



Teachers' working conditions, wellbeing and retention: an exploratory analysis to identify the key factors associated with teachers' intention to leave

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Received: 2 October 2024 / Accepted: 29 November 2024 / Published online: 7 February 2025
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Abstract

This article investigates the key factors associated with Australian teachers' intentions to leave their roles by examining their working conditions, experiences of work and mental health through the concept of the psychosocial work environment. Utilising a dataset of 744 primary and secondary teachers in mainstream Australian government schools, we applied confirmatory factor analysis to validate the measurement model of teachers' working conditions and health and wellbeing. This was followed by stepwise regression on a total of 36 variables related to teachers' working conditions and health and wellbeing to select 14 key explanatory variables for our linear regression model. We employed mixed-effects and linear regression analyses to examine the association between 14 key variables and teachers' intentions to leave. Our analysis indicated that several factors were negatively associated with teachers' intentions to leave their roles, including commitment to the school, job satisfaction and meaning of work. In contrast, a greater number of factors were positively associated with intentions to leave, including emotional demands, conflict between work and family life, exposure to work-related violence, workload, stress and depressive symptoms. Furthermore, the analysis identified career stage as a significant factor associated with intention to leave, with mid-career teachers and late-mid-career/advanced-career teachers in the sample being more likely to express intentions to leave than their early career counterparts. By drawing on the concept of the psychosocial work environment and considering working conditions, experiences of work and mental health, this study identifies key factors that are worthy of further research attention, provides a broad, exploratory conceptual approach to understand how these variables are interconnected and underscores the necessity of holistic integrated approaches to promoting teacher retention.

Keywords Teacher retention · Teacher attrition · Teacher wellbeing · Working conditions · Psychosocial work environment · Mental health

Introduction

Post-pandemic, teacher shortages persist in Australia and many other countries (UNESCO, 2023). The Australian Minister for Education has argued that ‘Australian schools are facing unprecedented teacher supply and retention challenges’ (Australian Government, 2022, p.3). Modelling of teacher supply and demand indicates that the shortages could worsen over the coming years; the demand for secondary teachers is expected to exceed the supply of new graduate teachers by around 4,100 between 2021 and 2025 (Australian Government, 2023). The prevailing policy response to workforce shortages in Australia, and elsewhere, has been to increase the supply of new teachers (Ingersoll & Tran, 2023). In Australia, this has involved the development of employment-based pathways, the recruitment of overseas teachers and the provision of financial incentives, such as reduced fees or scholarships (Australian Government, 2023).

However, over the last year, ‘keeping the teachers we have’ emerged as a key theme in Australian national workforce planning (Australian Government, 2023, p. 5). This reflects persistent concerns within the academic research literature regarding the need to focus on teacher turnover—as well as teacher supply—as a primary contributor to teacher shortages (Carver-Thomas & Darling-Hammond, 2019; Casely-Hayford et al., 2022; Ingersoll, 1997). Recent evidence indicates that a significant number of Australian teachers are planning to leave the profession. For example, the proportion of Australian classroom teachers reporting that they plan to leave the profession before retirement has increased considerably over recent years, from less than a quarter (22.25%) in 2020 to more than a third (34.21%) in 2022 (AITSL, 2023). Furthermore, between 2018 and 2022, the proportion of teachers reporting that they intend to remain in the profession for only one year increased from 9 to 13%, and the proportion intending to remain for 2–4 years increased from 17 to 23% (AITSL, 2023). Other nationwide studies of Australian teachers have determined that a significant proportion of the profession thinks about or plans on leaving (Heffernan et al., 2022).

The retention of teachers is critical for the sustainability of the Australian teaching workforce and the stability and efficacy of the school system. High teacher turnover detrimentally affects student learning (Ladd & Sorensen, 2017) and can lead to significant costs (Garcia & Weiss, 2019). Teacher attrition compromises education quality, leading to out-of-field teaching (Hobbs, et al., 2022), multi-grade classrooms and costs associated with training new teachers. While changing schools offers teachers valuable experiences and opportunities for professional growth, it creates challenges, such as financial costs and the loss of school-specific knowledge (Garcia & Weiss, 2019; Ronfeldt et al., 2013). For example, Gibbens et al. (2021) found that teacher turnover disrupts student academic achievement because new teachers often lack the school-specific expertise needed to effectively support students. In addition, high turnover can negatively impact on the organisational culture within schools by increasing organisational instability, affecting social relationships and a creating diminished sense of community among staff (Borman & Dowling, 2008; Kelchtermans, 2017).

Existing research into teacher turnover and teachers' career intentions has identified a wide range of factors that are associated with teacher turnover and intentions to leave, ranging from issues associated with education policies and the status of the teaching profession, such as standardisation, performance cultures and systems of accountability (Nguyen et al., 2019; Perryman & Calvert, 2020), to school policies, conditions and characteristics, including heavy workloads and the emotionally demanding nature of the work (Heffernan et al., 2022; Rahimi & Arnold, 2024). Student, school and teacher characteristics, teacher satisfaction, morale and motivation are also factors, as well as teacher mental health and wellbeing (Madigan & Kim, 2021; Nguyen et al., 2019; Rahimi & Arnold, 2024). These studies demonstrate that teachers' experiences of their work, the work environment in schools and teacher health and wellbeing are critical factors in shaping teachers' career plans. It is important to note that while turnover intentions are a strong predictor of actual turnover, they do not always result in it. Various factors, such as changes in job conditions, new opportunities, or personal circumstances, can alter an employee's decision to leave or stay (Grissom et al., 2016).

The existing research literature lays a crucial foundation for understanding the relationships between various factors and teacher turnover intentions, along with the depth of their associations. A significant next step involves exploring turnover theories that provide insights into the reasons behind teachers' intentions to leave or stay. Ingersoll and Tran (2023) highlight that concepts like employee supply, demand and turnover are central in organisational theory and the sociology of organisations and occupations. However, they observe that attempts to apply theoretical frameworks from organisational theory, organisational psychology and the sociology of organisations to education staffing issues are scarce (Ingersoll & Tran, 2023).

Although there are studies that utilise theories and frameworks that draw on organisational theory and models of the work environment to explore teachers' career intentions (Collie, 2023), studies that account for the complexity of the work environment by analysing the relationship between a wide range of variables and intention to leave are limited (Rahimi & Arnold, 2024). In this paper, we draw on the concept of the psychosocial work environment from the field of occupational health and organisational psychology to broadly examine the relationships between teachers' working conditions, teacher mental health and teachers' intentions to leave.

