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# A systematic narrative review of teachers' occupational stressors and coping strategies: A bioecological systems perspective

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## ABSTRACT

This systematic review uses a bioecological systems model to study occupational stressors and their effects on teachers' performance in schools. We discuss risk factors and coping styles influencing occupational stress at the levels of the biosystem (teacher characteristics), microsystem (class relations), mesosystem (school context), exosystem (social policy), and macrosystem (cultural norms). The review indicates that teachers face specific stressors within each ecological system and experience varying levels of emotional issues corresponding to the system challenges. They are particularly vulnerable to feelings of helplessness and negative affect at higher-order ecological levels (i.e. exosystem and macrosystem) due to limited control over stressors in those systems. Accordingly, teachers may have to resort to palliative coping to manage their emotions. While workload, role stressors, and interpersonal conflicts are significant stressors in the microsystem, organisational challenges originating from the school structure, such as the inadequacy of professional support, contribute to stress in teachers at the mesosystem level. At higher-order ecological systems, stressors include school reform, policy changes, and discrimination against marginalised teachers. The study concludes by offering evidence-based strategies tailored to each ecological system to mitigate stress and alleviate negative emotions among teachers.

## Introduction

The teaching profession is confronted with a pervasive challenge – occupational stress, a phenomenon that extends beyond routine challenges and strains educators' coping mechanisms (Katz et al. 2018; Santamaría et al. 2021; von der Embse et al. 2019). Stress among teachers has become a growing concern internationally, impacting both the well-being of educators and the quality of education they provide (Santamaría et al. 2021). Defined as the physiological and psychological response to demands that surpass an individual's coping resources (Lazarus 1976), stress in the educational context is particularly concerning due to its potential long-term consequences. According to Kyriacou (2001, 28), teacher stress is 'the experience by a teacher of unpleasant, negative emotions,

such as anger, anxiety, tension, frustration or depression, resulting from some aspect of their work as a teacher.'

The escalating levels of stress among teachers have been associated with various negative outcomes, including reduced job satisfaction, burnout, a decline in overall work performance, and attrition (MetLife 2013; Montgomery and Rupp 2005; Ryan et al. 2017). Chronic stress, a prevalent issue in the teaching profession (Katz et al. 2018), has been found to adversely influence emotional balance and day-to-day functioning. The repercussions extend beyond the individual, influencing the educational environment, as evidenced by a considerable proportion of educators expressing their intention to leave the teaching profession (Ryan et al. 2017; Santamaría et al. 2021; Simon and Johnson 2015). More specifically, a substantial 51% of U.S. teachers report experiencing excessive stress (MetLife 2013), and nearly 40–50% of teachers in the United States decide to leave the profession within the initial five years of their teaching careers (Darling-Hammond 2010; Ingersoll 2002). A recent study by Reinke et al. 2024 found that 71% of teachers in the United States intend to leave their profession. In this post-pandemic survey, teachers reported high stress and burnout associated with their jobs, particularly among special education teachers. This phenomenon is not exclusive to specific geographical regions; rather, it is a global challenge affecting educators worldwide, as evidenced by studies in Quebec showing elevated levels of psychological distress among teachers compared to the general population (Biron et al. 2008).

Amidst these challenges, the significance of understanding stressors and coping strategies employed by teachers cannot be overstated and requires a systematic examination. As educators' coping strategies may influence their capacity to manage the stressors encountered in their professional domain, it becomes crucial to explore the effectiveness of distinct coping mechanisms with diverse stressors. Investigating the specific methods educators employ to navigate stress can provide valuable insights into effective stress management within the teaching context. As there are systematic reviews of interventions for teacher stress (e.g. von der Embse et al. 2019), this study therefore does not review the effectiveness of diverse, extant therapeutic interventions for teacher stress. On the other hand, this study establishes a solid foundation by applying the bioecological framework (Bronfenbrenner and Morris 2007) to offer practical recommendations to inform system change and future interventions at different ecological levels. This is the first study to situate the complexities of teacher stressors within diverse communities and ecological contexts. By examining stressors, we aim to contribute valuable insights that can inform interventions and support systems for educators facing the formidable challenge of occupational stress. In other words, understanding the role of the ecological systems in shaping teacher stress can identify the most problematic areas to pave the way for targeted interventions, thereby fostering a healthier and more resilient teaching workforce.

## *Types of stressors and coping mechanisms*

There is a distinction between challenge stressors (e.g. time pressure, job scope, and workload) and hindrance stressors (interpersonal conflict, role ambiguity, red tape, and organisational constraints) stressors. Challenge stressors are perceived as obstacles that can be overcome, potentially fostering personal growth. In contrast, hindrance stressors

are seen as unmanageable obstacles that impede goal achievement. Extensive empirical research has supported this distinction, revealing diverse effects on job attitudes, job satisfaction, and organisational commitment (Podsakoff et al. 2007). Despite the contrasting impacts of challenge and hindrance stressors on various outcomes, both types deplete energy resources and correlate positively with strain (Dawson et al. 2016). However, challenge stressors may promote motivational responses, as individuals tend to view overcoming these demands as valuable. In contrast, hindrance demands are perceived as insurmountable, leading to reduced motivation and performance.

Regarding coping strategies, a fundamental distinction exists between direct-action and palliative coping techniques, each serving a unique purpose in addressing stressors (Kyriacou 2001). Direct-action strategies, rooted in problem-focused adaptive behaviours, aim to remove the source of stress and are proactive measures within a teacher's immediate control. However, their effectiveness may be limited in situations beyond the teacher's direct influence, such as national policy changes. In these cases, teachers may need to adapt and develop strategies to mitigate the impact of external changes (Lazarus and Folkman 1984). Conversely, palliative coping strategies focus on alleviating the feelings of stress without directly addressing the stressor itself. Emotion-focused in nature, these techniques include (dys)functional activities like going to the gym, smoking, and reading a book (Ghasemi 2022). While palliative strategies may provide relief, they do not address the root cause of stress. Nevertheless, teachers may resort to palliative techniques when stressors are beyond direct resolution.

### Teacher stress: definition and models

Teacher stress, in its fundamental essence, can be defined as the physiological and psychological responses educators experience when confronted with demanding situations within their professional roles (Kyriacou 2001). This phenomenon requires a nuanced examination, considering the intricate interplay between internal and external factors in educational contexts. Our exploration of teacher stress examines various theoretical frameworks, each offering a unique perspective on stressors and coping mechanisms prevalent in educational settings. Among these models, Karasek's (1979) stress-management model of job strain stands out, intricately detailing the delicate equilibrium between job demands and decision latitude. In essence, a formidable workload coupled with limited decision-making authority contributes significantly to mental strain and chronic stress. Additionally, Derogatis's (1987) empirical research, rooted in Lazarus's (1976) social interaction theory, provides a foundational understanding of stress dispositions. He discusses the three-domain approach – personality mediators, environmental factors, and emotional responses – as the influential sources of stress, presenting a comprehensive perspective on psychological stress by laying the groundwork for effective strategies to manage and mitigate stressors within educational settings.

Later, Lazarus and Folkman's (1984) appraisal model refines our understanding, defining stress as a complex interplay between individuals and their environment. Widely accepted in understanding teacher stress, Lazarus and Folkman's appraisal model centres on cognitive appraisal, involving the evaluation of environmental demands and the assessment of coping capacity. This transactional theory of stress posits that stress emerges when perceived demands surpass available resources.

In the broader landscape of stress models, maintaining a balance between demands and resources remains a recurring theme. Lazarus and Folkman's (1984) transactional theory highlights the role of appraisals in shaping stress experiences, while Hobfoll's (1989) conservation of resources model (COR) and Bakker and Demerouti's (2007) job demands-resources model (JD-R) emphasise the impact of imbalances between demands and resources. Hobfoll's COR model centres on threats to accumulated resources as key stress determinants, while JD-R posits that stress results from high demands unless offset by relevant resources. Despite critiques, these balance models are integral to comprehending the distinctive dynamics of teacher stress.

Also, Prilleltensky et al. (2016) conceptualise stress as a dynamic balance between risk and protective factors across personal, interpersonal, and organisational dimensions, advocating for interventions to preserve this equilibrium and prevent adverse consequences. In harmony with Lazarus's transactional theory of stress (Lazarus 1991), which characterises stress as a transactional and emotional process, these models collectively emphasise the dynamic interaction between individuals and their contextual stressors.

