



Review article

## Resilience and mental health in practicing chilean teachers during the pandemic

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### ABSTRACT

The connection between resilience and psychological well-being, as well as the associations between various resilience profiles and well-being, remain unclear. This study investigated the resilience profiles of teachers and their links to psychological well-being and mental health symptoms. The data were gathered from 602 Chilean teachers who completed questionnaires assessing resilience, well-being, and mental health symptoms. The primary findings revealed a significant relationship between resilience and mental health, especially among experienced teachers who perceived their working conditions as better. This study provides compelling evidence supporting the notion that resilience can serve as a protective factor against mental health issues.

The complexity of the teaching profession is related to multiple factors, including the intensification of teaching work characterized by a progressive increase in the quantity of tasks and responsibilities assigned to those in this profession (Ávalos & Valenzuela, 2016), loss of autonomy and deprofessionalization (Draelants & Dupriez, 2018), low income (Mardones, 2019), and emotional overload (Robinet-Serrano & y Pérez-Azuanché, 2020) in the midst of a multifaceted, dynamic, and changing performance context (Hascher et al., 2021a) with high regulations that have implications for teachers' morale, commitment, and effectiveness (Ben Pérez & Flores, 2018). Given this background, and according to Derakhshan, Coombe, Arabmofrad, and Taghizadeh (2020), teaching has become one of the most demanding and stressful professions in the 21st century.

The COVID-19 pandemic disrupted teachers' personal and professional lives on an unprecedented scale, and available empirical evidence highlights a moderate to high prevalence of stress and mental health problems which worsened as an outcome of the COVID-19 pandemic. Research suggests that before the pandemic, teachers already showed lower levels of mental and physical well-being, satisfaction, and resilience (Lacomba-Trejo, Schoeps, Valero-Moreno, del Rosario, & Montoya-Castilla, 2022), and since the pandemic these figures have

dropped significantly (Berger, Quiñones, Barnes, & Reupert, 2022; Lizana, Vega-Fernández, Gómez-Bruton, Leyton, & Lera, 2021). While teachers often adopted a positive outlook and deliberately engaged in various activities to restore their well-being (Beltman, Hascher, & Mansfield, 2022), the pandemic placed unprecedented pressure on teachers; their quality of life showed a significant decrease during the pandemic compared to the pre-pandemic period (Lizana et al., 2021). Teachers reported higher levels of stress and lower levels of positive feelings (Billett, Turner, & Li, 2022), and the pandemic negatively impacted their personal and professional roles, morale, well-being, and self-efficacy (Fray, Jaremus, Gore, Miller, & Harris, 2022; Hascher, Beltman, & Mansfield, 2021a; Robinson et al., 2022). Also, symptoms of anxiety and depression appeared among teachers (Salinas-Falquez et al., 2022), underpinning the relationship between stress and mental health problems (Cortés-Álvarez et al., 2022; Sudibjo & Manihuruk, 2022).

Lizana and Lera (2022), reporting data from Chilean teachers, argued that the deterioration of mental health during the pandemic was associated with job instability due to financial uncertainty. Their research indicated that the risk of anxiety increased 2.08 times among women compared to men, which is consistent with previous research where women had higher rates of anxiety than their male counterparts.

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According to Lizana and Lera (2022), Chilean teachers before the pandemic revealed higher levels of emotional exhaustion compared to their Latin American counterparts, and they claimed that these figures worsened in the pandemic due to teleworking, the increase in working hours, and the difficulties in attaining a healthy work-life balance, mainly among women. Similarly, they reported an increase in depression and anxiety compared to previous studies, particularly in the case of female and young teachers. Therefore, the current problem cannot be only attributed to the pandemic. Concerning the influence of socio-demographic variables, the investigations carried out with teachers showed that female teachers with children who presented some chronic illness were more exposed to these symptoms (Cortés-Álvarez et al., 2022; Keim et al., 2022; Salinas-Falquez et al., 2022). Likewise, teachers in charge of the care of children and adults, and those who work in private schools, are those whose psychological well-being was most affected (Cabezas et al., 2022). These findings suggest a strong connection between teachers' stress and diminished mental health, which deepened due to overtime because of numerous teaching and administrative tasks. The issues described earlier regarding teachers' mental and physical health impact both the teaching profession and the quality of teaching (e.g., Granziera, Martin, & Collie, 2023; Madigan & Kim, 2021; Weißenfels, Klopp, & Perels, 2022; Wong, Ruble, Yu, & McGrew, 2017), so it is crucial to produce knowledge regarding protective factors against these phenomena. As such, resilience is seen as a capacity that can help teachers positively cope with daily stressors and experience a greater sense of control and ability to manage adverse events, sustain motivation to meet their objectives and, therefore, respond adequately to teacher job-related demands (Salinas-Falquez et al., 2022).

Teacher resilience has been recognized as an important field of research internationally, as interest has grown about what supports teachers, enabling them to remain in the profession and thrive in their work, despite challenging conditions (Beltman & Mansfield, 2018; Boon, 2020; Mansfield, Ebersöhn, Beltman, & Loots, 2018). This concept has been identified as a relevant factor in teacher retention, effectiveness, and well-being (Mansfield et al., 2018). *Teacher resilience* is understood as the process, capacity, or outcome of positive adaptation and continued professional engagement and growth in the face of challenging circumstances. In this context, resilience is defined as a dialectical relationship between the teacher and adverse situations that causes a positive transformation (Vallés & Clarà, 2022) – a multidimensional phenomenon (Beltman & Mansfield, 2018).

Recent research on teacher resilience has taken a social-ecological approach, claiming that contextual factors predominately influence individual factors (Ainsworth & Oldfield, 2019; Oldfield & Ainsworth, 2022). Resilience is determined by individual, situational, and contextual characteristics that dynamically interrelate to provide risk and protective factors. Individuals, by leveraging personal, professional, and social resources, not only recover, but can thrive professionally and personally, experiencing job satisfaction, positive beliefs, personal well-being, and continued commitment to their profession (Beltman & Mansfield, 2018; Boon, 2020; Peixoto, Wosnitza, Pipa, Morgan, & Cefai, 2018). Resilience in teachers is therefore understood as the everyday capacity of teachers to sustain their educational purposes and successfully manage the inevitable uncertainty inherent in their work (Gu, 2018).

