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Chronic fatigue of nurses in view of the challenges of contemporary psychiatric care. Do temperament and work environment matter?

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Summary

Aim. The objective of this study was to identify the level of chronic fatigue in the group of psychiatric nurses and to determine the relationship between working environment conditions and temperament, and the chronic fatigue syndrome in the group of psychiatric nurses.

Material and methods. 85 nurses from psychiatric treatment centers were subjected to the study. In this study a revised version of the Formal Characteristics of Behavior – Temperament Inventory (FCB-TI), CIS 20R (Checklist Individual Strength) Questionnaire, and a personal questionnaire regarding the working environment characteristics were applied.

Results. In the most numerous group of patients, the occurrence of chronic fatigue was found to be moderate (48.23% of respondents) and high (47.05%). Endurance as a trait of temperament is important for analyzing differences in chronic fatigue in the group of psychiatric nurses. In the studied group, difficulties in relations between nurses are correlates of reduction in concentration, reduction of motivation and they affect the overall result of chronic fatigue. The frequency of receiving contradictory instructions from staff and the state of information flow in the team are correlated with the reduction in concentration.

Conclusions. The results indicate a high prevalence of chronic fatigue. Factors related to the working environment that concern cooperation and communication among the staff perform a significant role in the development of chronic fatigue in psychiatric nurses. Further research on this issue is necessary in view of observable problems in the psychiatric care organizational structures.

Keywords: chronic fatigue, nursing staff, mental health

Introduction

Fatigue is an inherent feature of the modern world of working professionals. It mainly refers to a subjective feeling of lack of energy and exhaustion [1]. If the

individual's effort is excessive, resting is insufficient or there are certain factors that may affect well-being (health, social situation, etc.), chronic fatigue syndrome (CFS) develops. It may also be a consequence of severe occupational stress or burnout [2]. Fatigue can have serious consequences for the proper functioning of an organization: reduced performance, more errors made at work, and accidents at work. Thus, it is health-threatening and makes it difficult for an employee to fulfill their roles.

Social service professionals are susceptible to feeling overworked. This group includes nurses working in psychiatric wards. Their profession is considered to be one of the most stressful in the world [3]. In their work, they face many challenges: conducting nursing interventions to reduce the fear and anxiety of patients with mental disorders, managing conflict situations, or conducting careful observation of patients, especially at night. Nurses are an important part of the team taking care of people with mental disorders, yet they have not been the focus of research on chronic fatigue. Previous analyses focused mainly on the effects of work performed by nurses: burnout syndrome (defined as emotional exhaustion syndrome, depersonalization and reduced sense of personal achievement that can occur in persons working with others in a certain way) and on the phenomenon of compassion fatigue (describing the negative effects of work affecting the employee's ability to feel compassion for others) [4, 5]. To date, it has been shown that nurses experience both phenomena at a high level of intensity and also experience symptoms of post-traumatic stress [6].

Analyses for 2017–2027 indicate an increase in the number of retiring nurses in comparison to those entering the profession, and in their average age. This creates a risk of an insufficient number of working nurses [7]. In Poland, a systematic increase in the number of patients undergoing various forms of psychiatric treatment is noteworthy, including a threefold increase in the number of hospitalizations of adolescents and young adults diagnosed with behavioral and emotional disorders, as well as a higher number of suicide attempts and a greater number of self-inflicted injuries over the last 25 years [8]. These data justify the need not only to educate new nursing staff, but also to support those already in the job.

Global rates of psychiatric disorders and mental health problems show the need to study this professional group not only in terms of working conditions and work performance, but also health-related costs incurred. Research on the group of nurses demonstrated that health at work is determined by its objective characteristics and the perception of work organization [9]. In the group of surgical nurses, symptoms of fatigue after work, sleep difficulties and emotional exhaustion correlate with the assessment of efforts put into work and the degree of dissatisfaction with the lack of benefits resulting from work. Personality traits are also important, and their effects are visible in difficult situations at work. Researchers have repeatedly found the correlation between temperament and various aspects of stress. It is recognized as a factor directly triggering human coping behaviors in a stressful situation and affecting possible stress-

related disorders. Temperament is considered as a factor co-determining the intensity of experiences. It has been established so far that in the group of psychiatric nurses, temperament traits are predictors of burnout [10]. There is no data on temperamental determinants of fatigue in the group of psychiatric nurses working in Poland.

