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# Burnout of special education teachers in Saudi Arabia's inclusive education schools

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**Introduction:** Burnout is a serious phenomenon that negatively affects teachers' professional performance. The current study aims to determine the level of burnout among special education teachers in inclusive education schools in the Kingdom of Saudi Arabia.

**Methods:** It used a descriptive survey approach by employing an online questionnaire to collect data from 137 special education teachers in inclusive education schools.

**Results and discussion:** The study found that the level of burnout among special education teachers was average, with an arithmetic mean of 2.907 and a relative weight of 48.40%. Male teachers had higher levels of burnout than female teachers. Moreover, teachers specialising in deafness and hearing loss had higher levels of burnout than teachers in other subspecialties. The other variables, such as educational level and experience, had no significant effect on the dimensions of burnout or overall level of burnout. This study recommends the provision of intervention programmes to help reduce teachers' burnout levels. In addition, there is a need to reduce the workload and tasks assigned to special education teachers in inclusive education schools.

## KEYWORDS

burnout, special education teachers, inclusive education schools, education, student

## 1 Introduction

Global interest in inclusive education began three decades ago but has recently increased. Inclusive education for people with disabilities aims to address all the barriers that prevent learners with disabilities from participating in education (Jardinez and Natividad, 2024). It helps to improve academic achievement, peer acceptance, and self-esteem as well as augment emotional, psychological, and social development (UNESCO, 2023). Although special education teachers play an essential role in the effective and successful implementation of inclusive education (Klochko et al., 2022), they face many professional challenges, including burnout (Kabak and Özbakır, 2023). In Saudi Arabia, studies by Al-Kharaan (2023) and Al-Qahtani (2016) found that special education teachers suffer from high levels of burnout. This burnout affects not only the teachers but also the students and the schools they serve (Nuri et al., 2017).

Herbert J. Freudenberger, a German physician and psychologist, was the first to describe the term *burnout* in his scientific paper 'Staff Burn-Out' as 'being exhausted by making excessive demands on energy, strength or resources' in the workplace (Freudenberger, 1974, p. 159). The term was then developed by American psychologist Christina Maslach, one of the most prominent pioneers of burnout research. She developed the Maslach Burnout Inventory (MBI), which is still the most widely used inventory (Heinemann and Heinemann, 2017). Maslach and Leiter (2016) defined *burnout* as a psychological syndrome that manifests as a

prolonged response to chronic personal stress at work, with three main dimensions: overwhelming exhaustion, feelings of cynicism and detachment from work, and feelings of ineffectiveness and lack of accomplishment. Despite the importance of this issue, the [World Health Organization \(2019\)](#) has included burnout in the International Classification of Diseases (ICD-11) as an occupational phenomenon, not a disease. Burnout is a syndrome resulting from accumulated and chronic stressors in the workplace that have not been effectively and successfully managed, resulting in the depletion of an individual's energy, increased negative feelings about work and self, and decreased professional efficiency ([World Health Organization, 2019](#)).

According to the above definitions, teacher burnout is a multidimensional syndrome characterised by emotional exhaustion, reduced performance, and detachment from personal relationships. Although not all teachers suffer from burnout, it is a serious professional problem that can undermine the quality of education and the well-being of teachers ([Mahmoodi-Shahrehabaki, 2019](#)). According to [Al-Sharif \(2020\)](#), the symptoms of teacher burnout do not appear suddenly but are a process that grows gradually until the symptoms appear, and these symptoms can vary from one teacher to another. [Alfayez \(2023\)](#) classified the symptoms of burnout as organic (physical), psychoemotional, and social. Burnout is closely related to the physical, psychological, and social health of teachers, which may negatively affect their effectiveness ([Hall and Goetz, 2013](#)).

In recent decades, numerous scientific studies have indicated that special education teachers are more susceptible to burnout and attrition than general education teachers ([Brownell and Smith, 1992](#); [Brunsting et al., 2014](#); [Billingsley, 1993](#); [Boe et al., 1997](#); [DeMik, 2008](#); [Fore et al., 2002](#); [Hester et al., 2020](#); [Jackson, 2023](#); [Plash and Piotrowski, 2005](#); [Williams and Dikes, 2015](#)). The responsibilities and tasks of special education teachers are more than those of general education teachers in inclusive education settings ([Kumari et al., 2019](#); [Rogers and Johnson, 2018](#); [Tyagi, 2016](#); [Williams and Dikes, 2015](#)). General education teachers are primarily responsible for all students, including students with disabilities, while the role of special education teachers is to provide consultation, support, and collaboration to address the needs of both general education teachers and students with disabilities within the classroom ([Shyman, 2015](#)). Although special education teachers face barriers that require reconsideration of their roles and responsibilities, their duties are considered crucial in promoting inclusive education ([Abrol, 2023](#)).

The sources and causes of burnout among special education teachers are diverse. Often, personal characteristics, such as sex, experience, educational level, and subspeciality, influence the level of burnout ([Al-Khatatba, 2021](#); [Stathopoulou et al., 2023](#); [Park and Shin, 2020](#)). Some studies have found that female teachers are more likely to experience burnout than male teachers ([Garcia-Arroyo et al., 2019](#); [Nagar, 2012](#)), while others have found that the opposite is true ([Al-diyar and Salem, 2013](#); [Bayani et al., 2013](#); [Girgin and Baysal, 2005](#)). Male teachers are affected by administrative and organisational issues and the school environment, while female teachers are more affected by psychological and physical reactions and workloads ([Tran, 2015](#); [Tsubono et al., 2024](#)). Workload, lack of shared decision-making, and student misconduct are negatively associated with teacher burnout regardless of sex ([Abós et al., 2019](#)).