Scholars have claimed that resilience is a complex, dynamic, and multidimensional phenomenon (Beltman & Mansfield, 2018; Mansfield, Beltman, Price, & McConney, 2012) that can be developed (Boon, 2020), nurtured, learned, and acquired (Gu, 2018). Therefore, it is assumed that teacher resilience can be enhanced over time through specific supportive systems and environmental factors where individual characteristics interact with contextual factors (Beltman, 2020; Beltman & Mansfield, 2018; Fernandes, Peixoto, Gouveia, Castro Silva, & Wosnitza, 2019; Hascher, Beltman, & Mansfield, 2021b; Peixoto et al., 2018). Based on the research carried out with teachers working in different

latitudes, similarities have been found regarding the protective and risk factors regarding teacher resilience. In this sense, it is suggested that empirical and conceptual work on resilience in adults, and particularly in novice teachers (Gu, 2018), is especially important to identify the fundamental personal and contextual elements that might strengthen and increase resilience (Wosnitza & Peixoto, 2018).

At the same time, it is crucial to emphasize the significance of studying teacher attrition and resilience throughout different stages of their careers. This is particularly relevant in countries experiencing a shortage of teachers, where attention should be given to the early years of teaching. Additionally, it is important to investigate veteran teachers, aiming to understand the factors that contribute to their sustained motivation and to explore the reasons behind their commitment to the teaching profession despite the mounting challenges and the changing working conditions they face (Flores, 2018; Gu, 2018).

Resilience can be enhanced through contextual conditions, including the characteristics such as compassion, responsiveness, mutuality, trust, and reciprocity of the relationships that teachers build with various actors in the educational community (Arcelay-Rojas, 2019; Fu et al., 2023; Guo, Liu, Zhao, & Wang, 2020; Kangas-Dick & O'Shaughnessy, 2020; Rizqi, 2017; Wilcox & Lawson, 2018). Similarly, Hurtubia Toro, Tartakowsky, Acuña, and y Landoni (2021) mentioned support, affection, assistance, empathy, active listening, humour, and trust as qualities of relationships that strengthen the capacity for resilience. These relationships encompass school leaders, colleagues, and students (Ainsworth & Oldfield, 2019; Arcelay-Rojas, 2019; Hurtubia Toro et al., 2021; Jin, Mercer, Babic, & Mairitsch, 2021; Ramakrishna & Singh, 2022).

Another contextual element pertains to institutional management, which includes characteristics specific to school organization, such as leadership styles, school culture, induction opportunities, professional development, and professional autonomy (Johnson et al., 2016; Villalobos & Assael, 2018). In this context, teachers recognize the important role of school leaders in creating a conducive environment for their work, where support and collaboration are present (Ainsworth & Oldfield, 2019; Ellison & Woods, 2019; Guo et al., 2020; Richards, Wilson, Holland, & Haegele, 2020; Wilcox & Lawson, 2018). Teacher resilience is associated with distributed leadership that promotes high teacher involvement in decision-making (Flores, 2018; Kilroy, Flood, Bosak, & Chênevert, 2017).

Well-being is a central element that should be promoted among teachers, especially considering that lower levels of well-being negatively affect mental health, commitment to work (Dreer, 2022), and the quality of the education they provide (Cortés-Álvarez et al., 2022). The dimensions of *human well-being* include: a) self-acceptance, which is considered a central characteristic of mental health and optimal functioning, referring to the attitudes one has towards one's self; b) personal growth, which refers to continuous development and self-realization throughout life; c) positive relationships, which corresponds to the capacity to establish positive interactions with others; d) autonomy, which corresponds to the regulation of behaviour from within; e) purpose in life, which is linked to the establishment of goals that direct existence; and f) mastery of the environment, which implies active participation in and control over the environment (Hepburn, Carroll, & McCuaig-Holcroft, 2021).

In line with Ryff's (2018) eudaimonic model of well-being, recent studies have confirmed the role of autonomy, purpose in life, positive social relationships, personal growth, and self-acceptance in the psychological well-being of teachers (e.g., Billaudeau, Alexander, Magnard, Temam, & Vercambre, 2022; Ebersold, Rahm, & Heise, 2019). Therefore, we might expect that the increase in these protective factors will strengthen teachers' psychological well-being (Rajesh et al., 2020).

From a transactional and social-ecological perspective, the relationship between well-being and resilience is seen as bidirectional and dynamic (Cefai, 2021; Kaldas & Foody, 2022; Ungar, 2012). This theoretical framework posits that well-being and resilience influence each other, and both impact mental health (e.g., anxiety, depression).

Factors associated with resilience to depression and/or stress include positive emotions and optimism (Southwick, Vythilingam, & Charney, 2005), and higher levels of well-being can enhance resilience, enabling individuals to effectively cope with stressors and reduce the risk of anxiety and depression (Fredrickson, Tugade, Waugh, & Larkin, 2003). An additional theoretical perspective suggests mediating factors that might buffer the relationship between well-being, resilience, anxiety, and depression. For instance, social support, self-efficacy, and emotion regulation skills can influence an individual's well-being and resilience, thereby impacting their vulnerability to anxiety and depression (Lee, Ahn, Jeong, Chae, & Choi, 2014; Zhang, Brown, & Rhubarb, 2023).

It is widely accepted that resilience and well-being are distinct constructs, although they share certain commonalities (Hascher et al., 2021a). In a comprehensive analysis of studies where both resilience and well-being were examined concurrently, Hascher et al. (2021a) showed that some research treated these constructs as similar, while another set of studies considered them interrelated, with well-being being seen as a constituent of resilience in certain cases, and resilience being regarded as equivalent to well-being in others. A third group of studies recognized well-being as a significant factor contributing to the development of resilience. Last, a fourth group of studies identified resilience as crucial for the maintenance and growth of well-being, particularly among teachers. The critical aspect of this association is that different aspects of resilience may differently contribute to mental health and well-being. Therefore, different styles of resilience may contribute in different ways to mental health and well-being.

In summary, a growing body of research has provided evidence for the positive relationship between teacher resilience and well-being (e.g., Fletcher & Sarkar, 2013; Gu & Day, 2007). Empirical data from studies emphasize that resilience is positively associated with psychological well-being, therefore developing and nurturing teacher resilience can contribute to better mental health and overall well-being (e.g., Day & Gu, 2014; Gu & Day, 2007). Nonetheless, it was not clear which aspects of resilience (i.e., resilience styles) are key to improving mental health and well-being.

Like resilience, psychological well-being in teachers has appeared related to teaching experience in such a way that less experienced educators have lower mental health and well-being than the most experienced staff (Berger et al., 2022). Therefore, resilience and well-being are considered attributes that can help develop better stress management (Zilioli, Slatcher, Ong, & Gruenewald, 2015) and better mental health. In fact, recent studies carried out in the context of the COVID-19 pandemic showed that lower levels of resilience are associated with greater symptoms of anxiety, depression, stress, and exhaustion (Berger et al., 2022; Keim et al., 2022; Salinas-Falquez et al., 2022). Despite the evidence generated about the impact of the pandemic on the mental health of teachers, there is a percentage of teachers who increased their resilience and sense of well-being during COVID-19 (Berger et al., 2022).