More recently, Herman and his colleagues (Herman et al. 2020) have proposed a conceptual framework – The Coping-Competence-Context Theory (3C) – highlighting the intricate interplay between coping mechanisms, competence, and the broader contextual factors that shape teacher stress levels and overall impact. Beyond emphasising the significance of stress and coping patterns in affecting educator well-being and burnout risk, the 3C theory posits the pivotal role of educator competence, specifically in areas such as classroom management skills. Additionally, the broader school environment, encompassing leadership qualities, context, and policies, is deemed crucial in defining levels of teacher stress. Within the Coping pathway, the 3C theory aligns with the transactional model of stress, conceptualising coping as a crucial buffer between stressful experiences and outcomes; while the Competence pathway of 3C underlines the importance of teacher behaviour management competence, with a specific focus on its impact on teacher practices, interaction patterns with students, and student outcomes. Finally, the Context pathway examines the influence of school and system policies and practices, including expectations, resources, administrative support, and school climate on teacher stress levels.

## Bioecological perspective: key factors

To understand the complexities of teacher stress, we adopted a comprehensive approach akin to the bioecological model, which posits that development and behaviour result from a dynamic interplay of internal and external systems. The bioecological system, as conceptualised by Bronfenbrenner 1994, includes key elements of person (i.e. forces, resources, and demands), process (i.e. reciprocal interactions occurring between person and environment), context (i.e. microsystem, mesosystem, exosystem, and macrosystem), and time (i.e. microtime, mesotime, and macrotime) that collectively influence human development. According to the bioecological perspective, human behaviour is viewed as a dynamic process shaped by a structure of relationships, and this process is susceptible to changes in the relational framework. Within the teaching profession, the

nested contexts comprise a multifaceted array of elements, which is the focus of the current study.

The microsystem includes teachers' most immediate environment, where they engage in social and psychological exchanges with friends, students, colleagues, and school administration, which forms their professional and mental identities in that setting. Moving beyond dyadic relationships, the mesosystem facilitates connections between two or more systems within which teachers operate, fostering more expansive interactions. Meanwhile, the exosystem comprises formal and informal social structures and relations, predominantly psychological rather than physical, which individuals encounter vicariously but exert a direct empowering or degrading influence on their lives. Finally, the macrosystem refers to broader social values, cultural beliefs, political tendencies, and community events. Each of these systems influences individual dynamics, collectively establishing a framework that shapes the experiences of teachers.

Evaluating the factors influencing teacher stress demands an examination of multiple levels within the educational ecosystem. These levels include the biosystem that deals with the individual teacher, the microsystem encompassing social roles and interpersonal relationships, the mesosystem that integrates two or more microsystems, and the exosystem and macrosystem comprising contextual factors, social policies, and cultural norms that may (in)directly exert influence on teachers. By investigating these layers, we can identify characteristics that either foster or impede teacher stress, providing insights for developing targeted interventions and support systems. In other words, by understanding the intricate web of 'contexts' within which occupational stressors unfold, we gain valuable insights to effectively support teachers, thereby potentially contributing to student achievement and success. Utilising this multifaceted framework aims to equip schools with applicable responses to implement interventions tailored to their specific needs. Furthermore, the overarching aims of this research include (a) expanding our understanding of the significance of stressors across different bioecological systems (b) identifying effective coping styles and resources specific to each system layer, and (c) recommending strategies to improve teachers' mental health and performance within educational systems.

## Method

This systematic review adhered to the guidelines outlined in the Preferred Systematic Reviews and Meta-Analyses (PRISMA) Statement (Page et al. 2021) and included studies published between 2000 and 2024. This period covers an important stream of coping research and includes shifts in occupational stressors for teachers (Ghasemi et al. 2023). A systematic review methodology was adopted for this research with two primary objectives: to provide evidence-based insights for policy-making and to identify gaps in the existing literature. This approach ensures comprehensive inclusion of all relevant scholarly research in the field. A systematic review also offers transparency, replicability, and rigour – qualities that are crucial from both policy and research perspectives. These attributes not only enhance the credibility of the findings but also contribute significantly to advancing the body of knowledge in this area.

This review considered articles that met specific inclusion criteria: (1) peer-reviewed and written in English, (2) published within the last two decades, (3) centred on the

teaching profession, and (4) focused on the occupational stressors and coping mechanisms of teachers within the school environment. The selected studies were then organised based on their emphasis on ecological systems. Studies that did not fulfil these criteria or were literature reviews were excluded from the analysis.

Electronic databases including ERIC, PsychInfo, Web of Science (WoS Core Collection database), SCOPUS, and PubMed were searched in January 2024 for peer-reviewed articles that met the inclusion criteria. Subject heading terms, phrase searching, and truncation were used to aid searching. Additional relevant articles were identified by manually searching the reference lists of the articles that met the inclusion criteria. The following keywords were used: 'teacher stress, teacher stressors, teaching stress, teaching stressors, work stress, coping strategies.'

### Data extraction and coding procedures

In this research, we systematically screened titles and abstracts of the retrieved articles and excluded those that did not meet the inclusion criteria. The full texts of potentially eligible articles underwent further screening for inclusion. A standardised data extraction form was developed based on established guidelines in systematic review methodology. This form was meticulously designed to capture pertinent information from each included study, ensuring consistency and reliability in data extraction. The form included various aspects, including author details, publication year, study aims, research design, geographical location, and participant demographics.

Additionally, specific variables related to the identified stressors and coping strategies were systematically coded to facilitate a comprehensive analysis of the literature. Each article was analysed for statements and concepts related to teachers' stressors and coping. Significant factors associated with ecological systems were identified and classified into five groups based on the bioecological model conceptualised by Bronfenbrenner 1994. These included (1) individual factors in the biosystem (e.g. age, teaching experience, personality); (2) factors associated with teachers' roles, relations, and environment in the microsystem (e.g. role stressors and interpersonal relationships); (3) stressors regarding school context and community in the mesosystem (e.g. organisational climate); and (4) stressors associated with public policy and society in the exo- and macrosystem characterised by funding inequalities and racial dynamics. This framework was used to guide the review process, enhancing our understanding of knowledge gaps.

To enhance transparency and replicability, the coding process was conducted independently by two researchers, with any discrepancies resolved through consensus or consultation with a third reviewer if necessary. Moreover, to address the diverse nature of the included studies in terms of design, settings, affective factors, and outcomes, a narrative synthesis approach was employed. This method allowed for a qualitative summary and interpretation of the findings, elucidating patterns, themes, and relationships across the literature while acknowledging the heterogeneity of the evidence base (Popay et al. 2006).

### Fidelity assessment

In addition to meticulous data extraction procedures, fidelity assessment was conducted to ensure the reliability and accuracy of the coding process. This involved evaluating the

consistency and adherence to predefined criteria in data extraction and synthesis across all included studies. To mitigate potential biases and enhance methodological rigour, inter-rater reliability checks were performed by two independent researchers, with any discrepancies resolved through discussion and consensus. Furthermore, to validate the fidelity of the coding process, a random sample of studies was selected for thorough review and comparison to confirm the accuracy and completeness of data extraction. This systematic approach to fidelity assessment bolstered the integrity and trustworthiness of the review findings.

## Results

The initial search identified 841 peer-reviewed articles, which were imported into Endnote. After eliminating duplicates and including 8 hand-searched articles, the total number of articles potentially relevant to the research topic was 737. A comprehensive screening process further narrowed down the selection to 103 articles. Subsequent screening, based on abstracts and titles, further refined this number to 89. Finally, after a thorough examination of full texts for eligibility, 21 studies were included in the review. Figure 1 presents the PRISMA flowchart illustrating the systematic process of the literature search.

Table 1 provides a comprehensive overview of the included studies, predominantly originating from the United States, with additional contributions from Canada, the United Kingdom, Scotland, Germany, Iran, Israel, Portugal, and Turkey. The studies span various ecological systems, with four focusing on the biosystem, four on the microsystem, five on the mesosystem, and eight on the exosystem and macrosystem. The collective participant count across studies reached 60,857, predominantly female and aged between 24 and over 60 years. The majority of participants were associated with the general education sector, offering a diverse and extensive representation of the teaching profession. The research designs employed in the reviewed studies exhibited a predominant quantitative orientation ($n = 12$), complemented by qualitative ($n = 7$) and mixed-method ($n = 2$) approaches. Quantitative studies leveraged a variety of validated tools and scales to assess factors influencing teachers' occupational stress, while qualitative studies utilised semi-structured interview questions. Notably, each quantitative study explored the evaluation of multiple factors, presenting a comprehensive analysis of diverse aspects impacting teachers' occupational stress.