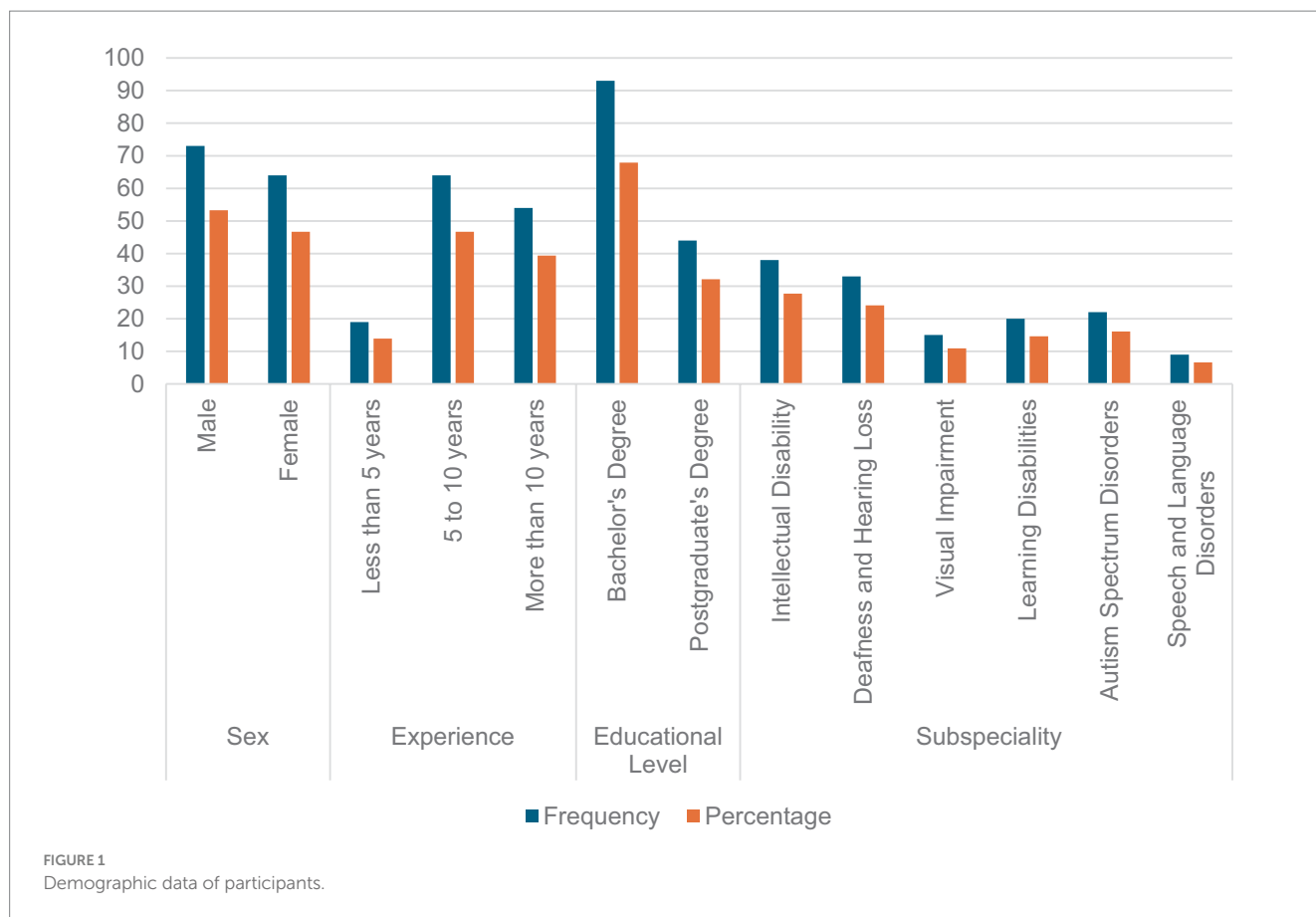
Research on burnout among special education teachers and their experience shows mixed results. While some studies have found that more experienced teachers have higher burnout levels ([Stathopoulou](#)

[et al., 2023](#); [Williams and Dikes, 2015](#)), others have found that less experienced teachers have higher burnout levels ([Brunsting et al., 2014](#); [Duli, 2016](#); [Faskhodi and Siyyari, 2018](#)). It can be argued that experience may not affect teacher burnout, but other factors, such as workload, school environment, emotional issues, organisational justice, and student misbehaviour ([El Helou et al., 2016](#); [Mota et al., 2023](#)). Mindfulness, self-acceptance, and stress reduction training can help prevent or relieve burnout and improve the well-being of special education teachers ([Sun et al., 2019b](#)).

Educational level is associated with burnout among special education teachers ([Llorent and Ruiz-Calzado, 2016](#); [Sezer, 2012](#)). Those with higher degrees experience higher levels of burnout ([Şen, 2023](#)). However, [Jamaludin and You \(2019\)](#) argued that those with a bachelor's degree experience higher levels of burnout. Higher educational levels may positively influence psychological empowerment and reduce burnout among special education teachers in inclusive education schools ([Candeias et al., 2021](#); [Rashkovits and Livne, 2013](#)). Regardless of educational level, lack of administrative support, role conflict, and role ambiguity positively contribute to teacher burnout ([Park and Shin, 2020](#)). This leads to emotional exhaustion, depersonalisation, and reduced personal accomplishment among teachers ([Karanfil and Khatami, 2021](#)). Positive support from general education teachers and school administrators can help reduce burnout among special education teachers ([Langher et al., 2017](#)).