However, the interaction between resilience and psychological well-being remains unclear, as does the existence of distinct resilience profiles that exert varying influences on psychological well-being and mental health. Therefore, this study had two objectives: (1) Assess the correlation between well-being, mental health, and resilience, and (2) investigate potential resilience profiles that may generate diverse patterns of psychological well-being. The rationale behind this approach lay in recognizing the multidimensional nature of resilience, which may give rise to profiles characterized by unique attributes not captured by global associations.

By understanding the significance of teacher resilience in countries like Chile, we can then explore the various factors that contribute to its development and maintenance.

Contributing to the research on teacher resilience in countries like Chile is important, especially considering that this field of research is still emerging (Díaz & Barra, 2017; Villalobos, 2018; Villalobos & Assael, 2018; Villalobos, Barría-Herrera, & Pasmanik, 2022; Villalobos & Flores, 2022), and generating knowledge about factors that can

promote quality retention is urgent, given the high dropout rates. In this context, the latest study conducted in Chile on this subject revealed that, on average, 9.45% of the teaching staff left the classroom each year between 2004 and 2020. Their departure can be attributed to three main reasons: 3% left temporarily; 3.2% assumed other positions within the school system, while 2.96% dropped out definitively from both the classroom and the school system. It is worth noting that 82.9% of the teachers who ultimately left did so the first time they left. Based on this evidence, it is projected that by 2026 there will be a deficit of 26,000 teachers nationwide (Elige Educar, 2022).

## 1. Method

### 1.1. Design

This study was conducted using a non-experimental, quantitative, descriptive, cross-sectional, and psychometric methodology (Hernández, Fernández, & Baptista, 2010). We adopted a questionnaire design to examine the association between demographics, resilience, psychological well-being, and mental health, as well to explore teacher resilience profiles using a multidimensional measure.

### 1.2. Measures

The full version of the Multidimensional Teachers' Resilience Scale (MTRS) (Mansfield & Wosnitza, 2015) was selected, considering that the scale presents a multidimensional approach (which suited the search for resilience styles), and it presented robust behaviour. It consists of 26 items allocated to four dimensions: Professional (six items, e.g., "At school I can be flexible when situations change"); Emotional (five items, e.g., "When something goes wrong at school, I don't take it too personally"); Motivational (11 items, e.g., "I am good at maintaining my motivation and enthusiasm when things get challenging at school"); and Social (five items, e.g., "I am good at building relationships in new school environments"). Answers are given with a 5-point Likert scale ranging from "completely disagree" to "completely agree." Additionally, two instruments linked to teachers' mental health were included: the Depression, Anxiety, and Stress Scale (DASS-21), a brief instrument that measures stress, anxiety, and depression (Henry & Crawford, 2005), and the Ryff Psychological Well-Being scale (Ryff, 2013). The Ryff scale is a 6-point Likert-type scale of 39 items, where 1 corresponds to "totally disagree" and 6 corresponds to "totally agree." Both scales were selected because of their extended use in the literature and because validated Chilean versions existed. For the DASS-21 (Lovibond & Lovibond, 1995), we used the Chilean validation (Antúnez & Vinet, 2012), whose reliability is adequate (Cronbach's  $\alpha = 0.91$ ). This scale is made up of 21 items assessing symptoms of depression (seven items), anxiety (seven items), and stress (seven items). Responses are recorded on a scale ranging from 0 ("It didn't happen to me") to 3 ("It happened to me a lot, or most of the time"). For the Ryff's Psychological Well-Being (PWB) scale (Ryff, 2013), we used the Chilean validation (Véliz Burgos, 2012). This scale uses 39 items distributed in six subscales to assess eudaimonic well-being: Self-Acceptance ( $\alpha = 0.79$ ), Positive Relations ( $\alpha = 0.75$ ), Autonomy ( $\alpha = 0.67$ ), Environmental Mastery ( $\alpha = 0.62$ ), Purpose in Life ( $\alpha = 0.54$ ), and Personal Growth ( $\alpha = 0.78$ ).

### 1.3. Data collection procedures

The questionnaires were put in digital format to facilitate their dissemination. Pedagogy graduates were contacted via e-mail from the database provided by two universities with a long tradition in teacher training in the capital of Chile. The purpose of the study was announced in the call, and a link was included to access the questionnaires. Before responding, the participants had to read an informed consent letter which indicated, among other things, the voluntary nature and confidentiality of the study. A complementing survey was distributed through

direct contact with schools' directors with whom the university that funds this project had established collaboration agreements. From the contact with managers, meetings were held to explain the purpose of the study, describe the informed consent process, and explain the procedure to complete the survey. Then, the school board distributed the survey to the teachers at their schools or facilitated their contact via e-mail so that the research team could directly carry out the call. The data were collected for approximately 3 months, and two or three e-mail calls (depending on the school) were facilitated to encourage teachers to participate in the study.

#### 1.4. Participants

A total of 602 teachers with an average age of 39 years ( $M = 38.9$ ,  $SD = 10$ ) and 12 years of teaching experience ( $M = 12.2$ ,  $SD = 9.32$ ) responded to our online survey. Of the sample, 71.93% of the participants ( $n = 433$ ) reported being female, 26.41% ( $n = 159$ ) reported being male teachers, and 1.66% ( $n = 10$ ) reported a non-binary gender or preferred not to say. Most teachers (57.14%,  $n = 344$ ) had training in secondary education, while 19.77% had training in basic general education, and 53 (8.8%) trained in differential education. Of the sample, 40.86% ( $n = 246$ ) teachers worked in a high school, while 38.70% ( $n = 233$ ) worked in elementary schools, and 20.43% ( $n = 123$ ) taught at both educational levels. Regarding the financial dependency of the schools, 55.48% ( $n = 334$ ) of participants worked in municipal schools, and 29.57% ( $n = 178$ ) worked in semi-private schools subsidized by the government. Finally, 14.95% ( $n = 90$  teachers) worked in private schools. Note that the sampling included mainly teachers with more than 5 years of experience (75.75%;  $n = 456$ ), and beginner teachers comprised 24.25% of the sample ( $n = 146$ ). This was consistent with the 65.61% ( $n = 395$ ) of the teachers who had contracts of 40 h per week, while 24.42% ( $n = 147$ ) reported having a weekly workload of 30–39 h. Only 9.96% ( $n = 60$ ) reported a workload of less than 29 h. These work hours were followed by 37.71% ( $n = 227$ ) of teachers who earned more than \$1000 USD per month, 35.38% ( $n = 213$ ) who had an income between \$800–999 USD monthly, and 7.14% of the teachers indicated receiving less than \$400 USD per month (for details, see Table 1).

