

# Professional burnout teachers of inclusive education: a systematic review and meta-analysis

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## ABSTRACT

In recent years there has been a steady increase in research interest in the phenomenon of professional burnout of teachers, which underscores the relevance of this problem. The purpose of the study is to conduct a systematic review (SLR) of the scientific literature on the problem of professional burnout among teachers of inclusive education. A systematic review of the literature was conducted using preferred reporting elements for PRISMA systematic reviews and meta-analysis. As part of this study, a comprehensive search was conducted in the databases of SSRIs, Web of Science, PubMed, ScienceDirect, and Springer to identify relevant articles. A total of 18 articles published in 9 high-ranking journals met the inclusion criteria. According to the meta-analysis provided by Comprehensive Meta-Analysis 4.0, the average effect size was 0.299, with a confidence interval ranging from 0.059 to 0.539. The Z-score was 2.441 at  $p = 0.015$ . A literature review revealed that future research should explore the development of a model for diagnosing and preventing burnout among teachers implementing inclusive education, as well as programs aimed at maintaining the professional well-being of teachers in an inclusive environment. Future research should also examine the impact of artificial intelligence on the diagnosis and prevention of professional burnout among teachers of inclusive education. The integration of best international practices in Kazakhstan will enable the creation of a comprehensive system to support the well-being of teachers. The materials of the systematic review are of scientific value for researchers implementing inclusive education and implementing programs to support the well-being of teachers.

**Keywords:** Inclusive education, Professional burnout, Review, Special educational needs, Teacher burnout

## Introduction

In the context of digitalization and globalization, the problem of teacher burnout is becoming increasingly relevant [1]. This issue is the focus of a significant amount of research [2]. Burnout is a reaction to chronic stress that develops gradually [3]. Burnout at work is a long-term reaction to chronic stress at work, characterized by emotional exhaustion, depersonalization, and decreased personal achievement [4, 5].

Maslach *et al.* [6] describe burnout as a state of exhaustion in which specialists develop a cynical attitude towards the value of their professional activities and doubt their ability to successfully perform their work duties. Freudenberger [7] considers burnout as a state of physical, emotional, and mental exhaustion that develops as a protective psychological mechanism of the individual. According to Quintiliano *et al.* [8, 9], teacher burnout occurs as a result of prolonged exposure to stressors inherent in the teaching profession.

Despite the significant number of studies on teacher burnout, the results remain fragmented due to differences in samples, methodologies, and diagnostic tools [10-13].

A number of studies have focused on determining the level and factors of stress that lead to burnout [14-17]. At the same time, most publications are aimed at studying the emotional burnout of teachers, whereas professional burnout, as a multifactorial phenomenon, is represented to a lesser extent.

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Publications by Kazakhstani researchers [18-20] focus primarily on regional characteristics, practical aspects, and local data. As a result, there is a disconnect between global findings and their applicability to the Kazakhstani context.

This study fills this gap by providing a systematic review and meta-analysis of professional burnout among inclusive education teachers, providing a more holistic and comparable understanding of teacher burnout. A systematic review of the literature on burnout among inclusive education teachers has not yet been conducted. Therefore, this literature review allows us to identify the key factors contributing to burnout and identify areas for further research. Based on the data, two key research questions were formulated:

**RQ1:** What are the key factors contributing to the professional burnout of teachers working in inclusive settings?

**RQ2:** What strategies are proposed to ensure the well-being of teachers in inclusive settings?

The purpose of this study is to conduct a systematic review and meta-analysis of the scientific literature using Scopus, Web of Science, PubMed, ScienceDirect, and Springer databases to identify key studies addressing professional burnout among inclusive educators. This review aims to critically summarize existing research on burnout among inclusive educators, analyze existing research on burnout, and identify strategies and directions for further research. To achieve this goal, the following objectives were formulated:

**SA1:** Identify the key factors contributing to burnout among educators working in inclusive settings.

**SA2:** Analyze strategies for ensuring the well-being of educators and teachers in inclusive settings.

Therefore, a systematic review and meta-analysis are necessary to obtain a holistic and evidence-based understanding of the level of teacher burnout.

