted of 1420 nurses working in hospitals. A cross-sectional research model with questionnaire methods was employed. The Health Behavior Inventory, the Resilience Measurement Scale, the Generalized Self-Efficacy Scale, the Life Orientation Test, and a survey questionnaire to collect socio-demographic data were used. The described tools exhibited satisfactory statistical parameters.

RESULTS

Nurses were characterized by an average or slightly increased level of health behaviors and personal resources. Resilience, self-efficacy, optimism, and socio-demographic factors (age, place of residence, relationship status, financial situation, work system, length of service, type of department, BMI) were significant predictors determining the health-related behaviors in nurses.

CONCLUSIONS

Personal resources (resilience, self-efficacy, optimism) and selected socio-demographic variables, as significant predictors of health-related behaviors, were found to be diverse in terms of strength and direction of impact. The obtained results highlight the justification for continuing research, which could serve as a foundation for developing educational programs. It is recommended, therefore, that nurses participate in various forms of support related to the development of their personal resources and shaping of their health-related behaviors in the workplace.

KEY WORDS

personal resources; health behaviors; nurses

BACKGROUND

The work environment of nurses is associated with many factors adversely affecting health-related behaviors, including exposure to professional stress, working in a shift system, overload with professional duties (fatigue), diversity of clinically hospitalized cases, limited time for rest, and conflicts with colleagues and patients (Janicka et al., 2020; Perry et al., 2018).

Shift work plays a significant role in ensuring the continuity of nursing care, but its rotational system exposes workers to circadian rhythm disturbances, negatively impacting the quality of nursing care and work efficiency (Farauta et al., 2022). Its impact also results in deterioration in the health of nurses, manifested in cardiovascular complaints, gastrointestinal disorders, cancers, obesity, metabolic and infectious diseases, as well as anxiety and depressive disorders (Farauta et al., 2022; Li et al., 2022). Most shift workers experience social jet lag (SJL), which refers to the discrepancy between biological time (circadian rhythm) responsible for physiological and behavioral processes, and social time associated with social obligations (work, studies). It leads to a decrease of the quality of life and social competences, the emergence of cognitive impairments (reduced attention, improper assessment of situations), and an increased risk of chronic and neoplastic diseases (Kim & Jang, 2022).

A significant factor influencing the health-related behaviors of nurses is professional stress, which arises from the dissonance between the work environment and the needs and resources of the employee (Witkoski Stimpfel et al., 2022). A literature review indicated that it disrupts the functioning of nurses at emotional, cognitive, and behavioral levels (Ogińska-Bulik, 2021). Examples of the negative impact of professional stress on the professional activity of nurses are burnout syndrome (BS) and secondary traumatic stress (STS) (Ogińska-Bulik, 2021; Wilczek-Rużyczka & Zaczyk, 2022). The first of them is a set of symptoms related to emotional exhaustion, depersonalization, and subjective lowering of one's own achievements by the employee, which results in the neglect of professional duties, low levels of motivation and job satisfaction, and the increase of sickness absenteeism (Dall'Ora et al., 2020; Wilczek-Rużyczka & Zaczyk, 2015, 2022). The second one arises from contact with individuals directly exposed to trauma or suffering (Ogińska-Bulik, 2021). Consequently, the employee becomes a victim of indirect exposure to trauma, which manifests itself in negative changes in the emotional sphere (anger, a sense of helplessness) and cognitive sphere (negative beliefs about oneself and reality), intensified psychomotor activity, insomnia, and avoidance of traumatic thoughts. It is worth noting that nurses belong to a chronically stressed professional group, reflecting the current crisis in healthcare (Heuel et al., 2022). Experiencing stress is associated with reduced physical activity and engagement in activities harmful to health (smoking, overeating, skipping meals).

Nurses are also exposed to fatigue, which is caused by excessive effort combined with inadequate rest (Ross et al., 2021). Its chronic impact intensifies the level of stress and burnout, and increases employee absenteeism and frequency of mistakes. It has also been observed that fatigue increases susceptibility to injuries in the workplace, lowers productivity, and adversely affects the employee's health. It is worth emphasizing that emotional predispositions, maladaptive stress coping styles, and a tendency to experience negative emotions are significantly linked to higher levels of fatigue.

