



Exploring professional burnout and resilience in Physical Education teachers: a case study of Kazakhstan

Exploración del agotamiento profesional y la resiliencia en los docentes de Educación Física: un estudio de caso de Kazajstán

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Abstract

Introduction: Professional burnout of teachers, affecting professional deformations, causes growing societal concern. High stress in teaching activities leads to the emergence of personality deformation disorders among teachers, especially among physical education teachers. A key factor in reducing or avoiding burnout is resilience.

Objective: The primary purpose of this study is to investigate the characteristics and interplay of burnout and resilience among physical education teachers within the context of their professional development and challenges.

Methodology: This study involved 400 physical education teachers in total. This research was carried out using the survey model.

Results: According to the findings, burnout and resilience are inversely correlated, with men reporting more symptoms of burnout and women reporting higher levels of resilience and personal achievement. Accordingly, women have lower levels of depersonalization and emotional exhaustion, which could be explained by resilience as a protective factor against burnout.

Conclusions: Resilience protects Kazakhstani physical education teachers from burnout. Burnout rates may be reduced by enhancing resilience through targeted interventions, career development, and school-based support. Results emphasize the necessity of resilience-building initiatives and educational support that fosters teachers' well-being.

Keywords

Burnout; depersonalization; emotional exhaustion; gender; physical education; personal accomplishment; support; teacher.

Resumen

Introducción: El agotamiento profesional de los docentes, que repercute en deformaciones profesionales, es motivo de creciente preocupación social. El alto nivel de estrés en las actividades docentes conduce a la aparición de trastornos de deformación de la personalidad entre los docentes, especialmente entre los profesores de educación física. Un factor clave para reducir o evitar el agotamiento es la resiliencia.

Objetivo: El propósito principal de este estudio es investigar las características y la interacción del agotamiento y la resiliencia entre los profesores de educación física en el contexto de su desarrollo profesional y sus desafíos.

Metodología: En este estudio participaron 400 profesores de educación física en total. La investigación se llevó a cabo mediante el modelo de encuesta.

Resultados: Según los resultados, el burnout y la resiliencia están inversamente relacionados, siendo los hombres los que manifiestan más síntomas de burnout y las mujeres los que manifiestan mayores niveles de resiliencia y realización personal.

Discusión: En consecuencia, las mujeres presentan menores niveles de depersonalización y agotamiento emocional, lo que podría explicarse por la resiliencia como factor protector frente al burnout.

Conclusiones: La resiliencia protege a los profesores de educación física de Kazajstán del agotamiento. Las tasas de agotamiento pueden reducirse mejorando la resiliencia mediante intervenciones específicas, desarrollo profesional y apoyo escolar. Los resultados destacan la necesidad de iniciativas de desarrollo de la resiliencia y apoyo educativo que fomenten el bienestar de los docentes.

Palabras clave

Burnout; depersonalization; emotional exhaustion; gender; physical education; personal accomplishment; support; teacher.

Introduction

Professional burnout syndrome (PBS) is a detrimental consequence that reduces the effectiveness of professional activity and harms the individual's health (Berger-Estilita et al., 2024; Lenoir et al., 2021; Søvold et al., 2021). While categorized as a factor influencing workers' health, PBS is not a diagnosis by itself. Long-term stress alters metabolism, hormonal glands, and the nervous system, leading to a decline in a person's overall health (Biswas et al., 2022; Nakao et al., 2021).

PBS is considered a unique phenomenon and personal deformation that signals a progressively negative state of an individual's professional activity and their attitude toward it. This definition encompasses the various approaches to understanding and interpreting this phenomenon (Abad et al., 2023; Chemali et al., 2019; Nituica et al., 2021; Ali et al., 2024).

Among occupations, teaching is one that most negatively impacts a person's personality (Zhang et al., 2023). Teachers are constantly exposed to stressors that can be classified as affectogenic. These include high dynamism, time scarcity, work overload, complex new pedagogical situations, role ambiguity, and social evaluation. High levels of stress related to teaching have been highlighted in various studies (Agyapong et al., 2022; La Rotta Viillamizar et al., 2021), suggesting that personality deformation disorders are common among educators.

Teachers are traditionally expected to demonstrate reliability, strict work discipline, and a drive for self-improvement (Li et al., 2023). They focus on rigorous adherence to the demands of the school environment rather than prioritizing their own well-being and harmony. Research indicates that one of the causes of professional burnout (PB) is the pursuit of perfectionism, impeccability, and irreproachability (Bridgeman et al., 2018; Maslach & Leiter, 2016).