The psychosocial work environment and teachers' career intentions

The psychosocial work environment refers to the interplay between the social, psychological and organisational aspects of the workplace that influence employees' mental, emotional and physical health and outcomes such as turnover, absence and illness (Stansfeld and Candy, 2006; Rugulies, 2019; Theorell et al., 2015). It encompasses a range of factors, including job demands and workload, control over work tasks, support from supervisors and colleagues, organisational culture and climate, recognition and rewards, opportunities for growth and development and the balance between work and personal life. In schools, these elements of the work environment significantly impact staff experiences, stress levels and overall health and wellbeing

(Dicke et al., 2018; Riley et al., 2021). For example, the school environment plays a crucial role in shaping teacher self-efficacy and job satisfaction, with key factors such as principal support being particularly significant (Aldridge & Fraser, 2016).

There are numerous models of the psychosocial work environment, including the Job Demands-Resources (JD-R) model (Bakker et al., 2003), Effort-Reward Imbalance (ERI) model (Siegrist, 2016) and the Demand-Control (or Job Demand-Control, JDC) model (Karasek, 1979). Each of these models emphasises various aspects and offers insights into how work impacts employee health, wellbeing and outcomes. For example, there is considerable evidence within the JD-R literature that demanding work environments can lead to burnout and decreased organisational commitment, while job resources can buffer the negative effects of job demands and increase job satisfaction and engagement (Bakker et al., 2003). Applying the JD-R model to examine teachers' intentions to leave, Collie (2023) has demonstrated that experiencing positive relationships with colleagues is associated with lower turnover intentions among teachers while having leaders who limit teacher autonomy and experiencing time pressure at work were associated with higher turnover intentions.

One of the advantages of adopting these models is that it enables researchers to assess how work conditions impact on teacher wellbeing and career outcomes. This can help identify the key issues that influence teachers' decisions to leave. However, each model of the psychosocial work environment focuses on elements related to their theoretical origins, and they therefore omit potentially critical aspects that may be of importance to retention.

To examine the breadth and complexity of working life, there have been efforts to apply a multidimensional approach that integrates various theoretical models (e.g. Burr et al., 2019), including in the context of schools (Dicke et al., 2018). This approach acknowledges the complexity of working conditions and their interactions with workers (Elovania et al., 2022). In relation to teaching, Rahimi & Arnold (2024) draw on a broad conceptualisation of the work environment to demonstrate that there are critical differences in the work environments of teachers who report intending to remain in their roles and those who intend to leave their roles. Compared to teachers who reported intending to stay in their roles, teachers who planned to leave experienced higher levels of work-life conflict, higher workloads and greater emotional demands. They also reported lower levels of organisational justice, trust in management and recognition for their work (Rahimi & Arnold, 2024).

To begin to acknowledge the complexity of the teachers' work environments and experiences, we adopt an exploratory approach to our investigation. We investigate the relationships between many dimensions of the psychosocial work environment and psychosocial outcomes and teachers' intentions to leave. We bring these different dimensions together into a coherent framework by drawing on our earlier work into the conceptualisation of teachers' work and health (Rahimi & Arnold, 2024).

Theorising teachers' work, health and career intentions through a broad conceptualisation of the psychosocial work environment

Rugulies (2019) defines the psychosocial work environment as a crucial link in the causal pathway that connects economic, social and political structures to health and illness outcomes, mediated by psychological and psychophysiological processes. This conceptualisation of the psychosocial work environment establishes that it is shaped by both individual perceptions of work and broader societal and workplace structures (Rugulies, 2019). The pathway from macro-factors (economic, social, political structures and labour organisation) through workplace structures (job security, contracts and professional status) to individual and group psychosocial working conditions (job demands, quality of leadership and interpersonal relationships) leads to cognitive and emotional reactions as a result of individual experiences, psychophysiological changes and health-related behaviours, ultimately affecting the risk of physical and mental health issues and career outcomes (Rugulies, 2019) (see Fig. 1).

Applying Rugulies' framework to the teaching profession, we establish a conceptual model for investigating the impact of psychosocial work environments in schools, as well as teachers' experiences of work and mental health on their career intentions. From this perspective, psychosocial working conditions in schools, including aspects of work related to job demands, relationships and leadership, social capital, opportunities for development and organisational culture, have a significant impact on teachers' individual experiences of work. Teachers' experiences of their work refer to their perceptions, appraisals, evaluations and interactions with their jobs, including cognitive, emotional and interactional processes. This includes how well the job meets their expectations, aligns with their values and allows them to manage both professional and personal responsibilities,

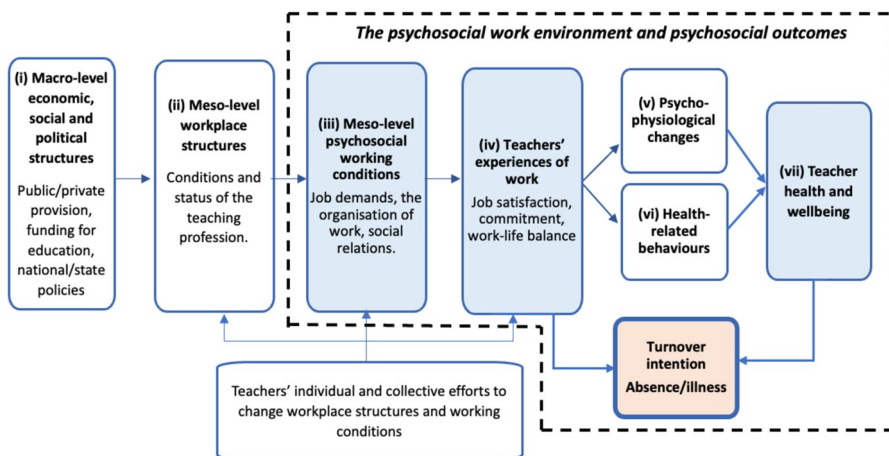


Fig. 1 Study focus: Teachers' psychosocial work environments and intentions to leave (Rahimi & Arnold, 2024, adapted from Rugulies, 2019)

how they think about and feel towards their job, as well as how overall they interact with their work responsibilities and environment.

In turn, these experiences lead to psychophysiological change and health-related behaviours which impact on their mental health and wellbeing. Both individual experiences of work and health and wellbeing impact on teacher job outcomes, such as absence and intention to leave. This element of the framework emphasises that working conditions in schools may be conducive or damaging to positive experiences of work and good health and wellbeing for teachers.