A factor adversely affecting the mental health of nurses is the phenomenon of so-called emotional labor (EL), which involves expressing certain emotional standards required by the employer during contact with patients (Kinman & Leggetter, 2016). This leads to dissonance between emotions experienced internally and those expressed externally in contact with patients and colleagues. It should be emphasized that emotional labor is a source of emotional tension, which threatens the overall well-being of the employee, intensifies the emergence of negative affect, and contributes to burnout (depletion of emotional resources).

Personal resources are said to play a crucial role in regulating the above-mentioned threats (Tapa et al., 2022). According to Antonovsky's salutogenic concept, generalized resistance resources constitute a fundamental factor responsible for acquiring and maintaining health. They determine the ability to shape and enhance stress coping skills and positively impact the health of an individual (Pasieka & Zdziarski, 2022). Personal resources, as personality constructs, have adaptive and functional significance, protecting the individual from the adverse effects of stressors. It is worth emphasizing that they are personality predispositions enabling effective and creative functioning, especially in excessively demanding situations. A literature review indicated their ability to mutually integrate, forming the so-called caravans of personal resources (Hobfoll et al., 2018). An example of such resource synergy in the workplace is positive psychological capital (PsyCap), which is a psychological state that positively influences the well-being of employees in an organization (Luthans & Youssef-Morgan, 2017). It includes four resources: hope, self-efficacy, resilience, and optimism. Hope is characterized by perseverance in pursuing goals and seeking alternative possibilities. Self-efficacy involves a sense of confidence in initiating effective activities. Resilience allows skillful problem-solving and acquiring the necessary resil-

Maria Merklinger-Soma, Ewa Wilczek-Rużyczka

ience for creative action. Optimism, as the last of the mentioned resources, imparts a positive meaning to one's behaviors in both the present and the future. A literature review indicated that the described caravan of resources influences increased job and career satisfaction, shapes innovative behaviors, intensifies work engagement, reduces levels of psychological stress and burnout, and reduces smoking intention among nurses (Flinkman et al., 2023).

The aim of the research was to investigate the relationship between health-related behaviors and personal resources and socio-demographic variables in a group of nurses. The research hypothesis was that personal resources and socio-demographic factors have predictive value regarding health-related behaviors in nurses.

PARTICIPANTS AND PROCEDURE

PARTICIPANTS

The project involved 1420 Polish nurses working in hospitals in the Małopolska region. The majority of the nurses lived in rural areas (n = 796, 56.06%). The most numerous age group was in the range of 41-50 years (n = 476, 33.52%). In the indicated sample, the majority of the nurses were in relationships (n = 1017, 71.62%). Most individuals had a bachelor's degree (n = 728, 51.27%). The participants most commonly reported a good financial situation (n = 839, 59.08%). The largest group in terms of work experience consisted of individuals with 21-30 years of service (n = 477, 33.59%). The majority of nurses worked in a two-shift system (n = 1252, 88.17%) and in non-surgical departments (n = 818, 57.59%). Most individuals had a normal body mass index (n = 851, 59.93%).

MEASURES

In order to provide answers to the research objectives, four standardized questionnaires together with an author-designed survey to determine socio-demographic factors were used.

The Health Behavior Inventory (HBI), developed by Juczyński (2012), measured the overall intensity of health-related behaviors and its four categories (healthy eating habits, preventive behaviors, health practices, positive mental attitude). It consists of 24 statements, with values ranging from 24 to 120 points. A higher score indicates a greater intensity of self-reported health-related behaviors. The questionnaire was designed for adults. The reliability, established based on Cronbach's α for the entire questionnaire, was .85, and for its subscales, it ranged from .60 to .65.

Three scales assessing personal resources were also applied:

The Resilience Measurement Scale (SPP-25). The SPP-25, developed by Ogińska-Bulik and Juczyński (2008), measures the general level of resilience and its five factors: 1) perseverance and determination in action; 2) openness to new experiences and a sense of humor; 3) personal competence in coping and tolerance for negative emotions; 4) tolerance for failures and viewing life as a challenge; 5) optimistic attitude towards life and the ability to mobilize in difficult situations. The SPP-25 comprises 25 statements and measures personality traits of resilience, with possible scores ranging from 25 to 100 points. The higher the score, the greater is the intensity of the described resource. Internal consistency, determined based on Cronbach's α for the entire scale, was .89, and for its five subscales, it ranged from .67 to .75.

