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Chronic fatigue in teachers and its selected determinants

Przewlekłe zmęczenie u nauczycieli i jego wybrane uwarunkowania

Abstract:
Introduction: Chronic fatigue is most often studied in the fields of medicine and psychology, drawing attention as a key component of chronic fatigue syndrome and occupational burnout. It manifests itself in decreased motivation, reluctance to engage in work, concentration difficulties, and irritability. Despite its significant impact on quality of life and daily work performance, chronic fatigue has not been widely examined in the context of the teaching profession. When teachers experience chronic fatigue, they may have less energy to prepare for lessons and engage less in their professional responsibilities. This may—though not necessarily—negatively affect both their well-being and their students.
Method: This study aimed to examine whether gender, age, seniority, workload, and resilience served as predictors of chronic fatigue in teachers. The sample consisted of 288 teachers, working mainly in preschools and elementary schools. The study employed the Resilience Assessment Questionnaire, the Quantitative Workload Inventory, and the Checklist Individual Strength.
Results: Most participants exhibited a moderate level of general fatigue. Additionally, the majority of teachers displayed either moderate or high resilience across the personal, social, and family domains. Both resilience and workload were significant predictors of overall chronic fatigue level and subjective feeling of fatigue.
Conclusion: The level of chronic fatigue observed among teachers and the identification of its contributing factors highlight the need for an education

policy that actively supports the development of teacher resilience and aims to minimize the risk of excessive workload.

Keywords: chronic fatigue, resilience, teacher.

Introduction

Teachers' work is of great social importance and can be a source of satisfaction. What should also be remembered is that it is demanding and difficult. It involves constantly observing students' behavior and engaging in reflection on that basis, processing various information in limited time, and taking responsibility for the course of educational processes. In their work, teachers face many problem situations, which they resolve in conditions of deficit of time and excess of information; they should react quickly to pedagogically difficult situations. Therefore, their perception, attention, memory, and thought processes remain on a high level for a relatively long time. What is more, the quality of education directly depends on teachers' knowledge and experience. However, there is a discrepancy between teachers' social role and their actual position in society. On the one hand, educational authorities emphasize the importance of teachers' work; on the other, there are various obstacles and difficulties (e.g., excessive bureaucracy, a wide scope of professional responsibility, students' misbehavior, parents' entitlement attitude, noise) that prevent teachers from effectively doing their professional duties. In addition to that, contemporary human life is marked by the increasingly fast development of technologies, an accelerating pace of life, the digitization of all its areas, and a flow of information that needs constant processing. All of these can cause stress, exhaustion, and burnout syndrome in teachers and thereby negatively affect their health and/or capacity for work.

The article aims to present the results of the author's research on chronic fatigue in teachers and its selected contributing factors. It also aims to discuss the theoretical basis and practical implications of that research.

Chronic fatigue and its consequences

In the literature, there has been an observably growing interest in chronic fatigue, which represents a serious social problem (Cullen et al., 2002). It is a complex and multifaceted state (Åkerstedt et al., 2004), commonly present in everyday life, for example as a "hard day's work" syndrome, which is associated with a change of mood, behavior, and psychophysiological states (van der Linden and Eling, 2006).

There is consensus that chronic fatigue can be considered from two perspectives: physiological and psychological (Stępka and Basińska, 2015). In the former perspective, fatigue—also referred to as tiredness—results from strain associated with activities, tasks, and work of the organism and occurs after physical or mental effort. It is an objective phenomenon, experienced as a state of exhaustion of the organism, which is transitory (e.g., decreased capacity for activity). In the latter perspective, fatigue is a subjectively experienced phenomenon, characterized by mental weariness (e.g., concentration difficulties, reluctance to be active in life, decreased motivation) and nervous arousal (e.g., irritability).

In the psychological perspective, chronic fatigue is defined as "a subjective feeling that is associated with a change in the psychophysiological mechanisms regulating behavior, resulting from prior mental or physical exertion" (Makowiec-Dąbrowska and Koszada-Włodarczyk, 2006, p. 336, translation mine). It is bothersome enough for the individual to be unable to meet the demands of work, and even if they do meet these demands, it is only by increasing the effort. In the present study, chronic fatigue is understood as a subjective state resulting from mental and/or physical exertion and lack of rest (Makowiec-Dąbrowska and Koszada-Włodarczyk, 2006). The emergence of chronic fatigue can negatively affect all the activities that the teacher engages in at school.