#### 1.5. Data analysis

##### 1.5.1. MTRS validation

The MTRS was already validated with Portuguese teachers (Peixoto, Silva, Pipa, Wosnitza, & Mansfield, 2020), however, no validation had been done for Chilean teachers. The scale items were translated and back translated by bilingual researchers to ensure semantic equivalence. To analyse the internal structure of the scale in Chilean teachers, we used confirmatory factor analysis (CFA). This was carried out using the maximum likelihood robust (MLR) estimator available in MPlus 8 (Muthén & Muthén, 1998-2017). To address the sensitivity of a chi-square test of sample size (Kline, 2011), we assessed the model fit using the comparative fit index (CFI), the Tucker-Lewis index (TLI), the root mean square error of approximation (RMSEA), and the standardized root mean square residual (SRMR). For CFI and TLI values, we considered acceptable values higher than 0.90, and for RMSEA and SRMR values those lower than 0.08 (Brown, 2015; Kline, 2011).

##### 1.5.2. Resilience profiles

The resilience profiles analysis was based on two main objectives: 1) Evaluate the associations between the proposed variables, and 2) explore resilience profiles. The rationale behind this procedure was, first, to establish the associations between the different variables to then explore if these observed associations are seen for the different resilience profiles. It is relevant to notice that a priori resilience profiles may be diverse and include low and high scores of different subscales following a rationale of resilience styles. As such, our first aim was to explore the associations between well-being and mental health with resilience. This

**Table 1**  
Descriptives of participants.

Variable	Levels/Subscale	N	%/Mean (±SD)
Gender	Female	433	71.93
	Male	159	26.41
	Non-binary	4	0.66
	Prefer not to answer	6	1.00
	Total	602	1.00
Initial training	Elementary teacher	119	19.77
	Secondary school teacher	344	57.14
	Differential education	86	14.29
	Teacher	53	8.80
Financial dependency	City hall	334	55.48
	Subsidized private	178	29.57
	Private	90	14.95
School level	Total	602	100
	Elementary	233	38.70
	Secondary	246	40.86
	Both	123	20.43
Teaching experience	Total	602	100
	Beginners	146	24.25
	Experienced	456	75.75
Contract hours per week	Total	602	100
	0–19	20	3.32
	20–29	40	6.64
	30–39	147	24.42
	40–44	395	65.61
Income (\$USD)	Total	602	100
	Less than 400	43	7.14
	400–599	24	3.99
	600–799	95	15.78
	800–999	213	35.38
Age	1000 or more	227	37.71
	Total	602	100
Years of experience		602	38.94 (±10.07)
		602	12.3 (±9.33)
MTRS	Professional	602	5.23 (±0.82)
	Emotional	602	4.86 (±0.94)
	Motivational	602	5.31 (±0.79)
	Social	602	5.20 (±0.75)
		602	5.20 (±0.75)
DASS-21	Depression	602	3.86 (±4.84)
	Anxiety	602	3.94 (±4.78)
	Stress	602	5.10 (±5.06)
Ryff	Self-Acceptance	602	16.63 (±3.17)
	Eudaimonic well-being	602	15.47 (±2.83)
	Positive Relations	602	17.31 (±3.34)
	Autonomy	602	18.1 (±2.43)
	Environmental Mastery	602	18.1 (±2.43)
	Personal Growth	602	15.97 (±2.36)
	Purpose in Life	602	20.83 (±3.98)
		602	20.83 (±3.98)

Note. Factor variables are presented by level with their respective sample size ( $N$ ) and percentage (%). For continuous variables, we present sample size for that variable and mean  $\pm$  the standard deviation ( $SD$ ). For psychometric instruments, we include means ( $\pm SD$ ) by subscale.

was assessed using Pearson correlations, with an alpha value of 0.05. A correlation matrix was built, presenting all correlations between the MTRS subscales, Ryff's well-being subscales, and the DASS-21 subscales. We also included the variables age and teaching experience to explore association with demographic continuous variables. Our second aim was to explore resilience profiles. To achieve this objective, we performed a  $k$ -means clustering analysis. To select the number of clusters, we used 30 different methods, indicating the likely number of clusters in the sample (Charrad, Ghazzali, Boiteau, & Niknafs, 2014). Each method suggestion was considered as a "vote" (e.g., the Elbow method suggested three, therefore three clusters earned a vote, to then continue with the other 29 methods). The number of clusters presenting the highest number of votes was considered as the most likely solution. The solutions with the highest number of votes were then visually explored. We performed a principal component analysis (PCA) using the resilience variables, and we plotted the first two components evaluating the distance between the



clusters. We selected the final solution when considering that the clusters were not overlapped after plotting them, and we avoided clusters with a low number of observations. Once the clusters, or profiles, were obtained, we proceeded to characterize them. We first evaluated the differences between clusters using the variables employed in the clustering procedure (i.e., the MTRS subscales). We used a one-way analysis of variance (ANOVA), followed by a Tukey post-hoc test using cluster identity as the independent variable and MTRS subscales as the dependent variables. In cases where we either did not find normal distribution on the dependent variable or a lack of homogeneity of variances, we proceeded using the Kruskal-Wallis test, followed by multiple Mann-Whitney U tests corrected by Bonferroni's method. ANOVA assumptions were evaluated using the Shapiro-Wilk test and Bartlett's test of homogeneity of variances. Then, we characterized the clusters, given the demographic variables considered in this study: age, experience (in years), gender, teacher initial formation, institution dependency, student's level, income, and workday. Age and experience were analysed using the same procedure described above for the MTRS subscales. The remaining variables were frequency variables, thus we analysed them using a chi-squared test, including the frequencies of a two-entry table

Clusters X Variable. Given the sample size of this study, and the likelihood of the chi-squared tests producing false positive results with high sample sizes (Hu & Bentler, 1999; Lacobucci, 2010), we used an adjusted chi-squared test with a 1000 replication Monte Carlo test (Agresti, 2019; Hope, 1968; Patefield, 1981). Once the sample was characterized, we proceeded to evaluate psychological well-being and symptomatology. We used the same one-way ANOVA procedure described above but used both Ryff's well-being subscales and the DASS-21 subscales as dependent variables and cluster identity as the independent variable.