The Generalized Self-Efficacy Scale (GSES). The Polish version of the GSES was created by Schwarzer, Jerusalem, and Juczyński (Juczyński, 2012). The questionnaire measures the overall score of self-efficacy and includes 10 statements. The scale was designed for adults. The sum of all points provides a general self-efficacy index ranging from 10 to 40 points. A higher score indicates greater intensity of the indicated resource. The Cronbach's α coefficient was 0.85.

The Life Orientation Test (LOT-R). The LOT-R questionnaire was developed by Scheier et al. (1994). The responsibility for adapting the Polish version lay with Poprawa and Juczyński (Juczyński, 2012). The LOT-R aims to measure dispositional optimism and was designed for the study of adults. It consists of 10 statements, of which 6 held diagnostic values. The overall score ranges from 0 to 24 points, with a higher score indicating a higher level of optimism. The internal consistency for the original version, assessed using Cronbach's α coefficient, was .76.

The socio-demographic data questionnaire comprised 10 questions, including both closed and open questions. It consisted of two parts. The first part covered questions related to socio-demographic characteristics (gender, place of residence, age, marital status, education, financial status, BMI). The second part included questions concerning the professional situation (work experience, nature of work, type of department).

PROCEDURE

A cross-sectional study model using the questionnaire method was employed. Permission to conduct the research was obtained from the Bioethics Committee of the Krakow Academy of Andrzej Frycz Modrzewski (approval number KBKA/62/0/2018 dated 15.11.2018) and organizational units of healthcare systems. Nurses were informed in writing about the

Maria Merklinger-
Soma, Ewa
Wilczek-Rużyczka

purpose of the research and the procedure for completing the research tools before participating in the project. They were also acquainted with the applicable legal regulations regarding the protection of personal data and the anonymous and voluntary nature of participation in the project. The fundamental inclusion criterion for the study was current employment as a nurse in a surgical or non-surgical department within a specified healthcare entity, as well as conscious and voluntary consent to participate in the project. After verifying the received sets of survey questionnaires, some were rejected due to incomplete data (e.g., incomplete filling of the questionnaire set, complete non-completion of the questionnaire set).

RESULTS

Initially, basic descriptive statistics of the analyzed quantitative variables were calculated along with the Kolmogorov-Smirnov test. The test results are presented in Table 1. It shows that the distributions of the examined variables are statistically significantly different from a normal distribution. In such

a situation, statistical analyses were conducted using non-parametric tests. The significance level was considered the classic threshold α = .05. However, probability results of the test statistic in the range .05 < p < .1 were interpreted as significant at the level of a statistical tendency.

The analysis of our own research findings revealed that nurses exhibit an average or slightly elevated level of health-related behaviors and personal resources (Table 1). In the first step, we aimed to determine which socio-demographic variables and personal resources significantly predict the level of health behaviors. A series of stepwise linear regression analyses were conducted, with health-related behaviors as dependent variables and personal resources and socio-demographic variables as potential predictors. All variables examined on a nominal and ordinal scale were recoded using the dummy coding method.

Firstly, an analysis was performed for the overall level of health-related behavior (Table 2). The entire analysis was conducted in fourteen steps. The first variable, level of resilience, explained a substantial 61.7% of the variability in the overall level of health-related behaviors of the subjects. The addition of the

Table 1

Descriptive statistics of the studied quantitative variables

Variables	M	Me	SD	Skew	Kurt	Min	Max	KS	p
Health-related behaviors	83.61	84	12.89	−0.10	−0.58	41	114	0.04	< .001
Proper eating habits	20.49	20	4.10	0.05	−0.70	9	30	0.08	< .001
Preventive behaviors	21.98	22	3.68	−0.38	0.11	8	30	0.09	< .001
Positive mental attitude	21.77	22	4.10	−0.27	−0.69	10	30	0.11	< .001
Health-related practices	19.36	19	3.98	−0.01	−0.44	6	30	0.07	< .001
Resilience	72.51	73	11.05	−0.27	−0.62	37	98	0.07	< .001
Perseverance and determination to act	15.56	15	2.45	−0.25	0.25	6	20	0.14	< .001
Openness to new experiences and sense of humor	14.60	15	3.25	−0.38	−0.43	5	20	0.12	< .001
Personal coping skills and tolerance for negative emotions	13.51	14	3.53	−0.04	−0.79	5	20	0.10	< .001
Tolerance for failure and treating life as a challenge	15.02	15	2.24	−0.48	1.34	4	20	0.16	< .001
Optimistic attitude towards life and ability to mobilize in difficult situations	13.81	14	3.26	−0.15	−0.53	4	20	0.09	< .001
Sense of self-efficacy	29.83	30	4.36	−0.25	−0.75	16	39	0.11	< .001
Optimism	15.33	17	5.47	−0.69	−0.80	0	24	0.20	< .001
BMI	24.42	24.03	3.42	0.22	1.42	16	37	0.06	< .001