Teachers' job specialisation affects their job satisfaction and burnout levels ([Mustafa and Ismail, 2020](#)). Many studies have shown that special education teachers are more susceptible to burnout than general education teachers in inclusive education ([Hazan-Liran and Karni-Vizer, 2024](#); [Hemati and Moradi, 2021](#); [McGrew et al., 2023](#); [Park and Shin, 2020](#); [Stathopoulou et al., 2023](#); [Suvorov et al., 2021](#)). Special education teachers in inclusive schools face significant challenges and difficulties that go beyond their teaching duties ([Nilsen, 2020](#)). Moreover, burnout may vary among special education teachers themselves, depending on their subspeciality. The results from [Al-Khatatba \(2021\)](#), a study conducted in Saudi Arabia, showed that teachers of students with autism spectrum disorder (ASD) experienced higher levels of burnout than teachers of students with other disabilities. [Tahar et al. \(2023\)](#) found that teachers of students with learning disabilities in integrated schools had low levels of burnout. Teachers' negative attitudes towards disability in inclusive schools are associated with higher burnout rates ([Rohmer et al., 2024](#)). Training and awareness programmes may help to change these negative attitudes and perceptions into positive ones ([Sze, 2009](#)).

The literature on burnout levels among special education teachers in inclusive schools is lacking, especially in the Arab context. Researching and understanding this issue in depth is crucial for developing effective support mechanisms and intervention strategies that can help reduce the long-term effects of burnout, enhance teachers' well-being, improve job performance, and create a healthier work environment. There is a gap in research that explores how factors such as sex, experience, educational level, and subspeciality intersect in the impact of burnout among special education teachers in inclusive schools. Examining these intersections may provide a more accurate understanding of the challenges faced by teachers in inclusive education settings. This research can help to address these research gaps in order to gain a more comprehensive understanding of the dynamics of burnout among special education teachers in inclusive



schools and to attempt to reduce it by answering the following questions:

- 1) What are the levels of burnout among special education teachers in inclusive education schools?
- 2) Are there differences in burnout levels among special education teachers in inclusive schools according to sex, experience, educational level, and subspeciality?

## 2 Method

The current study followed the descriptive survey method because it was appropriate for the objectives and nature of the study. The descriptive survey method is considered one of the main methods used in behavioural and social research, focusing on examining reality or a phenomenon as it exists in the field and providing accurate numeric descriptions that clarify the magnitude and extent of that phenomenon (Darwish, 2018). For example, surveys are among the most widely used methods in quantitative research (Johnson et al., 2008).

### 2.1 Participants

This study was limited to special education teachers in inclusive education schools in Saudi Arabia, with 137 participating in the

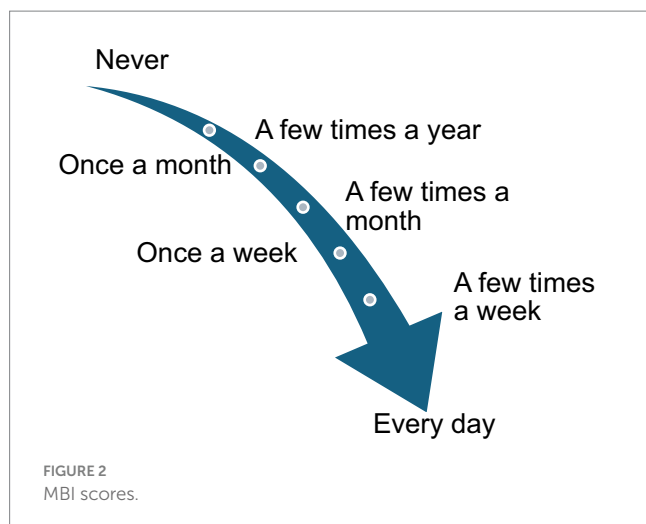
study. The sample was selected using simple random sampling. Figure 1 shows the demographic data of the participants according to the study's variables (sex, experience, educational level, and subspeciality).

### 2.2 Instrument

After reviewing the theoretical literature and previous studies related to burnout among special education teachers, the fourth edition of the Maslach Burnout Inventory (MBI) for educators was used. The MBI is a valid and reliable measurement tool that helps to identify teachers at risk of burnout (Trung et al., 2024). This scale consists of 22 items distributed across three main dimensions. The first dimension is emotional exhaustion and includes nine items (1, 2, 3, 6, 8, 13, 14, 16, and 20). The second dimension, depersonalization, contains five items (5, 10, 11, 15, and 22). The third dimension is personal accomplishment and includes eight items (4, 7, 9, 12, 17, 18, 19, and 21).

The MBI consists of a scale from 0 to 6. A score of 6 was given for the answer 'every day', a score of 5 for the answer 'a few times a week', a score of 4 for the answer 'once a week', a score of 3 for the answer 'a few times a month', a score of 2 for the answer 'once a month', a score of 1 for the answer 'a few times a year', and a score of 0 for the answer 'I do not suffer at all'. Figure 2 illustrates this.