### Biosystem

### Individual characteristics

The study of teacher stress is intricately connected to individual characteristics and personality traits, shaping the dynamic experiences of educators in their professional roles. Various studies have investigated demographic variables, shedding light on their role in work-related stress among teachers. The biosystem level comprises four cross-sectional studies with samples ranging from 47 to 1,430 participants across different geographical locations, including Canada, Germany, and Iran, as well as an international sample. These studies collectively highlight the significance of demographic variables (such as gender and age), professional characteristics (such as experience level), and
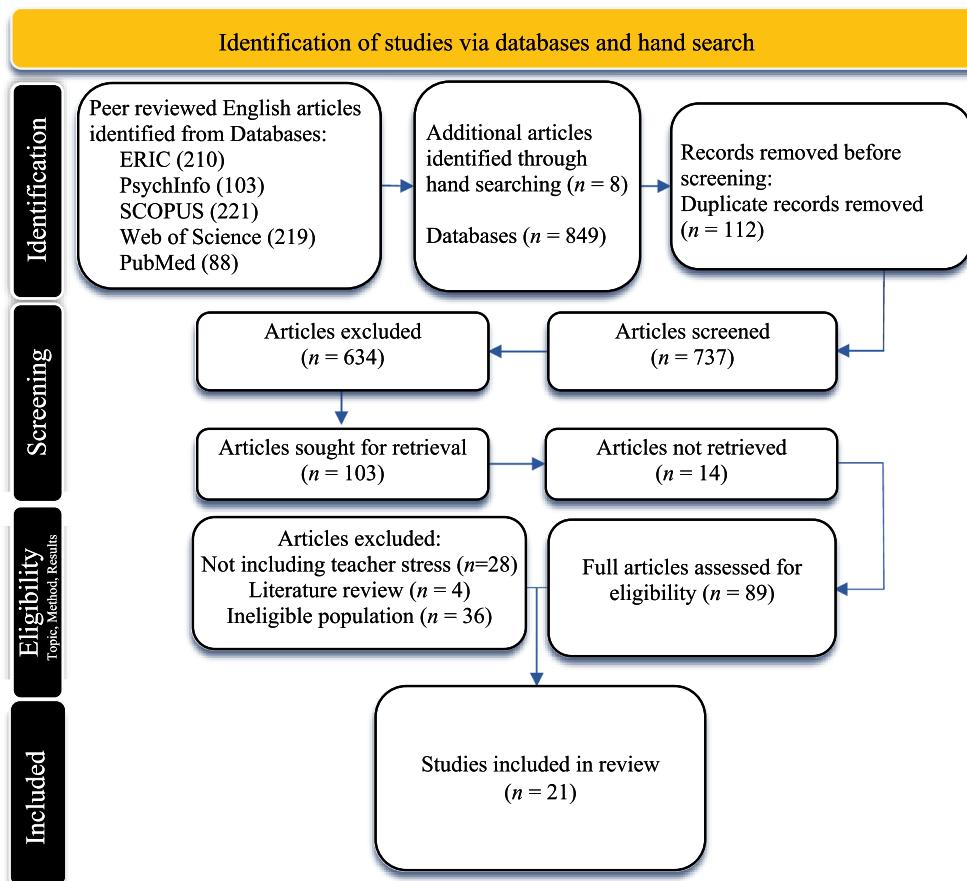
**Figure 1.** PRISMA flow diagram of the systematic literature search.

personality traits (such as perfectionism) in influencing teacher stress. The findings indicate the complex interaction of individual factors in shaping stress experiences and coping mechanisms among teachers. For instance, Klassen and Chiu (2010) established links between gender, age, and teacher qualifications with the prevalence of teaching stress, highlighting significant differences in psychological and physical stress between male and female teachers and emphasising the distinct relationship between gender and work-related stress.

Age, another pivotal demographic variable, has surfaced as a significant factor in teacher stress. Darmordy and Smyth 2010 reported that teachers in their forties exhibited higher stress levels than their younger counterparts. Moving beyond demographic variables, teacher professional characteristics also play a crucial role in understanding stress patterns. Ghasemi's (2022) study revealed that preservice teachers were more susceptible to stress, while expert teachers faced the risk of experiencing anxiety and depression. This highlights the evolving nature of stress across different stages of a teacher's career, with distinct challenges emerging at each phase.

Perfectionism, as a personality characteristic, has drawn significant attention in understanding teacher stress. Stoeber and Rennert's (2008) research differentiated

**Table 1.** Overview of the studies included in the systematic review (N = 21).

| | Authors | Study Title | Study Design | Main Findings |
|---|---|---|---|---|
| **Biosystem** | | | | |
| 1 | Klassen and Chiu (2010) | Effects on teachers' self-efficacy and job satisfaction: Teacher gender, years of experience, and job stress. | Cross-sectional Questionnaire N = 1,430 Canada | • Female teachers had greater workload stress and greater classroom stress from student behaviours.<br>• Teachers with greater workload stress had greater classroom management self-efficacy.<br>• Teachers with greater classroom stress had lower self-efficacy. |
| 2 | Stoeber and Rennert (2008) | Perfectionism in school teachers: Relations with stress appraisals, coping styles, and burnout. | Cross-sectional Questionnaire N = 118 Germany | • Striving for perfection was positively related to active coping.<br>• Negative reactions to imperfection were positively related to threat/loss appraisals, avoidant coping, and stress. |
| 3 | MacIntyre et al. (2019) | Stressors, personality and well-being among language teachers. | Cross-sectional Questionnaire N = 47 International sample | • Teachers reported long and irregular working hours, financial pressures, lack of job security, and a heavy workload.<br>• Personality and stress were not found to correlate with each other. |
| 4 | Ghasemi et al. (2023) | Shifts in stressors, internalising symptoms, and coping mechanisms of teachers during the COVID-19 pandemic. | Cross-sectional Questionnaire N = 351 Iran | • Novice teachers experienced higher rates of stress, which was positively associated with dysfunctional coping strategies.<br>• Teachers demonstrated shifts towards using functional coping strategies upon experiencing new stressors. |
| **Microsystem** | | | | |
| 5 | Shernoff et al. (2011) | A qualitative study of the sources and impact of stress among urban teachers. | Qualitative Semi-structured Interviews N = 14 United States | • Work overload, intense behavioural and learning needs, lack of supplies, limited social support, and accountability pressures were significant stressors.<br>• Sources of stress reflecting work-setting and job features (e.g. managing behaviour problems) were more prominent than individual factors (e.g. early career teacher status). |
| 6 | Paquette and Rieg (2016) | Stressors and coping strategies through the lens of Early Childhood/Special Education pre-service teachers | Mixed methods Questionnaire N = 187 United States | • Stressors included work overload, communication, and classroom management and discipline.<br>• Teachers used relationships, exercise, time management, and the ability to schedule downtime to cope with stressors. |
| 7 | Mulholland et al. (2013) | Teacher interrupted: Work stress, strain, and teaching role. | Mixed methods Questionnaire N = 399 Scotland | • Middle managers, who held leadership and classroom teaching responsibilities reported a range of stressors associated with changes in the school system.<br>• The interaction of stressors associated with teacher role, job demands, and job resources highlighted a range of risk factors (e.g. 'professional ethos,' 'change,' and 'role') that have the potential to affect health in the long term. |
| 8 | Whitaker et al. (2015) | Workplace stress and the quality of teacher – children relationships in Head Start. | Cross- sectional Questionnaire N = 1001 United States | • More workplace stress was associated with greater conflict in teacher-student relationships. |

(Continued)

Table 1. (Continued).