Note. Me – median; Skew – skewness; Kurt – kurtosis; KS – Kolmogorov-Smirnov test result; BMI – body mass index.

Table 2

Regression analysis coefficients predicting the level of overall health-related behavior score

Variables	B	SE	β	t	R²	F
				14th model		
(Constant)	37.67	2.41		15.64***	.70	238.05***
Resilience	0.63	0.05	.54	13.33***		
Optimism	0.59	0.06	.25	9.43***		
BMI	−0.45	0.06	−.12	−7.28***		
Medical ward	−1.94	0.39	−.07	−5.01***		
Sense of self-efficacy	0.46	0.09	.15	5.08***		
Openness to new experiences and sense of humor	−0.34	0.09	−.09	−3.71***		
Age over 61 years	7.63	1.63	.07	4.70***		
Being in a relationship	1.51	0.45	.05	3.32**		
Tolerance for failure and treating life as a challenge	−0.51	0.12	−.09	−4.40****		
Town/City	1.06	0.39	.04	2.73**		
Average financial situation	−1.00	0.43	−.04	−2.36*		
Age 51-60 years	1.55	0.56	.05	2.77**		
Seniority 21-30 years	20.38	7.08	.75	2.88**		
Age 41-50 years	−19.48	7.10	−.71	−2.75**		

Note. B – non-standard regression coefficient; *SE* – standard error; β – standard regression coefficient; BMI – body mass index;
*p < .05, **p < .01, ***p < .001.

Personal resources and health behaviors

next thirteen variables only marginally improved the goodness of fit by 8.3%, but all variables introduced into the model significantly improved the explanatory level of the dependent variable's variance, as indicated by *t*-test values. Analysis of the β coefficient values showed that the levels of resilience, optimism, and self-efficacy were associated with a higher overall health-related behavior score. Similarly, sociodemographic variables such as work experience of 21-30 years, age of the participants being 51-60 years and over 61 years, being in a relationship, and living in a city also played a role. On the other hand, a higher BMI level, two resilience scales (openness to new experiences and sense of humor; tolerance for failures and treating life as a challenge), working in a surgical department, average financial situation, and age of 41-50 years were associated with a lower overall health-related behavior score. The strongest predictors were the level of resilience and the level of optimism. Other variables, which are not listed in the table, could not be introduced into the model, meaning they did not significantly improve the goodness of fit.

Another analysis was conducted for proper dietary habits (Table 3). In this case, the regression was conducted in nine steps. The reintroduction of resilience explained substantial variance (31.5%) in the dependent variable, and the introduction of another eight variables led to an additional 11.3% increase in the goodness of fit. Beta coefficient analysis revealed that the levels of resilience and optimism and age above 61 years were associated with a higher level of proper dietary habits. Conversely, heightened levels of all other predictors, such as BMI level, age up to 30 years, two resilience scales (openness to new experiences and sense of humor, tolerance for failures and treating life as a challenge), working in a surgical department, and average financial situation, were associated with a lower level of proper dietary habits. It is worth noting that the first two predictors introduced into the model – the level of resilience and BMI – explained the highest percentage of the variance in the dependent variable, expressed by the β coefficient value.