Chronic fatigue is a concept strongly related to occupational burnout. While occupational burnout is analyzed mainly in the literature in organizational psychology, fatigue is discussed mostly in the field of medicine. Nevertheless, attempts to define chronic fatigue are made in psychology as well. The following perspectives can be mentioned:

- the job demands–resources (JD-R) theory (Bakker and Demerouti, 2014), with fatigue considered as a negative consequence of excessive job demands. High job demands act as stressors that exhaust employees' energy, and their attempts to cope with the experience of exhaustion lead to health deterioration, an intention to leave one's job (Schaufeli and Bakker 2004), or lowered efficiency;
- the conservation of resources theory (Hobfoll, 2006), with fatigue understood as an outcome of difficulties in acting in accordance with one's values in the workplace. Individuals who have more personal resources will be less prone to stressful situations and better protected against occupational burnout. A low level of personal resources is also associated with the use of less effective strategies for coping with stress.

Although chronic fatigue and occupational burnout share a common component, namely physical exhaustion, burnout is more strongly linked with motivational consequences, while chronic fatigue is predominantly associated with health consequences. However, both can lead to a decrease in teacher productivity, which has extensive pedagogical and social implications.

Perceived as an important personal job-related factor, chronic fatigue can affect overall functioning in life and at work (Frone and Tidwell, 2015). It usually affects the emotional (e.g., anxiety, irritability, aggression or apathy, depression), physical (e.g., sleep quality deterioration, disturbances of vegetative functions), and occupational spheres (e.g., reluctance to work/study, decreased concentration, low motivation to work, low work efficiency, low work engagement, low quality of relations with other employees; Makowiec-Dąbrowska and Koszada-Włodarczyk, 2006; Son, 2019).

Selected determinants of chronic fatigue in teachers

Based on a research review, the key factors potentially related to the experience of chronic fatigue were identified. These include stress-inducing characteristics of the teaching profession, teachers' work conditions, non-occupational responsibilities, occupational stress, workload, and individuals' personal resources.

Teresa Makowiec-Dąbrowska and colleagues (2021) conducted research on fatigue among teachers. Straining factors correlated with chronic fatigue include the stress-inducing characteristics of teachers' work (such as a sense of time pressure, hurry, failure to adjust the pace of work to one's abilities, increasing workload, excess of responsible duties, low prestige of the profession, low work efficiency, and lack of support from superiors) and its conditions (noise and unpleasant smells). The level of fatigue depends also on factors associated with non-occupational responsibilities, lack of free time, and self-perceived health (Makowiec-Dąbrowska et al., 2021).

Job stress is the main predictor of both job burnout (Zhao et al., 2022) and fatigue (Rose et al., 2017). It was found to contribute to chronic fatigue among academic teachers (Springer et al., 2023). Moreover, the latest empirical findings point to the existence of relationships linking occupational stress and resilience with occupational burnout in other groups of teachers (Jung et al., 2024; cf. Martínez-Ramón et al., 2021).

Christopher Day and colleagues (2006) identified the key factors that negatively influenced teacher effectiveness. One of them was workload. I understand workload as a state in which the worker feels overburdened with duties beyond his or her physical and mental capacities.

Personal resources enable teachers to cope with the stressors encountered at work and then to restore inner balance after the experience of stress (Ruter, 2006). One of such resources can be psychological resilience, usually defined as a relatively stable individual resource (Ogińska-Bulik and Juczyński, 2008; cf. Konaszewski, 2020) or as the process of effectively coping with negative phenomena and chance events (Rutter, 2006). What these two approaches to resilience have in common is the ability to detach oneself from emotionally negative experiences and flexibly adapt to the changing demands of stressful experiences (Tugade and Fredrickson, 2007). In this study, resilience is understood as a personality characteristic that, combined with the effect of environmental factors, supports the individual's ability to cope with adversities, stress, and potentially traumatizing events (Gąsior et al., 2006). It was assumed that, as postulated by the job demands–resources theory (Bakker and Demerouti, 2014), personal resources were functional in achieving occupational goals, reduced the psychological costs associated with job demands, and/or stimulated personal growth and learning (Bakker, 2011).