Objective of the study

The objective of this study is an attempt at identifying the level of chronic fatigue in the group of psychiatric nurses and determining the relationship between working environment conditions and temperament, and the chronic fatigue syndrome in the group of psychiatric nurses. The following research questions were postulated:

1. What is the level of general chronic fatigue and its subscales in the study group?
2. Do dimensions of temperament (briskness, perseverance, rhythmicity, sensory sensitivity, endurance, emotional reactivity, and activity) differentiate the level of chronic fatigue?
3. Do selected sociodemographic variables (age and seniority in the profession) differentiate the perceived level of chronic fatigue in the study participants?
4. Do psychosocial working conditions (physical working conditions, ways of performing work, professional development, functioning in an organization, interpersonal relations, aggression at the workplace) differentiate the study subjects according to the level of chronic fatigue?
5. What is the predictor of the overall level of fatigue and its subscales in the group of psychiatric nurses?

Material and methods

The following tools were used in the study:

1. A revised version of the Formal Characteristics of Behavior – Temperament Inventory (FCB-TI) by M. Cyniak-Cieciura, B. Zawadzki and J. Strelau [11]. This tool consists of 7 content scales. Three test scales examine the temporal characteristics of behavior: briskness – a tendency to react quickly and maintain a high pace of performed activities; perseverance – a tendency to maintain and/or repeat behaviors despite the cessation of the stimulus that caused them; and rhythmicity – a tendency to rhythmically perform activities related to the rhythm of sleep and wakefulness, eating meals and the rhythm of life. The four remaining scales constitute the energetic level of behavior: sensory sensitivity – an ability to respond to sensory stimuli, sensual sensitivity; endurance – an ability to respond adequately in situations requiring long-term and highly stimulating activity, which is manifested in high resistance to distractors and fatigue; emotional reactivity – a tendency to intensively react to emotive stimuli; activity – a tendency to

undertake highly stimulating activities and/or to undertake behaviors providing external stimulation. For each question in the FCB-TI one of the following answers can be selected: "I strongly disagree", "I disagree", "I agree", "I strongly agree". Internal consistency coefficients are within the range 0.73–0.88, which indicates high reliability of measurement in using the FCB-TI questionnaire and, despite shortening the scales, they do not differ significantly from the coefficients obtained for the scales applied in the original version of the tool.

2. CIS20R (Checklist Individual Strength) Questionnaire for the study of chronic fatigue in the employee population by J. Vercoulen et al. in its Polish adaptation of T. Makowiec-Dąbrowska and W. Koszada-Włodarczyk [12]. The questionnaire contains 20 statements. The person under study marks, on a 7-point scale, the consistency of the statement in the question with personal experiences in the period of 14 days before the study. The overall result obtained in this questionnaire allows to identify the level of general chronic fatigue. It covers the results of 4 subscales (subjective experience of fatigue, reduction in concentration, reduction in motivation, reduction in activity). The test has temporal standards in sten scores. The results within a sten score of 1–3 are low, the results within a sten score of 4–6 are average, and the results within sten score of 7–10 are high. For the overall result, low level of fatigue is within 39 points; average level of fatigue is in the range of 40–83 points, whereas high level is over 83 points. The CIS20R (Checklist Individual Strength) is a tool whose validity and reliability are under study. The reliability of the CIS20R was measured by assessing its internal consistency by the Cronbach's α coefficient. The values of coefficients for individual fatigue subscales are between 0.611 and 0.879, and for the overall result the coefficient is 0.912.
3. Personal questionnaire – it includes two sets of questions. They concerned personal demographic data such as sex, age, seniority, history of a chronic disease, 24-hour (and longer) shifts and the number of institutions in which employees were working. Another set of questions addressed the characteristics of the working environment, i.e.:
   a) Working conditions at workplace (WCW) and issues such as circadian rhythm disorders (a shift work schedule collides with physiological, mental and family rhythms); sleeping off (the number of hours of sleep after a night shift); social conditions (their assessment in the workplace); physical effort – (whether the work requires a lot of effort); waking up (frequency of waking up during sleep); fatigue after shifts (its severity).
   b) Way of performing work (WPW): speed of decisions (frequency of making quick decisions at work); monotony of actions at work; predictability (frequency of unpredictable situations); non-rhythmic work flow; the number of patients in relation to the number of staff; documentation (assessment of the

volume of paperwork); autonomy (as to the possibility of making autonomous decisions).