| Authors | Study Title | Study Design | Main Findings |
|---|---|---|---|
| **Mesosystem** | | | |
| 9 Herman et al. (2021) | Individual and school predictors of teacher stress, coping, and wellness during the COVID-19 pandemic | Cross-sectional Questionnaire N = 639 United States | • Collegial school leadership and fair and equitable school discipline structures positively predicted coping and well-being.<br>• Student support and teacher affiliation were positively associated with stress. |
| 10 Collie et al. (2012) | School climate and social-emotional learning: Predicting teacher stress, job satisfaction, and teaching efficacy. | Cross-sectional Questionnaire N = 664 Canada | • Teachers' perceptions of school climate influence their stress.<br>• Teachers' perceptions of student behaviour and motivation influence their stress. |
| 11 Pogere et al. (2019) | Teachers' job stressors and coping strategies: Their structural relationships with emotional exhaustion and autonomy support | Cross-sectional Questionnaire N = 251 Portugal | • Concern for students enhanced adaptive coping and autonomy support, preventing exhaustion and palliative strategies.<br>• Inversely, work overload led to palliative coping and exhaustion, undermining autonomy-support, and adaptive strategies. |
| 12 Troman (2000) | Teacher stress in the low-trust society | Ethnographic Semi-structured interview N = 11 United Kingdom | • Intensification of teachers' work is certainly involved in eroding positive staff relationships, changing trust relations in high modernity, and impacting negatively on teachers' well-being and collegial professional relations. |
| 13 Koçyiğit and Sezer (2024) | Exploring the sources of stress and coping strategies of Turkish preschool teachers. | Phenomenological Semi-structured interview N = 36 Turkey | • All participants identified parents and students as the stressors at the interpersonal level.<br>• Interpersonal (inadequate classroom support staff, larger class sizes) vs organisational (school management and leadership style) stressors. |
| **Exo- and Macrosystem** | | | |
| 14 Maring and Koblinsky (2013) | Teachers' challenges, strategies, and support needs in schools affected by community violence: A qualitative study. | Qualitative Semi-structured interview N = 20 United States | • Teachers adopted coping strategies at the individual, family, school, and community levels.<br>• They employed strategies, such as prayer and seeking support from family and colleagues, but also engaged in some avoidant strategies, such as emotional withdrawal and avoiding difficult subjects. |
| 15 Tatar and Horenczyk (2003) | Diversity-related burnout among teachers. | Cross-sectional Questionnaire N = 280 Israel | • School cultural heterogeneity predicts teachers' diversity-related burnout.<br>• Proactive and reactive approaches for preventing and reducing diversity-related burnout in assimilationist teachers should be used. |
| 16 McCarthy et al. (2023) | Associations between teacher-student racial/ethnic congruence and public school teachers' risk for stress. | Quantitative Secondary data N = 29,340 United States | • Risk for stress was significantly associated with school racial concentration/equity.<br>• Black/African American teachers were the most likely to appraise as Demanded (most vulnerable for stress) and least Resourced (least vulnerable for stress).<br>• Programmes for recruitment and retention of teachers of colour are suggested. |

(Continued)

**Table 1.** (Continued).

| | Authors | Study Title | Study Design | Main Findings |
|---|---|---|---|---|
| 17 | Rauscher and Wilson (2017) | Super heroes and lucky duckies: Racialized stressors among teachers. | Qualitative Semi-structured interview N = 22 United States | • Teachers experience racially specific stressors at work and make racially specific appraisals about common stressors.<br>• While Black teachers report chronic strains, White teachers report sexual harassment. |
| 18 | Aujila-Bhullar (2018) | A complicated passport: Racialized realities and lessons from visible minority women teachers. | Narrative inquiry Interview N = 8 Canada | • Teachers reported incidents of discrimination, marginalisation and oppression in their teaching as significant stressors.<br>• Relationships formed with families and students of visible minority backgrounds indicated the need and retention of visible minority teachers within school systems. |
| 19 | Fitchett et al. (2020) | Examining the intersectionality among teacher race/ethnicity, school context, and risk for occupational stress. | Quantitative Secondary data N = 25,620 United States | • Both teacher and school race/ethnicity were unique predictors of a teacher being classified as at-risk for stress.<br>• Teachers' reported race/ethnicity significantly moderated the school effect association with stress risk. |
| 20 | Margolis and Nagel (2006) | Education reform and the role of administrators in mediating teacher stress. | Phenomenological Interview and observation N = 15 United States | • Exhaustion and stress increased in relation to the scope and pace of educational change and the extent to which teachers perceived the changes to be imposed rather than communally owned.<br>• To mediate the negative consequences associated with school change, administrators and teachers should be provided with efficacious strategies. |
| 21 | Herman et al. (2023) | School leadership, climate, and professional isolation as predictors of special education teachers' stress and coping profiles. | Quantitative Questionnaire N = 404 United States | • More adaptive patterns of stress and coping were associated with positive perceptions of school structure.<br>• Attending to educator's perceptions of fairness is a contextual strategy to promote adjustment and well-being. School leaders need to establish and communicate clear, consistent, fair, and equitable procedures for their discipline practices. |

between positive and negative facets of perfectionism. They found that striving for perfection was linked to positive outcomes such as challenge appraisals and active coping, while negative reactions to imperfection were associated with threat appraisals, avoidant coping, and burnout. Additionally, MacIntyre et al. (2019) identified consistent correlations between personality traits, well-being, and stress among language teachers. Notably, their findings revealed that personality and stress did not exhibit direct correlations, highlighting the need for understanding both stress sources and positive factors contributing to teacher well-being.

While individual factors have indeed been extensively examined in the literature concerning strategies for enhancing stress management skills and teacher retention globally, recent research indicates a noteworthy shift towards contextual variables. This evolving emphasis highlights the growing recognition of the pivotal role played by contextual factors in predicting and addressing teacher stress (Kyriacou 2001). Specifically, contemporary research stresses the critical significance of interpersonal and social support factors in elucidating the multifaceted nature of teacher stress. This evolving perspective not only enriches our understanding of the complexities surrounding teacher well-being but also emphasises the need for a holistic approach that integrates both individual and contextual considerations in interventions aimed at mitigating teacher stress.

### *Microsystem*

### *Stressors in roles, relations, and environment*

Progressing through the outer layer of bioecological systemic tiers, relationships with others, societal roles, and interpersonal elements seem to exert a crucial influence on shaping stress levels among teachers, both in terms of quantity and quality (Herman et al. 2023; Mulholland et al. 2013; Nixon et al. 2011; Shernoff et al. 2011). This level includes four studies with varied designs (qualitative, mixed methods, and cross-sectional) and sample sizes ranging from 14 to 1001 participants. These studies have been conducted in different locations, including the United States and Scotland, and collectively illustrate the profound impact of workplace relations, role stressors, and social support on teacher stress. The studies addressed various aspects of teacher stress, such as work overload, role ambiguity, and the quality of teacher-student relationships, emphasising the importance of supportive interpersonal interactions and clear role expectations.

More specifically, the microsystem is marked by the profound impact of workplace relations and conflicts, where the interactions of various factors significantly contributes to the overall stress experienced by teachers. Research has indicated that characteristics of work, including job demands, control, and social support, intricately shape the teacher's experience of stress and its subsequent impact on well-being (Dawson et al. 2016; MacIntyre et al. 2019; Mulholland et al. 2013).

Regarding occupational stress, role stressors (i.e. role conflict and role ambiguity) play a pivotal role in provoking stress in teachers (Hooper 2013; Mulholland et al. 2013). Role ambiguity, originating from unclear expectations and a lack of necessary information or resources, contributes to feelings of uncertainty, helplessness, stress, and burnout (Nixon et al. 2011; Papastylianou et al. 2009; Schmidt et al. 2012). On the other hand, role conflict, often contingent

on inconsistencies and conflicts regarding job demands, can be another significant source of stress (Hooper 2013). Research indicates that teachers encounter varying levels of such hindrance stressors. For instance, Papastylianou et al. (2009) found that teachers generally experience low to moderate levels of both role conflict and role ambiguity. This variation in the extent of role stressors highlights the importance of addressing specific role-related issues to mitigate stress. Teachers experiencing high levels of role ambiguity may struggle with a lack of clarity about their responsibilities and expectations, leading to increased stress and reduced job satisfaction. Conversely, role conflict, which involves incompatible demands from different stakeholders, can lead to significant stress and hinder teachers' ability to perform their duties effectively.