Research revealed that more resilient teachers were less prone to the stress involved in their role and felt less emotionally exhausted, which positively influenced their effectiveness and favored career development (Richards et al., 2016). Resilient teachers are those who cope in stressful situations, finding a balance between their own needs and the needs of their students (Gloria et al., 2013). As a result, they derive more satisfaction from their work and are capable of entering into positive interactions with others. What is more, teachers showing a high level of resilience have the abilities and skills allowing them to engage in work and reduce the stress involved in it, while less resilient ones tend to experience greater exhaustion and indifference to work (de Vera-García and Gambarte, 2019). High resilience favors a lower level of occupational burnout symptoms among teachers (Gloria et al., 2013; cf. Martínez-Ramón et al., 2021).

Other personal resources that reduce the experience of chronic fatigue in teachers are humor and passions. It turned out that the more often teachers used affiliative humor, self-enhancing humor, and coping humor, the lower level of job stress they experienced, which resulted in a lower level of chronic fatigue (Kruczek, 2019). With the growth of harmonious passion, teachers experienced weaker fatigue symptoms (Mudło-Głagolska, 2019).

To sum up, despite the wide interest in the character of teachers' work, there are relatively few studies on chronic fatigue in this occupational group. Many studies concerned the psychosocial conditions of teachers' work (Pyżalski and Merecz, 2010), occupational burnout syndrome (Bakker et al.,

2005; Xanthopoulou et al., 2007), or teacher health (Bortkiewicz et al., 2020). The problem of teacher chronic fatigue has been addressed in few studies (e.g., Kruczek, 2019; Makowiec-Dąbrowska et al., 2021; Mydło-Głagolska, 2019; Strutyńska, 2022).

Method

Aim of the study

The study aimed to determine the relationships linking gender, age, seniority, personal resources (in this case, resilience), and workload with the emergence of chronic fatigue in a sample of teachers. Additionally, the study assessed the level of fatigue in these teachers and their resilience level. Based on theory (Bakker and Demerouti, 2014) and previous research (e.g., Jung et al., 2024; Martínez-Ramón et al., 2021; Rose et al., 2017; Springer et al., 2023), it was assumed that sociodemographic variables (gender, age, and seniority), workload, and resilience could be predictors of teacher chronic fatigue. The study was limited to quantitative research, using the JD-R model as the theoretical context. The following research questions were formulated:

1. What is the level of chronic fatigue in the sample of teachers?
2. What is the level of resilience in the sample of teachers?
3. What are the predictors of chronic fatigue in the sample of teachers?

Participants and procedure

The study was conducted in accordance with the quantitative paradigm, using a diagnostic survey. It was conducted by means of the auditorium questionnaire technique during classes attended by postgraduate students at one of Warsaw's universities, from November 2019 to January 2020. Respondents were informed about the anonymity of the study and the voluntary nature of participation. I used non-random sampling, based on the availability of participants.

Table 1 presents the characteristics of the sample. Most of the respondents were women (93.4%). Respondents' mean age was 39 years, and their mean seniority was 11 years. Nearly 70% of the sample were teachers working in elementary schools.

Table 1. Sample Characteristics (N = 288)

Variable	Statistic
Gender, *n* (%)	
Women	269 (93.4)
Men	16 (5.6)
Not reported	3 (1.0)
Age, *M* (*SD*)	39.94 (10.08)
Min.–Max.	25–63
Seniority, *M* (*SD*)	11.65 (10.28)
Min.–Max.	1–40
Type of institution, *n* (%)	
Preschool	78 (27.1)
Elementary school	195 (67.7)
Secondary (post-elementary) school	5 (1.7)
Special care and educational facility	3 (1.0)
Psychological and pedagogical counseling center	1 (0.3)

Source: author's research

Measures

Material for the present research was collected using the following self-report measures:

The Resilience Assessment Questionnaire (KOP-26), developed by Krzysztof Gąsior, Jan Chodkiewicz, and Wojciech Cechowski (2016) consists of 26 items measuring three dimensions of resilience: personal skills (e.g., "I can set clear, specific goals in my life"), family relations (e.g., "In difficult situations, I can always count on someone from my family"), and social skills (e.g., "Compared to others, I have a lot of friends"). The response to each item is scored on a 5-point scale (1 = *strongly disagree* to 5 = *strongly agree*). The measure is based on the model created by Joan Haase (2004), assuming that an individual's resilience is a process that encompasses three dimensions: individual (e.g., hope, courage, positive self-image, openness to others), family (e.g., family support, friendly relations between family members), and social (having close friends, possibilities of asking for help). The higher the score, the higher the level of resilience. The reliability of the measure is .89 for the total score and ranges from .79 to .88 for individual scales.