## 2. Results

### 2.1. MTRS validation

We carried out a CFA, testing the model proposed by the Portuguese validation of the scale (Peixoto et al., 2020), which presented acceptable fit to the data,  $\chi^2(59) = 235.4, p < .001, CFI = 0.936, TLI = 0.915, RMSEA = 0.07 [0.061, 0.080], SRMR = 0.038$ . Reliability was also acceptable, with the Cronbach's alpha ranging from 0.67 for the

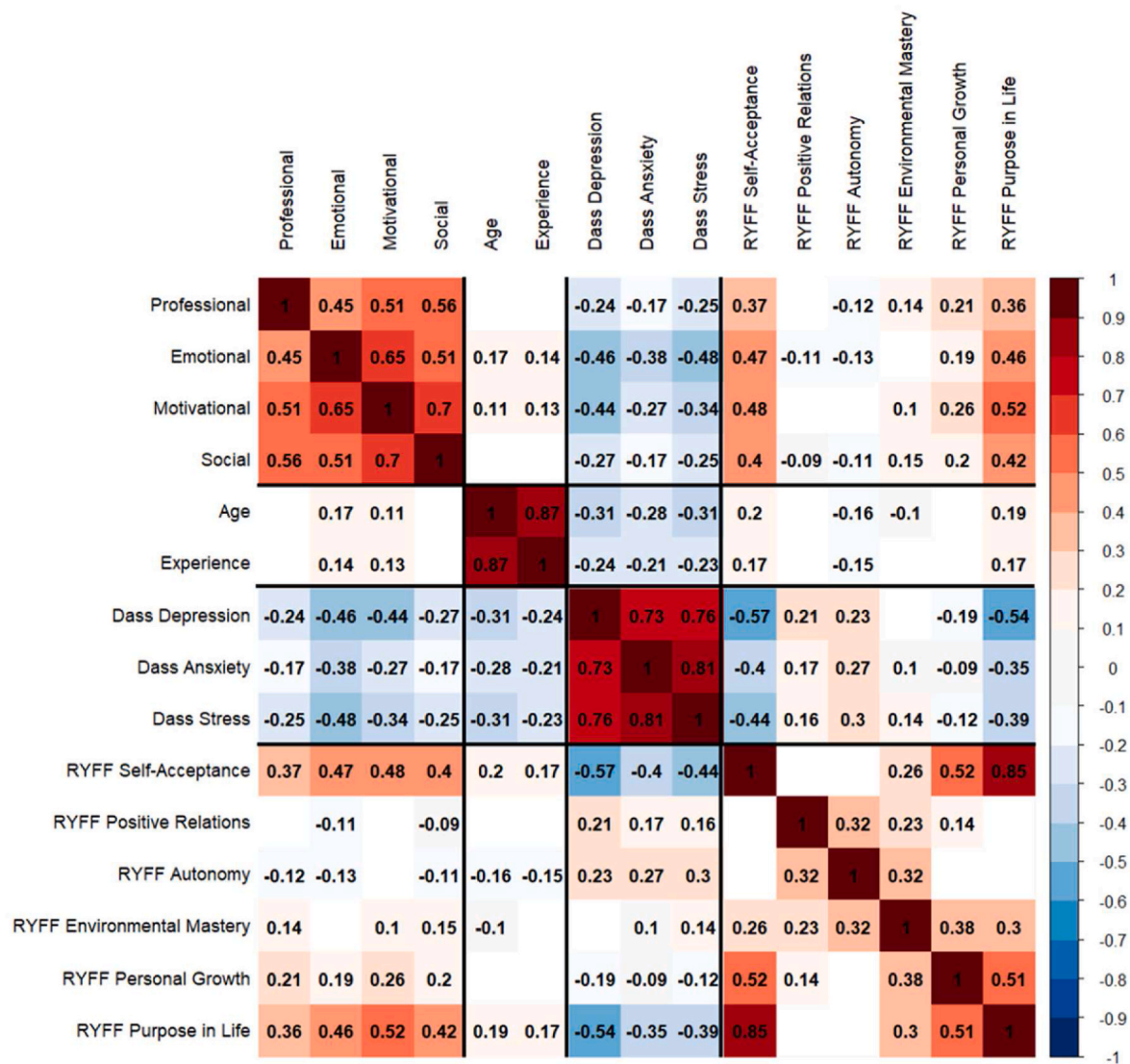


Fig. 1. Pearson Correlation Matrix Depicting the Association of the Variables

Note. Pearson correlation coefficients are presented in each matrix's cell accompanied by a colour legend indicating the range of the Pearson coefficient according to the colour scale depicted at the right of the matrix. Non-significant correlations (i.e.,  $p > .05$ ) are depicted as blank cells without reporting the Pearson coefficient. (For interpretation of the references to colour in this figure legend, the reader is referred to the Web version of this article.)

Emotional dimension to 0.89 for the Motivational dimension.