Although teaching's impact on personality and burnout is still an underexplored topic (Kim et al., 2019; Larasati & Kuswando, 2023), several studies have focused on the variables influencing professional burnout. However, the findings remain inconsistent. Negative outcomes of professional burnout include deteriorating mental and physical health, interpersonal relationship breakdowns, reduced effectiveness in professional activities, and the development of negative attitudes toward colleagues and students (Salyers et al., 2017). To date, no research has explored the relationship between resilience and burnout among Kazakhstani physical education teachers. Therefore, further research into the manifestation of professional burnout in this group is crucial to develop effective prevention and remediation programs.

Study Rationale

The demand for educational reforms has grown in Kazakhstani society (Nurgaliyeva et al., 2025), with the state's policies aiming to elevate the professionalism of teachers through new professional standards, competency verification, and modifications to professional development systems. However, the results of these reforms are often ambiguous, and teachers continue to face significant challenges in their work environment. These challenges are rooted in the complexity, diversity, and dynamism of modern education, compounded by socioeconomic conditions and the growing demands placed on educators (Tajibayeva et al., 2023). As a result, there is an urgent need for professionals who can quickly adapt to the evolving educational landscape and develop effective coping mechanisms for stress in the workplace (Ospankulov et al., 2023).

A central issue in this context is safeguarding the mental well-being of educators. However, practical tools to protect teachers' health and resilience remain lacking. Teachers, especially those with lower salaries, often take on additional work, which increases their stress levels. Furthermore, the constant revision of educational programs adds to their administrative burden, leaving little time for professional growth or self-care. This leads to exhaustion, making it difficult for teachers to engage with the necessary professional development that could help them adapt to changes in the education system (Karibaev et al., 2024).

Despite the increased focus on teacher burnout, schools and administrators rarely address the psychological and physical toll that teachers face. This neglect of teachers' well-being is particularly concerning for physical education (PE) teachers, whose roles require significant mental and physical effort. The demanding nature of their responsibilities, including organizing physical activities and sports events,

imparting specialized knowledge, and managing student interactions, often leads to emotional exhaustion and burnout.

Given these circumstances, ensuring the psychological resilience of teachers, particularly PE teachers, is critical. Despite growing awareness of the need to prevent burnout, research in Kazakhstan has been inconsistent and fragmented (Nurgaliyeva et al., 2023). There is a pressing need for a comprehensive examination of burnout and resilience among PE teachers. To the best of the authors' knowledge, this is the first study to explore these issues in the Kazakhstani context.

Questions for research

Q1: What are the levels of burnout and resilience among PE teachers in Kazakhstan?

Q2: Is there a significant relationship between burnout and resilience among PE teachers?

Q3: Which factors (e.g., gender, teaching experience, job satisfaction) are significant predictors of burnout in PE teachers?

Q4: Do male and female PE teachers experience burnout and resilience differently?

Purpose of the research

The primary purpose of this study is to investigate the characteristics and interplay of burnout and resilience among physical education teachers within the context of their professional development and challenges. Specifically, the research aims to address the following key objectives:

- (1) Examine the prevalence and causes of professional burnout among physical education teachers in Kazakhstan, identifying key stressors that contribute to burnout in this specific educational context.
- (2) Assess the levels of resilience exhibited by physical education teachers and explore how these levels may influence their ability to cope with stressors and prevent burnout.
- (3) Analyze the relationship between burnout and resilience to understand how resilience may act as a protective factor against burnout in the professional lives of physical education teachers.
- (4) Identify demographic and professional variables that may influence the experience of burnout and the development of resilience among physical education teachers.

Significance of the Study

This study provides a timely and significant exploration of the connection between professional burnout and resilience among physical education (PE) teachers within Kazakhstan's educational environment. By addressing the critical issue of burnout, the research highlights resilience as a potential moderating factor, offering a new lens through which to understand how educators navigate professional stress (Nurgaliyeva et al., 2024). While teacher burnout has been extensively studied in various countries—including the United States, Finland, and South Korea—there is limited empirical research focused on Central Asian contexts, particularly Kazakhstan.

What distinguishes this study is its attention to the unique cultural, institutional, and systemic factors shaping the teaching profession in Kazakhstan. For example, differences in administrative expectations, societal values around physical education, and access to professional support may influence how burnout manifests and how resilience develops. Unlike previous research that often emphasizes general education teachers, this study narrows its focus to PE teachers, a group that faces distinct physical, emotional, and organizational demands.

The study also contributes methodologically by selecting and adapting diagnostic tools suitable for the Kazakhstani context, ensuring cultural relevance and validity. In doing so, it not only provides insights into teacher well-being but also lays the groundwork for evidence-based interventions tailored to the needs of local educators. The findings are expected to inform policy and practice, supporting the development of sustainable strategies for promoting teacher resilience and reducing burnout—an urgent need in the face of increasing educational demands and workforce challenges in Kazakhstan.