To calculate the burnout rating, the range between the highest and lowest scores was calculated and divided by the average number of categories to determine the rating range.



$$2 = \frac{6+0}{3}$$

Based on this classification, the level of burnout is determined as follows: less than 2 is considered low, from 2 to less than 4 is considered moderate, and from 4 to less than 6 is considered high.

### 2.3 Validity and reliability

Validity and reliability are important elements of research quality to ensure accurate and reliable results (Heale and Twycross, 2015). *Validity* refers to the ability of the instrument to measure what it is designed to evaluate, while *reliability* refers to the consistency and stability of the scale (Mohajan, 2017). To ensure the validity of the MBI for the participants, the instrument was reviewed by five professors from special education and psychology departments of Saudi universities. The researcher asked them to investigate the relevance and suitability of the instrument for measuring what it was designed to assess. They all confirmed its validity and suitability for use with the participants.

To evaluate the internal consistency of the MBI, it was administered to a pilot sample of 20 special education teachers in inclusive education schools. The internal consistency of the instrument was examined using Pearson's correlation coefficients. The first dimension, 'emotional exhaustion', ranged from 0.754 to 0.893. The second dimension, 'depersonalization', was between 0.631 and 0.897, and the third dimension, 'personal accomplishment', ranged from 0.732 and 0.807. These scores indicate that the MBI possesses acceptable internal consistency. The researcher also calculated McDonald's omega coefficients and Cronbach's alpha. All the consistency coefficients for the subdimensions and the total were very high, ranging from 0.872 to 0.891, indicating that the MBI has good internal consistency and accurately and reliably measured what it aimed to assess.

### 2.4 Study procedure

After reviewing the theoretical literature and previous studies related to the current study topic, the instrument was prepared, and

its validity and reliability were verified. A letter of approval was then obtained from Umm Al-Qura University to facilitate the task. The researcher shared and distributed the link to an electronic questionnaire among special education teachers in inclusive education schools via WhatsApp and email. Finally, the questionnaires were collected, audited, computerised, and statistically processed to answer the study questions and make appropriate recommendations in light of the findings of the study.

### 2.5 Statistical methods

In accordance with the objectives and nature of the study, the Statistical Package for the Social Sciences (SPSS version 26) was used to analyse the study data. Descriptive statistics, such as Pearson's correlation coefficient, McDonald's omega coefficient, Cronbach's alpha, and multivariate analysis of variance (MANOVA), were used to extract the results of the study.

### 3 Findings

*Q-1) What are the levels of burnout among special education teachers in inclusive schools?*

The researcher calculated the means, standard deviations, percentages and levels of the special education teachers' responses to the MBI's items. Table 1 shows this results.

Table 1 illustrates that the level of emotional exhaustion among special education teachers is average, with an arithmetic mean of 2.974 and a relative weight of 49.60%. In addition, the data indicate that the level of depersonalization among special education teachers is very low, with an arithmetic mean of 1.819 and a relative weight of 30.30%. Regarding personal accomplishment among special education teachers, the data indicate that it is at an average level, with an arithmetic mean of 3.928 and a relative weight of 65.50%.

Overall, the level of burnout among special education teachers in inclusive schools was average, with a general arithmetic mean of 2.907 and a relative weight of 48.40%. This indicates that teachers suffer from an average level of burnout because it does not reach very high levels but still requires attention and improvement. These results highlight the importance of providing continuous support and ameliorating work strategies to ensure an enhanced work experience and reduce burnout among teachers.

*Q-2) Are there differences in burnout levels among special education teachers in inclusive education schools according to the variables (sex, experience, educational level and subspecialty)?*

To evaluate the differences between the average scores of special education teachers in inclusive education schools on the MBI according to the previous variables, multivariate analysis of variance (MANOVA) was used. Table 2 demonstrates the results of the tests, indicating the significance of the differences between the groups.

Table 2 indicates that the overall model had a significant impact on the studied variables, with a Pillai's Trace value of 0.833,  $F(3, 101) = 168.042$ ,  $p < 0.001$  and  $\eta^2 = 0.833$ . This suggests that the

TABLE 1 Results of the mean, standard deviation, percentage and level of MBI items.

Dimension	N	Item	Mean	Std. deviation	Relative weight (%)	Level
Emotional exhaustion	1	I feel that my job emotionally drains me due to the teaching process	3.204	1.960	53	Average
	2	I feel that my energy is depleted by the end of the school day	3.876	1.880	65	Average
	3	I feel exhausted when I wake up in the morning knowing I have to face a new workday	3.175	2.117	53	Average
	6	Dealing with people all day long causes me stress	2.949	2.150	49	Average
	8	I feel burned out from my work	3.153	2.152	53	Average
	13	I feel frustrated with my teaching profession	2.438	2.219	41	Average
	14	I feel that I am working in this profession with a lot of stress	3.307	2.205	55	Average
	16	Directly working with people leads to severe pressure on me	2.474	2.163	41	Average
	20	I feel as if I am nearing the end due to my profession	2.190	2.102	37	Average
		Overall mean	2.974	1.734	50	Average
Depersonalization	5	I feel like I am dealing with some students as if they were objects, not people	1.796	2.160	30	Low
	110	I have become more harsh with people due to my teaching job	2.036	2.201	34	Average
	11	I feel annoyed and worried because my job increases my emotional coldness	2.029	2.294	34	Average
	15	I actually do not care about the problems my students face	1.642	2.120	27	Low
	22	I feel that students blame me for some of their problems	1.591	2.053	27	Low
		Overall mean	1.819	1.855	30	Low
Personal accomplishment	4	It is easy to understand my students' emotions	3.876	2.214	65	Average
	7	I deal effectively with my students' problems	4.015	2.139	67	High
	9	I feel that I have a positive impact on many people through my work	3.657	2.052	61	Average
	12	I feel energetic and active	3.642	1.988	61	Average
	17	I can easily create a comfortable psychological environment with my students	4.022	2.123	67	High
	18	I feel happy and comfortable after working with my students	4.453	1.886	74	High
	19	I have achieved many valuable and significant things through my profession	3.964	1.983	66	Average
	21	I handle emotional and affective problems calmly in my profession	3.796	1.986	63	Average
		Overall mean	3.928	1.554	66	Average
	Overall mean of burnout	2.907	1.360	48	Average	