The framework also emphasises that working conditions in schools are a critical link between teacher experiences of work and health and wellbeing and broader macro-economic, -social and -political structures, such as national and state-level education policies and national funding for education, as well as meso-level employment and labour patterns such as teacher preparation, teacher professional learning, teacher pay and remuneration, teacher voice in decision-making and teacher policies. This element of the framework emphasises the importance of the broader school system, as well as the status and conditions of the teaching profession, on teachers' working conditions in schools.

Applying this broad and exploratory framework to teacher turnover and career intentions can significantly enhance our understanding of the complex and multi-dimensional nature of teacher wellbeing. Examining the different elements of the psychosocial work environment enables researchers to:

- (i) Explore the different elements of teacher wellbeing, including working conditions, experiences at work and health outcomes, acknowledging that these are influenced by the complex interplay of societal, workplace and individual factors.
- (ii) Identify the specific elements of teachers' working conditions, individual experiences and wellbeing that are most strongly associated with teachers' career intentions, whilst acknowledging that these are situated within broader issues related to the teaching profession and society.
- (iii) Examine interrelationships between teachers, their working conditions, the teaching profession and broader social, political and economic issues. The framework emphasises that these elements are interconnected and shape one another rather than being discrete and mutually exclusive.

For the purposes of this study, the analysis focuses on the relationship between teachers' intentions to leave and four key dimensions of the framework: working conditions in schools, teachers' experiences of their work, teacher characteristics and teacher wellbeing. Figure 1 illustrates the specific focus of the present study as well as the broader macro- and meso-level factors shaping teachers' working conditions and wellbeing.

The present study

This study examines the variables associated with teachers' meso-level (psycho-social) working conditions, teachers' experiences of their work, teacher health and wellbeing outcomes, and other key personal and contextual factors, to identify those that are most strongly associated with Australian teachers' job intentions. The study aims to inform theorisation about teacher turnover intentions by identifying, from a broad number of factors, the key variables associated with Australian teachers' intentions to leave their roles.

Method

Sample

Participants were recruited by sending email invitations to approximately 10,000 Australian teachers who were registered with Qualtrics panels. These teachers were invited to participate in the survey via a secure online link. Of those invited, 3,328 accessed the link. On the survey webpage, they were given a plain language statement detailing the study and a consent form that needed to be agreed upon before proceeding. At the beginning of the survey, a two-stage screening process was implemented to exclude those who did not meet the study criteria, such as teachers who were inactive, not employed in the government sector, or without teaching qualifications. Additionally, further screening was conducted to ensure the sample was representative of key demographics, including state or territory and school level. Those that did not complete all COPSOQ-III items were removed from the sample.

The final sample consisted of 744 teachers employed in Australian government mainstream primary and secondary schools. Small subsamples of teachers working in special schools or combined schools were removed to ensure a more homogenous sample focussed on mainstream government schools. Of the final sample of teachers, 24.2% were male and 75.8% were female. Regarding the level of schooling in which they work, 56.3% were primary school teachers, while 43.7% were teaching at the secondary level. In terms of employment type, the majority (73.9%) were employed full-time, 17.6% were part-time and 8.5% worked on a casual basis. Additionally, teachers with one to five years of experience constituted 35.7% of the sample, those with six to twelve years made up 37%, and teachers with more than twelve years of experience represented 27.3%. Geographically, 62% of the participants were from metropolitan areas, and 38% were from non-metropolitan regions (see Table 1).

As reported by the Australian Bureau of Statistics in 2022, teaching staff in Australia were almost evenly distributed between primary and secondary schools, with primary schools employing 156,019 teachers (50.8%) and secondary schools employing 151,021 teachers (49.2%). Secondary schools had a higher percentage of male teachers at 38.6%, compared to 18.0% in primary schools. Additionally, the workforce included a mix of employment types: 74% of teachers worked full-time and 26% were employed on a part-time/casual basis (Australian Bureau of Statistics, 2022; AITSL, 2023). According to the ABS (2022), the vast majority of teachers are located in NSW

Table 1 Demographic Characteristics of the Sample

Teacher Characteristics	Category	Proportion
Gender	Male	24.2%
	Female	75.8%
School Level	Primary School	56.3%
	Secondary Level	43.7%
Employment Type	Full-time	73.9%
	Part-time	17.6%
	Casual	8.5%
Years of Teaching Experience	1–5 Years	35.7%
	6–12 Years	37.0%
	More than 12 Years	27.3%
School Geographical Location	Metropolitan	62.0%
	Non-Metropolitan	38.0%
State	New South Wales	27.4%
	Victoria	25.3%
	Queensland	21.4%
	Western Australia	10.3%
	South Australia	7.7%
	Tasmania	3.6%
	Northern Territory	1.9%
	ACT	2.4%

(28%), Victoria (27%), Queensland (21%), Western Australia (11.5%) and South Australia (7%). Only a small proportion of the Australian teacher workforce is located in Tasmania (2.5%), The Northern Territory (1%) and ACT (1.5%). Overall, the sample is reasonably representative of the Australian government school teacher workforce.

Instruments

The data collection process drew on the Third Version of the Copenhagen Psychosocial Questionnaire (COPSOQ-III, see Burr et al., 2019) to measure key aspects of the psychosocial work environment, and teacher health and wellbeing (Burr et al., 2019). Measures of the psychosocial work environment included variables related to workload (quantitative demands), work pace, emotional demands, alongside protective factors like possibilities for development, the meaning of work, job predictability, job recognition, role clarity and conflicts, as well as the quality of leadership and social support from colleagues both within and outside the school (for a full list of measures see Table 2 and for a full copy of the COPSOQ-III instrument, please see Burr et al. (2019)). The study also explored teachers' individual experiences of their work through measures of job satisfaction, work-life conflict, job quality, commitment to the workplace and work engagement (see Table 2). Measures of mental health included burnout, stress, sleep troubles, depressive symptoms, cognitive stress symptoms and self-efficacy. In addition, several other key factors related to teaching were assessed, including experiences of work-related violence

Table 2 Measures and attributes used in the study

Level	Construct
Meso-level psychosocial working conditions	Quantitative Demands Work Pace Emotional Demands Predictability Recognition Role Clarity Role Conflict Quality of Leadership Possibilities for Development Social Support from internal Colleagues Social Support from external Colleagues Social Support from Supervisors Sense of Community at Work Illegitimate Tasks Organisational Justice
Teachers' experiences of work	Meaning of Work Job Satisfaction Work-life Conflict (work-life balance) Quality of Work Commitment to the Workplace Work Engagement
Teacher health & wellbeing	Self-rated Health Burnout Stress Sleeping Troubles Depressive Symptoms Cognitive Stress Self-efficacy Work-related violence
Teacher characteristics	School level Age Gender Employment Location Class size Years teaching

and contextual and personal attributes such as the level taught, age, gender, employment status, geographical location (metro vs, non-metro), number of students in class (1–25 and 25 +) and years of teaching experience (three levels).