## Materials and Methods

The study was conducted in three stages. *In the first stage*, a systematic review plan was developed. The systematic review was conducted according to the following plan:

- 1) Formulating the purpose of this study;
- 2) Monitoring publications in databases;
- 3) Selecting publications according to criteria;
- 4) Analysis and synthesis of the obtained materials.

*In the second stage*, information was collected using the keywords “burnout,” “burnout of *inclusive education teachers*,” and “*professional burnout of teachers in inclusive settings*” in the Scopus, Web of Science, PubMed, ScienceDirect, and Springer databases. The literature search was conducted from September 2024 to December 2025.

*In the third stage*, articles were reviewed based on key characteristics such as publication type, year of publication, and indexing.

The study used *theoretical methods*: a literature search in scientific databases, keyword formulation, filtering, and publication date

restrictions, as well as empirical methods: analysis, meta-analysis, and synthesis.

### Search strategy

A literature search in scientific databases is a key element in identifying the most relevant and high-quality publications. The scientific literature search is focused on preferred reporting items for the purpose of conducting a systematic review and meta-analysis.

The following methods were used in the scientific literature search: keyword selection, publication filtering, and publication date restrictions. The following keywords were selected:

- “burnout”;
- “professional burnout teachers;”
- “professional burnout of teachers in inclusive settings.”

The logical operators AND, OR, and NOT were used to combine keywords, allowing for narrowing or broadening the search scope. Publication filtering allows for selection of categories related to the research topic, which helps focus on the most relevant studies and publications. Publication date restrictions allow for consideration of the study's timeframe and allow for the extraction of data on more relevant research.

### Identification

This research uses a systematic review of scientific literature based on PRISMA 2020 standards. The analysis method was used to systematize the results obtained by searching for scientific literature on the research topic. The analysis allows us to identify the main factors of professional burnout among teachers of inclusive education. The PRISMA 2020 reporting standard [21, 22] was used to formalize the analysis in order to present the results in more detail and systematically. The PRISMA flowchart ensures transparency of the selection procedure. Meta-analysis was used to increase the statistical power of the analysis and identify patterns, as meta-analysis is a powerful tool that represents a set of statistical procedures aimed at quantitatively integrating the results of independent empirical studies devoted to the same scientific problem [23, 24]. The use of these methods contributes to a more comprehensive understanding of the topic of teacher burnout in inclusive conditions, which ultimately facilitates an in-depth analysis and synthesis of the obtained materials.

### Selection process

The initial selection was based on an analysis of the titles and annotations of scientific publications. Both theoretical and empirical studies were included in the selection. All selected articles have been fully read by all the authors. The title and annotations were checked for relevance to the research topic. The list of references was studied in order to obtain additional materials. In order to provide the widest possible coverage of scientific publications on the professional burnout of teachers of inclusive education, a search was performed in several

international databases SSRIs, Web of Science, PubMed, ScienceDirect, and Springer. The study included publications on teacher burnout and was available for download in PDF format in English.

### Selection criteria

The main selection criteria were the presence of a description of the professional burnout of teachers working in inclusive conditions. During the selection, preference was given to studies published over the last ten years (2015-2025).

The selection of scientific papers was based on clearly defined criteria:

- 1) The article is relevant to the research topic—professional burnout of teachers;
- 2) The article examines teacher burnout in inclusive settings;
- 3) The article is published in a highly ranked journal;
- 4) The article was published in the last ten years in English and in open access.

This systematic review differs from other systematic reviews in that this study examines the professional burnout of inclusive education educators.