c) Professional development (PD): satisfaction regarding the course of one's career; development (assessment of career opportunities in the current workplace); remuneration (assessment of satisfaction with payment); social prestige.
d) Functioning in the organization (FIO): contradictions (assessment of the frequency of receiving contradictory instructions); simultaneous performance of more than one function/role; coping (ability to cope in a professional role); being appreciated by doctors; being appreciated by patients; information flow (assessed as very good to poor information flow in a team).
e) Interpersonal relations (IR): conflicts (their frequency in a team); difficulties in interactions with doctors (in the workplace); difficulties in interactions with nurses; difficulties in interactions with patients' families (in the workplace);
f) Workplace aggression (WA): verbal aggression, physical aggression from patients (assessment of their severity); frequency of aggressive behaviors from patients.

For most questions, answers should be given on a five-point scale. The respondent indicates to what extent they agree that the given data are related to their work.

The study was approved by the Commission for Ethics of Scientific Research at the Institute of Psychology of the Kazimierz Wielki University in Bydgoszcz (on February 19, 2019) and the management of medical institutions and facilities. Employees of two psychiatric treatment centers were subject to the study. The selection of institutions for the study was non-random. All persons who agreed to participate in the study and submitted complete questionnaires were included. The study was anonymous. Persons who marked a history of chronic disease in the personal data section were removed from the study analyses. Respondents completed questionnaires after work and outside their workplace.

The analyses used data from 85 persons; 7 questionnaires were rejected due to incomplete data. The subjects were all women.. The age range of the nurses under study was from 24 to 57 years (mean 45.7 years) and seniority ranged between 2 and 37 years (mean 23 years). The study subjects were a total of 67 nurses from general psychiatric wards for men and women, 4 staff members from the departments for children and adolescents, 8 from the department for the treatment of withdrawal syndrome and substance abuse treatment, and 6 persons from the department of forensic psychiatry. There were 10 persons on 24-hour and longer shifts. Out of all the subjects, 17 nurses worked in more than one healthcare facility.

In order to obtain answers to the research questions, statistical analyses were carried out using the IBM SPSS Statistics 25. It enabled to analyze basic descriptive statistics, carry out analyses with Pearson's r and Spearman's rho correlation coefficients as well as the stepwise linear regression analysis assuming statistically significant results at p

level < 0.05, while the results at 0.05 < p < 0.1 were considered statistically significant. This paper uses a scale where [13]:

a) $0 < rxy \leq 0.1$ low correlation;
b) $0.1 \leq rxy \leq 0.3$ weak correlation;
c) $0.3 \leq rxy \leq 0.5$ average correlation;
d) $0.5 \leq rxy \leq 0.7$ high correlation;
e) $0.7 \leq rxy \leq 0.9$ very high correlation.

Results

First, the analysis of basic descriptive statistics was carried out together with the Shapiro-Wilk test in order to verify whether the assumption of compliance of distribution of studied quantitative variables with normal distribution was met. The test result turned out to be statistically significant in the case of most variables, nevertheless the absolute value of the skewness index did not exceed the arbitrary value of 1.5, which indicates that distribution is slightly asymmetric compared to the Gaussian distribution. Following this, it was decided to carry out a parametric analysis in this section.

By using temporal standards for mean values of components of chronic fatigue of T. Makowiec-Dąbrowska and W. Koszada-Włodarczyk, the ranges for the results of the studied group were identified. On the scale of the subjective experience of fatigue, the study subjects obtained average results, and for the scales reduction in motivation, reduction in activity and reduction in concentration these results can be considered as high (4.5; 4.2; 4.18; 3.57 points, respectively). The analysis of overall result of perceived chronic fatigue demonstrated that:

1. Out of 85 respondents, as many as 40 persons (47.05%) achieved results considered as high (sten scores of 7–10);
2. 41 persons (48.23%) obtained average results (sten score of 4–6),
3. 4 people (4.7%) achieved low scores – sten score of 3, and none of the persons scored lower on the sten score.