TABLE 2 Statistical significance tests for multivariate analysis of variance between groups regarding burnout according to the variables of sex, experience, educational level, and subspeciality.

Effect		Value	F	Hypothesis df	Error df	Sig.	Partial $\eta^2$
Intercept	Pillai's Trace	0.833	168.042	3.000	101.000	0.000	0.833
	Wilks' Lambda	0.167	168.042	3.000	101.000	0.000	0.833
	Hotelling's Trace	4.991	168.042	3.000	101.000	0.000	0.833
	Roy's Largest Root	1.649	168.042	3.000	101.000	0.000	0.833
Sex	Pillai's Trace	0.139	5.450	6.000	101.000	0.002	0.139
	Wilks' Lambda	0.861	5.450	6.000	101.000	0.002	0.139
	Hotelling's Trace	0.162	5.450	6.000	101.000	0.002	0.139
	Roy's Largest Root	0.162	5.450	3.000	101.000	0.002	0.139
Experience	Pillai's Trace	0.035	0.602	6.000	204.000	0.729	0.017
	Wilks' Lambda	0.965	0.597	6.000	202.000	0.733	0.017
	Hotelling's Trace	0.036	0.592	6.000	200.000	0.736	0.017
	Roy's Largest Root	0.026	0.889	3.000	102.000	0.449	0.025
Education level	Pillai's Trace	0.048	1.870	3.000	101.000	0.170	0.048
	Wilks' Lambda	0.952	1.870	3.000	101.000	0.170	0.048
	Hotelling's Trace	0.051	1.870	3.000	101.000	0.170	0.048
	Roy's Largest Root	0.051	1.870	3.000	101.000	0.170	0.048
Subspeciality	Pillai's Trace	0.475	3.874	15.000	309.000	0.000	0.158
	Wilks' Lambda	0.582	4.038	15.000	279.218	0.000	0.165
	Hotelling's Trace	0.622	4.136	15.000	299.000	0.000	0.172
	Roy's Largest Root	0.345	7.108	5.000	103.000	0.000	0.257
Sex and experience	Pillai's Trace	0.050	0.878	6.000	204.000	0.512	0.025
	Wilks' Lambda	0.950	0.878	6.000	202.000	0.512	0.025
	Hotelling's Trace	0.053	0.879	6.000	200.000	0.511	0.026
	Roy's Largest Root	0.050	1.702	3.000	102.000	0.171	0.048
Sex and education level	Pillai's Trace	0.072	2.623	3.000	101.000	0.055	0.072
	Wilks' Lambda	0.928	2.623	3.000	101.000	0.055	0.072
	Hotelling's Trace	0.078	2.623	3.000	101.000	0.055	0.072
	Roy's Largest Root	0.078	2.623	3.000	101.000	0.055	0.072
Sex and subspeciality	Pillai's Trace	0.205	1.509	15.000	309.000	0.100	0.068
	Wilks' Lambda	0.804	1.528	15.000	279.218	0.095	0.070
	Hotelling's Trace	0.232	1.542	15.000	299.000	0.089	0.072
	Roy's Largest Root	0.165	3.392	5.000	103.000	0.007	0.141
Experience and education level	Pillai's Trace	0.049	0.846	6.000	204.000	0.536	0.024
	Wilks' Lambda	0.952	0.838	6.000	202.000	0.542	0.024
	Hotelling's Trace	0.050	0.830	6.000	200.000	0.548	0.024
	Roy's Largest Root	0.030	1.011	3.000	102.000	0.391	0.029
Experience and subspeciality	Pillai's Trace	0.253	1.054	27.000	309.000	0.396	0.084
	Wilks' Lambda	0.763	1.062	27.000	295.614	0.385	0.086
	Hotelling's Trace	0.290	1.070	27.000	299.000	0.375	0.088
	Roy's Largest Root	0.197	2.260	9.000	103.000	0.024	0.0165
Education level and subspeciality	Pillai's Trace	0.218	1.615	15.000	309.000	0.068	0.073
	Wilks' Lambda	0.795	1.615	15.000	279.767	0.069	0.074
	Hotelling's Trace	0.242	1.609	15.000	299.000	0.070	0.075
	Roy's Largest Root	0.151	3.110	5.000	103.000	0.012	0.131



independent variables had a substantial influence on the dependent variables studied.

Moreover, sex had a notable effect, with a Pillai's Trace value of 0.139,  $F(3, 101) = 5.450$ ,  $p = 0.002$  and  $\eta^2 = 0.139$ , indicating that sex significantly contributes to explaining differences in the dependent variables.