### 2.2. Resilience associations

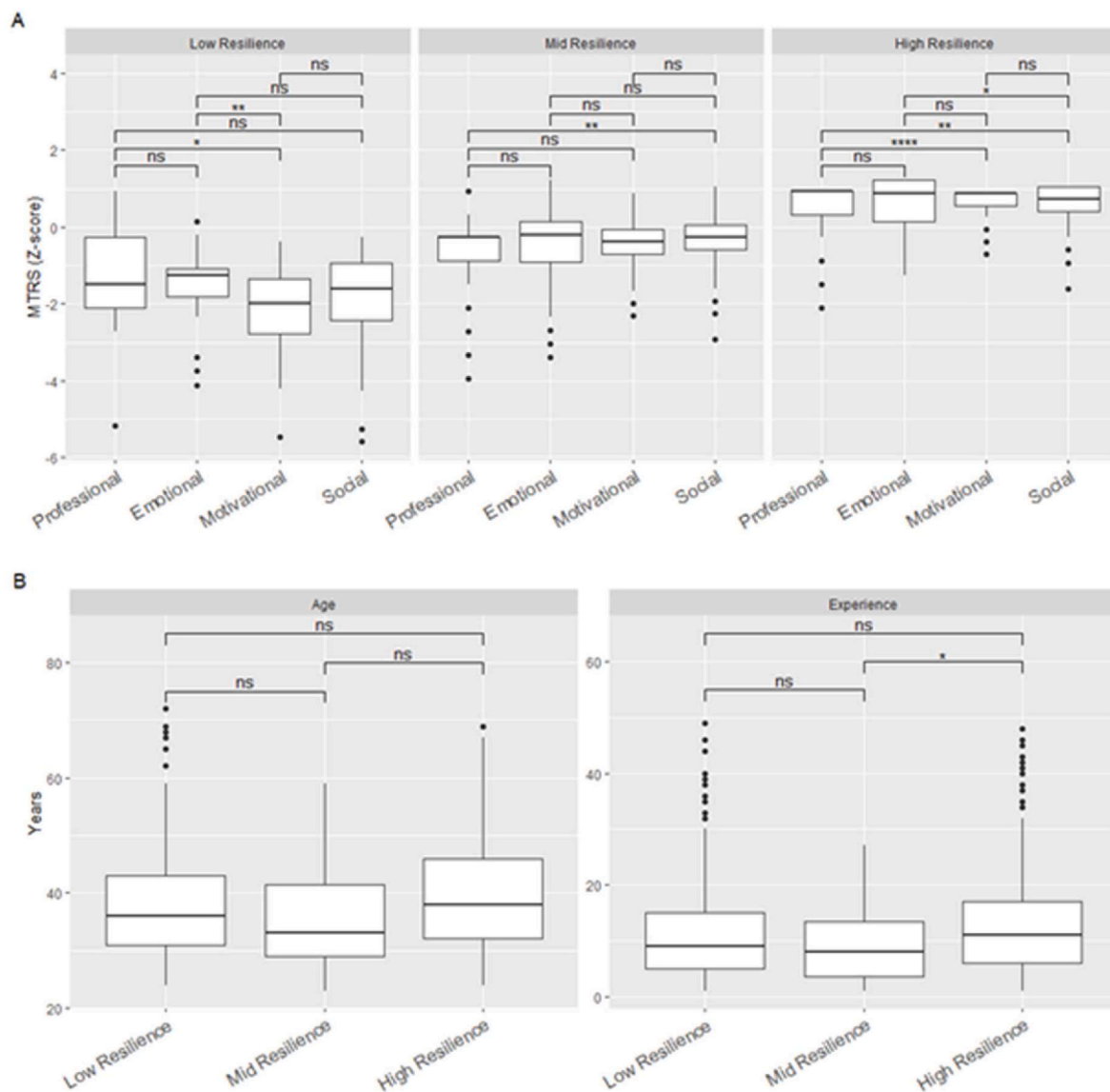
We found high correlations between the MTRS subscales (Pearson  $r$  in range 0.45–0.7; see Fig. 1). The correlation coefficients provided evidence of a close relationship between the subscales while also indicating a certain level of independence between them. From MTRS subscales, only the Emotional and Motivational dimensions were weakly correlated with age and experience, while the remaining dimensions were not significantly associated (Fig. 1). The association with mental health symptomatology was inverse and ranging with a Pearson  $r$  between 0.24 and 0.46, where MTRS Emotional presented the highest associations with the DASS-21 (Fig. 1). In general, these associations supported that resilience is associated with mental health symptomatology. Finally, Ryff's PWB scale presented mixed results, where most of the scales presented positive associations with resilience; Ryff's Autonomy and Positive Relations presented a weak inverse correlation with some of the MTRS scales. The strongest associations were found between Ryff's Purpose in Life and Self-Acceptance, with Pearson's  $r$  in ranging from 0.36 to 0.52. Overall, these associations indicated that

resilience was related with psychological well-being. However, the effects differed in strength and direction depending on the subscale.

### 2.3. Resilience profiles

To obtain MTRS profiles, we performed a cluster analysis. We first determined the number of clusters to extract. As described in Methods, we used 30 different methods to then explore the solutions with the highest number of recommendations per 30 votes. The method suggested four clusters, closely followed by three clusters. We therefore explored these two potential solutions. When projecting the clusters into the two dimensions explaining the most variance of a PCA analysis, we found that three of the clusters were partially overlapped, while the fourth was comprised of a low number of teachers. The three-cluster solution presented lower overlapping between clusters, and the fourth cluster of the previous solution was merged with one of the clusters of the three-cluster solution. Given these results, we selected the three-clusters solution. Once the profiles (i.e., clusters) were obtained, we proceeded to characterize them based on the variables used to produce such profiles.

In Fig. 2A, we present the results of the four subscales of the MTRS.



**Fig. 2.** (A/B) Characterization of Profiles by Means of (A) MTRS and (B) Age and Experience  
 Note. Comparisons were performed using Mann-Whitney U tests corrected by Bonferroni's method. ns  $p > .05$ . \* $p < .05$ . \*\* $p < .01$ , \*\*\* $p < .001$ .

The MTRS presented a consistent behaviour; one profile presented low scores in all MTRS subscales, another with medium scores, and finally one profile with high scores of resilience. Based on Fig. 2A results, we named the profiles low resilience, mid resilience, and high resilience. The low resilience groups were composed of 43 teachers, mid resilience of 260, and high resilience of 299, showing that most of the teachers reported mid or high resilience.

These profiles did not present significant differences in age (Fig. 2B). However, they did show a small effect, supporting the notion that the high resilience profile had more experience than the low resilience profile, without differences with the mid resilience group. Regarding the other demographic characterization variables presented in Table 2, we did not find any significant differences attributed to gender, teacher initial formation, institution dependency, and the student's level. However, we did find differences in income ( $\chi^2 = 20.324, p = .01$ ) and in workday ( $\chi^2 = 17.214, p = .009$ ). These differences were due to a higher frequency of higher income and a longer workday hours for the high resilience profile (see Table 2 for details).

Finally, we explored how these profiles were related with mental health symptoms and eudaimonic well-being. See Fig. 3.

As presented in Fig. 3A, we observed a consistent pattern showing that the high resilience profile participants reported significantly lower scores of depression, anxiety, and stress. Mid resilience participants presented mid symptomatology, and the low resilience group presented the highest scores. As such, the results support the relationship between resilience profiles and mental health symptoms. Regarding eudaimonic well-being, there was not a consistent pattern among the different PWB subscales. We found that the high resilience group presented the highest Self-Acceptance and Purpose in Life. In both variables, those of mid resilience presented significantly lower scores than the high resilience group, higher than the low resilience group (Fig. 3B). For Personal Growth, the high resilience groups achieved the highest scores, but the low and mid resilience groups did not present significant differences

(Fig. 3B).

Positive Relations and Autonomy presented non-conclusive results, given that the high resilience group presented significant differences with mid and low resilience respectively, but mid and low resilience participants did not present significant differences on these two variables. These results might be due to a small effect size. Finally, Environmental Mastery presented no differences between the profiles. Altogether, the results support that the high resilience group presented higher Self-Acceptance, Personal Growth, and Purpose in Life, while these participants also reported the lowest scores in Positive Relations and Autonomy, although these effects were less intense.