## Results and Discussion

### Analysis of the received data

The collected materials were obtained from Scopus, Web of Science, PubMed, ScienceDirect, and Springer databases using the keywords “burnout,” “professional burnout teachers,” and “professional burnout of teachers in inclusive settings”. All authors reviewed, analyzed, and grouped the collected materials by the selected keywords. **Table 1** shows the number of publications containing specific keywords in various scientific databases.

**Table 1. Keyword performance indicators for the study**

Keywords/Number of articles	Burnout	Professional burnout teachers	Professional burnout of teachers in inclusive settings
PubMed	25113	480	2
ScienceDirec	10478	1522	1131
Web of Science	1005	492	115
Scopus	4358	3021	150
Springer	28313	1380	872

The research indicates some significant tendencies. The majority of publications with the keyword "burnout" were identified in Springer (n=28,313), PubMed (n=25,113), ScienceDirect (n=10,478), and Scopus (n=4,358). When you specify burnout in Web of Science, the number of publications drops to 1,005. It is nonetheless intriguing that there are fewer papers on professional burnout in inclusive settings, yet the database yields a higher number of articles on burnout among inclusive education teachers. Scopus has 3,021 papers, ScienceDirect has 1,522, Springer has 1,380, Web of Science has 492, and PubMed has only 480, indicating that this issue has not been sufficiently investigated in this database. Regarding the final point, ScienceDirect (n = 1131) and Springer (n = 872) have the greatest number of articles on this topic, while Scopus (n = 150) and Web of Science (n = 115) have much fewer. There are just two papers on this topic in PubMed.

As the table shows, ScienceDirect leads in highly specialized topics related to inclusive education, suggesting the platform's popularity among inclusion researchers. Scopus and Springer contain numerous publications on general burnout but few on highly specialized topics, indicating their focus on broader research. PubMed and Web of Science have very few publications on teacher burnout, which may be due to content limitations or a focus on other research areas. The fewest publications are on the topic of “Professional burnout of teachers in inclusive settings” (for example, only 2 in PubMed and 115 in Web of Science). This indicates that this issue has been understudied, despite its relevance to the development of inclusive education.

To ensure the practical implementation and visual presentation of the process of selecting scientific publications, the PRISMA reporting standard was used, which is presented in **Figure 1**.