Regarding the experience variable, it did not show any significant impact, with a Pillai's Trace value of 0.035,  $F(6, 204) = 0.602$ ,  $p = 0.729$  and  $\eta^2 = 0.017$ , indicating that experience did not significantly affect the dependent variables. Similarly, educational level did not reveal a significant effect, with a Pillai's Trace value of 0.048,  $F(3, 101) = 1.708$ ,  $p = 0.170$  and  $\eta^2 = 0.048$ .

Conversely, the subspeciality had a significant effect on the studied variables, with a Pillai's Trace value of 0.475,  $F(15, 309) = 3.874$ ,  $p < 0.001$  and  $\eta^2 = 0.158$ , indicating that the subspeciality notably affects the differences in the dependent variables.

As for the interactions between the variables, such as sex and experience, sex and educational level, sex and subspeciality, experience and educational level, experience and subspeciality and educational level and subspeciality did not have a significant effect on the studied variables.

Table 3 emphasizes the significant effect of sex on all the dependent variables measured. The results displayed a significant effect on emotional exhaustion ( $F = 6.048$ ,  $p = 0.016$  and  $\eta^2 = 0.055$ ), depersonalization ( $F = 3.559$ ,  $p = 0.062$  and  $\eta^2 = 0.033$ ), personal accomplishment ( $F = 15.061$ ,  $p = 0.000$  and  $\eta^2 = 0.128$ ) and overall burnout level ( $F = 12.012$ ,  $p = 0.001$  and  $\eta^2 = 0.104$ ). Pairwise comparisons revealed that males had markedly higher levels of emotional exhaustion, depersonalization, personal accomplishment and overall burnout compared to females, with all differences being statistically significant at the 0.05 level.

In contrast, the experience variable did not show a significant effect on any dependent variables, with no statistically significant differences in emotional exhaustion ( $F = 0.445$ ,  $p = 0.642$  and  $\eta^2 = 0.009$ ), depersonalization ( $F = 0.731$ ,  $p = 0.484$  and  $\eta^2 = 0.014$ ), personal accomplishment ( $F = 1.171$ ,  $p = 0.314$  and  $\eta^2 = 0.022$ ) and overall burnout level ( $F = 1.026$ ,  $p = 0.362$  and  $\eta^2 = 0.020$ ). Similarly, the educational level variable did not show a significant effect on any dependent variables, with non-significant values for emotional exhaustion ( $F = 0.413$ ,  $p = 0.522$  and  $\eta^2 = 0.004$ ), depersonalization ( $F = 2.893$ ,  $p = 0.092$  and  $\eta^2 = 0.027$ ), personal accomplishment ( $F = 1.202$ ,  $p = 0.275$  and  $\eta^2 = 0.012$ ) and overall burnout level ( $F = 0.061$ ,  $p = 0.805$  and  $\eta^2 = 0.001$ ).

In contrast, the subspeciality variable had a significant effect on all dependent variables. The results were statistically significant for emotional exhaustion ( $F = 5.868$ ,  $p = 0.000$  and  $\eta^2 = 0.222$ ), depersonalization ( $F = 5.078$ ,  $p = 0.000$  and  $\eta^2 = 0.198$ ), personal accomplishment ( $F = 3.965$ ,  $p = 0.002$  and  $\eta^2 = 0.161$ ) and overall burnout level ( $F = 4.625$ ,  $p = 0.001$  and  $\eta^2 = 0.183$ ). Post-hoc comparisons revealed significant differences in favour of deafness and hearing loss specialist teachers compared to other subspecialities of disabilities. These differences highlight the importance of providing targeted support for teachers specializing in deafness and hearing loss to address elevated burnout.

Regarding the interactions between variables, the results showed varied effects. The interaction between sex and subspeciality had a significant effect on emotional exhaustion ( $F = 3.216$ ,  $p = 0.010$  and  $\eta^2 = 0.135$ ), depersonalization ( $F = 1.106$ ,  $p = 0.362$  and  $\eta^2 = 0.051$ ),

personal accomplishment ( $F = 2.014$ ,  $p = 0.083$  and  $\eta^2 = 0.089$ ) and overall burnout level ( $F = 2.889$ ,  $p = 0.018$  and  $\eta^2 = 0.123$ ).

Post-hoc comparisons indicated significant differences between sex and across subspecialities in terms of emotional exhaustion, depersonalization, personal accomplishment and overall burnout level. Female teachers specializing in deafness and hearing loss showed higher rates of emotional exhaustion compared to males, while males had higher rates of depersonalization, personal accomplishment and overall burnout in deafness and hearing loss specialty. These differences underscore the importance of tailored guidance and support to meet individuals' needs based on their sex and specialization.

Regarding the interactions between academic degree and subspeciality, the results showed varying effects. They had a significant effect on emotional exhaustion ( $F = 2.330$ ,  $p = 0.048$  and  $\eta^2 = 0.102$ ) and personal accomplishment ( $F = 2.969$ ,  $p = 0.015$  and  $\eta^2 = 0.126$ ). However, the interaction between academic degree and subspeciality did not have a significant effect on depersonalization ( $F = 0.753$ ,  $p = 0.586$  and  $\eta^2 = 0.035$ ) or overall burnout level ( $F = 2.173$ ,  $p = 0.063$  and  $\eta^2 = 0.095$ ). These differences suggest that the interaction between degree and subspeciality significantly affects some aspects of burnout, highlighting the importance of considering these factors when providing support and guidance. Post-hoc comparisons revealed that the interaction between academic degree and subspeciality had a significant effect on emotional exhaustion and personal accomplishment, with distinctions favoring those with a post-graduate degree compared to those with a bachelor's degree in most subspecialities, particularly in the field of deafness and hearing loss.