The average overall result in the level of chronic fatigue for the studied group is 83.3 points, which means that it is at the verge of average (up to 83) and high (from 84) results.

In order to verify the first research question, it was decided to study whether there is a relationship between temperament dimensions and the level of perceived chronic fatigue. Therefore, the Pearson's r correlation coefficient was employed (Table 1). The analysis showed a statistically significant negative correlation between endurance and all components measuring the perceived level of chronic fatigue and the overall index. The analysis indicates that with the decrease in endurance, the level of chronic fatigue increases. The indicated correlations are moderate, only the reduction in mo-

tivation scale strongly correlates with endurance. Negative moderate correlation was also observed between activity and reduction in motivation.

Table 1. **Correlations between the perceived level of chronic fatigue and temperament dimensions**

		Br.	Per.	Rhyt.	Sens.	End.	React.	Act.
Subjective experience of fatigue	Pearson's r	-0.04	0.18	-0.11	-0.09	-0.38	0.15	-0.27
	Significance	0.695	0.104	0.317	0.439	<0.001	0.163	0.014
Reduction in motivation	Pearson's r	-0.02	0.18	-0.10	0.01	-0.51	0.13	-0.33
	Significance	0.871	0.105	0.357	0.941	<0.001	0.230	0.002
Reduction in activity	Pearson's r	0.00	0.06	-0.10	0.06	-0.42	0.11	-0.13
	Significance	0.993	0.607	0.385	0.618	<0.001	0.317	0.232
Reduction in concentration	Pearson's r	-0.02	0.14	-0.06	-0.08	-0.42	0.26	-0.07
	Significance	0.826	0.213	0.573	0.449	<0.001	0.015	0.528
Overall fatigue index	Pearson's r	-0.03	0.17	-0.11	-0.05	-0.48	0.19	-0.23
	Significance	0.784	0.130	0.338	0.649	<0.001	0.075	0.036

Br. – briskness; Per. – perseverance; Rhyt – rhythmicity; Sens. – sensory sensitivity; End. – endurance; React. – emotional reactivity; Act. – activity

Next, it was decided to investigate the relationship between age and seniority in the profession and the level of perceived chronic fatigue among the nurses under study. As a result of the analysis, it turned out that a statistically significant relationship at a trend level occurs between age and the reduction in motivation scale ($r = 0.19$; $p = 0.084$). The occurring positive weak correlation indicates that among the study subjects reduction in motivation increases with age.

Using the Pearson's r and Spearman's rho correlation coefficients, the occurrence of a statistically significant relationship between physical working conditions and the perceived level of chronic fatigue was verified. The analyses demonstrated a statistically significant positive relationship between circadian rhythm disorders and the reduction in activity scale ($r = 0.30$; $p = 0.004$). This result is at the verge of average and weak correlation.

Another goal was to investigate the relationship between the way work is performed and the perceived level of chronic fatigue (Table 2). As a result of the analysis, it turned out that the non-rhythmic work scale of the personal questionnaire shows a statistically significant relationship with two subscales (reduction in motivation, reduction in activity) and the general chronic fatigue index in the CIS20R. A significant positive correlation was observed between the number of patients and the general fatigue index of the staff. The number of patients and the volume of documentation variables positively moderately correlate with the subjective experience of fatigue scale.

Table 2. **Correlations between the perceived level of chronic fatigue and the way work is performed**

		Subjective experience of fatigue	Reduction in motivation	Reduction in activity	Reduction in concentration	Overall index
Speed of decision	Spearman's rho	0.18	0.16	0.27	0.28	0.26
	Significance	0.095	0.149	0.011	0010	0.016
Monotony	Spearman's rho	-0.01	0.06	-0.04	-0.04	-0.01
	Significance	0.906	0.588	0.691	0.690	0.954
Predictability	Spearman's rho	0.10	0.04	0.06	0.21	0.13
	Significance	0.363	0.738	0.580	0.056	0.241
Autonomy	Spearman's rho	0.00	0.05	0.12	0.19	0.09
	Significance	0.980	0.638	0.279	0.085	0.434
Non-rhythmic work	Pearson's r	0.27	0.39	0.33	0.29	0.35
	Significance	0.011	<0.001	0.002	0.006	0.001
Number of patients	Pearson r	0.36	0.17	0.22	0.28	0.32
	Significance	0.001	0.128	0.039	0.009	0.003
Documentation volume	Pearson's r	0.33	0.23	0.21	0.21	0.29
	Significance	0.002	0.035	0.060	0.058	0.007

The relationship of professional development (assessment of career development opportunities, satisfaction, remuneration, social prestige) with chronic fatigue was subsequently studied. As a result of correlation analyses, no correlations between these variables at a level higher than weak correlation (career development – reduction in activity: $R = -0.20$; $p = 0.074$; satisfaction – reduction in activity: $R = -0.024$; $p = 0.025$) were found.