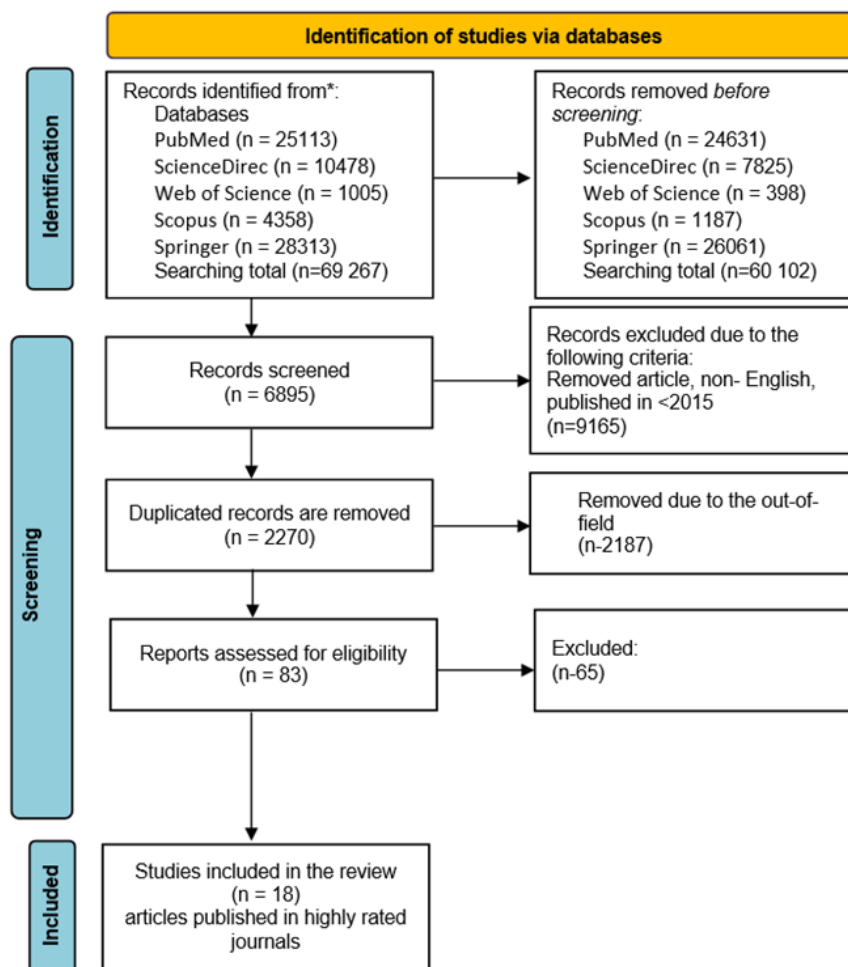


Figure 1. Visual representation of the PRISMA publication selection process

An initial search of each database using the keyword “burnout” yielded 6895 publications. The authors reviewed titles and abstracts. Using filtering and date restrictions, they selected publications on teacher burnout. After eliminating duplicates and articles not in English, the search continued using the keyword “professional burnout teachers.” The number of selected articles was reduced to 2270. The number of publications using the

keyword “professional burnout of teachers in inclusive settings” was 83 articles. According to the last three selection criteria, the article examines teacher burnout in inclusive settings, published over the past ten years in a highly rated journal in English and in the public domain—a total of 18 articles published in 9 highly rated journals met the inclusion criteria. A brief description of the journals included in the review is presented in Table 2.

Table 2. Brief description of the journals included in the review

Journal	Article	Indexing
Health Psychology Report	1	Scopus
Teaching and Teacher Education	1	Scopus
Frontiers in Education	1	ESCI
Persona: Jurnal Psikologi Indonesia	1	SINTA
European Journal of Special Needs Education	1	Scopus
BMC Women’s Health	1	Scopus
International Journal of Educational Psychology	1	ERIC
Clinical Psychology and Special Education	1	ESCI
Journal of Intellectual Disability - Diagnosis and Treatment	1	Scopus

According to the data in Table 2, the publications included in the analysis were published in nine highly regarded international scientific journals. To examine the statistical power of the acquired results, meta-analysis was performed on 18 papers

included in the review. Meta-analysis is a technique for synthesizing the findings of multiple research studies in order to get a general conclusion. The meta-analysis process consists of several sequential stages: establishing the objective of the study,

monitoring articles in databases, selecting publications based on criteria, and analyzing and summarizing the gathered materials. These processes guarantee a methodical and valid selection of scientific papers. Comprehensive Meta-Analysis 4.0 software was utilized to process the data, with Microsoft Office Excel (MS-Excel) 2010 employed for calculations.

Based on the data obtained, it can be concluded that all (100%) articles selected for the systematic review were from international journals. An analysis of the main scientific papers studying burnout among inclusive education teachers is presented in **Table 3**.