Literature review

According to the definition, professional burnout is a two-dimensional construct, much like the "chronic fatigue" syndrome. (Edú-Valsania et al., 2022; Jan & Parveen, 2024; Simionato et al., 2019). According to one interpretation, emotional exhaustion (EE) is a factor linked to complaints of nervous tension and poor physical health. Depersonalization is a change in attitude toward oneself or others (e.g., patients, clients, coworkers, or subordinates) and is regarded as an attitudinal factor (Dugani et al., 2018; Salvagioni et al., 2017; Shen et al., 2022).

According to another approach's framework, burnout syndrome is a three-dimensional construct that includes depersonalization, EE and a decrease in one's accomplishments (Nadon et al., 2022; Wahyuni et al., 2023). Feelings of emotional overstrain and depletion of one's own emotional resources is signs of EE. Depersonalization manifests as an unfavorable, callous, and pessimistic attitude toward labor process participants (De Clercq et al., 2022; Lee & Gong, 2024; Schuck et al., 2023). A decrease in one's sense of professional competence and self-worth, as well as a devaluation of one's professional activity and its outcomes, are common manifestations of a reduction in personal accomplishments.

The signs and symptoms of burnout syndrome, which range from exhaustion and excessive emotional tension while performing professional tasks to a state of deep neurosis, existential despair, and a sense of emptiness and meaninglessness in life, are evidence of the phenomenon's complexity and multifaceted nature, according to researchers (Bocheliuk et al., 2020; Costa & Pinto, 2017). It should be mentioned, nevertheless, that under equal circumstances, some teachers experience emotional burnout, while for others, the onset of this condition can be delayed and does not significantly impact the caliber of professional activity, and for still others, it is not typical in principle and its symptoms are essentially nonexistent. Therefore, it is reasonable to assume that the personal traits of teachers continue to play a major role in this situation.

Many researchers also pinpoint the causes of burnout, which include accountability for the results, motivational involvement in the professional activity process, the intensity of emotional experiences, or subjectively personal relationships, and the teacher's personality traits (Genoud & Waroux, 2021; Fesun et al., 2020; Kariou et al., 2021). Consequently, a mismatch between the professional environment that has developed in particular teaching staff and the personality, resource base, and demands of professional activity leads to burnout, which is the result of the interaction between situational and personal factors (Durak & Saritepeci, 2019; Lian et al., 2021). We believe that this contradiction sets off the process that leads to burnout and is the first step in its development. However, one of the primary causes of the discussed discrepancies is the teacher's initial (or lost) misconceptions about himself, his abilities, and his role in the professional activity process. Another significant cause of the discussed discrepancies is the teacher's unrealistic expectations about the activity's process, its outcomes, and its evaluation by the social environment.

Burnout occurs when a person experiences high levels of emotional tension and chronic stress (frustration of expectations). This leads to a violation of the person's self-identification, which combines with environmental influences based on emotional involvement (Shoman et al., 2021). This, in turn, activates the person's psychological defenses, acting subconsciously. Therefore, prevention of this condition must be implemented from the very beginning of a professional career. To preserve their integrity and physical and mental well-being without compromising their productivity, educators must be taught to spot the warning signs of emotional burnout and to avoid giving in to them. The best defense against burnout is awareness, sustainability, constructive use and accumulation of internal and social resources, and maximizing the teacher's personality's capacity for stress reduction and self-healing in the workplace.

Method

Study design

The relationship between burnout and resilience was identified based on the literature analysis, with a focus on PE teachers. Specifically, these relationships pertain to EE, depersonalization, personal accomplishment (PA), and resilience.



Research Method

A quantitative survey model was employed for this research. Questionnaire was designed by the authors. This approach was selected because it allows for the analysis of data from a large and diverse participant group, making it suitable for identifying patterns and relationships across variables such as burnout and resilience. Survey research is especially effective for understanding current attitudes, perceptions, and behaviors within a specific population.

To ensure the reliability and validity of the instruments used, the following steps were taken:

- 1) Reliability of both the burnout and resilience scales was assessed using Cronbach's alpha. The internal consistency coefficients for both instruments exceeded the acceptable threshold of 0.70.
- 2) Validity was confirmed through expert review and exploratory factor analysis (EFA), verifying the construct validity of the scales.
- 3) Instruments used in this study were previously validated in similar educational contexts, further supporting their applicability and appropriateness.

Efforts to reduce potential bias in sampling were made by applying purposive sampling with clearly defined inclusion criteria and ensuring a diverse representation from various school types and regions.