In classifying teaching experience, it was recognised that teachers' career stages are not linear and that there are different definitions of career stage (Booth et al., 2021). For

our analysis, we employ three categories, early career (less than five years), mid-career (6–12 years) and advanced-mid-career and advanced-career teachers (> 12 years). Data collection also encompassed responses to seven distinct forms of work-related violence: bullying, threats of violence, physical violence, sexual harassment, conflicts and quarrels, gossip and slander, unpleasant teasing and social media harassment. The work-related violence results were derived by summing the instances where participants indicated that they had experienced any of these violence forms at work in the past twelve months. The scores were rescaled prior to the analysis of the data.

Intention to leave

To assess teachers' career intentions, the shortened version of the Turnover Intention Scale (TIS-6) (Bothma & Roodt, 2013) was employed. The TIS-6 is validated for its effectiveness in assessing the likelihood of employees staying or leaving their positions (Bothma & Roodt, 2013; Nemeth et al., 2024). Study participants responded to questions regarding their attitudes and intentions towards their role over the last 9 months. The items addressed issues related to the frequency of thoughts about leaving their current role, considering alternative employment, the degree of personal and goal fulfilment in their current job and their enthusiasm for their work. Responses were collated and rescaled to a 0 to 100 scale, providing a uniform index of each educator's likelihood of departing from their role. A score above 50 suggests a greater inclination towards leaving, whereas a score below 50 suggests the opposite (Bothma & Roodt, 2013).

Ethics

Ethics approval for this study was obtained from ****institution name**** prior to data collection. Participants were informed of the study's purpose and their rights, including the right to withdraw from the study at any time without consequences. Participation was voluntary. All responses to the survey were anonymised to ensure confidentiality. Data from the survey were stored securely on in a password protected location on an encrypted university server. Given the sensitive nature of the topics, links to support resources were made available to participants.

Data analysis

Validation

Confirmatory Factor Analysis (CFA) was employed to validate the factor structure of the scales of the psychosocial work environment and teacher health and wellbeing outcomes. Each measure from the Copenhagen Psychosocial Questionnaire (COPSOQ) used in this study was treated as a distinct factor in the confirmatory factor analysis (CFA). Each COPSOQ scale was modelled as a separate latent factor, with related

5-point Likert scale items loading onto each respective factor. The CFA analysis, which was performed using R, facilitated an assessment of the dimensionality of the scales and the degree to which the items loaded onto the expected factors, thereby ensuring the scales' construct validity within the context. Further, to ensure the reliability of our measures for intention to leave, we conducted a Cronbach's alpha analysis on the related items, confirming the internal consistency of the scale (Tavakol & Dennick, 2011).

Feature selection

To identify the primary factors associated with teachers' intentions to leave the profession, a stepwise regression analysis was employed. This method was selected due to its suitability for exploratory model building and its systematic approach to feature selection, ensuring that the final model includes the most significant variables while controlling for overfitting and multicollinearity (Ruengvirayudh & Brooks, 2016). A variety of variables related to working conditions, individual experiences and evaluations of work and health and wellbeing outcomes were analysed (see Table 2).

Stepwise regression was selected over other methods due to its ability to handle many potential predictors and its efficiency in refining models by excluding less significant variables. Although stepwise regression offers advantages in terms of model parsimony, it has the potential to omit relevant variables.

Further, the examination of collinearity statistics and correlational analysis indicated an absence of multicollinearity among the variables. This finding was validated by assessing multicollinearity through Tolerance and Variance Inflation Factor (VIF) assessments (see Tables 4 and 7).

Regression models

A general linear model (GLM) was applied to evaluate the overall effect of the key factors on teachers' intentions to leave (Dobson & Barnett, 2018). This was followed by mixed-effects regression modelling to account for the nested structure of the data, considering variations across teaching levels and years of experience. Model comparisons were undertaken to identify the most suitable analytical approach. This enabled the assessment of how various factors associated with intention to leave might vary among teachers at different career stages or working in different educational settings (primary and secondary). Further analysis, including sensitivity analysis and cross-validation, was carried out to affirm the robustness of the selected predictive model.

Results

Teachers' intention to leave

Table 3 presents the average scores for intention to leave among teachers in Australian government primary and secondary schools, categorised by key

Table 3 Average (mean) score on intention to leave (out of 100) for teachers in Australian government primary and secondary schools

Teacher Characteristics	Category	Mean Score
Teaching Level	Primary	48.2
	Secondary	50.4
Gender	Male	50.6
	Female	48.7
Employment type	Full-time	49.4
	Part-time/Casual	48.5
Years teaching	1–5 years	43.7
	6–12 years	52.1
	more than 12 years	52.3
Geolocation	Metropolitan	48.2
	Non-Metropolitan	50.8

Table 4 Stepwise feature selection summary

	β	Std Error	<i>t</i> value	Sig *	Tolerance	VIF
(Intercept)	53.690	4.205	12.768	<0.001 ***		
Quantitative Demands	0.058	0.036	1.578	0.115	0.528	1.894
Work Pace	0.050	0.033	1.508	0.132	0.612	1.633
Emotional Demands	0.112	0.032	3.483	<0.001 ***	0.569	1.757
Predictability	−0.044	0.030	−1.489	0.137	0.566	1.765
Job Satisfaction	−0.133	0.040	−3.298	0.00102 **	0.483	2.071
Work Family Conflict	0.114	0.031	3.664	<0.001 ***	0.512	1.952
Commitment to the Workplace	−0.417	0.035	−11.762	<0.001 ***	0.427	2.345
Work Engagement	−0.115	0.030	−3.896	<0.001 ***	0.721	1.388
Stress	0.051	0.036	1.438	0.151	0.379	2.637
Burnout	0.070	0.037	1.905	0.057	0.347	2.883
Depressive Symptoms	0.086	0.030	2.887	0.004 **	0.528	1.895
Work–related Violence	1.418	0.670	2.117	0.035 *	0.765	1.307
Class size	1.508	1.037	1.454	0.146	0.968	1.033
Years Teaching (up to 5, 6–12, 12+)	2.322	0.668	3.476	<0.001 ***	0.940	1.064

*Significance: 0 '***', 0.001 '**', 0.01 '*', 0.05 '.' 0.1 ' ' 1

demographic and professional characteristics. The differences in average intention to leave scores in relation to school level, gender, employment type and school geolocation are marginal. However, reported intention to leave was higher among those who have taught for more than five years compared to those who have been in the profession for one to five years.