Moreover, the impact of role demands on teachers' occupational stress is particularly noteworthy, especially in contexts where teachers work with students exhibiting challenging behaviour (Hooper 2013). The heightened responsibilities associated with managing and teaching children with problem behaviour contribute significantly to increased levels of role conflict and role ambiguity, thereby elevating overall occupational stress levels. A meta-analysis conducted by Schmidt et al. (2012) highlights the broader implications of role ambiguity and role conflict by linking these stressors to heightened rates of depression, which is significantly associated with stress (Ghasemi 2022). Also, Ghorpade et al. (2011) explored the distinct effects of role conflict and ambiguity on teacher burnout. Their findings revealed that role conflict amplifies emotional exhaustion and depersonalisation, while role ambiguity diminishes the sense of personal accomplishment. In particular, Cooper 2018 conducted an in-depth investigation into the origins of occupational stress among teachers, revealing that mental illness was predominantly predicted by job pressure originating from teacher's role ambiguity.

Additional contextual variables contributing to teacher stress in this layer include interpersonal relationships. Teachers face numerous challenges in this area, such as maintaining classroom order, addressing student misbehaviour, fostering effective communication with parents, and cultivating positive relationships with colleagues (Herman and Reinke 2015; Prilleltensky et al. 2016). Research indicates that occupational stress affects teachers' interpersonal relationships with colleagues (Shernoff et al. 2011) and leads to conflicts with students (Whitaker et al. 2015). Conflict with students can become a major source of stress, particularly when teachers lack effective classroom management skills (Herman et al. 2020; Robertson 2008). Indeed, poor interpersonal relations with students and inadequate classroom management skills are frequently cited as primary reasons for teacher attrition (Bondy et al. 2007; Ryan et al. 2017). Novice educators, in particular, face challenges in understanding the intricate interplay between managing classroom dynamics, addressing behaviour issues, and facilitating academic tasks, which significantly increases their stress levels (Dicke et al. 2015; Prilleltensky et al. 2016). Their relative inexperience heightens the stress they experience, influencing their perceptions and interpretations of the severity of student behaviour.

Additionally, challenging parents represents another significant stressor contributing to workplace conflicts among teachers, often linked to incongruent expectations (Prakke and Van Peet 2007). The extant research suggests that the disparity between parental and teacher expectations is particularly pronounced for novice teachers, which emerges as a notable hindrance stressor (Robertson 2008). The incongruence in expectations

between these key stakeholders introduces a layer of complexity that can be overwhelming for educators.

### Addressing stressors in microsystem

Social support, characterised by interpersonal interactions that offer emotional and instrumental support to educators, stands out as an extensively explored mediator of teacher stress (Dawson et al. 2016; Shernoff et al. 2011). Research suggests that social support from colleagues serves as a robust buffer against stress, often surpassing the impact of support from other sources such as friends and family. Notably, collegial support not only alleviates individual stress but also contributes to the cultivation of relational trust at an organisational level, thereby fostering a conducive and supportive work environment (Gold and Roth 2013; Shernoff et al. 2011). The qualitative dimensions of this support become evident in the emphasis on trusting and collegial relationships with various stakeholders, including peers, colleagues, mentors, and administrators, all of which are qualitatively highlighted as crucial sources of social support (Herman et al. 2023). In an illuminating qualitative study involving urban teachers, Shernoff et al. (2011) studied the multifaceted nature of support mechanisms. The findings indicated the fundamental role of both human and material resources, (i.e. classroom-based and school-wide support), as well as instructional and leadership support (i.e. managing disruptive behaviour and leadership/colleague support) in mitigating teacher stress.

Based on extant research (Bondy et al. 2007; Gold and Roth 2013; Herman and Reinke 2015; Herman et al. 2020; Shernoff et al. 2011), we may use a framework outlining how personal/professional relationships may support and help teachers with their occupational stressors. The dimensions of this support system may include: allowing teachers to voice their emotional tensions to provide them with instrumental and emotional support, demonstrating empathy by confirming their emotional experiences, facilitating the exchange of resources and ideas to provide real solutions, and inspiring teachers to introspectively examine their attitudes, emotions, and belief systems to foster professional reflection and development. The pervasive sense of community and support emanating from these interconnected professional relations have shown significant associations with alleviated levels of stress and elevated stress management skills among educators (Ghasemi et al. 2023; Gold and Roth 2013; Herman and Reinke 2015). Also, implementing positive behaviour systems in order to effectively address student disruptive behaviour as a significant source of stress can significantly influence classroom management, leading to an enhanced sense of efficacy in improving classroom behaviours and mitigating occupational stress (Bondy et al. 2007).

Regarding role stressors, teachers' resilience is fortified when they successfully meet role expectations set by the administration (see Papastylianou et al. 2009). Consequently, school leaders play a pivotal role in cultivating teacher resilience by establishing transparent and achievable expectations and fostering trusting collaborative relationships. Clarity in role expectations ensures that educators have a clear understanding of their responsibilities, reducing ambiguity and stress. Overall, to retain teachers effectively, school leaders and administrators should focus on establishing robust and collegial leadership teams, cultivating positive school environments with strong social support, and endorsing effective classroom management strategies, which are in line with the 3C

theory of stress management (Herman et al. 2020). These initiatives serve as crucial mechanisms for reducing teacher stress by equipping them with required coping skills and strategies, contributing to their overall job satisfaction (McCarthy et al. 2014).

## Mesosystem

### Stressors associated with school context and community

The mesosystem, which consists of the interactions between different components of the microsystem and factors associated with the broader educational environment, plays a significant role in teacher stress. This review identified five studies with diverse designs, including cross-sectional, ethnographic, and phenomenological, with sample sizes ranging from 11 to 664 participants. These studies span various countries, including the United States, Canada, Portugal, the United Kingdom, and Turkey. They collectively highlight the significant influence of school climate, collegial relationships, leadership, and organisational structures on teacher stress.

Stressors originating from the organisational domain, such as the school administration approach towards teachers and the overall organisational climate, play fundamental roles in shaping and predicting teachers' stress levels (Collie et al. 2012; Shernoff et al. 2011). Particularly poignant for novice teachers is the challenge of being thrust into demanding teaching scenarios without adequate professional support, fostering sentiments of inadequacy and resignation (Prilleltensky et al. 2016). The organisational sources contributing to feelings of anxiety, stress, and inadequacy are multifaceted and include (a) deficiencies in teacher preparation programmes, (b) the emotional intensity inherent in teaching, and (c) schools that lack structured support for preservice teachers (Bondy et al. 2007; Dicke et al. 2015; Ghasemi et al. 2023).

The organisational aspect further contributes to teacher stress through prescriptive curricula, burdensome paperwork, and shifting instructional priorities – each, in interaction with the microsystem, serving as organisational risk factors that give rise to a sense of hopelessness and occupational stress among teachers (Ghasemi 2018; McCarthy et al. 2014). More recently, Cooper 2018 studied occupational stress in teachers, revealing that job pressure factors, particularly related to the structure of the school and the lack of status and promotion, are major predictors of dissatisfaction and stress.

Additionally, Herman et al. (2023) found a significant relation between adaptive stress-coping patterns and teachers' perceptions of school structure, defined as perceived equitable and consistent discipline practices. They suggested that holding negative views on school structure, characterised by perceived unfairness, could be a significant stressor making teachers prone to adopting maladaptive stress-coping patterns. This highlights the importance of fair and consistent school policies in mitigating teacher stress and promoting healthier coping mechanisms.

Troman's (2000) qualitative study also examines the effects of organisational stress dynamics within the mesosystem. He demonstrated that the intensification of teachers' work not only erodes positive staff relationships but also reflects the changing trust relations in high modernity. This shift in trust dynamics within the educational system negatively shapes teachers' social relations, impacting their physical and emotional well-being and collegial professional interactions. His work highlights the interconnectedness of systemic changes and teacher stress within the mesosystem, emphasising how evolving

organisational demands and trust issues contribute significantly to the overall stress experienced by educators.

These studies collectively emphasise the intricate dynamics within the mesosystem, shedding light on how factors such as trust relations, perceived fairness, and professional relations and support contribute to teacher stress. The findings highlight the importance of a supportive and equitable school environment in mitigating stress and promoting teacher well-being.

### Addressing stressors in mesosystem

Addressing stressors at the mesosystem level requires notable emotional regulation on the part of teachers, as the nature of stressors in this layer often demands emotion-focused coping rather than direct-action coping to eliminate the source of stress. Ng et al. (1995) propose a re-conceptualisation of conflict, suggesting that it can be viewed as a pedagogical opportunity, particularly for marginalised teachers. This perspective does not trivialise or dismiss the challenges and complexities of conflict within educational settings. Instead, it aims to empower teachers, particularly those facing marginalisation or systemic barriers, by fostering a mindset that views conflict as a catalyst for growth and learning.