Another analysis was conducted for the level of preventive behaviors (Table 4). This time, the regression analysis was conducted in eleven steps. All predictors introduced into the model collectively explained 35.6% of the variance in the dependent variable. It is worth noting that the level of resilience, introduced as the first predictor into the model, independently explained 27.9% of the variance in the level of preventive behaviors. The remaining ten predictors explained an additional 7.8% of the variance in the dependent variable. The β coefficient analysis

Maria Merklinger-Soma, Ewa Wilczek-Rużyczka

Table 3

Regression analysis coefficients predicting the level of proper eating habits

Variables	B	SE	β	t	R^2	F
				14th model		
(Constant)	18.89	1.00		18.97***	.43	119.03***
Resilience	0.18	0.02	.48	9.93***		
BMI	−0.38	0.03	−.31	−14.12***		
Age up to 30 years	−1.30	0.23	−.13	−5.76***		
Optimism	0.13	0.03	.17	5.04***		
Age over 61 years	2.07	0.69	.06	3.01**		
Medical ward	−0.53	0.17	−.06	−3.13**		
Openness to new experiences and sense of humor	−0.12	0.04	−.09	−3.04**		
Average financial situation	−0.45	0.19	−.05	−2.45*		
Tolerance for failure and treating life as a challenge	−0.10	0.05	−.06	−2.04*		

Note. B – non-standard regression coefficient; *SE* – standard error; β – standard regression coefficient; BMI – body mass index; *p* < .05, **p* < .01, ***p* < .001.

Table 4

Regression analysis coefficients predicting the level of preventive behavior

Variables	B	SE	β	t	R^2	F
				14th model		
(Constant)	9.24	0.78		11.91***	.36	72.16***
Resilience	0.04	0.02	.13	2.03*		
Age up to 30 years	−0.53	0.24	−.06	−2.21*		
Optimism	0.12	0.03	.18	4.48***		
Perseverance and determination to act	0.20	0.05	.13	4.34***		
Age over 61 years	2.90	0.66	.10	4.39***		
Town/City	0.62	0.16	.08	3.83***		
Medical ward	−0.50	0.16	−.07	−3.09**		
Age 51-60 years	0.56	0.20	.07	2.84**		
Optimistic attitude towards life and ability to mobilize in difficult situations	0.13	0.05	.12	2.48*		
Being in a relationship	0.49	0.21	.06	2.39*		
Sense of self-efficacy	0.08	0.04	.10	2.19*		

Note. B – non-standard regression coefficient; *SE* – standard error; β – standard regression coefficient; *p* < .05, **p* < .01, ***p* < .001.

indicated that the levels of optimism, self-efficacy, and resilience, along with its two scales (perseverance and determination in action, optimistic attitude toward life and the ability to mobilize in difficult situations), were associated with a higher level of preventive behaviors. Additionally, the age range of 51-60 years and above 61 years, living in the city, and being in a relationship were also associated with a higher level of these behaviors. Conversely, working in a surgical ward and being aged up to 30 years were associated with a lower level of preventive behaviors. The predictor introduced only in the third step in the model, namely the level of optimism, explained the highest percentage (%) of the variance in the dependent variable. The β coefficient value, which was the most significantly different from zero,

was observed in the case of the factor for perseverance and determination in action, as well as the level of resilience. The inclusion of self-efficacy in the last step significantly reduced the β coefficient value for the level of resilience, indicating that these predictors collectively explain a considerable portion of the variance in the dependent variable. A similar analysis was then conducted for the level of positive psychological attitudes. This time, the regression analysis was performed in eight steps. Notably, the constructed model presented in Table 5 explained almost 3/4 of the variance in the dependent variable. The level of resilience introduced in the first step explained as much as 65.4% of the variance in the positive psychological attitude. The addition of the next seven variables only improved the goodness of

Table 5

Regression analysis coefficients predicting the level of positive mental attitude

Variables	B	SE	β	t	R^2	F
				14th model		
(Constant)	4.13	0.56		7.40***	.74	500.30***
Resilience	0.05	0.01	.12	3.27**		
Optimism	0.21	0.02	.28	11.15***		
Personal coping skills and tolerance for negative emotions	0.22	0.03	.19	6.74***		
Optimistic attitude towards life and ability to mobilize in difficult situations	0.22	0.04	.18	6.08***		
Sense of self-efficacy	0.15	0.03	.16	5.66***		
Being in a relationship	0.56	0.15	.06	3.86***		
Age up to 30 years	0.37	0.16	.04	2.32*		
Town/City	0.24	0.12	.03	2.12*		

Note. B – non-standard regression coefficient; *SE* – standard error; β – standard regression coefficient; *p < .05, **p < .01, ***p < .001.