Validity of the instrument

COPSOQ-III is a widely used instrument to assess the psychosocial work environment. It has been validated with working populations in Germany (Linke et al., 2021),

Sweden (Berthelsen et al., 2020), Spain (Moncada et al., 2014) and Denmark (Bjorner & Pejtersen, 2010), and with school leaders In Australia (Dicke et al., 2018).

To validate COPSOQ-III with Australian government primary and secondary teachers, confirmatory factor analysis (CFA) of the COPSOQ scales used in the study was conducted using R. Despite the significant chi-square statistic indicating a deviation from a perfect model fit, both the Comparative Fit Index (CFI) at 0.917 and the Tucker-Lewis Index (TLI) at 0.906 exceeded the acceptable threshold, suggesting an adequate fit to the observed data. The Root Mean Square Error of Approximation (RMSEA) was found to be 0.040, with a 90% confidence interval ranging from 0.038 to 0.041, and the Standardised Root Mean Square Residual (SRMR) stood at 0.049. These values provided evidence of the model's good fit (Brown, 2015). The model demonstrated robust parameter estimates across the latent variables, reinforcing the constructs' validity within the proposed framework. The results indicate that the model has a satisfactory fit with the observed data.

In addition, the reliability analysis of the six items measuring intentions to leave indicated a strong internal consistency with a Cronbach's alpha of 0.86 (Tavakol & Dennick, 2011). None of the individual items significantly detracted from the overall scale reliability. This indicated that the items provide a reliable measure of teachers' intentions to leave.

Key features

From a total of 36 variables, the regression determined the 15 most relevant variables for inclusion in the final model. The resulting model was highly significant ($F(14, 689) = 98.65, p < 0.001$), accounting for approximately 66.7% of the variance in intention to leave (Adjusted R-squared = 0.6604).

According to the model, a number of factors related to teachers' working conditions and health and wellbeing were significantly associated with intention to leave, including job satisfaction, commitment to the workplace, work engagement, work-life conflict, emotional demands, depressive symptoms and exposure to work-related violence. In addition, years of teaching experience was an important factor, with a significant association between mid- (5–12 years) and upper-mid (12+ years) career stages and teachers' plans to leave the profession. Class size, with categories delineating smaller (1–25 students) and larger (more than 25 students) classes, was included in the model due to its potential relationship with turnover intentions. The model, based on the selected features, explains a significant proportion of the variance in intention to leave (see Table 4).

In addition to identifying significant predictors, the analysis also evaluated multicollinearity among variables through Tolerance and Variance Inflation Factor (VIF) assessments. Tolerance values above 0.1 and VIF values well below 10 were observed for all key variables, indicating that multicollinearity was not a concern (Thompson et al., 2017). The absence of multicollinearity supports the reliability of the model's estimates and the accuracy of each predictor's contribution.

General and mixed-effects regression models

To account for the hierarchical structure of the data, one general linear regression model and two mixed-effects regression models were employed, one with random effects for teaching level (Mixed-effects Model 1) and another for years of teaching (Mixed-effects Model 2). A summary of the three models is presented in Table 5.

The general linear regression model demonstrated substantial explanatory power with an Adjusted R-squared value of 0.664. This result was closely aligned with the Marginal R-squared values of the mixed-effects models, which were 0.649 and 0.666 for models 1 and 2, respectively. This indicated that, despite the hierarchical structure of the data, the general linear model was as effective in explaining the variance in teachers' intentions to leave.

The significance levels and the effect sizes (β) of the predictors were consistent across models. This indicated that the general linear model could be considered reliable. Based on these results, the analysis focussed on the general linear model as it provided a direct comparison of the factors influencing teachers' intentions to leave within a single model.

As indicated in Table 5, 14 key variables related to the concept of the psychosocial work environment were included in the final model. Of the 14 predictors, commitment to the workplace emerged as the most important factor with a strong negative association with intention to leave. Being a mid-career teacher (5–12 years of experience), emotional demands, work-life conflict, job satisfaction, work engagement and being a more experienced teacher (more than 12 years) were other key variables strongly associated with job intentions. In addition, quantitative demands (amount of work), stress, depressive symptoms and work-related violence were other important predictors. While burnout and number of students in a class determined a positive estimate, the results were not statistically significant, indicating that, compared to other variables, they did not have a significant impact on job intentions within the sample.

Further analysis on the selected model

Moderation analysis

Based on the moderation analysis results (Table 6), significant interactions between work-life conflict and years teaching (for both mid and upper-mid career stages) were observed. The positive interaction effects for both mid-career and advanced-mid-career/advanced-career stages indicated that work-life conflict had a greater impact on job intentions as teachers progress through their careers. The analysis also revealed the significant main effects of commitment to the workplace, job satisfaction, emotional demands, work family conflict and work engagement on intention to leave, consistent with the predictors identified from the feature selection and the selected linear regression model.

Table 5 Factors associated with teachers' intentions to leave: general linear regression analysis and two mixed-effects regression models with random effects for years teaching in (1) and teaching level in (2)

Predictor	General Linear Regression Model				Mixed – effect Model (1)				Mixed – effect Model (2)			
	Est	SE	t value	Sig. *	Est	SE	t value		Est	SE	t value	
(Intercept)	54.52	3.966	13.745	0.000***	58.25	4.217	13.813		55.02	4.015	13.702	
Commitment to the Workplace	–0.43	0.033	–13.147	0.000***	–0.416	0.035	–11.796		–0.415	0.035	–11.744	
Job Satisfaction	–0.148	0.039	–3.794	0.000***	–0.138	0.04	–3.42		–0.138	0.04	–3.427	
Emotional Demands	0.126	0.031	4.114	0.000***	0.115	0.032	3.595		0.114	0.032	3.569	
Work Life Conflict	0.118	0.031	3.837	0.000***	0.116	0.031	3.761		0.115	0.031	3.736	
Work Engagement	–0.101	0.029	–3.466	0.001***	–0.108	0.029	–3.668		–0.107	0.03	–3.641	
Years Teaching 5 – 12 years (mid)	5.376	1.203	4.468	0.000***	–	–	–		5.27	1.206	4.369	
Teaching more than 12 years	4.123	1.333	3.092	0.002**	–	–	–		4.271	1.335	3.201	
Quantitative Demands	0.08	0.034	2.318	0.021*	0.061	0.036	1.692		0.062	0.036	1.699	
Stress	0.078	0.036	2.157	0.031*	0.075	0.036	2.074		0.076	0.036	2.082	
Depressive Symptoms	0.077	0.029	2.62	0.009**	0.083	0.03	2.803		0.085	0.03	2.851	
Violence	1.437	0.666	2.159	0.031*	1.417	0.666	2.127		1.411	0.666	2.119	
Burnout	0.059	0.035	1.662	0.097	0.051	0.035	1.432		0.051	0.036	1.44	
No. of students in class	1.194	1.034	1.155	0.249	1.237	1.035	1.196		1.231	1.035	1.189	
Predictability	–	–	–	–	–0.041	0.029	–1.399		–0.042	0.029	–1.409	
Work Pace	–	–	–	–	0.04	0.033	1.19		0.039	0.033	1.17	