The Quantitative Workload Inventory (QWI) by Paul E. Spector and Steve M. Jex (1998), adapted into Polish by Łukasz Baka and Róża Bazińska

(2016), consists of 5 items (e.g., "How often does your job require you to work very fast?"). Respondents use a 5-point scale to indicate their answers (1 = *less than once per month or never* to 5 = *several times per day*). The measure has been used before in research on Polish teachers (Baka and Cieślak, 2010). The result of measurement is an overall perceived workload score. The reliability coefficient is .80.

The Checklist Individual Strength (CIS20R; Vercoulen et al., 1994), Polish version by Teresa Makowiec-Dąbrowska and Wiesława Koszada-Włodarczyk, 2006 consists of 20 items, rated on a scale from 1 to 7. It measures the level of chronic fatigue in four dimensions: subjective fatigue (e.g., "I feel tired"), reduction in motivation (e.g., "I feel no desire to do anything"), reduction in physical activity (e.g., "I don't do much during the day"), and reduction in concentration (e.g., "My thoughts easily wander"). The lower the score, the higher the level of chronic fatigue symptoms. The reliability of the measure is .92 for the total score and ranges from .63 to .88 for individual components of fatigue.

Data analysis

Statistical calculations were performed using IBM SPSS Statistics 29.0. The program was used to compute basic descriptive statistical measures, with the Kolmogorov–Smirnov test assessing the alignment of the distribution of scores with the normal distribution. The internal consistency of the scores was estimated using Cronbach's alpha coefficient. To determine the relationships between variables, an analysis of Pearson correlations was performed. To check which variables played the role of predictors of chronic fatigue, I performed a linear regression analysis using the enter method. The collinearity of predictors was controlled using VIF < 5.

Results

Table 2 presents basic descriptive statistics. Teachers most often reported a reduction in concentration and physical activity and less often complained about subjective fatigue. To test the alignment of the distribution of scores with the normal distribution, I performed an analysis using the Kolmogorov–Smirnov test. The analysis revealed that the distributions of all variables diverged from the normal distribution, though the divergence was not significant (the values of skewness were within the range of –2 to 2; George and Mallery, 2019). For all the variables analyzed, the values of reliability measured using Cronbach's alpha were acceptable. Only for reduction in motivation was that coefficient below .70, though it was still acceptable (Table 2).

Table 2. Descriptive Statistics, Kolmogorov–Smirnov Test Results, and Cronbach's α Coefficients

	M	*Mdn*	*SD*	Sk.	Kurt.	Min.	Max.	*D*	*p*	Cronbach's α
Resilience – overall score	4.14	4.19	0.47	−0.89	1.29	2.19	5.00	.09	<.001	.899
Personal skills	4.22	4.33	0.53	−1.05	1.88	1.78	5.00	.12	<.001	.797
Family relations	4.48	4.64	0.55	−1.81	3.88	1.91	5.00	.17	<.001	.887
Social skills	3.40	3.33	0.80	−0.19	−0.25	1.00	5.00	.07	<.001	.861
Subjective fatigue	3.27	3.13	1.49	0.55	−0.33	1.00	7.00	.08	<.001	.882
Reduction in motivation	4.26	4.25	1.39	−0.26	−0.29	1.00	7.00	.06	.007	.639
Reduction in physical activity	4.05	4.00	1.59	−0.12	−0.72	1.00	7.00	.07	.004	.719
Reduction in concentration	4.38	4.60	1.49	−0.28	−0.58	1.00	7.00	.06	.005	.805
Fatigue – overall score	3.86	3.85	1.29	0.16	−0.43	1.00	7.00	.04	.200	.925
Workload	3.58	3.60	0.83	−0.34	−0.05	1.00	5.00	.07	.002	.805

Source: author's research
Note. Kurt. = kurtosis; Sk. = skewness.