In order to verify the relationship between functioning in an organization and perceived chronic fatigue, subsequent analyses were performed (Table 3). The Spearman's rho correlation coefficient analysis proved that as the level of information flow decreases, the level of the scale measuring the reduction in activity and the general perceived chronic fatigue index increase. Positive moderate correlations were observed between contradictory instructions and reduction in concentration. This means that as the frequency of contradictory instructions increases, the level of the scale measuring reduction in concentration increases simultaneously.

Table 3. **Correlations between perceived level of chronic fatigue and functioning in an organization**

		Subjective experience of fatigue	Reduction in motivation	Reduction in activity	Reduction in concentration	Overall index
Contradiction	Pearson's r	0.21	0.14	0.22	0.33	0.26
	Significance	0.049	0.219	0.048	0.002	0.015
Simultaneousness	Pearson's r	0.25	0.09	0.16	0.20	0.22
	Significance	0.023	0.423	0.143	0.069	0.046
Coping	Pearson's r	0.02	0.01	0.02	0.07	0.04
	Significance	0.872	0.903	0.833	0.529	0.740
Being appreciated by doctors	Pearson's r	0.09	-0.01	-0.08	0.07	0.05
	Significance	0.419	0.928	0.488	0.500	0.684
Being appreciated by patients	Pearson's r	-0.12	-0.18	-0.24	-0.20	-0.19
	Significance	0.296	0.110	0.026	0.070	0.077
Information flow	Spearman rho	-0.21	-0.24	-0.38	-0.26	-0.30
	Significance	0.054	0.029	<0.001	0.017	0.005

When verifying the correlation of interpersonal relations with the perceived level of chronic fatigue, a statistically significant correlation was found between the interactions with nurses variables (measured in a personal questionnaire) and two subscales measuring chronic fatigue and the overall score (Table 4). The worse the quality of interaction with nurses was, the higher was the level of experienced fatigue, reduction in concentration and reduction in motivation. These correlations are moderate.

Table 4. **Correlations between experienced chronic fatigue and social relations**

		Subjective experience of fatigue	Reduction in motivation	Reduction in activity	Reduction in concentration	Overall result
Conflicts	Spearman's rho	0.12	0.11	0.09	0.12	0.12
	Significance	0.294	0.340	0.417	0.294	0.282
Difficulties in interactions with doctors	Spearman's rho	-0.12	-0.25	-0.16	-0.01	-0.16
	Significance	0.281	0.019	0.136	0.931	0.144
Difficulties in interactions with nurses	Spearman's rho	-0.27	-0.33	-0.25	-0.31	-0.34
	Significance	0.011	0.002	0.024	0.003	0.001

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Difficulties in interactions with patients' families	Pearson's r	-0.07	-0.13	-0.13	-0.04	-0.10
	Significance	0.500	0.236	0.226	0.704	0.380

The last correlation analysis focused on the relationship between workplace aggression (verbal aggression, physical aggression, its frequency) and the level of experienced fatigue. As a result of the analysis, it turned out that no correlations other than weak between these variables were observed (frequency – reduction in concentration: Spearman's rho = 0.27; p = 0.014).