Crucially, teachers must engage in critical reflection and ethical considerations when using conflict as a pedagogical tool, ensuring that conflict is handled in a constructive and supportive manner that respects the dignity and well-being of all individuals involved. By critically reflecting on conflicts and demands, teachers can use these experiences to challenge normalised behaviours and thinking, fostering resilience and empowerment to overcome systemic contradictions and limitations (Aujila-Bhullar 2018). Ungar (2010) refers to this process as navigation, 'an agentic exercise of personal power directed towards acquiring resources' (p. 405). This navigation process enables teachers to actively seek out and utilise resources that support their well-being and professional development, transforming challenges into opportunities for growth.

Additionally, research suggests that a positive school climate and collegial leadership can notably improve teachers' sense of efficacy and coping skills, particularly when these leaders actively cultivate collaborative/supportive relationships and advocate for ongoing professional development initiatives (Herman et al. 2023). According to Ghasemi et al. (2023), 'School leaders need to attend to teachers' sense of justice regarding their administrative decisions and practices as a strategy for promoting environmental antidotes to teacher stress' (p. 21). Thus, cultivating a caring and compassionate workplace climate could be a significant protective factor against teacher stress.

Conversely, in a toxic environment, teachers may require additional support to develop their interpersonal skills. Equipping educators with assertiveness training and fostering empathic listening and supportive mentoring practices can serve as valuable interpersonal antidotes to the often adversarial relationships teachers encounter in a charged workplace climate (Prilleltensky et al. 2016). These strategies not only help mitigate stress but also promote a more positive and supportive school culture, ultimately benefiting both teachers and students.

More importantly, supporting teachers at the microsystem level requires tackling issues at both the school and broader policy levels (e.g. exosystem), such as excessive workloads and pressures related to high-stakes accountability. Without these systemic

changes, efforts to enhance teacher well-being may face considerable challenges (Oldfield and Ainsworth 2022). Therefore, decentralising decision-making and authority to the local level, along with promoting extensive systems of accountability, can help teachers cope with their occupational stressors more effectively. This approach empowers teachers by giving them more control over their work environment and fostering a sense of agency, thereby reducing stress and improving overall well-being.

According to Papatraianou et al. (2018), teachers perceive flexibility as a crucial quality for managing potential occupational stress arising from cultural and educational diversity in schools. In response, Papatraianou and her colleagues developed a transactional systems model of teacher resilience using an ecological approach to understand how interdependencies of the systems could be unique to a specific culture and context. They argued that each educational context may pose a unique set of enablers and limitations that can be influenced by teachers' ability to construct connections within their environment by being involved in growth-fostering relationships. Such connections empower teachers by preventing workplace isolation and building relational resilience to effectively utilise available resources in coping with occupational stressors.

## Exo- and macrosystem

### Stressors associated with public policy and society

The exosystem and macrosystem refer to external systems that indirectly impact individuals within the school environment, such as community services, societal structures, and government policies, as well as the broader cultural norms, values, and ideologies (see Bronfenbrenner and Morris 2007). This level includes eight studies utilising varied methodologies, including qualitative, cross-sectional, secondary data analyses, and phenomenological designs. Sample sizes range from 8 to 29,340 participants and cover a broad geographical scope, including the United States, Canada, and Israel. These studies collectively highlight the significant impact of broader societal and systemic factors on teacher stress.

Certain institutional-level occupational risks often originate from broader community-level issues or social structures, which, in turn, affect educational policies. For instance, teachers in high-poverty educational settings may come across difficulties that adversely influence their emotional well-being and retention (Ryan et al. 2017; Simon and Johnson 2015). In high-poverty academic contexts, similar to many other communities, schools are increasingly tasked with responsibilities beyond academic development, including the provision of mental health services and the promotion of prosocial learning and emotional development. This expanded role places heightened complexity on the job demands of teaching, particularly in school communities with low socioeconomic status, requiring elevated levels of problem-focused coping in response to challenging environmental conditions (Maring and Koblinsky 2013). In other words, such environments place a considerable strain on teachers, requiring them to manage not only academic responsibilities but also the broader well-being of their students, which can lead to increased stress and burnout (Herman et al. 2021). Consequently, evidence suggests that turnover intentions are higher for teachers in high-poverty schools (Carver-Thomas and Darling-Hammond 2019; Darling-Hammond 2010; Ingersoll 2001).

Past research also indicates that funding inequalities related to race and culture lead to fewer tangible resources, inferior working conditions, and increased teacher stress and burnout (Kozol 2005). An interesting example could be Tatar and Horenczyk's (2003) research on diversity-related burnout. They demonstrated that factors in the school organisational culture and cultural heterogeneity, such as promoting assimilationist cultural uniformity rather than a pluralistic approach in the school system can give rise to higher diversity-related burnout in teachers who teach immigrant students of diverse cultures. In a similar vein, exploring how the racial composition of schools affects teacher stress, McCarthy et al. (2023) found that teachers of colour in schools with high concentrations of non-White students face an increased risk of stress. The probable explanation for such results could be the limited financial resources available in schools with predominantly non-White students and the deficit-laden educational views held by some teachers towards students of colour. In other words, inadequate resources and the negative perceptions and low expectations some educators hold regarding students of colour can contribute to a less supportive and more stressful teaching environment. This association highlights the impact of racial dynamics within the (exo)macrosystem on teacher well-being. Additionally, the study builds upon prior scholarship, revealing that funding disparities based on race and culture contribute to tangible resource deficiencies, poorer working conditions, and heightened teacher burnout. These findings stress the importance of addressing systemic inequalities and promoting a culturally responsive and inclusive school environment.

Rauscher and Wilson's (2017) investigation into race and occupational stressors among high school teachers adds another layer to our understanding of how racial dynamics impact teacher stress. Their interviews revealed that racially specific stressors are experienced and appraised differently by teachers of diverse backgrounds. These findings advocate for an intersectionality perspective, emphasising that race, racism, and racial privilege operate multiplicatively, creating distinct constellations of stressors among female teachers. Aujila-Bhullar's (2018) research expands on this by investigating how social identities intersect within the (exo)macrosystem, introducing stressors related to class oppression, sexism, and racism, particularly affecting women of colour. The study indicates the significance of recognising the interplay of gender, race, ethnicity, socio-economic status, and religion in shaping teachers' experiences, both personally and professionally. In this study involving minority female teachers in Canada, the recollection of discriminatory experiences emerges as a painful and distressing aspect. The teachers' accounts vividly portray the enduring emotional impact of discrimination, with emotions such as shame, distress, and helplessness becoming evident in their narratives. Similarly, Fitchett et al. (2020) highlighted the impact of racial and ethnic demographics at both the teacher and school levels. Their results indicated that teacher stress could be predicted by the racial and ethnic composition of both the school and the teachers themselves. Teachers of colour, facing racial stress in predominantly White schools, exhibited higher rates of attrition and migration, collectively termed occupational mobility (Ingersoll and May 2011).

Other higher-order factors, such as high-stakes accountability frameworks and government policies, significantly influence teachers' stress and resilience. These factors often mediate their impact through various mechanisms. In general, teachers develop and express negative emotions and cognitions regarding national educational policies

and evolving initiatives (Day et al. 2006). In particular, any prescribed change in school structure and educational policies by the government may result in teacher occupational stress. In a phenomenological study to understand how teachers perceive the complexities of school and policy restructuring, Margolis and Nagel (2006) demonstrated a significant correlation between stress and emotional exhaustion and the scope and pace of change. These changes negatively impacted job performance and satisfaction, particularly when reforms were perceived as imposed rather than communally owned. This highlights that teachers' negative feelings are intensified when they view reforms as externally imposed. Therefore, involving teachers in the decision-making processes related to educational reforms is crucial to mitigate negative effects on their well-being. Additionally, the implementation of policy changes can significantly impact teachers' perceived autonomy and agency, both of which are closely associated with higher levels of occupational burnout (Day et al. 2006; Richards et al. 2018).

Social and cultural influences play a crucial role in determining how relationships within the educational environment are formed and maintained, directly impacting a teacher's ability to cope with occupational stress (Papatraianou et al. 2018). In terms of layers, interrelationships and interdependencies can also exist between factors at individual levels and higher-order policy levels. For instance, policy changes in Portugal regarding workload and accountability gave rise to negative emotions and motivational apathy in teachers (Flores 2018). Such policy-induced stressors illustrate the complex connections across multiple ecological levels, highlighting the necessity for palliative coping strategies to manage these higher-order stressors effectively.