Table 3 presents the frequency analysis for the dimensions of chronic fatigue. Each respondent's result was juxtaposed with provisional norms (Makowiec-Dąbrowska and Koszada-Włodarczyk, 2006), and on that basis respondents were divided into groups with low, moderate, and high scores. A high overall chronic fatigue level was found in 8.4% of the respondents. As many as 24% of the teachers scored high on subjective feeling of fatigue. Low motivation was found in 5.2% of the respondents, low physical activity was found in 8.4%, and deteriorated concentration in 2.1%.

Table 3. Frequency Analysis for the Assessment of Dimensions of Chronic Fatigue Based on Provisional Norms

	Subjective fatigue	Reduction in motivation	Reduction in physical activity	Reduction in concentration	Fatigue – overall score
High	69 (24.0%)	15 (5.2%)	24 (8.4%)	6 (2.1%)	24 (8.4%)
Moderate	174 (60.6%)	115 (40.1%)	124 (43.2%)	61 (21.3%)	151 (52.6%)
Low	44 (15.4%)	157 (54.5%)	139 (48.4%)	220 (76.7%)	112 (39.0%)

Source: author's research

In the next stage, data concerning resilience and its dimensions in the current sample were presented in relation to provisional norms (Table 4). The levels of personal skills, family relations, and overall resilience were high in more than 40% of teachers. A high level of social skills was found in 33% of the respondents. Approximately 13% of the teachers showed low levels of personal skills and family relations, and 25% exhibited a low level of social skills. The overall score on resilience was low in less than 18% of respondents.

Table 4. Frequency Analysis for the Assessment of Dimensions of Resilience Based on Provisional Norms

	Personal skills	Family relations	Social skills	Resilience – overall score
Low	38 (13.3%)	39 (13.7%)	72 (25.3%)	51 (17.9%)
Moderate	122 (42.8%)	117 (41.1%)	119 (41.8%)	96 (33.7%)
High	125 (43.9%)	129 (45.3%)	94 (33.0%)	138 (48.4%)

Source: author's research

Table 5 shows the results of the analysis of correlations between the dimensions of resilience and the dimensions of chronic fatigue. The results indicate the presence of statistically significant, positive and weak relationships between overall resilience score, personal skills, and all dimensions of chronic fatigue—higher levels of resilience and personal skills were related to lower scores on all fatigue dimensions. A higher level of family relations was associated with a lower level of reduction in motivation and lower overall fatigue score. A higher level of social skills in teachers was accompanied by lower subjective feeling of fatigue and a lower overall chronic fatigue level.

Table 5. Pearson's r Correlations Between the Dimensions of Resilience and Chronic Fatigue in Teachers

	Subjective fatigue		Reduction in motivation		Reduction in physical activity		Reduction in concentration		Fatigue – overall score	
	r	*p*	*r*	*p*	*r*	*p*	*R*	*p*	*r*	*p*
Resilience – overall score	.24	<.001	.24	<.001	.18	.002	.14	.021	.24	<.001
Personal skills	.25	<.001	.29	<.001	.20	<.001	.19	.001	.27	<.001
Family relations	.11	.059	.17	.005	.09	.114	.07	.221	.13	.033
Social skills	.23	<.001	.12	.046	.15	.090	.07	.248	.18	.002

Source: author's research

The next stage consisted in checking if there were relationships linking age and seniority with the levels of chronic fatigue and its components (Table 6). The analysis revealed positive and weak associations of age with subjective fatigue, reduction in concentration, and overall fatigue level. Similar correlations (weak and positive) were found between the dimensions of chronic fatigue and seniority.