Table 6

Regression analysis coefficients predicting the level of health-related practices

Variables	B	SE	β	t	R^2	F
				14th model		
(Constant)	9.19	1.02		9.05***	.50	130.65***
Resilience	0.06	0.02	.16	3.34**		
Optimism	0.13	0.03	.18	5.31***		
Medical ward	−0.94	0.15	−.12	−6.10***		
Sense of self-efficacy	0.18	0.04	.20	5.14***		
Shift work	−1.13	0.23	−.09	−4.87***		
BMI	−0.08	0.02	−.07	−3.16**		
Age up to 30 years	0.56	0.20	.06	2.86**		
Personal coping skills and tolerance for negative emotions	0.14	0.04	.13	3.32**		
Age over 61 years	1.86	0.62	.06	2.97**		
Poor financial situation	−2.01	0.60	−.06	−3.33**		
Average financial situation	−0.51	0.17	−.06	−3.05**		

Note. B – non-standard regression coefficient; *SE* – standard error; β – standard regression coefficient; BMI – body mass index; **p < .01, ***p < .001.

fit by 8.4%. All β coefficient values were positive, indicating that a higher level of quantitative variables or the fulfillment of qualitative variables (a value of 1 indicating the presence of a given characteristic) resulted in a higher level of the dependent variable. In the final model, the level of optimism explained the highest percentage of the variance in the dependent variable, while the level of resilience was only in the fifth position.

In the final step, the dependent variable selected was the level of health practices (Table 6). This time, the regression analysis was concluded in eleven steps. All predictors introduced into the model collectively explained 50.5% of the variance in the dependent variable, with the level of resilience, introduced as the first predictor into the model, independently interpreting as much as 41.6% of the variance in the level of health practices. The remaining ten predictors improved the goodness of fit by only 8.5%. The β coefficient analysis indicated that the levels of self-efficacy, optimism, and resilience were associated with a higher level of health practices. Additionally, the scale of personal competencies for coping and tolerance of negative emotions, and ages up to 30 years and above 61 years, also resulted in a higher level of the described variable. In turn, the β coefficient analysis also showed that working in a surgical ward and in a two-shift system, BMI level, and poor or average financial standing were associated with a lower level of health practices. The introduction of the predictor referred to as the level of self-efficacy in the fourth step of the model explained the highest percentage (%) of the variance in the dependent variable. This means that the predictive capabilities of the resilience level were dampened by the subsequent variables added to the model.

DISCUSSION

The results of our research confirmed the formulated hypothesis, in which resilience, self-efficacy, optimism, and socio-demographic factors (age, place of residence, relationship status, financial standing, work experience, ward type, work system, BMI) as predictive variables had a diverse impact on initiated health activity. The presented analyses are self-descriptive in nature and therefore express opinions and beliefs that do not reflect the full picture of health-related behaviors undertaken in the daily functioning of nurses. It is worth noting that three presented personal resources broadly referenced the concept of a caravan of resources, particularly PsyCap, creating a popular synergy of resources in the professional environment of nurses (Hobfoll et al., 2018; Luthans & Youssef-Morgan, 2017).

The literature review indicates that resilience is a relatively important personal resource utilized in nursing practice and research (Cooper et al., 2020; Kim & Chang, 2022). It is a dynamic and multifaceted process that changes over time, influencing the physical and mental health of the described group. Resilience enables coping with threats adversely affecting mental health, effectively managing emotions, facing challenges, setting priorities, and adapting to new professional circumstances (Han et al., 2023; Kim & Chang, 2022). Moreover, it fosters positive relationships among nurses, enhances self-esteem and job satisfaction, facilitates the separation of family and professional life, and elevates professional competence. The results of our research also confirmed a significant role of resilience in shaping health-related behaviors among nurses working in surgical and non-surgical wards. The importance of this resource in predicting the overall outcome of health-related behaviors and its four categories varied considerably. The level of resilience explained the highest percentage of the variance in the dependent variable concerning the overall health-related behavior index and proper dietary habits. Similar research findings were presented by Gieniusz-Wojczyk et al. (2021). Namely, nurses with a high level of resilience exhibited better dietary habits, lower risk of alcohol dependence, and good psychophysical well-being. It has also been confirmed by a study of Chinese nurses, in whom regular physical exercise, non-smoking, and positive coping styles were associated with the level of resilience (Guo et al., 2017).