### Addressing stressors in exo- and macrosystem

Certainly, a significant challenge confronting school-led interventions in fostering teacher resilience is the limited influence schools wield over exo- and macrosystemic factors. Therefore, any substantial progress in mitigating the perceived social unfairness regarding changes in policies needs comprehensive modifications at all levels of the system. This includes initiatives to address underlying issues within the higher-order layers, such as broader community dynamics, governmental policies, and cultural norms (Aujila-Bhullar 2018). Effective interventions must therefore encompass multi-layered strategies that align with both immediate school environments and broader systemic changes to create a more equitable and supportive framework for educators.

Cultural differences among teachers can also lead to isolation (Papatraianou et al. 2018), demonstrating the significance of reducing professional isolation through increased representation and stronger professional networks to aid in teacher adjustment. In order to support marginalised teachers with their professional stress, McCarthy et al. (2023) suggest recruiting more teachers from marginalised cultures, especially in areas with a high concentration of non-White students. However, merely hiring such teachers would be an insufficient plan and requires extensive in-service support to mitigate tokenism, isolation, and attrition, which may give rise to occupational stress. Supporting the voices of marginalised teachers in recruitment and retention efforts is essential for a positive educational environment and teacher well-being. More importantly, establishing fair and clear processes in the school system is another critical strategy to address educators' perceived unfairness in structural practices, which is associated with high levels of stress (Herman et al. 2023).

Past research has demonstrated that mentoring teachers to build a strong understanding of their identities by defining their primary values, professional goals, commitment, and boundaries can contribute to effective coping with challenging emotional conflicts (Barnes 2019; Ghasemi 2023). Additionally, training teachers to adopt proactive or reactive measures to cope with their occupational stress has been strongly recommended. While the proactive approach involves mentoring at all levels to enhance cultural diversity knowledge of teachers to help them commit themselves to multicultural education, the reactive approach comes into play when a teacher is identified with diversity-related burnout, requiring the use of stress-management strategies to deal with the burdens of teaching in culturally diverse classrooms (Tatar and Horenczyk 2003).

Research literature also suggests utilising supportive systems to respond to occupational stressors due to the interconnectedness and interdependencies of community and contextually based support structures. Adopting a critical perspective, Price and her colleagues (2012) recommend a shift from individually focused resilience-building for teachers to an examination of the adverse conditions within which they operate. They advocate for a distributed approach towards addressing risks and promoting protective processes across multiple ecological systems, discouraging policy-makers from adopting reductionist interventions that disproportionately burden educators. This broader perspective acknowledges that effective support for teachers requires systemic changes at various levels. It emphasises the need for school and community-based support systems that recognise and address the complex social, cultural, and organisational factors contributing to teacher stress. By focusing on creating supportive environments and equitable practices, these strategies aim to enhance teacher well-being and retention in a sustainable and holistic manner.

Finally, teachers' resistance to oppressive work regimes has, at times, prompted changes at the school level, resulting in improvements in their occupational stress. This perspective views events as a dialectical process between agency and structure, emphasising the ever-present possibility of change (Troman 2000). By actively resisting and challenging unfavourable conditions, teachers can influence and reshape the work environment, demonstrating that individual and collective agency can drive structural transformations. This dynamic interplay highlights the importance of empowering educators to advocate for better working conditions and the potential for systemic change through their actions and resilience.

## Discussion

Educators across various ecological levels encounter significant daily challenges within a profession widely acknowledged as notably stressful compared to other occupational domains (Fitchett et al. 2020; Ghasemi 2022; Oldfield and Ainsworth 2022). This systematic review of 21 studies explored and synthesised the occupational stress and coping strategies of primary to secondary school teachers based on the bioecological framework. The results indicated the significance of occupational stress in microsystem and higher-order ecological systems, revealing coping strategies tailored to each ecological level. Figure 2 demonstrates an overview of the identified stressors and

corresponding intensifying factors specific to each ecological system, as well as practical recommendations to alleviate their effects on teachers.

### Systems interactions in mesosystem

The reviewed studies revealed intricate relationships influencing teacher stress across diverse ecological layers. The mesosystem, which includes interactions between different components of the microsystem, emerged as a nexus of stressors originating from both the microsystem and the broader educational environment. In this layer, novice teachers faced the challenge of being thrust into demanding teaching scenarios without adequate professional support, leading to feelings of inadequacy and resignation (Prilleltensky et al. 2016). Given their heightened susceptibility to stress and burnout (Dicke et al. 2015; Ghasemi 2022), novice teachers require higher levels of support from their school institutions to remain engaged and effective during their initial teaching.

Our analysis revealed notable distinctions between novice and experienced teachers concerning stressors and coping mechanisms. Novices often struggle with managing classroom dynamics, behaviour issues, and academic tasks without adequate support. In contrast, experienced teachers may encounter different stressors, such as navigating complex organisational climates or reconciling disparate expectations from stakeholders. Understanding these differences is crucial for tailoring support mechanisms. For novices, targeted professional development programmes and mentorship initiatives could mitigate stress and foster resilience during the early stages of their careers. Conversely, for experienced teachers, interventions focusing on organisational support and collaborative problem-solving may be more effective. By acknowledging and addressing these
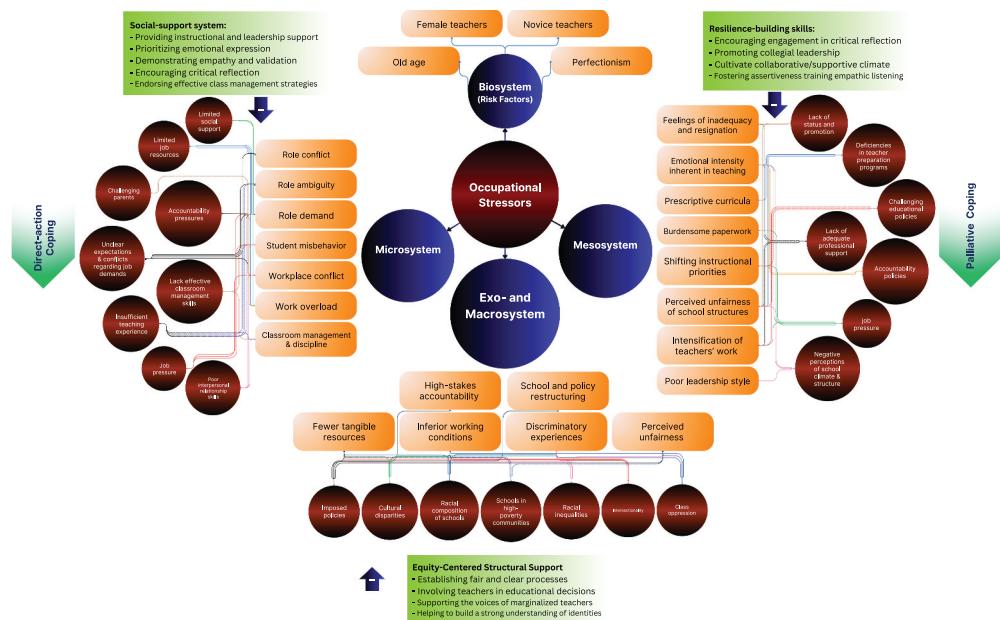


**Figure 2.** Overview of identified stressors, intensifying factors, and practical recommendations.

distinctive differences, educational institutions can better support teacher well-being and enhance overall job satisfaction.

School leaders play a pivotal role in cultivating a school culture that prioritises work-life balance and perceived fairness within the system (Ghasemi et al. 2023; Herman et al. 2023). Similarly, school psychologists contribute to this ecosystem by promoting a positive school climate and leading initiatives to implement preventive measures for teachers. Students indirectly benefit from enhanced teacher well-being when school psychologists offer effective academic guidance and behavioural/emotional support to teachers, which helps mitigate stressors in the classroom environment and improves relationships in the mesosystem.