Table 6. Pearson's r Correlations Between Age and Seniority and the Dimensions of Chronic Fatigue in Teachers

Chronic fatigue	Age		Seniority	
	r	*p*	*r*	*p*
Subjective fatigue	.23	<.001	.22	<.001
Reduction in motivation	.01	.844	.02	.741
Reduction in physical activity	.10	.084	.12	.038
Reduction in concentration	.15	.009	.18	.003
Fatigue – overall score	.17	.003	.18	.002

Source: author's research

To determine which variables were predictors of chronic fatigue and its dimensions, I performed a linear regression analysis using the enter method (Table 7). Age, seniority, resilience, and workload were included in the model as predictors. The analysis showed that all the models analyzed were well fitted to the data and explained 2.5% to 16.1% of the variance. In the case of overall fatigue score and the experience of subjective feeling of fatigue, the significant predictors turned out to be resilience and workload. Fatigue decreased (by 0.21–0.22 *SD*) with an increase in the level of resilience and increased (by 0.19–0.26 *SD*) with an increase in workload. Resilience was a significant predictor of reduction in motivation and reduction in physical activity—with an increase in resilience by 1 *SD*, motivation level increased by

0.24 *SD* and physical activity increased by 0.16 *SD*. For reduction in concentration, the only significant predictor turned out to be workload—an increase in workload by 1 *SD* translated into a reduction in concentration by 0.13 *SD*.

Table 7. Regression Coefficients for the Model Predicting Chronic Fatigue in Teachers

							95.0% CI for *B*			
		B	*SE*	β	*t*	*p*	*LL*	*UL*	*Sk. R²*	*F*
Fatigue – overall score	(Constant)	2.14	0.88		2.43	.016	0.41	3.87	.102	7.18***
	Gender	−0.02	0.31	−.003	−0.06	.953	0.64	0.60		
	Seniority	0.01	0.01	.11	0.96	.340	−0.01	0.04		
	Age	0.01	0.01	.05	0.43	.664	0.02	0.03		
	Resilience	0.58	0.16	.21	3.68	<.001	0.27	0.88		
	Workload	−0.30	0.09	−.19	−3.36	<.001	−0.48	−0.12		
Subjective fatigue	(Constant)	1.40	0.98		1.43	.153	−0.53	3.32	.161	11.47***
	Gender	−0.18	0.35	−.03	−0.50	.616	−0.86	0.51		
	Seniority	0.01	0.02	.09	0.82	.412	−0.02	0.04		
	Age	0.02	0.02	.13	1.16	.245	−0.01	0.05		
	Resilience	0.67	0.17	.22	3.85	<.001	0.33	1.01		
	Workload	−0.46	0.10	−.26	−4.64	<.001	−0.66	−0.27		
Reduction in motivation	(Constant)	2.18	0.99		2.20	.028	0.23	4.13	.048	3.73**
	Gender	0.01	0.35	.002	0.04	.969	−0.68	0.71		
	Seniority	0.003	0.02	.02	0.21	.836	−0.03	0.03		
	Age	−0.01	0.02	−.04	−0.32	.750	−0.04	0.03		
	Resilience	0.69	0.18	.24	3.94	<.001	0.35	1.04		
	Workload	−0.18	0.10	−.11	−1.82	.070	−0.38	0.01		
Reduction in physical activity	(Constant)	2.32	1.12		2.06	.040	0.11	4.54	.025	2.42*
	Gender	−0.25	0.40	−.04	−0.63	.529	−1.05	0.54		
	Seniority	0.01	0.02	.07	0.60	.548	−0.02	0.05		
	Age	0.003	0.02	.02	0.16	.872	−0.03	0.04		
	Resilience	0.53	0.20	.16	2.66	.008	0.14	0.93		
	Workload	−0.13	0.11	−.07	−1.17	.245	−0.36	0.09		

Reduction in concentration	(Constant)	3.17	1.04		3.03	.003	1.11	5.23	.048	3.77**
	Gender	0.35	0.37	.05	0.92	.356	−0.39	1.08		
	Seniority	0.02	0.02	.16	1.38	.169	−0.01	0.06		
	Age	−0.001	0.02	−.10	−0.08	.935	−0.04	0.03		
	Resilience	0.35	0.19	.11	1.90	.059	−0.01	0.72		
	Workload	−0.24	0.11	−.13	−2.26	.025	−0.45	−0.03		

Source: author's research, *Note.* *$p < .05$. **$p < .01$. ***$p < .001$.

Discussion

The analysis of the results obtained makes it possible to conclude that most respondents exhibited a moderate level of general fatigue. This finding is consistent with the results reported by Kruczek (2019) in her research on the associations of personal resources with perceived stress and chronic fatigue in teachers.