**Table 3. An analysis of the main scientific works on the study of professional burnout**

Title of the article	Results obtained	Authors	Name of the journal and publication year	Source
1	2	3	4	5
<b>Stress and burnout in teaching. Study in an inclusive school workplace.</b>	Teachers working in inclusive education systems are exposed to high levels of stress, and without appropriate support measures, the risk of burnout increases.	Candeias A A., Galindo E., Calisto I., Borralho L., Reschke K.	Health Psychology Report (2021)	[25]
<b>Teacher burnout explained: Teacher-, student-, and organisation-level variables</b>	High levels of professional stress are particularly common among teachers with low emotional stability and limited experience.	Saloviita T., Pakarinen E.	Teaching and Teacher Education (2021)	[26, 27]
<b>Working in inclusive or non-inclusive contexts: Relations between collaborative variables and special education teachers' burnout</b>	Teachers in inclusive schools often experience professional stress, but establishing effective collaboration with colleagues and administration can help reduce this stress.	Squillaci M., Hofmann V.	Frontiers in Education (2021)	[28]
<b>The role of self-efficacy: The relationship between mindfulness and burnout among inclusive primary school teachers</b>	The study's findings highlight the need to implement mindfulness training and professional development programs for teachers. Teachers with high levels of self-efficacy are less susceptible to job stress and have a positive attitude toward their professional activities.	Putu Winda Yuliantari GD, Widayarsi P	Persona: Jurnal Psikologi Indonesia (2020)	[29, 30]
<b>Psychological capital as a mediator of job satisfaction and burnout among teachers in special and standard education</b>	Although special education teachers experience stress more often than mainstream teachers, high levels of PsyCap help them cope with it.	Hazan-Liran B., Karni-Vizer N.	European Journal of Special Needs Education (2024)	[31]
<b>Investigating the status of marital burnout and related factors in married women referred to health centers</b>	Women with high levels of stress are more prone to depression, anxiety, and psychosomatic illnesses.	Nejatian M., Alami A., Momeniyan V., Delshad Noghabi A., Jafari A.	BMC Women's Health (2021)	[32]
<b>The potential role of perceived support for reduction of special education teachers' burnout</b>	Systematic support programs for special education teachers reduce the risk of burnout.	Langher V., Caputo A., Ricci M.E.	International Journal of Educational Psychology (2017)	[33]
<b>Features of personal distress of teachers of special and inclusive education</b>	Young teachers and less experienced professionals are more susceptible to professional stress.	Fedoseeva A.M., Babkina N.V.	Clinical Psychology and Special Education (2023)	[34]
<b>Providing inclusive primary school education for children with special educational needs in wartime Ukraine: Challenges and current solutions</b>	Ensuring inclusive primary education requires comprehensive measures aimed at improving distance learning methods, providing psychological support, and offering professional development for teachers.	Velykodna M., Deputatov V., Horbachova O., Miroshnyk Z., Mishaka N.	Journal of Intellectual Disability - Diagnosis and Treatment (2023)	[35, 36]

A meta-analysis was performed using data from scientific papers to review the literature. The results of the meta-analysis, based on 18 articles, are presented in **Table 4**.

Table 4. Scientific sources compiled using the meta-analysis method

Study name	Std diff means	Std error
Candeias <i>et al.</i> (2021) [25]	0,126	0,044
Boavida and Candeias (2021) [37]	0,084	0,037
Candeias <i>et al.</i> (2024) [38]	0,044	0,052
Candeias <i>et al.</i> (2024) [39]	0,053	0,034
Candeias <i>et al.</i> (2021) [40]	0,034	0,038
Candeias and Galindo (2021) [41]	0,068	0,186
Borrvalho <i>et al.</i> (2025) [42]	0,124	0,111
Candeias <i>et al.</i> (2023) [43]	0,126	0,127
Candeias <i>et al.</i> (2021) [44]	0,13	0,327
Saloviita and Pakarinen (2021) [26]	0,25	0,325
Saloviita <i>et al.</i> (2024) [45]	0,02	0,143
Squillaci and Hofmann (2021) [28]	0,164	1,248
Putu Winda Yuliantari and Widyasari (2020) [29]	1,905	0,07
Hazan-Liran and Karni-Vizer (2024) [31]	0,681	0,138
Nejatian <i>et al.</i> (2021) [32]	0,13	0,333
Langher <i>et al.</i> (2017) [33]	0,442	0,179
Fedoseeva and Babkina (2023) [34]	0,747	0,569
Velykodna <i>et al.</i> (2023) [35]	0,055	1,295

By entering the obtained results into Comprehensive Meta-Analysis 4.0, the meta-analysis's final conclusions can be obtained. The first conclusion was determined using a funnel

plot. A funnel plot is a graphical tool for identifying bias in meta-analysis. The final results of the funnel plot, constructed based on the analyzed scientific papers, are presented in **Figure 2**.