Thus, the primary responsibility of school psychologists in fostering teacher resilience lies in their ability to influence school environments. While their direct interventions can enhance teacher resilience, their ability to affect broader ecologies should not be under-estimated. School psychologists are well-positioned to foster school-wide initiatives that stimulate positive behavioural management and prioritise mental health and well-being for the entire school community. Moreover, recognising the heightened need for inter-personal support and mentorship among novice teachers in their school environments, school psychologists can provide behavioural consultation to support classroom manage-ment self-efficacy and improve teacher-student relationships (see Herman et al. 2023). This targeted support contributes to building teachers' confidence and resilience, ulti-mately enhancing their teaching effectiveness. Such interventions may also address challenges within microsystem components, including deficiencies in teacher prepara-tion programmes and the emotional intensity of teaching within the organisational domain (Bondy et al. 2007; Dicke et al. 2015; Ghasemi et al. 2023).

## The significance of higher-order systems

A substantial body of literature emphasises the potential of lower-level system activities (e.g. relationship-building, collegial leadership, professional development) to alleviate distress and enhance teachers' performance. However, the successful implementation of these initiatives depends on more than individual effort, requiring robust support from institutional and higher-order systems. Placing the burden solely on teachers without proper support structures can lead to overwork and increased occupational stress. Thus, ensuring adequate interpersonal and institutional support at the exosystem and macro-system levels is crucial to making these strategies accessible, applicable, and manageable for teachers.

The Crossover Theory (Westman 2001) offers a compelling lens to understand how stress at the higher-order levels, such as the exosystem and macrosystem, can permeate lower-order systems, significantly impacting teachers' well-being. Cultural norms and community values within the macrosystem can shape the expectations and pressures placed on teachers, adding to their stress. Additionally, policies specified by decision-makers at these higher-order levels often transmit distress to the educational environ-ment, influencing teachers' emotional health and job satisfaction. For instance, policies mandating extensive administrative duties or high-stakes testing can create a ripple effect of stress, burdening teachers with increased workload and pressure. This stress can cross over to the microsystem level, affecting classroom dynamics and teacher-student

relationships. Thus, the decisions made at the (exo)macrosystem level have profound implications for the inner ecological systems, highlighting the necessity of thoughtful and supportive policymaking to promote teachers' well-being and, by extension, their performance and student outcomes

The review highlighted the substantial influence of community services, societal structures, and government policies in making such changes possible in facilitating transformative changes. More specifically, the review unveiled the multiplicative effects of race, racism, and racial privilege on teacher stress, calling for an intersectionality perspective within the (exo)macrosystem (Aujila-Bhullar 2018; Rauscher and Wilson 2017). Policies aimed at reducing professional isolation, enhancing representation, and fostering stronger professional networks are crucial steps in promoting diversity and inclusivity, recognising the dynamic interplay across different ecological layers (Herman et al. 2023; McCarthy et al. 2023).

## Implications

This systematic review resonates with the broader research and theory highlighting teachers' integration into an ecosystem influenced by both proximal and distal aspects of their personal lives, work environments, and the educational system. By identifying malleable factors related to occupational stress, this review offers administrators and districts valuable insights to implement targeted supports or policies aimed at reducing teacher stress. Educational policymakers can leverage data to assess stress prevalence, develop clear policies, deliver school-wide training for teachers, introduce evidence-based prevention programmes, and strengthen organisational support through professional workshops to bolster teaching skills and teachers' mental health.

Improving teacher socioemotional competence and providing systematic support for vulnerable educators are imperative steps in enhancing teachers' coping skills. Collaboration with experienced teachers is necessary and should be viewed as a shared responsibility in the mesosystem in order to develop functional coping strategies that manage and alleviate stress. The findings suggest unique stressors associated with teachers' roles and expectations in the microsystem, calling for administrators to promote collegial leadership, provide professional development, and establish transparent, achievable expectations. In higher-order ecological layers, supporting the voices of marginalised teachers, addressing educators' perceived unfairness in structural practices, and mentoring teachers to build a strong sense of identity can significantly mitigate teachers' stress and improve their performance.

## Strengths and limitations

While the literature search was systematically conducted, it is acknowledged that certain studies might have been overlooked due to specific inclusion and exclusion criteria. The review focused solely on peer-reviewed English-language papers published in the last two decades, potentially missing other relevant articles. Nevertheless, the strengths of this systematic review lie in enhancing the understanding of teachers' occupational stress and effective coping strategies across diverse bioecological systems. These insights may

contribute to improving educational systems in the 21ˢᵗ century by promoting and maintaining teachers' occupational well-being.

## Recommendations: a synthesis of effective approaches for teacher stress

Ecological models for occupational stressors provide a compelling unifying framework to guide research, policy, and practice. The five recommendations outlined in this section constitute key elements for assisting teachers experiencing occupational stress. These recommendations are intricately connected to the insights presented in this article and correspond with the four systems elucidated by Bronfenbrenner and Morris (2005) in their bioecological perspective.

We did not discuss coping strategies for occupational stress at the individual level, as environmental factors tend to exert a more substantial influence than individual characteristics, especially in populations consistently exposed to high stress levels (Ungar et al. 2013). Based on the findings of Oldfield and Ainsworth (2022), within the context of institutionalised adversity, teachers' coping processes are predominantly influenced by contextual factors rather than individual traits. Also, as noted by Ungar et al. (2013), 'individuals are not always the most important locus for change in complex systems' (p. 356).

### *Supporting teacher agency in microsystem*

Helping teachers to build and develop growth-enhancing relationships could serve as one of the strongest antidotes to occupational stress. From an ecological perspective, teacher agency originates from a combination of situational and structural elements associated with dynamic interactions between members of a system and the context, which either hinder or foster their capacity to effect change and improvement (Bellibaş et al. 2020). According to Le Cornu (2013), workplace relations can result in a sense of belonging, acceptance, and connectedness; which are the critical ingredients of resilience-building factors for teachers facing occupational stressors (see Oldfield and Ainsworth 2022). However, such relational dynamics should go beyond simple interpersonal connections to include the significance of identity roles, agency, and the broader ecological context that influences these systems (Day et al. 2006).

### *Addressing the relational dynamics in mesosytem*

It is crucial for both novice and experienced teachers to proactively form and nurture support groups, often organised as professional learning communities. These groups should be a standard component in every school, facilitating teachers' involvement in growth-fostering connections. Districts also play a pivotal role by implementing induction programmes and providing opportunities for teachers to form and develop complex relational networks between internal and external school systems. Through these networks, teachers can still engage their direct-action coping skills at this ecological level by influencing challenges and stressors in collaboration with significant stakeholders in a community (see Oldfield and Ainsworth 2022). Establishing such a broader set of

multilevel relational networks within the mesosystem can also empower teachers to become significant agents of change in local and higher-order policies and systems.

### Empowerment initiatives for teacher leadership in exosystem

Establishing a collaborative workplace environment among teachers, parents, school leaders, and policy-makers proves especially relevant in fostering teacher resilience when facing challenges, particularly in marginalised academic settings and high-poverty schools (see Ungar et al. 2013). Research suggests that fostering teacher leadership in novice teachers can improve school context by promoting collaboration in school events, collective planning and engagements, positive relational networks, a sense of agency, coping profiles, and interactions and mentoring (Bellibaş et al. 2020; Herman et al. 2023). Leadership roles facilitated by the school administrators and local districts can provide teachers with a sense of confidence to cope with workplace stressors, as well as a sense of autonomy and authority to develop plans and initiate school and systemic changes and improvements. For instance, empowering teachers and parents through forming supportive systems and learning-centred leadership can ultimately result in school improvement (Bellibaş et al. 2020).

### Providing supportive structures and policies in the macrosystem

Any dramatic change and improvement in the system requires modifications in the Macrosystem, the level teachers may have the least control and have to resort to a palliative coping style. However, teachers' resistance to oppressive policies, social norms, and discrimination can spark changes within the school and education system, reflecting a dynamic interaction between educators' agency and the structural constraints of the school environment (see Troman 2000). Also, re-establishing a new relationship between the educational system and schools to assist teachers in their agency to promote inclusion, equality, and equity by setting school norms, values, and ideologies can be an effective strategy to connect higher-order ecological systems and build a unified dialogue between government, education system, and schools.

Overall, acknowledging the principle of equifinality, which suggests that there are multiple pathways to achieve a goal in open systems, and recognising the diverse contexts in which teachers work, it becomes evident that a universal coping package for schools is unlikely to be effective. Instead, tailored approaches based on specific environmental conditions are necessary to address the unique challenges faced by educators (Oldfield and Ainsworth 2022).

### Disclosure statement

No potential conflict of interest was reported by the author(s).

### Notes on contributor

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