Participants

The study was conducted in Almaty, located in the southern region of Kazakhstan. A purposive sampling strategy was employed to ensure that participants met the following criteria: (1) they must have completed a bachelor's degree in physical education (PE); (2) they must currently be employed as secondary school teachers; and (3) they must represent a range of educational institutions and teaching environments to enhance the generalizability of the findings. A total of 400 physical education teachers participated in the study, drawn from mixed-language schools (Kazakh and Russian), secondary schools, gymnasiums, lyceums, and boarding schools, to account for variation in institutional contexts. To mitigate potential selection bias, efforts were made to ensure that the sample reflected the broader demographic and professional distribution of PE teachers in Kazakhstan, based on regional education department records. Although random sampling was not feasible due to logistical constraints, the diversity of school types and teacher profiles included in the sample contributes to the representativeness of the data. Response biases were addressed by assuring participants of full anonymity and confidentiality and by emphasizing that there were no right or wrong answers. Participants were encouraged to respond honestly, and no identifying information was collected. Furthermore, the survey was self-administered online, reducing the likelihood of interviewer influence or social desirability bias. All participants were provided with an informed consent form outlining the purpose of the study, their right to withdraw at any time, and the assurance of confidentiality and anonymity. Only those who voluntarily agreed and signed the consent form were included in the study. The average age of the participants is 36.74 ± 6.60 years (see Table 1).

Table 1. Participants' demographic, professional and subject characteristics

Category	Frequency (n)	Percentage (%)
Gender		
Male	380	80%
Female	20	20%
Total	400	100%
Age		
25–28 years	55	13.75%
29–31 years	58	14.5%
32–35 years	62	15.5%
36–39 years	65	16.25%
40–43 years	74	18.5%
44–47 years	86	21.5%
Institution (of employment)		
Secondary schools	280	70%
Gymnasiums	60	15%
Lyceums	40	10%
Boarding schools	20	5%
Highest qualification		
Bachelor	300	75%
Master	100	25%
Teaching experience		



Beginning teachers: 0–5 years	50	12.5%
Early-career teachers: 6–10 years	70	17.5%
Mid-career teachers: 11–15 years	90	22.5%
Experienced teachers: 16–20 years	80	20%
Veteran teachers: 21+ years	110	27.5%

Referring to Table 1, 16.25% of participants are between the ages of 36 and 39. 13.75% of participants are between the ages of 25 and 28; these are followed by those between the ages of 29 and 31 (14.5%) and 32 and 35 (15.5%); 21.5% of participants are between the ages of 40 and 43; those between the ages of 40 and 43 are followed by those between the ages of 18 and 43 and 32 and 35 (15.5%).

Secondary schools employ 70% of participants, followed by gymnasiums (15%), lyceums (10%), and boarding schools (5%). Most teachers have at least a bachelor's degree (75%), and a master's degree (25%).

Teachers' years of teaching experience are as follows: 12.5% are beginning teachers with 0-5 years of experience; 17.5% are early-career teachers with 6-10 years; 22.5% are mid-career teachers with 11-15 years; 20% are experienced teachers with 16-20 years; and 27.5% are veteran teachers with 21+ years of experience.

Instruments

The survey (Appendix A) had three sections designed to gather data on a particular facet of the burnout assessment of participants. The questionnaire consists of 22 Likert-scale items, where higher scores indicate a higher level of burnout.

The survey (Appendix B) had four sections designed to gather data on the resilience level assessment of participants. This scale includes 25 Likert scale items, scored on a 5-point scale, evaluating the ability to adapt and cope with stress.

Data Analysis

Descriptive statistics (DS) were used to compile resilience and burnout scores. Normality of the data was assessed using the Shapiro-Wilk test for each variable. Following this, Pearson's correlation analysis was performed to examine the relationship between resilience and burnout, with the significance level set at $p < 0.05$. To identify significant predictors of teacher burnout, multiple regression analysis was conducted. Before applying the regression model, multicollinearity was tested using Variance Inflation Factor (VIF), and no issues were identified. The assumption of homoscedasticity was evaluated through visual inspection of residuals. For robustness, we conducted sensitivity analyses to ensure the stability of the results under different conditions. The p-value threshold for statistical significance was set at $p < 0.05$ for all tests, and all analyses were carried out using the SPSS software package (Version 26).

Ethical Compliance

Ethical approval for the study was obtained from the Ethics Committee of Abai Kazakh National Pedagogical University (Kazakhstan) prior to data collection. All participants were provided with an informed consent form outlining the purpose of the study, their right to withdraw at any time, and assurances of confidentiality and anonymity. Only those who voluntarily agreed and signed the consent form were included in the study. Respondents were assigned alphanumeric identifiers to use instead of their names in all surveys and assessments. These measures were taken to ensure full compliance with ethical research standards.

Results

Table 2 presents the results of descriptive statistics.