Other interactions between variables, such as sex and experience, sex and educational level or experience and subspeciality, did not show significant effects based on these results. It can be concluded that sex and subspeciality variables had noticeable effects on burnout levels, while experience and educational level did not have significant effects.

## 4 Discussion

The results found that special education teachers in inclusive schools suffer from moderate burnout. This result corroborates previous studies (Alaraideh, 2016; Brunsting et al., 2014; Squillaci, 2020; Stathopoulou et al., 2023). However, it differs from the results of some studies, such as Candeias et al. (2021), Panagouli et al. (2019) and Tahar et al. (2023), which found that the burnout level of special education teachers was low; the results of Ramdan et al. (2020) and Vinogradova et al. (2020), which found that the burnout level was moderate to high; and the results of Küçüksüleymanoglu (2011) and Williams and Dikes (2015), which found that it was high.

Arguably, the difference in the results of previous studies can be attributed to the timing and location of the study, as well as the inventory of burnout used. Aldosiry (2022) and Candeias et al. (2021) suggest that providing continuous support and improving work strategies by school administrators and general education teachers may help reduce burnout among special education teachers in inclusive schools.

The results indicated that male teachers had higher levels of burnout than female teachers. This result supports previous studies (Al-diyar and Salem, 2013; Girgin and Baysal, 2005;

TABLE 3 Results of the four-way multivariate analysis of variance of the dimensions and the instrument.

Dependent variable	Dimension	Type III sum of squares	df	Mean square	F	Sig.	Partial $\eta^2$
Corrected model	Emotional exhaustion	259.354	33	7.4859	5.402	0.000	0.634
	Depersonalization	229.465	33	6.953	3.005	0.000	0.490
	Personal accomplishment	222.356	33	6.738	6.536	0.000	0.677
	Overall level of burnout	188.933	33	5.725	6.476	0.000	0.675
Intercept	Emotional exhaustion	290.449	1	290.449	199.640	0.000	0.660
	Depersonalization	128.601	1	128.601	55.570	0.000	0.350
	Personal accomplishment	514.628	1	514.628	499.226	0.000	0.829
	Overall level of burnout	289.773	1	289.773	327.775	0.000	0.761
Sex	Emotional exhaustion	8.799	1	8.799	6.048	0.016	0.055
	Depersonalization	8.236	1	8.236	3.559	0.062	0.33
	Personal accomplishment	15.526	1	15.526	15.061	0.000	0.128
	Overall level of burnout	10.620	1	10.620	12.012	0.001	0.104
Experience	Emotional exhaustion	1.295	2	0.647	0.445	0.642	0.009
	Depersonalization	3.382	2	1.691	0.731	0.484	0.014
	Personal accomplishment	2.415	2	1.207	1.171	0.314	0.022
	Overall level of burnout	1.814	2	0.907	1.026	0.362	0.020
Educational Level	Emotional exhaustion	0.600	1	0.600	0.413	0.522	0.004
	Depersonalization	6.695	1	6.695	2.893	0.092	0.027
	Personal accomplishment	1.239	1	1.239	1.202	0.275	0.012
	Overall level of burnout	0.054	1	0.054	0.061	0.805	0.001
Subspeciality	Emotional exhaustion	42.685	5	8.537	5.868	0.000	0.222
	Depersonalization	58.756	5	11.751	5.078	0.000	0.198
	Personal accomplishment	20.437	5	4.087	3.965	0.002	0.161
	Overall level of burnout	20.444	5	4.089	4.625	0.001	0.183
Sex and experience	Emotional exhaustion	1.893	2	0.946	0.651	0.524	0.012
	Depersonalization	5.776	2	2.888	1.248	0.291	0.024
	Personal accomplishment	0.734	2	0.367	0.356	0.701	0.007
	Overall level of burnout	1.181	2	0.591	0.668	0.515	0.013
Sex and educational level	Emotional exhaustion	9.954	1	9.954	6.842	0.010	0.062
	Depersonalization	4.448	1	4.448	1.922	0.169	0.018
	Personal accomplishment	0.517	1	0.517	0.502	0.480	0.005
	Overall level of burnout	3.978	1	3.978	4.499	0.036	0.042
Sex and subspeciality	Emotional exhaustion	23.392	5	4.678	3.216	0.010	0.135
	Depersonalization	12.800	5	2.560	1.106	0.362	0.051
	Personal accomplishment	10.383	5	2.077	2.014	0.083	0.089
	Overall level of burnout	12.771	5	2.554	2.889	0.018	0.123
Experience and educational level	Emotional exhaustion	3.988	2	1.994	1.370	0.259	0.026
	Depersonalization	5.010	2	2.505	1.083	0.343	0.021
	Personal accomplishment	0.448	2	0.224	0.217	0.805	0.004
	Overall level of burnout	1.676	2	0.838	0.948	0.391	0.018
Experience and subspeciality	Emotional exhaustion	9.201	9	1.022	0.703	0.705	0.058
	Depersonalization	18.654	9	2.073	0.896	0.532	0.073
	Personal accomplishment	16.720	9	1.858	1.802	0.077	0.136
	Overall level of burnout	5.4838	9	0.649	0.734	0.677	0.060