* Significance: 0 '****', 0.001 '***', 0.01 '**', 0.05 '*', 0.1 '+', 1

Table 6 Moderation analysis: interactions between years of experience and psychosocial predictors of teachers' intentions to leave

Predictor	Interaction With	Estimate	Std. Error	<i>t</i> value	<i>p</i> value*
Commitment to the Workplace	—	−0.494	0.064	−7.686	<0.001***
Job Satisfaction	—	−0.182	0.073	−2.511	0.012*
Emotional Demands	—	0.243	0.045	5.404	<0.001***
Work Life Conflict	—	0.124	0.047	2.626	0.009**
Work Engagement	—	−0.128	0.053	−2.407	0.016*
Work Life Conflict	Years Teaching 2	0.152	0.065	2.354	0.019*
Work Life Conflict	Years Teaching 3	0.184	0.071	2.6	0.01*

*Significance: 0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 '' 1

Cross-validation and sensitivity analysis

To assess the robustness of the results, a sensitivity analysis was conducted by excluding key predictors. For example, a modified model, after omitting three key variables—Work Pace, Predictability, Violence—showed a slight adjustment in the coefficients of the remaining predictors, with the Adjusted R-squared changing marginally from 0.6641 to 0.6617. This demonstrated that excluding the variables had a minimal effect on the model's explanatory power and underlined the reliability of the key predictors in determining teachers' intentions to leave.

In addition, we conducted a tenfold cross-validation, repeated 5 times. The model demonstrated a Root Mean Squared Error (RMSE) of approximately 13.92, an R-squared value of 0.642 and a Mean Absolute Error (MAE) of about 11.12. These metrics collectively indicate a moderate fit of the model, explaining around 64.2% of the variance in the intention to leave, with the RMSE and MAE providing insights into the average prediction errors. The cross-validation process, by leveraging multiple data subsets, offered a comprehensive evaluation, suggesting the model's predictive stability across different segments of the data.

Figure 2 provides a revised visual representation of the analysis, highlighting the complex relationships between key variables influencing teachers' experiences of work, working conditions, mental health and their intentions to leave. Despite not accounting for career stage, which could also affect teachers' intentions to leave as shown in the analysis, the interconnected approach captures dynamic and reciprocal interactions between variables. This supports an understanding of the psychosocial work environment as a dynamic system of interdependent elements rather than isolated characteristics (Elovainio et al., 2022).

Discussion

Drawing on a sample of 744 Australian school teachers, this analysis identified 14 key variables that explained a significant proportion of the variance in teachers' intention to leave. The final linear model, devoid of hierarchical structuring, was highly significant, explaining approximately 66.4% of the variance in intentions

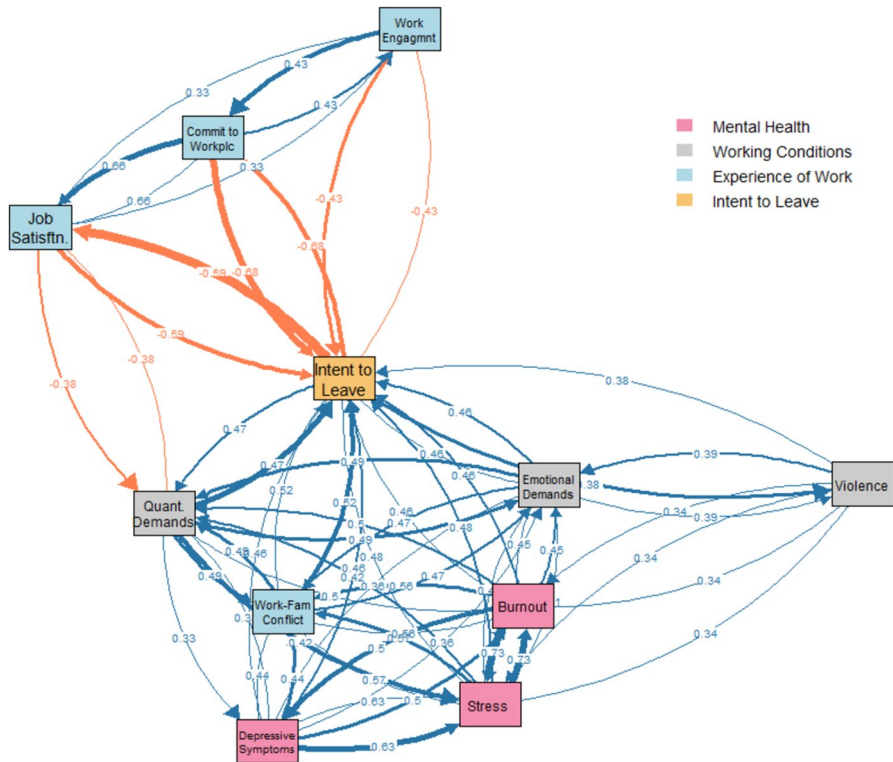


Fig. 2 Psychosocial work-related factors affecting teachers' intentions to leave

to leave confirming the model's strong fit. This demonstrates the importance of a broad multidimensional approach to examining teacher turnover intentions.

Recent public and media discussions about teacher shortages in Australia have focussed on teacher burnout as the major factor driving teacher attrition (SBS News, 2024; Truu, 2022; Withers, 2024). However, while burnout and other mental health issues are critical, our analysis presents a more complex picture of why teachers consider leaving their roles. Our analysis indicates that motivational, emotional, career-related, mental health, workload and safety-related factors are all important in shaping teachers' intentions to leave or remain in their roles.