As shown in Table 2, males reported higher emotional exhaustion and depersonalization scores compared to females, with a medium to large effect size (Cohen's $d = 0.77$ for emotional exhaustion and $d = 0.73$ for depersonalization). Cohen's d was calculated for each dimension to measure the effect size between male and female participants. The 95% confidence intervals (CIs) for the mean values of each group are also presented. For example, the mean emotional exhaustion score for males is 27.5, with a 95% CI of [26.8, 28.2], meaning that the true population mean for males lies within this range. Cohen's



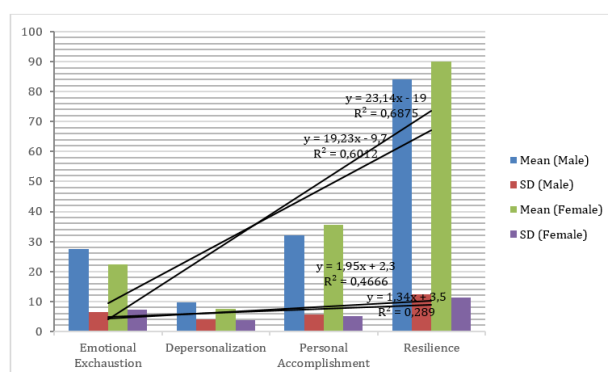
d-effect size of 0.77 for emotional exhaustion suggests a medium to large effect (according to Cohen's thresholds), indicating a statistically significant difference between male and female participants in this dimension.

Table 2. Descriptive statistics of burnout and resilience scores

Category	Male (n=380) M (SD)	Female (n=20) M (SD)	Cohen's d	95% Confidence Intervals (CI) (Male)	95% Confidence Intervals (CI) (Female)
Emotional Exhaustion	27.5 (6.5)	22.3 (7.2)	d = 0.77	(26.8, 28.2)	(19.5, 25.1)
Depersonalization	9.8 (4.1)	7.5 (3.8)	d = 0.73	(9.4, 10.2)	(5.8, 9.2)
Personal Accomplishment	32.0 (5.6)	35.5 (5.2)	d = -0.65	(31.4, 32.6)	(33.4, 37.6)
Resilience	84.2 (12.5)	90.1 (11.2)	d = -0.47	(83.2, 85.2)	(87.7, 92.5)

The bar chart visually represents the descriptive statistics of burnout and resilience scores for males and females, including means and standard deviations (SD) (see Figure 1).

Figure 1. Descriptive statistics of burnout dimensions for males and females



Males show higher levels of emotional exhaustion and depersonalization, suggesting elevated burnout risk. Females report higher personal accomplishment and resilience, indicating stronger protective factors against burnout. The strong positive correlation ($R^2 = 0.6875$) between resilience and reduced burnout in females highlights the importance of resilience-building strategies in stress management. Table 3 shows the results of Pearson's correlation analysis.

Table 3. Pearson's correlation between burnout and resilience

Variable	1	2	3	4
1. Emotional Exhaustion	1	.65**	-.48**	-.52**
2. Depersonalization	.65**	1	-.45**	-.50**
3. Personal Accomplishment	-.48**	-.45**	1	.58**
4. Resilience	-.52**	-.50**	.58**	1

Note: $p < .01$, significant correlation

The correlation values provide insight into the relationships between these psychological constructs, with positive correlations indicating direct relationships and negative correlations suggesting inverse associations.

A multiple regression analysis was conducted to determine the significant predictors of burnout (see Table 4).

Table 4. Regression analysis predicting burnout by gender

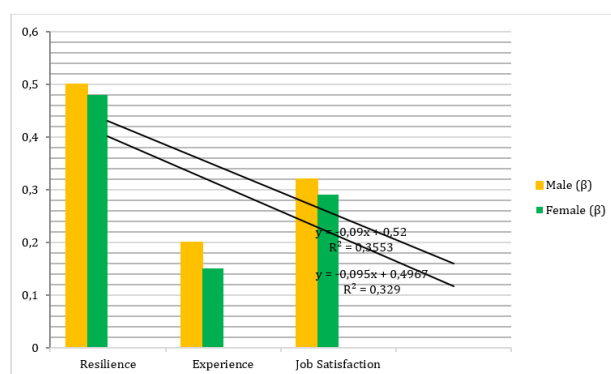
Predictor	Male (n=380) B (SE)	β	p	Female (n=20) B (SE)	β	p
Resilience	-0.40 (0.07)	-0.50	.001**	-0.35 (0.12)	-0.48	.007*
Experience (years)	-0.12 (0.05)	-0.20	.009*	-0.09 (0.08)	-0.15	.175
Job Satisfaction	-3.25 (0.85)	-0.32	.002**	-2.89 (1.10)	-0.29	.015*
R^2 , F(df)	0.43, F(3, 376) = 28.9			0.38, F(3, 16) = 6.5		

Note: * $p < .05$, ** $p < .01$ (significant predictors)

The regression analysis shows how resilience, experience (years), and job satisfaction predict burnout separately for males and females. The findings indicate that these predictors significantly explain burnout variance, though the strength and significance of their effects differ by gender.