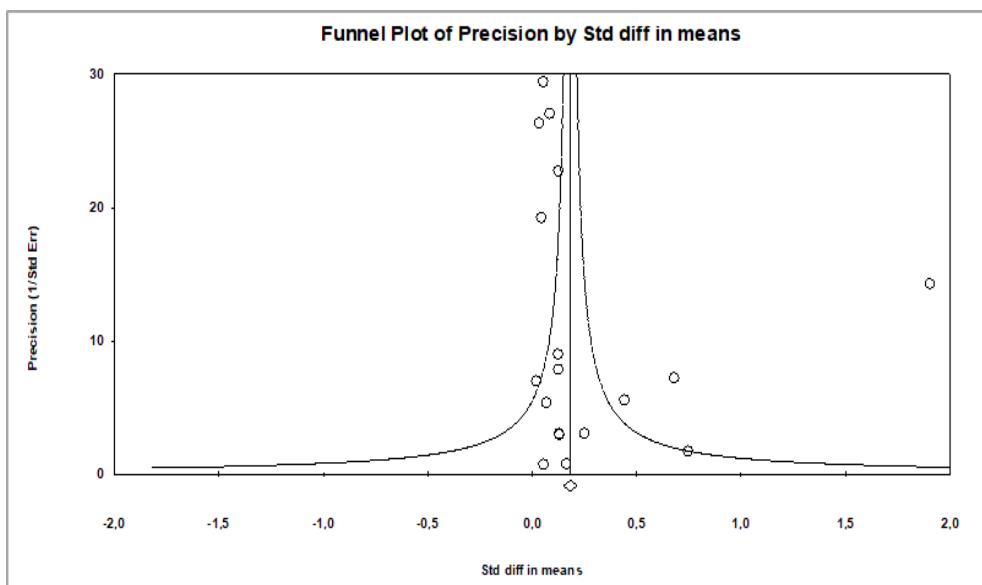


Figure 2. Quarry diagram. Results of a meta-analysis of scientific articles

The results of a meta-analysis of scientific papers can be obtained using the Forest Plot tool. 18 articles on the forest plot are presented graphically **Table 5**.

Table 5. Forest plot. Graphical representation of scientific research results

Study	Standardized mean difference	Standard error	Variance	95% CI lower	95% CI upper	Z-value	P-value
Candeias	0.126	0.044	0.002	0.040	0.212	2.864	0.004
Candeias	0.084	0.037	0.001	0.011	0.157	2.270	0.023
Candeias	0.044	0.052	0.003	-0.058	0.146	0.846	0.397
Candeias	0.053	0.034	0.001	-0.014	0.120	1.559	0.119
Candeias	0.034	0.038	0.001	-0.040	0.108	0.895	0.371
Candeias	0.068	0.186	0.035	-0.297	0.433	0.366	0.715
Candeias	0.124	0.111	0.012	-0.094	0.342	1.117	0.264

Candeias	0.126	0.127	0.016	-0.123	0.375	0.992	0.321
Candeias	0.130	0.327	0.107	-0.511	0.771	0.398	0.691
Saloviita	0.250	0.325	0.106	-0.387	0.887	0.769	0.442
Saloviita	0.020	0.143	0.020	-0.260	0.300	0.140	0.889
Squillaci	0.164	1.248	1.558	-2.282	2.610	0.131	0.895
Widyasari	1.905	0.070	0.005	1.768	2.042	27.214	0.000
Hazan-Liran	0.681	0.138	0.019	0.411	0.951	4.935	0.000
Nejatian	0.130	0.333	0.111	-0.523	0.783	0.390	0.696
Langher	0.442	0.179	0.032	0.091	0.793	2.469	0.014
Fedoseeva	0.747	0.569	0.324	-0.368	1.862	1.313	0.189
Velykodna	0.055	1.295	1.677	-2.483	2.593	0.042	0.966
<b>Random-effects model</b>	0.299	0.122	0.015	0.059 to 0.539	0.539	2.441	0.015
<b>prediction interval</b>	0.299	-	-	-0.705	1.303	-	-

Let's review the findings provided by Comprehensive Meta-Analysis 4.0. The analysis is based on eighteen studies. The effect size index is represented by the standardized mean difference (d).