The majority of teachers in the sample displayed either moderate or high resilience across the personal, social, and family domains. Although this is an optimistic result in the adjectival scale, as many as nearly one-fifth of the teachers scored low on overall resilience. Likewise, in previous studies almost half of the teachers had high (Martínez-Ramón et al., 2021) or moderate (Daniilidou, 2018) resilience levels.

Interestingly, in the current sample of teachers, age and seniority were significant for the experience of chronic fatigue, but the direction of this relationship was somewhat surprising. The results indicate that the younger the teacher was, the greater subjective feeling of fatigue and reduction in concentration they experienced and the more tired they felt. Similarly, the shorter the seniority, the greater subjective feeling of fatigue respondents perceived, the lower physical activity they showed, the lower concentration level they displayed, and the higher they scored on overall chronic fatigue. These results can be interpreted as follows: More experienced and older teachers may be adapted to the conditions of work at school and to the demands they have to meet, which is why they feel lower fatigue.

The results of regression analysis lead to the conclusion that overall chronic fatigue and the experience of subjective feeling of fatigue can be predicted based on low resilience and high workload. The teachers who are capable of setting themselves clear goals and new challenges, have close contact with their family, easily make new friends and acquaintances, and experience low workload will be less tired than those who do not believe in their abilities and skills, cannot count on support from their family, find it

difficult to make contact with strangers, and feel more overwhelmed with work. These findings are in line with the results of research conducted in Germany on a sample of nearly 8,000 employed individuals. They showed that fatigue was strongly related to occupational stress, and that this relationship was independent of the health problems controlled for in that study, such as depression and increased BMI (Rose et al., 2017). A different study, conducted in South Korea (Jung et al., 2024), found a significantly higher level of occupational burnout in teachers exhibiting a lower level of resilience, working in big schools (with a student population between 500 and 700) and in conditions of increased job stress. This model explained 45.6% of the variance in occupational burnout, with job stress being the most significant factor (Jung et al., 2024).

Resilience turned out to be important for the understanding of how some teachers coped with difficulties while others were unable to meet the challenges of working life (Day and Gu, 2010). A higher level of resilience was associated with teachers' ability to adapt to stressful working conditions (Gu and Day, 2007; cf. de Vera-García and Gambarte, 2019; Richards et al., 2016) and with orientation towards thriving rather than merely surviving (Gloria et al., 2013; Beltman et al., 2011).

Although resilience and workload do not predict all dimensions of chronic fatigue, research results make it possible to conclude that these variables are its significant predictors. According to the job demands–resources theory (Bakker and Demerouti, 2014), high job demands lead to the exhaustion of psychological resources, which increases the risk of chronic fatigue. In the present study, workload was one of the main predictors of fatigue, which supports this model. What is also worth noting is the conservation of resources theory (Hobfoll, 2006), according to which individuals with greater resources (e.g., high resilience) cope with stressful situation better and are less prone to chronic fatigue.

The results obtained indicate that resilience is a significant variable reducing the experience of fatigue in teachers. Therefore, educational policy should support this occupational group in the process of strengthening resilience, also through structural solutions. Strong friendly relations, making decisions together, the ability to regulate one's emotions, and building a positive self-image allow teachers to cope with stress, chronic fatigue, and job-related challenges better. At the same time, resilience-strengthening activities help increase a sense of personal achievement, and in the long term they translate into a decrease in the number of teachers leaving their jobs.

The data reported also suggests that it is worth considering the need to counteract excessive workload among teachers. What can serve this purpose is improving the qualifications of headmasters concerning the social aspects of staff management and improving the organization of the school's work as well as the work of teacher teams—for example, through changing the workplace or the basis of employment.

The results obtained cannot be generalized to the entire population of Polish teachers. Even though the sample (N = 288) was sufficient for the planned analyses to be performed, the author is aware that the results are valid within the sample and require confirmation in other contexts. Another limitation is the cross-sectional character of the study and the gender distribution clearly skewed compared to systemic data.

In future studies, it is worth attempting to identify individuals' personal resources (e.g., self-efficacy) and/or job resources (e.g., social support, the curbing of bureaucracy, good communication with other teachers and school authorities) that could reduce teacher chronic fatigue.

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