The bar chart compares the standardized regression coefficients (β) for resilience, experience, and job satisfaction in predicting burnout among males (yellow) and females (green) (see Figure 2). Additionally, the regression equations and R^2 values represent the strength of the relationship between predictors and burnout.

Figure 2. Comparison of standardized regression coefficients (β) for burnout predictors by gender with trend lines



The equations $y = -0.09x + 0.52$ ($R^2 = 0.3553$) for males and $y = -0.095x + 0.4967$ ($R^2 = 0.329$) for females indicate that burnout reduction is slightly more predictable in males based on these variables. R^2 values (~ 0.35 for males, ~ 0.33 for females) suggest that these predictors explain a moderate proportion of the variance in burnout, but other factors may also contribute.

Discussion

The findings of this study reveal notable gender differences in burnout and resilience levels among physical education teachers in Kazakhstan. Male participants reported significantly higher emotional exhaustion ($M = 27.5$, $SD = 6.5$) and depersonalization ($M = 9.8$, $SD = 4.1$) scores than female participants (emotional exhaustion: $M = 22.3$, $SD = 7.2$; depersonalization: $M = 7.5$, $SD = 3.8$), with medium to large effect sizes (Cohen's $d = 0.77$ and $d = 0.73$, respectively). These Cohen's d values indicate that the differences are not only statistically significant but also practically meaningful, with a large effect for emotional exhaustion and a medium effect for depersonalization. This finding is consistent with previous research suggesting that male teachers may experience higher levels of burnout, particularly in high-stress professions like physical education (Worly et al., 2019). One possible explanation is the societal expectations placed on male teachers to exhibit emotional restraint and physical endurance. In the context of physical education, these expectations may be heightened, as the profession requires teachers to maintain high physical energy levels while managing emotional challenges, which could contribute to higher burnout rates among male teachers. Interestingly, female participants reported significantly higher personal accomplishment ($M = 35.5$, $SD = 5.2$) compared to their male counterparts ($M = 32.0$, $SD = 5.6$), with a moderate effect size (Cohen's $d = -0.65$). This suggests that female teachers may experience a greater sense of fulfillment and effectiveness in their roles. Women in the teaching profession might use different coping strategies or face less external pressure regarding physical expectations, which could contribute to greater job satisfaction and a sense of personal achievement. Furthermore, females also scored higher on resilience ($M = 90.1$, $SD = 11.2$) compared to males ($M = 84.2$, $SD = 12.5$), with a moderate effect size (Cohen's $d = -0.47$). This finding supports the idea that resilience is a key factor in mitigating the negative effects of burnout (Fiorilli et al., 2022). Female teachers' higher resilience levels may reflect better coping mechanisms or emotional support systems that help them manage job-related stress more effectively than their male counterparts. These findings highlight the importance of gender-