In order to summarize the above analyses, a stepwise linear regression analysis was carried out. Work characteristics and temperament dimensions were introduced as predictors. Variables that statistically significantly correlated with individual dimensions of chronic fatigue (subjective experience of fatigue, reduction in motivation, reduction in activity, reduction in concentration) and the overall result were applied. The selection of a model was determined by the principle of a significant coefficient of determination and aimed at identifying the strongest predictor. The synthesis of results is presented in Table 5. Endurance turned out to be the strongest predictor for the overall result and for individual chronic fatigue subscales. Its increase by one unit causes a simultaneous decrease in results on the subjective experience of fatigue subscale by 0.64 unit. As a result of the analysis, it turned out that along with the number of patients variable, they account for nearly 14% of variation in a subjective experience of fatigue. The number of patients as a factor was positively correlated, while endurance was negatively correlated, with a subjective experience of fatigue. The next analysis allowed us to develop models for the dependent variable reduction in motivation. It turned out that the endurance scale accounts for up to 26% of the variation in this subscale. The unstandardized beta coefficient indicates that an increase in the endurance level by 1 unit will affect the decrease in reduction in motivation by 0.38 unit. Along with other predictors – non-rhythmic work and activity (conditioned by temperament) – they account for as much as 39% of variation. With the exception of non-rhythmic work, predictors were negatively correlated with reduction in motivation.

Further regression analyses showed that the endurance variable alone accounts for about 18% of variation in reduction in activity. As it increases by one unit, the level of activity decreases by 0.33 unit. Along with two variables, i.e., decision speed and information flow, they account for nearly 32% of variation in the activity dimension. Beta coefficients indicate a negative correlation of predictors with reduction in activity, except for the decision speed indicator, which is positive.

Another analysis enabled to develop models for the dependent variable reduction in concentration. As endurance increases by one unit, this scale's level decreases by 0.49 unit. This predictor accounts for 17% of variation in reduction in concentration. In addition to endurance, the contradictory instructions scale proved to be an important predictor. By adding this variable, the percentage of explained variance increases to 25%.

In the last stage, step regression models were developed for the general fatigue result. Endurance alone accounts for 23% of the variation in this dependent variable. It turned out that the addition of other predictors, such as contradictory instructions and difficulties in interactions with nurses, results in a significant increase in the percentage of explained variable to 35%. Values of beta standardized coefficients indicate that decision speed is positively correlated with general fatigue. Endurance and difficulties in interactions with nurses are negative predictors.

Table 5. **Summary of regression of dependent variables (chronic fatigue and subscales)**

Variables	β	T	R^2	F
Subjective experience of fatigue				
Model 1 Endurance Model 2 Endurance Number of patients	 -0.38 -0.33 0.31	 -3.71*** -3.42** 3.22**	 0.14 0.22	 13.75*** 12.83***
Reduction in motivation				
Model 1 Endurance Model 3 Endurance Non-rhythmic work Activity	 -0.51 -0.39 0.32 -0.27	 -5.39*** -4.30*** 3.64*** -3.14**	 0.26 0.39	 29.00*** 18.92***
Reduction in activity				
Model 1 Endurance Model 3 Endurance Decision speed Information flow	 -0.42 -0.41 0.31 -0.26	 -4.24*** -4.52*** 3.48** -2.88**	 0.18 0.32	 17.91*** 14.16***
Reduction in concentration				
Model 1 Endurance Model 2 Endurance Contradiction	 -0.42 -0.39 0.30	 -4.19*** -4.13*** 3.16**	 0.17 0.25	 17.53*** 14.71***
General fatigue result				

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Model 1				
Endurance	-0.48	-4.92***		
Model 4	-0.41	-4.54***	0.23	24.18***
Endurance	0.32	3.60**	0.35	16.22***
Contradiction	-0.27	-3.00**		
Difficulties in interactions with nurses				

β – standardized beta coefficient; T – significance of a given predictor; R^2 – value of coefficient of determination; F – significance of the model, * $p < 0.05$; ** $p < 0.01$; *** $p < 0.001$

Discussion

The study of fatigue in the group of psychiatric nurses has a special practical justification. CFS is a complex disorder that affects memory functioning and impairs cognitive functions mainly in terms of psychomotor speed and attention [12]. Thus it can negatively affect nursing services provided to patients. This is particularly important in view of an increasing demand for psychiatric care services. As a consequence, the study of the psychophysical health of representatives of this professional group is a part of the research on broadly understood condition of Polish psychiatry.