### 3. Discussion

This study sought to explore Chilean teachers' resilience profiles and their associations with psychological well-being and mental health symptoms. We found an association between resilience and mental health symptomatology. The association between resilience and psychological well-being was also present, but the effects differed in strength and direction, depending on the subscale. The discovered profiles depicted a global resilience intensity pattern of low, mid, and high resilience, ruling out complex resilience styles. As such, we did not find any resilience style which would present high scores on only one MTRS dimension or other patterns presenting resilience based on one or a few of the MTRS subscales (e.g., an emotional resilience style, high in Emotional and low in the remaining three subscales).

In general, the associations support the need to further explore the associations between resilience with mental health and well-being. Therefore, we propose that some adverse elements of teachers' working environments produce a relevant barrier for teachers to stay in the profession (cf. Clara, 2017). Most likely, these same elements are those deteriorating their mental health. Current results support the association between mental health and resilience; however, this experimental design did not allow us to determine causality, and potential causes of mental health deterioration were not measured, either.

Regarding our second objective, we expected more complex profiles to emerge. Our profiles depicted differences mainly due to resilience intensity, producing almost redundant results with the correlation analysis. Nonetheless, this gave us relevant information on how resilience measured with MTRS might behave. The correlations depicted in Fig. 1 for the MTRS suggest an association, but one not high enough to expect that it will behave as a single variable. The fact that we did not find different styles of resilience supported on some of the resiliency subscales, but rather we found an intensity segmentation of the profiles supports the idea that resilience, as measured by the MTRS, works as a global phenomenon. Therefore, we would not expect major differences on resilience deployment between teachers beyond intensity itself, at least measured by means of the MTRS. This supports the conception of resilience built integrally rather than domain specific.

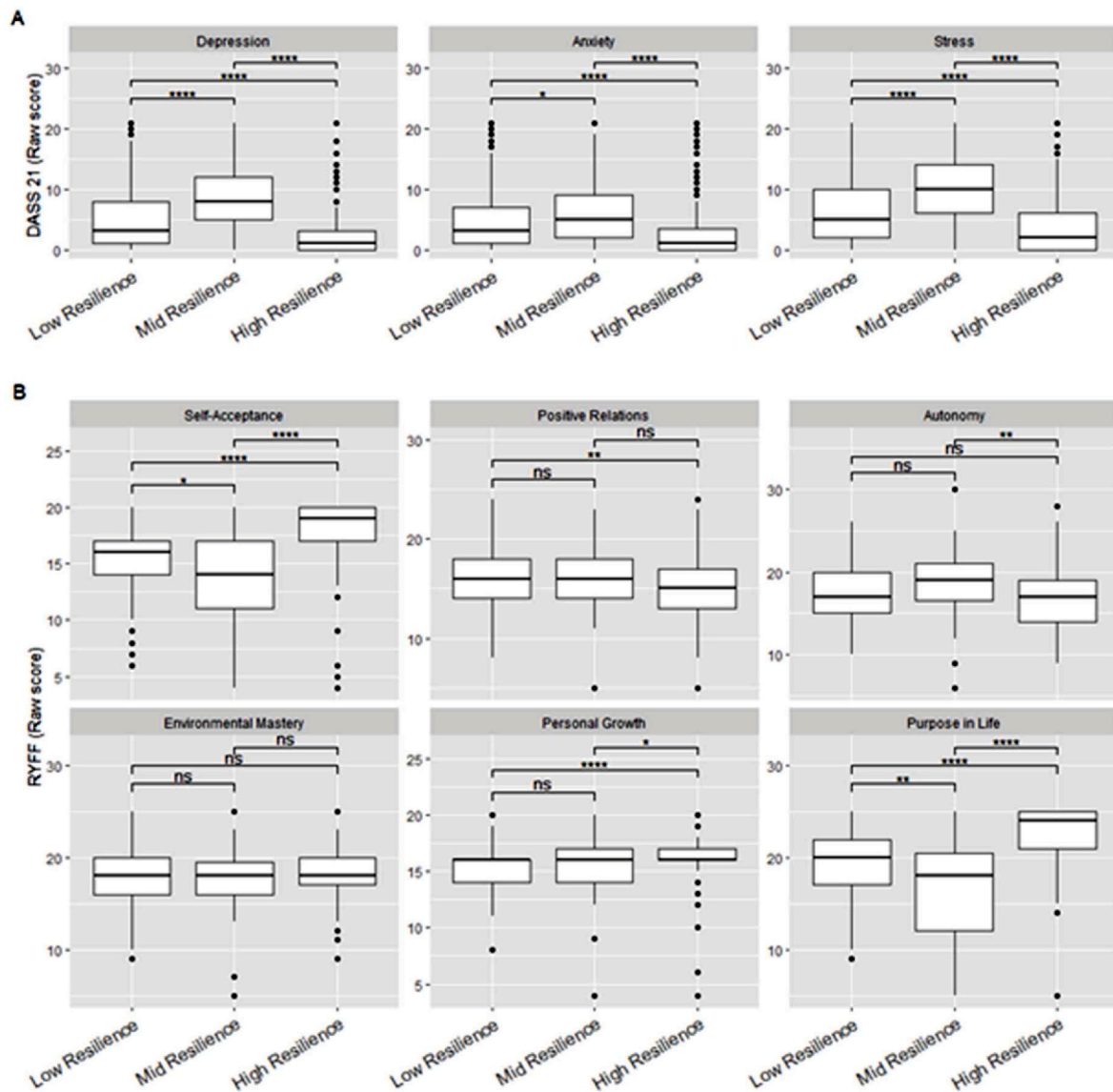
Based on these results, we propose that resilience's association with well-being in this study was likely due to the role of resilience as a protective factor against stress and mental health problems. This finding coheres with previous studies that found a positive relationship between resilience and mental health outcomes, including higher levels of well-being and lower levels of psychological distress (e.g., Bonanno, Westphal, & Mancini, 2011; Hu, Zhang, & Wang, 2015). Teacher resilience per se is a resource for educators who have experienced high levels of stress and discomfort, factors exacerbated since the pandemic (Berger et al., 2022; Fray et al., 2022; Lizana et al., 2021; Salinas-Falquez et al., 2022). Teacher resilience, in addition to enabling educators to resist difficulties and reduce the negative effects of work stressors, might also trigger higher levels of subjective well-being (Rajesh et al., 2020). In this sense, it is noteworthy that a higher level of resilience was associated with greater well-being, which is consistent with Mansfield et al.'s (2018) findings.