In alignment with other research, motivational, affective and emotional factors related to teachers' experiences of their work were key, with teachers' commitment to their work emerging as the most significant variable associated with intention to leave (Allan & Meyer, 1990; McInerney et al., 2015; Ware and Kitsantas, 2011). While turnover intention and commitment to work are related constructs, they are not the identical. Turnover intention refers to teachers' conscious and deliberate intentions to remain or leave their schools, while commitment reflects a teacher's affective engagement with their schools, including the degree of emotional attachment and identification with it (Chan et al., 2008; Meyer & Allen, 1991).

For teachers, commitment is shaped by many different factors, including their individual and collective self-efficacy (Cansoy, Parlar & Polatcan, 2020; Chesnut & Burley, 2015), levels of work-related stress (Buettner, Jeon, Hur & Garcia, 2016), labour market conditions and the broader the economic climate (Watt et al., 2012). Furthermore, school leaders play a critical role; leaders who foster collaboration, show appreciation for teachers and support professional learning, can enhance teacher commitment (Cansoy, Parlar & Polatcan, 2020; Heck & Hallinger, 2014).

Other variables related to teachers' experiences and evaluations of their work were also significantly associated with intention to leave, including work-life conflict, job satisfaction and engagement at work. This supports prior research demonstrating that the balance between teachers' professional and personal lives, along with the degree of satisfaction (Blömeke et al., 2017; Sims & Jerrim, 2020) and engagement (Li & Yao, 2022) they experience in schools, plays a significant role in shaping their decisions to stay or leave their jobs. Together, these results indicate that teachers think about leaving their roles when they experience a sense of misalignment, disconnection and lack of fulfilment in their roles. Feeling undervalued, under-supported or misaligned with their school appears prompt teachers to re-evaluate their career plans.

Despite being more conceptually distal to intentions to leave than other variables in the model, several elements of the psychosocial work environment were determined to be significant to teachers' job intentions, including demands and safety. Emotional demands, workload and experiences of work-related violence were identified as strongly associated with teachers' intentions to leave. Emotional demands emerged as a key predictor in the model and were found to be more important than workload—an element of work that is consistently highlighted in discussions of teacher stress and turnover. Emotional demands are inherent to teaching and a critical element of teachers' day-to-day experiences with students, parents and colleagues. These findings build on evidence that teachers who are frequently exposed to situations that evoke strong emotions are more likely to experience mental health issues, such as burnout (Tuxford & Bradley, 2015a, 2015b), by demonstrating that they are also strongly associated with teachers' intentions to leave their jobs. Overall, these findings demonstrate that working conditions in schools have significant, direct associations with teachers' career intentions. When the emotionally demanding nature of teaching work becomes excessive, when workloads are too high or teachers encounter work-related violence, the likelihood of planning to leave their role increases.

In our model, two key mental health outcomes, depressive symptoms and stress, were key predictors of teachers' intentions to leave their role. There is strong evidence that consistent exposure to occupational stress can lead to mental health problems, decreased job satisfaction, and may result in decisions to leave the profession (Brackett et al., 2010; Wang et al., 2015). Depressive symptoms, burnout and stress can all influence an individual's career intentions and increase their desire to seek alternative opportunities (Bakker et al., 2003; Li & Yao, 2022). In contrast to other studies finding that burnout is the most important predictor of turnover intention (Li & Yao, 2022), it was a positive but not significant predictor of intention to leave in the current study. Overall, the mental health of teachers plays an important role in shaping their job intentions.

The only teacher characteristic that was associated with intention to leave was career stage. Gender, age and employment type were not significantly associated

with intention to leave. However, being a mid-career teacher (6–12 years of experience) or an advanced-mid-career/advanced-career teacher (with more than 12 years of experience) was strongly associated with intention to leave. The analysis determined that for teachers in these two mid-career stages, work-life conflict had a significantly stronger association with their intentions to leave compared to early career teachers (Booth et al., 2021). The results were more significant for teachers in the most advanced career-stage group (more than 12 years), indicating that work-life balance may become progressively more significant. These findings indicate that career stage and work-life balance are critical to teachers' job intentions. Personal responsibilities, such as caring responsibilities which may include parenting or caring for elders, may increase for mid- and advanced-career teachers making it difficult to reconcile the demands of teaching work with family commitments.

The findings emphasise the significant role of factors related to teachers' work environments, including their experiences of work (affect, emotion and motivation), working conditions (demands and safety), mental health and career stage in shaping turnover intentions. This highlights the complex nature of teacher retention, as multiple, interconnected elements of their professional work and lives influence their decisions to leave or stay. Teachers' job intentions are shaped by a complex web of psychosocial working conditions, factors and outcomes, which are, in turn, influenced by systemic, profession-specific, school-specific and individual factors. The results indicate that reducing teacher turnover requires holistic approaches that improve both the broader context of the teaching profession, including its status, autonomy and influence, as well as working conditions in schools and individual psychosocial outcomes. There is evidence that factors external to schools such as teacher pay, education policies and reforms play a critical, direct role in teacher retention (Nguyen et al., 2019). This demonstrates the systemic nature of the problem and calls for system-wide response, involving policymakers, system administrators, school leaders and teaching professionals to create sustainable policies, systems and working conditions that support teachers to remain committed, healthy and content in their roles.

Models that promote workplace health by reducing the risk of harmful working conditions (e.g. excessive demands and work-related violence), promoting the positive aspects of work (e.g. fostering commitment and satisfaction) and managing ill health (stress, depression and burnout) could be particularly useful (LaMontagne et al., 2016). Given that teachers' working lives in schools are shaped by external regulations, policies and their professional status, it is essential for policymakers and school system administrators to ensure that efforts to address these aspects of workplace health are applied at both the school and the system level. A systemic approach that encompasses the policies and mandates shaping teachers' work, the working conditions within schools and teachers' individual needs is essential for creating a supportive, sustainable environment for the Australian teaching profession.

Limitations and future directions

The analysis only identified the key variables associated with teachers' career intentions without exploring the key mechanisms or interactions that could explain how they

influence one another. Further research is required to examine the potential moderating and mediating variables that contribute to teachers' plans to leave. The cross-sectional design drew on correlational and regression approaches to analyse the relationships between psychosocial working conditions and outcomes and teachers' job intentions. However, these methods are insufficient to confirm causality. Longitudinal studies of the psychosocial work environment, psychosocial outcomes and career intentions are required to understand how changes in these factors over time lead to turnover intentions. Furthermore, this study concentrated solely on teachers in Australian government mainstream schools.