Analyses of chronic fatigue in the group of psychiatric nurses allowed us to estimate that the severity of symptoms declared by the respondents is medium and high. What might be worrying is the fact that almost half of the respondents obtained results indicating severe fatigue. This means that a relatively large group of nurses experience burdens such as CFS, which is manifested, for example, in lower attention span. If we assume that this happens during working hours, then there is a higher probability of making a mistake or acting slowly. The obtained overall result and the results of individual subscales are, on average, higher compared to the results obtained in another study [13] by a group of pregnant women, employees of industry, trade and municipal services. Psychiatric nurses also have, on average, higher level of chronic fatigue when compared to a group of teachers. The differences are related to a subjective experience of fatigue, reduction in activity, reduction in motivation and in concentration [14]. The obtained result, however, is different than the results obtained in the study of the largest group of nurses in Poland (n = 1,141) where the severity of work-related chronic fatigue was average (sten score of 6) [15]. It is important that the division of respondents according to specialization and place of work was not included.

In this study, the role of temperament traits in the development of chronic fatigue was analyzed. It was assumed that temperament traits moderate the relationship between the stimulus and the consequences of experiencing it. As a result of the analyses, it turned out that low endurance in the group of psychiatric nurses is a temperamental indicator of the development of chronic fatigue and its individual components. This

seems understandable considering that the efficiency of the nervous system is reflected in adequate responses to strong or prolonged stimulation during work. Such specificity can be attributed to the work-related burden of persons providing care to mentally ill patients. Low intensity of endurance tends to be a risk factor not only in relation to psychiatric staff but also representatives of other professions where the risk of losing health or life occurs in connection with their professional duties. Research conducted on policemen, firefighters and military personnel [16] showed that all symptoms of PTSD correlated negatively with endurance in the groups of representatives of these services. Other analyses [17] also demonstrated that low endurance in the group of prison officers is conducive to experiencing more stressors at work and a sense of less social support from colleagues. In addition, it affects the propensity to use emotion-oriented strategies and lower focus on achieving the goal. Thus, it should be pointed out that this temperament trait in the group of difficult and dangerous professions is significant

Endurance is rooted in the concept of strength of the stimulation process (SSP) by I. Pavlov. This result is consistent with the current findings on SSP [18]. The strength of the stimulation process related to the functional efficiency of the central nervous system has been confirmed as important in predicting the development of fatigue in terms of its overall result as well as in subscales in the group of professionally active persons. In addition, as established in studies conducted on the group of teachers [19], its severity is significantly negatively correlated with emotional exhaustion (a component of burnout) as a result of work. It is interesting that the correlation between the strength of the stimulation processes (SSP) and fatigue has not been confirmed by using another measurement method, i.e., 10-item Fatigue Assessment Scale (FAS) [20]. The tool calculates only the general fatigue index, which is the sum of all scores.

As demonstrated in the study, interactions with nurses are correlated with reduction in motivation and reduction in concentration, and they are also one of the predictors in the model explaining the variation in the general fatigue result. It has been established so far [21, 22] that social interactions of the nursing staff significantly affect work assessment. On the one hand, these interactions strongly affect the experienced satisfaction; on the other, they are the most common source of stress. In the opinion of the nursing staff, one of problems in professional relations is, among others, ineffective communication and conflicts between individual employees, and between groups. One might wonder to what extent the specificity of working with psychiatric patients affects building relationships in a team. Another characteristic feature is that in the community of psychiatric nurses, intensive involvement in relationships (understood as devotion and commitment) is declared more frequently than among other nursing specializations, and at the same time conflicts in interactions with patients, families and medical staff at work are more frequent [23]. In search for the causes of misunderstandings, analyses of professional competences conducted in a group of Polish nurses [24] may

be useful. These analyses demonstrate significant discrepancies in mutual evaluation. All persons under study indicated that the level of their own competence is satisfactory or definitely satisfactory. Younger nurses rated the skills of older colleagues in providing information and support to patients as insufficient and unsatisfactory (40–47%).

Therefore, strengthening positive relationships at work can be an important field for promoting employees' health. This applies to relationships among colleagues, managers and recipients of care services. When these relationships are developed, it is worth noting that they depend, among others, on the social skills and experience of the persons who build them. As indicated by Brudek et al., it seems important to work on negative emotions experienced by the staff at psychiatric wards [25]. On the basis of the presented research results, it should be added that the work on employees' relationships should also be focused on dealing with experiences that arise from conflicts among employees. The ability to experience feelings constructively can reduce the risk of releasing them in an inappropriate manner.