sensitive approaches to teacher support programs in Kazakhstan. Policymakers and educational administrators should recognize the distinct challenges faced by male and female teachers and implement targeted interventions that promote well-being, resilience, and professional satisfaction across gender groups. Future research should further investigate the underlying factors contributing to these gender differences, including societal and organizational influences, to better understand how to support teachers in managing burnout. From a practical standpoint, the results emphasize the need for targeted intervention programs that focus on building resilience, particularly among male educators, who are more vulnerable to emotional exhaustion and depersonalization. Schools and educational institutions could implement structured mental health interventions, such as mindfulness training, cognitive-behavioral workshops, and stress management programs. Additionally, promoting a supportive work culture and recognizing teacher accomplishments may enhance personal accomplishment and reduce burnout. Gender-sensitive approaches may also be beneficial—for instance, male teachers might benefit from mentorship programs focusing on emotional regulation and coping strategies, while female educators could be further supported through leadership development initiatives that enhance self-efficacy and a sense of accomplishment. The correlation results from Pearson's coefficients reveal statistically significant relationships between emotional exhaustion, depersonalization, personal accomplishment, and resilience ($p < .01$). A strong positive correlation ($r = .65$) suggests that as emotional exhaustion increases, so does depersonalization. This aligns with the burnout theory, where individuals experiencing burnout often develop detachment or cynicism toward their work. A negative correlation ($r = -.48$) indicates that as emotional exhaustion rises, personal accomplishment tends to decrease. This is consistent with findings that individuals experiencing burnout feel less competent and effective in their roles (Azam et al., 2023; Wu et al., 2024; Clarke et al., 2024). Another negative correlation ($r = -.52$) suggests that higher emotional exhaustion is linked to lower resilience, supporting the notion that emotionally exhausted individuals may struggle to cope with stress and adversity (Golparvar & Parsakia, 2023). A negative correlation ($r = -.45$) between depersonalization and personal accomplishment indicates that higher depersonalization is associated with lower feelings of fulfillment or success. Additionally, a negative correlation ($r = -.50$) between depersonalization and resilience suggests that individuals who experience higher depersonalization may have diminished resilience, impairing their ability to cope with work-related stress. A positive correlation ($r = .58$) indicates that greater personal accomplishment is associated with higher resilience. This highlights the role of personal fulfillment and a sense of competence in strengthening individuals' ability to handle stress. These correlations suggest that burnout (emotional exhaustion and depersonalization) is inversely related to resilience, while personal accomplishment is positively associated with resilience, reinforcing the importance of fostering resilience as a protective factor against burnout and enhancing personal accomplishment to buffer against stress (Gerich & Weber, 2020; Fukui et al., 2019). The regression analysis shows how resilience, experience (years), and job satisfaction predict burnout for both males and females. For males, resilience ($\beta = -0.50$, $p < .01$) and job satisfaction ($\beta = -0.32$, $p < .01$) significantly predict burnout, with both predictors explaining a substantial portion of the variance in burnout ($R^2 = 0.43$). Experience (years) is also a significant predictor ($\beta = -0.20$, $p = .009$), with greater experience linked to lower burnout levels. For females, resilience ($\beta = -0.48$, $p = .007$) and job satisfaction ($\beta = -0.29$, $p = .015$) are significant predictors of burnout, but experience (years) does not show a statistically significant relationship ($p = .175$). The model for females explains 38% of the variance in burnout ($R^2 = 0.38$). This analysis suggests that resilience and job satisfaction are significant predictors of burnout in both male and female participants, although the predictive strength and specific effects of experience (years) differ between genders, highlighting the importance of considering gender-specific factors in understanding burnout. In conclusion, this study emphasizes the multifaceted nature of burnout, the gender-specific dynamics involved, and the central role of resilience and job satisfaction in mitigating burnout's impact. These insights suggest that gender-sensitive and individualized support strategies in educational settings are essential to effectively address burnout (Artz et al., 2022; Ordóñez-Dios et al., 2024).

Limitations and Future Research

While this study offers valuable insights into the relationship between burnout, resilience, and gender among teachers, several limitations warrant consideration. First, the use of a cross-sectional research design limits the ability to draw conclusions about causal relationships between variables. Longitudinal studies are needed to track how resilience may influence burnout trajectories over time.



Second, data were collected using self-report questionnaires, which are inherently subject to biases such as social desirability and subjective self-perception. Future studies could benefit from incorporating objective measures or adopting mixed-methods approaches to validate self-reported outcomes.

One significant limitation of this study is the substantial gender imbalance in the sample, with 380 male and only 20 female participants. This disparity could introduce gender bias, particularly when exploring variables such as resilience and burnout, where gender differences may be an important factor. The overrepresentation of male teachers limits the ability to generalize the findings to female teachers, whose experiences may differ in terms of coping strategies, stress levels, and resilience. Given this limitation, caution should be exercised when interpreting gender-specific results, as the findings may not fully reflect the experiences of female teachers in the same context.

Future studies should aim to ensure more balanced gender representation to better capture the diverse perspectives and experiences of teachers across gender lines. Exploring gender as a moderator of resilience and burnout would also be a valuable avenue for future research. In light of these limitations, generalizing results to broader populations should be done with caution. Future research should explore causal mechanisms and examine the long-term effects of resilience-based interventions in educational settings. Moreover, to better understand the gender-specific dimensions of burnout, future studies should consider additional contextual variables, such as workload, family responsibilities, institutional culture, and levels of social support, which may differentially impact male and female teachers.

Recommendations

- (1) **Professional Development Programs:** Offer targeted training on stress management, emotional regulation, and mindfulness techniques to help teachers build resilience. These programs can be incorporated into regular professional development sessions to ensure that teachers develop effective coping skills.
- (2) **Peer Support Networks:** Encourage the formation of peer support groups where teachers can share experiences and strategies for managing stress. Establish peer mentorship programs by pairing experienced teachers with newer staff members to provide guidance and support.
- (3) **Work-Life Balance Initiatives:** Promote policies that support a healthy work-life balance, such as flexible working hours and dedicated time for personal development. School administrators can also provide resources to help teachers manage their professional and personal responsibilities effectively.
- (4) **Mental Health and Wellness Programs:** Educational institutions should prioritize teacher well-being by providing access to counseling services, stress-reduction workshops, and wellness programs. These initiatives can help educators manage the emotional and psychological demands of their profession.
- (5) **Reduced Administrative Burden:** Schools can reduce the administrative workload on teachers by streamlining processes or providing additional support staff. This would allow teachers to focus more on instruction and less on non-teaching duties, helping to reduce stress and prevent burnout.