(Continued)



TABLE 3 (Continued)

Dependent variable	Dimension	Type III sum of squares	df	Mean square	F	Sig.	Partial $\eta^2$
Educational level and specialization	Emotional exhaustion	16.947	5	3.389	2.330	0.048	0.102
	Depersonalization	8.712	5	1.742	0.753	0.586	0.035
	Personal accomplishment	15.302	5	3.060	2.969	0.015	0.126
	Overall level of burnout	9.604	5	1.921	2.173	0.063	0.095
Error	Emotional exhaustion	149.851	103	1.455			
	Depersonalization	238.366	103	2.314			
	Personal accomplishment	106.178	103	1.031			
	Overall level of burnout	91.058	103	0.884			
Total	Emotional exhaustion	1,620.818	137				
	Depersonalization	921.12	137				
	Personal accomplishment	2,444.249	137				
	Overall level of burnout	1,438.163	137				
Corrected total	Emotional exhaustion	409.205	136				
	Depersonalization	467.831	136				
	Personal accomplishment	328.534	136				
	Overall level of burnout	279.991	136				

Bayani et al., 2013; Gallegos and Barrios, 2013; Sari, 2004). The findings of Khajehnasiri et al. (2022) showed that higher levels of burnout among male teachers are associated with several demographic characteristics, such as lower income, number of children in their families and responsibilities. Moreover, Bozkuş (2018) believes that male teachers experience greater feelings of depression, worthlessness and failure than female teachers. Consequently, the need to design intervention programs to reduce male burnout in inclusive education environments is necessary for schools, students and teachers. The results of a study conducted on Chinese special education by Sun et al. (2019a) indicated that mindfulness training with social support helps reduce burnout and improve well-being for special education teachers.

Teachers of students with deafness and hearing loss have higher levels of burnout than their colleagues in other subspecialties. This may be due to teachers' poor sign language qualifications (Desalegn and Worku, 2016) or a lack of facilities that meet the needs of deafness and hearing loss students (Almutairi and Alenezi, 2024; Bamu et al., 2017). Therefore, intensifying training courses for teachers on how to communicate with deafness and hearing loss students and providing educational environments that meet their needs are essential for improving their mental health.

The results indicated that there was a significant interaction effect between sex and subspecialty on burnout levels. Female teachers in the deafness and hearing loss specialization reported higher rates of emotional exhaustion than male teachers, while male teachers reported higher rates of emotional numbness, a lack of a sense of accomplishment and general burnout in the deafness and hearing loss specializations and other subspecialties. The type of disability in students is associated with higher burnout among special education teachers (Jovanović et al., 2019). Often, work conditions may influence burnout levels among teachers

(Brunsting et al., 2023). Therefore, administrative support may help enhance self-efficacy and reduce burnout among special education teachers (Combee, 2014).

The results indicated that there was a significant effect of the interaction of educational levels with subspecialties on levels of emotional stress and a lack of a sense of accomplishment, as the differences favored those with a postgraduate level compared to those with a bachelor's degree. Notably, burnout levels differ among teachers according to educational level. However, burnout levels are associated with different socio-demographic factors between males and females, such as age, educational level and marital status (Ahola et al., 2006).

Conversely, the variable of educational level and experience did not show any significant effect on any dimensions of burnout or on the total score. This result corroborates some studies (Tahar et al., 2023; Anastasiou and Belios, 2020). However, Williams and Dikes (2015) found that longer teaching experience is associated with teachers' burnout. More experienced teachers may be less prone to burnout because they have flexibility in accommodating the students' abilities and positive expectations for their students with disabilities (O'Brennan et al., 2017).

## 5 Conclusion

The current study aimed to identify the levels of burnout among special education teachers in inclusive education schools in the Kingdom of Saudi Arabia. This study found that special education teachers suffer from an average level of burnout. It recommends the provision of training programs for teachers that contribute to reducing burnout and its negative effects on them. In addition, reducing work pressures and tasks assigned to teachers of students with disabilities may help provide a supportive and healthy work environment for

them. Psychosocial support services should be available within all inclusive schools.

## 5.1 Limitations and future research

Despite the importance of the current study in understanding the levels of burnout among special education teachers in inclusive education schools, it faced many limitations. One of these limitations is the lack of scientific studies that address this topic, especially in the Arab environment. Therefore, many studies regarding teachers in each category of disability must be conducted. Future studies should also focus on finding solutions that help overcome burnout among special education teachers. Additionally, teachers responded weakly to the questionnaire, despite the Ministry of Education sending an electronic link to all special education teachers in inclusive education schools. Therefore, focusing on qualitative designs and methods that rely on interviews in future research may save time and provide more accurate results that help achieve the main research objective.

## Data availability statement

The original contributions presented in the study are included in the article/supplementary material, further inquiries can be directed to the corresponding author.

## Ethics statement

Ethical review and approval was not required for the study on human participants in accordance with the local legislation and

institutional requirements. Written informed consent from the participants was not required to participate in this study in accordance with the national legislation and the institutional requirements.

## Author contributions

TA: Writing – original draft, Writing – review & editing.

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## Conflict of interest

The author declares that the research was conducted in the absence of any commercial or financial relationships that could be construed as a potential conflict of interest.

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