The study recognized the importance of other factors that constitute an image of the functioning of psychiatric nurses in an organization. Contradictory instructions turned out to be one of the predictors explaining the variability in reduction in concentration and the general fatigue result. In turn, the flow of information predicts a reduction in activity in the regression model. It can be concluded that both factors are related to perceived difficulties in the functioning of teams of employees, including communication and functioning in a professional role. The respondents indicated that the more often they receive contradictory instructions, the less they are focused, and the worse the flow of information among the staff is, the stronger general fatigue and reduction in activity are.

Potential consequences of this situation conflict with the assumptions of health protection. The staff is required to have factual information and act with the focus on improving the patients' health. Owing to the functions of communication among employees, it is possible to achieve the goals of the organization. Implementing plans, organizing work and controlling it is possible due to social interactions in the team. Previous analyses on this topic [26] indicate that dysfunctional communication within the organization can be considered as a cause of conflict situations in the group of nurses. Moreover, satisfaction with the quality of the communication process between employees affects their prosocial behavior in care work. Interviews conducted among the Polish staff have shown that deficient interpersonal communication has an impact on negative atmosphere at work [27]. The research results presented in the paper make one consider to what extent the indicated problems (contradictory instructions, information flow) tend to be severely disturbed. In the course of research on pathological phenomena at work [28], it was found that problems with internal communication are associated with managerial leadership styles and are related to a negative work-related phenomenon of mobbing at work. The phenomenon of harassment or mobbing in an

organization can also occur as a result of professional overload, with accompanying tense atmosphere and a sense of stress.

In order to expand the knowledge about the problem of contradictory instructions and information flow, additional issues should be analyzed. For example, to what extent does the organizational structure of healthcare facilities impede the information flow and affect employees' fatigue? How can delegating responsibility improve emergency response? Can it be motivating? There is no doubt that studying communication within the organization in the form of a communication audit can be a useful tool to support the development of effective communication. In addition, a review of the literature dating back to 2003–2016 [29] showed that conducting regular team training sessions and working on getting to know each other's roles and responsibilities significantly improve communication.

This study has its limitations. When continuing research in this area, it seems important to consider specific characteristics attributed to both this profession and the gender of practicing persons it. For example, as the field literature indicates [30], nurses are more susceptible than the rest of the medical staff to experience a particular type of tension, i.e., stress of conscience. In the group of psychiatric nurses, it is a result of exposure to situations when fulfilling professional duties as expected is impossible. Stress of conscience is related to aggressive behaviors and experienced anger. Further, it would be worth analyzing interactions between the professional and non-professional zones and their consequences for chronic fatigue experience. In the Author's view, the lack of observed correlations between chronic fatigue and the age and seniority of the respondents is thought-provoking. A nurse is an "aging" profession on the Polish labor market. The importance of biological processes and the accompanying symptoms, e.g., perimenopausal symptoms in nurses over the age of 40, seems to be worth exploring.

The presented study is a voice in the discussion on the quality of healthcare services and working conditions in psychiatric treatment. Data analyzes facilitate an initial assessment of the motivation to perform work or the ability to concentrate at work. The continuation of research in this field may allow the development of psychological characteristics of problems in the profession of psychiatric nurses. In the group of psychiatric nurses, it is invariably important to explore competence areas that protect against psychophysical burdens at work, and to strengthen them.

Conclusions

1. The results of own research confirm the problem of chronic fatigue occurring in the group of psychiatric nurses. In the most numerous group of study subjects, chronic fatigue was found to be moderate, and then high. Its severity constitutes a special image of the psychophysical condition of the staff in view of challenges of contemporary psychiatric care.

2. Endurance as a temperament trait is important for analyzing differences in chronic fatigue in the group of psychiatric nurses. Its low level is one of the predictors of high results for individual chronic fatigue subscales as well as for the overall result in this respect. The role of endurance highlighted in the study results from the specificity of difficult situations to which social professions are exposed at work.
3. In the study group, difficulties in interactions with nurses are correlates of reduction in concentration and reduction in activity, and affect the overall result of chronic fatigue. The obtained results are in line with academic reports on the role of social climate at work and communication skills among employees.
4. The study has highlighted the need to support the nursing staff in their more efficient professional functioning and to develop research in the field of chronic fatigue.

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