Another significant personal resource is the sense of self-efficacy, which is broadly defined as an individual's belief in their ability to successfully perform tasks (Luthans & Youssef-Morgan, 2017). A literature review indicated that the sense of self-efficacy remains one of the most crucial resources positively influencing the health-related behaviors in nurses and should remain a central focus in health promotion efforts (Heuel et al., 2022). Moreover, it is a significant moderator in effectively coping with stress. The results of our research indicate that the level of this resource explained the highest percentage of variance in health practices. The indicated analysis complements numerous studies on the beneficial impact of this resource on health-related behaviors. Referring to the mentioned statement, it is worth citing Heuel et al.'s (2022) analyses in which self-efficacy was a positive predictor regarding nurses' health-related behaviors. Additionally, Gacek et al. (2023) observed that an increase in this resource intensified the overall score of health-related behaviors and two of its categories – proper dietary habits and positive mental attitude. Noteworthy findings were also reported in a study by Dadipoor et al. (2021), where the described resource had a strong predictive effect on the overall health status of nurses, including lower levels of anxiety and depression, improved sleep quality, enhanced social relationships, and increased

Maria Merklinger-Soma, Ewa Wilczek-Rużyczka

job satisfaction. Interesting analyses were carried out in a group of Japanese psychiatric nurses (Yada et al., 2017). It was observed that the factors positively affecting self-efficacy included developing trusting relationships in the workplace, work progressing as planned, and applying practical nursing skills. Conversely, feelings of fatigue leading to reduced productivity, impaired communication, experiencing excessive patient burden, performing tasks instrumentally, and excessive professional involvement had a negative impact on this personal resource.

Another interesting personal resource is dispositional optimism, which, according to Carver and Scheier (2014), is understood as generalized expectations of favorable events in the future and the belief that negative situations will occur less frequently or never. It is essential to emphasize that a high dispositional optimism index is associated with better subjective well-being in difficult situations and the ability to engage in health-promoting activities (Carver et al., 2010). Broadly, it influences a person's well-being and physical condition, reduces the risk of depression, builds resilience to stressful life events, and promotes life successes (Juczyński, 2012; Weitzer et al., 2022). As indicated by the analysis of our research results, the level of optimism explains the highest percentage of variance in the dependent variable concerning overall health-related behaviors (alongside resilience) and preventive behaviors and positive mental attitude. It is confirmed by the analyses conducted among nursing students from Poland, Spain, and Slovakia (Kupcewicz et al., 2022). It was observed that optimism positively influenced the overall health-related behavior and its four categories. For the Polish and Slovak samples, dispositional optimism was the strongest predictor of health-related behaviors. Further, the authors noted that with an increase in this resource, the level of positive mental attitude, which was high in the Polish group, increased. These data lead to the citation of results from studies conducted on nurses working in long-term healthcare facilities, where optimism was associated with a higher perception of health and a low level of burnout (Malagon-Aguilera et al., 2020). It is also worth noting that this resource protected nurses from the negative impact of stress, positively influenced mental health, self-esteem, job satisfaction, and stress coping styles (Yang et al., 2023; Zhang et al., 2020).

It was also observed that the socio-demographic factors predicting health-related behaviors varied significantly (BMI, age, relationship status, financial standing, place of residence, work system, work experience, department type). In our research, being in a relationship predicted higher overall health-related behaviors, positive mental attitude, and preventive behaviors. Interesting research results were observed in a group of Australian nurses, where being in a marital relationship was a predictor that posi-

tively influenced mental health (Perry et al., 2015). Conversely, among Greek psychiatric nurses, the risk of developing depression and anxiety was more pronounced in individuals who were single or divorced (Tsaras et al., 2018).

The analysis of our research findings indicated that an average financial standing had a negative predictive effect on overall health-related behavior, proper dietary habits, and health practices, which was confirmed by other authors (Orszulak et al., 2022).

According to Perry et al. (2018), nurses aged 25-34 exhibited unhealthy behaviors related to alcohol abuse and lower fruit and vegetable consumption. This analysis was confirmed in our own research, where age up to 30 predicted a reduced level of proper dietary habits and preventive behaviors. Furthermore, it was also observed that age above 60 was a positive predictor regarding overall health-related behaviors, proper dietary habits, preventive behaviors, and health practices. These observations confirmed the results of the study by Orszulak et al. (2022), which found that age positively correlated with the overall score for health-related behaviors and its four categories. Therefore, the more advanced the age of the participants was, the greater was the intensity of health-related behaviors.