### Statistical model

A random effects model was used for the analysis. This model considers studies to be randomly selected from a population of possible studies, and the results obtained are used to generalize to this population.

### Average effect size

The average effect size was 0.299, and the confidence interval ranged from 0.059 to 0.539. This means that the average effect size in the population of compared studies could lie within this range.

### Null hypothesis testing with Z-score

The Z-score tests the null hypothesis. The Z-score was 2.441 at  $p = 0.015$ . If we accept the critical value of  $\alpha = 0.050$ , we reject the null hypothesis and conclude that the average effect size in the population of similar studies is not zero.

### Q test of heterogeneity

The Q statistic tests the null hypothesis that all studies have the same effect size. If the true effect sizes are the same across all studies, then the expected Q value is equal to the degrees of freedom (the number of studies minus 1). The Q value was 669.505, the degrees of freedom were 17, and  $p < 0.001$ . If we set the critical value of  $\alpha = 0.100$ , then the null hypothesis is rejected, and we cannot claim that the true effect sizes are the same across all studies.

### I-squared statistic

The I<sup>2</sup> statistic was 97%, meaning that 97% of the observed variability in effect size is due to variability in the true effect size, and only 3% is due to sampling error.

### Burnout factors

Recent research highlights the multifaceted nature of the challenges of the teaching profession [46-48]. Even in the context of digital transformation and the active introduction of artificial intelligence, the teacher remains a key figure ensuring the effectiveness of the educational process [49-52]. At the same time, scientists note that the teaching profession is characterized by numerous stressful factors that lead to burnout [53-55].

Many factors influence professional burnout. Xia and Aziz [56] cite excessive workload and insufficient administrative support as the main factors of professional burnout. The studies of Saloviita and Pakarinen [26] identified support from colleagues and principals, school climate, personality traits, and changes in personal life as potential factors for teacher burnout.

We do not deny that teacher burnout is also closely related to their personal qualities. A number of studies consider burnout as a personality deformation [57, 58]. We note the research of Madaliyeva and Tlebaldina [59], who argue that professional burnout is one of the components of professional deformation of teachers, which leads to a decrease in the resource index [60, 61]. A burnt-out teacher experiences emotional exhaustion, decreased activity, perpetual fatigue [62, 63], dissatisfaction with working conditions, and a lack of internal personal resources [64, 65]. Consequently, teachers develop a formalistic attitude toward their work and a detachment from the goals and values of the organization, which is unacceptable in the teaching profession [66]. In particular, the level of burnout is determined by stress resilience, self-regulation, and work-life balance [67-69].

### The burnout of inclusive education teachers

Teachers in inclusive schools may face significant challenges when teaching students with special educational needs (SEN) [70-72]. Sarıçam and Sakız [73] believe that inclusive education teachers are particularly susceptible to higher levels of burnout. Research by Squillaci and Hofmann [28, 74] has documented a high proportion of teachers suffering from burnout. For example, according to a study of 45 respondents, 86.9% were at high risk of burnout, while 12.7% were at moderate risk.

According to Antoniou *et al.* [75, 76], teachers in inclusive education settings face the need to adapt to the physical and emotional state of students with special educational needs.

Furthermore, teaching children with SEN requires teachers to have a high level of emotional resilience and patience [77]. They are at higher risk of burnout [78, 79], which is associated with the need to adapt teaching materials to the specific needs of students with SEN [80-83]. Furthermore, in addition to preparing daily lessons, teachers in inclusive schools are also responsible for helping students with special educational needs overcome challenges that arise during the learning process [84, 85]. Consequently, their workday may extend beyond the established schedule, leading to physical and emotional exhaustion [86, 87]. These demands create additional stress for teachers, and as a result, teachers feel unable to cope with burnout [88, 89].