Conclusions

The study examined the prevalence and causes of professional burnout among physical education teachers in Kazakhstan, identifying key stressors contributing to burnout in this specific educational context. This was achieved by analyzing burnout levels (emotional exhaustion, depersonalization, and personal accomplishment) and discussing potential stressors, particularly for male teachers in high-stress roles such as physical education. The study provided specific data on burnout levels (emotional exhaustion, depersonalization, and personal accomplishment) and resilience for both male and female PE teachers, offering valuable insights into these factors within the context of Kazakhstan. Significant correlations were found between burnout (emotional exhaustion and depersonalization) and resilience, suggesting an inverse relationship. The findings revealed that resilience, job satisfaction, and teaching experience



are significant predictors of burnout, with notable gender differences in their effects. Specifically, male teachers reported higher emotional exhaustion and depersonalization, while female teachers exhibited higher personal accomplishment and resilience levels. These findings underscore the importance of gender-sensitive approaches in addressing burnout among physical education teachers. Kazakhstan's educational setting should prioritize resilience-building strategies to enhance job satisfaction, reduce stress, and improve overall teacher well-being. The study highlights the need for educational support programs that promote teachers' resilience and well-being, ensuring a healthier and more sustainable teaching environment.

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Supplementary Material**Appendix A****Survey**

N	Items	Never	A few times a year	Once a month	A few times a month	Once a week	A few times a week	Every day
Section 1: Emotional Exhaustion (EE)								
1	I feel emotionally drained from my work.							
2	I feel used up at the end of the work-day.							
3	I feel fatigued when I have to face another day on the job.							
4	I feel burned out from my work.							
5	Working with students all day is really a strain for me.							
6	I feel frustrated by my job.							
7	I feel like I'm working too hard in my job.							
8	I feel that teaching is breaking me down emotionally.							
9	I feel I have nothing left to give to my students.							
Section 2: Depersonalization (DP)								
10	I feel I treat some students as if they were impersonal objects.							
11	I feel I am losing my enthusiasm for teaching.							
12	I worry that I am becoming less caring towards my students.							
13	I have become more callous toward people since I took this job.							
14	I feel I am becoming indifferent to my students' needs.							
Section 3: Personal Accomplishment (PA)								
15	I feel I make a positive impact on my students' lives.							
16	I deal effectively with the problems of my students.							
17	I feel I have accomplished many worthwhile things in my job.							
18	I feel my teaching skills are effective.							
19	I feel inspired by my work.							
20	I am satisfied with my influence on students.							
21	I feel my work contributes to my students' success.							
22	I feel confident in my abilities as an educator.							

Appendix B

N	Items	Not true at all	Rarely true	Sometimes true	Often true	True nearly all the time
Section 1: Personal Competence & Confidence						
1	I am able to adapt to change.					
2	I can stay focused under pressure.					
3	I tend to bounce back after illness, injury, or difficulties.					
4	I believe I can achieve my goals, even when faced with obstacles.					
5	I am not easily discouraged by failure.					
6	I am confident in my ability to handle new or unexpected situations.					
7	I give my best effort, even when things seem hopeless.					

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- 8 I have a strong sense of purpose in my teaching.
Section 2: Control & Emotional Regulation
- 9 I can control my emotions when faced with difficulties.
- 10 I stay calm and think clearly in stressful situations.
- 11 I see challenges as opportunities for personal growth.
- 12 I am able to manage my reactions to difficult students or colleagues.
- 13 I can maintain a positive attitude even in challenging teaching conditions.
- 14 I make conscious efforts to stay mentally strong in tough situations.
- 15 I am good at finding creative solutions to problems.
- 16 I don't let negative emotions control my actions.
Section 3: Support & Adaptability
- 17 I feel supported by my colleagues and administration.
- 18 I know where to seek help when I need it.
- 19 I can adapt to new teaching methods or curriculum changes.
- 20 I feel my teaching skills are effective.
- 19 I feel inspired by my work.
- 20 I maintain strong social connections that help me cope with stress.
- 21 I am able to balance my work and personal life effectively.
Section 4: Spirituality & Meaning
- 22 I believe that things happen for a reason.
- 23 My personal values and beliefs help me get through difficult times.
- 24 I feel a sense of purpose in my life and work.
- 25 I find strength in my faith or personal philosophy.
-