Further research is required to examine whether these variables consistently predict intention to leave across different populations of teachers, especially those in special education settings and non-government schools. Overall, future research should employ diverse methods, including qualitative approaches, to better understand the interconnected and reciprocal relationships within the work environment. In particular, developing theories and models of the psychosocial work environment that are explicitly designed for the teaching profession is crucial. By identifying the key stressors and supports that are unique to teaching, these profession-specific approaches could provide more relevant, profession-specific insights into the factors influencing teacher wellbeing and retention.

Conclusion

This study draws on a broad conceptualisation of the psychosocial work environment to identify the 14 key elements in teachers' working conditions, experiences at work and health and wellbeing that impact on their job intentions. The analysis supports the notion that a range of factors are important. Those related to individual job experiences and evaluations emerged as key predictors, with workplace commitment playing a critical role. Emotional demands were a crucial component of teachers' working conditions associated with intention to leave, and stress and depressive symptoms were important mental health outcomes associated with teachers' job intentions. Teachers' career stage was another key predictor of intention to leave. Taken together, the results demonstrate that the challenges teachers face at work, their experiences and evaluations of their work, their career stage and their mental health are important considerations in efforts to understand and respond to teachers' future job plans. The analysis contributes insights into the aspects of teachers' working conditions and experiences of work that matter most to educators' career plans. This study attempts to provide a comprehensive framework to further understand why teaching work and its related outcomes can lead to intentions to leave. The research also highlights the need for holistic approaches that recognise the need for systemic, professional and workplace change to prevent teachers from wanting to leave.

Appendix

See appendix Tables 7 and 8.

Table 7 Correlation matrix of selected psychosocial and mental health variables

	QD	WP	ED	PD	JS	WLC	CW	WE	ST	BU	DS	VL
Quantitative Demands (QD)	1											
Work Pace (WP)	0.49	1										
Emotional Demands (ED)	0.49	0.5	1									
Predictability (PD)	-0.36	-0.09	-0.23	1								
Job Satisfaction (JS)	-0.38	-0.09	-0.27	0.55	1							
Work – Life Conflict (WLC)	0.49	0.4	0.47	-0.22	-0.29	1						
Commitment to Workplace (CW)	-0.32	0.05	-0.24	0.58	0.66	-0.28	1					
Work Engagement (WE)	-0.1	-0.02	-0.16	0.15	0.33	-0.3	0.43	1				
Stress (ST)	0.5	0.4	0.45	-0.28	-0.29	0.56	-0.22	-0.1	1			
Burnout (BU)	0.42	0.34	0.41	-0.22	-0.28	0.57	-0.24	-0.19	0.73	1		
Depressive Symptoms (DS)	0.33	0.18	0.36	-0.18	-0.3	0.44	-0.29	-0.28	0.5	0.63	1	
Violence (VL)	0.27	0.25	0.39	-0.19	-0.29	0.29	-0.26	-0.16	0.34	0.34	0.3	1

Table 8 COPSOQ III Construct Definitions

Construct	Definition (Burr et al., 2019)
Quantitative Demands	How much one has to achieve in one's work. It can be assessed as an incongruity between the amount of tasks and the time available to perform these tasks in a satisfactory manner
Work Pace	The speed at which tasks must be performed. Work Pace is a measure of the intensity of work
Emotional Demands	Dealing with or being confronted with other people's feelings and emotions at work. Other people comprise both people who are not employed at the workplace, e.g. customers, clients, or pupils and people employed at the workplace, such as colleagues, superiors, or subordinates
Predictability	Ability to avoid uncertainty and insecurity. This can be achieved if the employees receive the relevant information at the right time
Recognition	Recognition by leadership/management of your effort at work
Role Clarity	The employee's understanding of her or his role at work, i.e. content of the tasks, expectations to be met, and her or his responsibilities
Role Conflict	The potential inherent conflicting demands within a specific task and conflicts when prioritising different tasks
Quality of Leadership	The quality of managers' leadership in different contexts and domains
Possibilities for Development	Whether tasks are challenging and provide opportunities for learning, and thus provide opportunities for development not only in the job but also at the personal level. Lack of development can create apathy, helplessness and passivity
Social Support from internal Colleagues	Teachers' impressions of the possibility to obtain support from colleagues within the school if one should need it
Social Support from external Colleagues	Teachers' impressions of the possibility to obtain support from colleagues outside of the school if one should need it
Social Support from Supervisors	Teachers' impressions of the possibility to obtain support from the immediate superior if one should need it
Sense of Community at Work	Whether there is a feeling of being part of the group of employees at the workplace, e.g. if employees' relations are good and if they work well together
Illegitimate Tasks	
Organisational Justice	Whether employees are treated fairly. Four aspects are considered: First the distribution of tasks and recognition, second the process of sharing, third the handling of conflicts and fourth the handling of suggestions from the employees
Meaning of Work	The aim of work tasks and the meaning of the context of work tasks. The aim is 'vertical', i.e. that the work or product is related to a more general purpose, such as healing the sick or supporting student growth. The context is 'horizontal', i.e. that one can see how ones' own work contributes to the overall product of the organisation
Job Satisfaction	The employees' experience of satisfaction with various aspects of work

Table 8 (continued)

Construct	Definition (Burr et al., 2019)
Work-life Conflict (work-life balance)	The consequences of work on personal and family life. It includes conflict regarding energy (mental and physical energy) and conflict regarding time
Quality of Work	The employee's experience of the immediate output of their work
Commitment to the Workplace	The degree to which one experiences being committed to ones' workplace. The organisation or school is the focus
Work Engagement	A positive work-related state of fulfilment that is characterised by vigour, dedication, and absorption
Self-rated Health	The individual's assessment of their general health
Burnout	The degree of physical and mental fatigue/ exhaustion
Stress	A reaction of the individual that involves a combination of tension and displeasure
Sleeping Troubles	Sleep length, determined by e.g. sleeping in, waking up and interruptions of sleep, and quality of sleep
Depressive Symptoms	Symptoms which indicate depression
Cognitive Stress	Cognitive indicators of a sustained stress reaction of the individual
Self-efficacy	The extent of one's belief in one's own ability to complete tasks and reach goals
Work-related violence	Whether or not the employee experienced an incident of work-related violence in the last 12 months

Funding The authors declare that they have no known competing financial interests or personal relationships that could have appeared to influence the work reported in this paper

Ethical

All procedures involving human participants were approved by the Ethics Committee of Deakin University (approval number: 2019-341). Informed consent was obtained from all participants prior to participation in the study.

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