Continuing further discussions, it is crucial to emphasize the impact of shift work on the health status of nurses. According to Radosz-Knawa et al. (2021), nurses finishing the night shift experienced exhaustion, fatigue, deterioration of health, and well-being. The authors also found that shift work disrupted proper functioning in the private sphere, initiating hazardous situations often associated with traffic safety violations. With regard to the above point, it is worth mentioning the results of our own research; specifically, working in a two-shift system adversely affected health practices.

Through a comprehensive literature analysis, it was also observed that the longer the seniority of the nurses was, the higher was the level of overall health-related behavior, proper dietary habits, and positive mental attitude (Orszulak et al., 2022). Comparable results were obtained in our own study; namely, job seniority in the range of 21-30 years was a positive predictor regarding the overall index of health-related behavior.

Furthermore, in our research, a higher BMI was predictive of a lower overall health-related behavior index, proper dietary habits, and health practices. Interesting results were obtained in the study by Gacek et al. (2023): an increase in BMI levels lowered the level of health-related behaviors, especially proper dietary habits, among nursing students and professionals.

A literature review indicated that efforts have been made in the nursing profession to develop personal resources. In the meta-analysis conducted by

Personal resources and health behaviors

Maria Merklinger-
Soma, Ewa
Wilczek-Rużyczka

Zhai et al. (2021), it was found that after resilience-building training, there was an intensification of the described resources and a reduction in stress, depression, anxiety, and professional burnout. In other research findings, Swedish nurses working in surgical departments reported a high level of self-efficacy and competence in providing health advice on tobacco smoking after completing an online educational course (Rosvall & Carlson, 2017).

The presented considerations support the need for continuation and simultaneous expansion of the research, which can serve as a foundation for developing educational programs both to be incorporated in nursing studies as well as throughout nurses' professional careers. The main forms of support should include psychological counseling and regular training workshops that develop nurses' personal resources. The above-mentioned forms of support should also include shaping health-related behaviors, particularly in the category of health practices and proper dietary habits, which were at a relatively low level in the research results. Additionally, it was noted that the negative predictive value of some demographic and social variables (age up to 30 years, work in surgical wards, two-shift work, poor and average financial situation) indicate the need for psychological and psychoeducational support for nurses.

It can also be assumed that a high level of resilience, self-efficacy, and optimism in nurses will allow for the establishment of a professional therapeutic relationship with the patient and their family, positively impacting the treatment process. These personal resources can also positively influence effective collaboration with the therapeutic team, thereby reducing stress and burnout levels among nurses.

In summary, the article presents in a reliable and comprehensive manner an important scientific and social topic related to the impact of personal resources and socio-demographic variables on the health-related behaviors among nurses.

CONCLUSIONS

Personal resources (resilience, self-efficacy, optimism) and socio-demographic variables (age, place of residence, financial standing, relationship status, department type, work experience, work system) seen as significant predictors of health-related behaviors are characterized by various strengths and directions of impact.

Among the most significant predictors positively influencing the overall health behaviors of nurses were personal resources (resilience, optimism, self-efficacy) and socio-demographic variables (21-30 years of work experience, age over 61). Conversely, predictors negatively affecting the described variable included age 41-50, BMI, and working in a surgical ward.

Resilience, optimism, and age over 61 were positive predictors regarding proper dietary habits. In contrast, age up to 30, BMI, and working in a surgical ward negatively impacted this category of health-related behaviors.

The principal variables positively influencing preventive behaviors were personal resources and age over 61. Working in a surgical ward and age up to 30 were negatively associated with the described category of behaviors.

For positive mental attitude, all analyzed personal resources and selected socio-demographic variables (being in a relationship, age up to 30, living in a city) had a beneficial impact.

Particularly positive determinants of health practices were personal resources and ages up to 30 and over 61. Working in a surgical ward and in a two-shift system, BMI, and average and poor financial situation had a negative impact on this category.

The obtained results highlight the justification for continuing research, which could serve as a foundation for developing educational programs. It is recommended, therefore, that nurses participate in various forms of support related to the development of their personal resources and shaping of their health-related behaviors in the workplace.

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Maria Merklinger-Soma, Ewa Wilczek-Rużyczka