### *The well-being of teachers*

These factors increase teachers' susceptibility to burnout, requiring special attention to their professional well-being [90, 91]. The well-being of teachers is closely related to self-esteem, job satisfaction, and financial stability [92]. Research by Liu *et al.* [93] confirms that the well-being of teachers and their personal achievements are associated with professional burnout. Ismail and Owaida [94] presented an interesting idea regarding management support. In particular, they believe that burnout can be prevented if employers care about the well-being of their employees.

According to Hossain [95], teachers' well-being includes job satisfaction, emotional stability, and a sense of accomplishment. Teachers' well-being depends on many interrelated factors, including emotional health, social support, professional relationships, and work-life balance [96].

The scientists propose a number of recommendations aimed at strengthening the well-being of teachers, in particular, they suggest that heads of educational organizations take coordinated measures to support teachers, as well as provide regular confidential consultations to monitor and mitigate the consequences of the loss of personal resources. Well-being measures aim to reduce the effects of burnout [97].

Summarizing the above, we can conclude that burnout is a rather complex phenomenon that does not have a clear generally accepted definition. To solve the problem of teacher burnout, it is necessary to have theoretical and methodological foundations, which makes it necessary to identify strategies and directions for further research on the prevention of teacher burnout in order to ensure the well-being of teachers in an inclusive environment.

The scientific literature has given the problem of burnout a lot of attention; researchers have published monographs, performed investigations, and written thousands of reviews and scientific papers about it. Nonetheless, the majority of research focuses on burnout in law enforcement, fire safety experts, healthcare professionals, and teachers of different specialties. Research on burnout specifically among inclusive education teachers working with children with special educational needs is lacking, despite the abundance of scientific papers on the subject.

A comparison of scientific papers in the Scopus, Web of Science, PubMed, ScienceDirect, and Springer databases reveals that the

materials in each database are subjectively different. This illustrates the significance of early detection of professional burnout among teachers in inclusive education environments.

## Conclusion

A comprehensive review of 18 studies on the professional burnout of inclusive education educators highlights the key findings. A systematic review allowed us to structure and critically synthesize existing scientific data, identifying key theoretical approaches to burnout among inclusive education teachers. A meta-analysis, in turn, provided a quantitative integration of empirical results, enabling the identification of significant data influencing burnout severity.

Despite the fact that the presented review is not exhaustive, purposeful efforts have been made to conduct a comprehensive analysis of the scientific literature. The analysis revealed a number of gaps that require a comprehensive study. In particular, the lack of elaboration of three interrelated research areas has been established:

- designing a model for early diagnosis of professional burnout for teachers engaged in inclusive education;
- development of a model for the prevention of professional burnout in this category of teachers;
- development and implementation of programs aimed at maintaining the professional well-being of teachers in an inclusive environment.

Future research should also examine the impact of artificial intelligence on the diagnosis and prevention of professional burnout among teachers of inclusive education.

An analysis of the literature indicates the need to develop and adapt preventive programs, taking into account the socio-cultural characteristics of modern society. The integration of the best international practices in Kazakhstan can create a favorable environment for the professional well-being of teachers, especially in the field of inclusive education.

The results obtained make a significant contribution to the development of scientific discourse on professional burnout among teachers of inclusive education. The materials of the systematic review are of scientific and practical value for researchers, specialists, and managers of educational institutions implementing inclusive education and implementing programs to support the well-being of teachers.

### *Disclosure of information about the use of AI*

The authors used ChatGPT 5.2 to facilitate language editing and improve clarity and conciseness. All proposals were critically reviewed, revised, and confirmed by the authors. The use of artificial intelligence did not involve data analysis or the creation of original content.

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**Ethics statement:** None

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