Considering that the higher resilience profile presented significant

**Table 2**  
Demographic characteristics of participants by resilience profiles.

Demographic	Low resilience	Medium Resilience	High Resilience
N	43	260	299
Age	36.4 (±9)	38.3 (±10.1)	39.7 (±10.1)
Teaching experience (years)	9.6 (±7.5)	11.7 (±9.1)	13.1 (±9.6)
Gender			
Female	65.11 (28)	75.38 (196)	69.89 (209)
Male	30.23 (13)	23.84 (62)	28.09 (84)
Not binary	0 (0)	0 (0)	1.33 (4)
Prefer not to say	4.65 (2)	0.76 (2)	0.66 (2)
Initial training			
Differential	11.62 (5)	15 (36)	15.05 (45)
Elementary and middle	20.93 (9)	18.33 (44)	22.07 (66)
Secondary	53.48 (23)	66.66 (160)	53.84 (161)
Other	13.95 (6)	7.69 (20)	9.03 (27)
School dependency			
State	48.83 (21)	53.07 (138)	58.52 (175)
Mixed	39.53 (17)	30.76 (80)	27.09 (81)
Private	11.62 (5)	16.15 (42)	14.38 (43)
School level			
Elementary and middle	41.86 (18)	39.23 (102)	37.79 (113)
High	34.88 (15)	40.38 (105)	42.14 (126)
Both	23.25 (10)	20.38 (53)	20.06 (60)
Income (\$USD)			
Less than 400	13.95 (6)	8.07 (21)	5.35 (16)
400–599	2.32 (1)	5 (13)	3.34 (10)
600–799	23.25 (10)	16.15 (42)	14.38 (43)
800–999	32.55 (14)	40 (104)	31.43 (94)
>1000	27.9 (12)	30.76 (80)	45.48 (136)
Workday (hours)			
10–19	4.65 (2)	3.46 (9)	3.01 (9)
20–29	9.3 (4)	6.92 (18)	6.02 (18)
30–39	30.23 (13)	31.15 (81)	17.72 (53)
40–44	55.81 (24)	58.46 (152)	73.24 (219)

Note. Continuous variables are described as mean (±standard deviation), while frequency variables are presented as percentage (n). In cases where the n does not sum the n of the cluster, this is due to missing data.



**Fig. 3.** Description of Resilience Profiles Obtained Based on (A) Symptomatology (DASS-21) and (B) Eudaimonic Well-Being  
 Note. Comparisons were performed using Mann-Whitney U tests corrected by Bonferroni’s method. ns  $p > .05$ . \* $p < .05$ . \*\* $p < .01$ , \*\*\* $p < .001$ .

differences in higher scores on well-being (Self-Acceptance, Personal Growth, and Purpose in Life), future researchers are encouraged to explore the linkage between these well-being constructs and what some authors (Day & Gu; 2014; Greenfield, 2015; Johnson et al., 2015) refer to as the teacher’s ability to give a “transcendent meaning,” or a moral purpose, to their work that increases social justice. These authors argued that this moral purpose can correspond to a central asset of resilient teachers, which has been endorsed in recent studies by Yeigh et al. (2022).

Regarding the association between resilience profiles and mental health symptoms, the main results coincide with recent findings, which imply that teachers with lower levels of resilience experienced greater symptoms of anxiety, depression, stress, and burnout during the pandemic (Berger et al., 2022; Keim et al., 2022; Salinas-Falquez et al., 2022). Similarly, the association between resilience and teaching experience coheres with data from Berger et al. (2022), who argued that educators with more years of experience are more resilient when managing adverse events, and less experienced educators report more mental health symptoms and lower well-being when compared to veteran teachers. This finding supports the calls for the need to create a supportive system targeting teachers who are starting their career,

especially accounting for the influence of individual and contextual factors on teacher retention (Casely-Hayford, Björklund, Bergström, Lindqvist, & Kwak, 2022), quality teacher retention (Day & Gu, 2014), and the teacher shortage crisis (European Commission, 2019). Similarly, a recent study in Chile projected a shortage of 32,000 teachers by 2030 (Elige Educar, 2022).

In contrast to other studies presenting how autonomy and positive emotions foster teachers’ well-being (Billaudeau et al., 2022; Varela, Guzmán, Oriol, Romo, & Miranda, 2022), our findings did not indicate that the greater resilience profiles were associated with more positive relations and autonomy. A potential explanation for this unexpected finding could be due to our study sample’s composition, as most participants worked in public schools and might have perceived their unique school climates differently. A recent study showed that teachers who perceived the highest rates of positive school climate experienced the highest well-being (Dreer, 2022). Among the sociodemographic variables, both the income level and the contract hours differed significantly between the resilience profiles.

These findings highlight that teachers’ working conditions are likely a critical factor to be considered in policies that address contextual factors (Ainsworth & Oldfield, 2019; Oldfield & Ainsworth, 2022) when



enhancing teacher resilience. In this sense, it is necessary to delve deeper into how working conditions contribute to resilience, considering that the participation in professional learning communities favours the joint analysis of problems and solutions through pedagogical innovation (Johnson et al., 2016).

Even though previous evidence aligns with our findings, our study was significantly limited. This was a non-experimental cross-sectional study, meaning that we assessed teachers only once, and that no intervention was performed. Ours was an observational paradigm where associations could be explored, but we cannot attribute causal links or control confounding variables in studies like these. Similarly, our sample was teachers who voluntarily completed our survey. As such, a self-selection bias might have adulterated results. Specifically, self-motivations to answer surveys, as well as motivations and circumstances to not answering surveys, might have biased our results. For instance, teachers with too great of a workload might not have completed our survey due to time limitations. Also, teachers poorly engaged in their profession might have avoided a profession-related survey, while teachers enjoying their profession might have responded in greater numbers. As such, despite the large sample size, ours was not a representative sample also based on teachers' sociodemographic conditions, for instance. An additional limitation concerns the resilience measure used. Looking at the items on the MTRS, they mainly address protective factors of resilience and not resilience itself, as assessed in other measures (e.g., Morgan, 2011). Nevertheless, the profiles obtained can be considered as characterizing resilience in a way that accounts for different dimensions encompassing the primary factors that contribute to teachers' resilience. Combining them into a profile enables a more comprehensive characterization of teachers' resilience, compared to considering only a global measure of resilience. Furthermore, global scores on the MTRS have been highly correlated with measures of global resilience (Peixoto et al., 2020).

#### 4. Conclusion and implications for practice

This study contributes to the characterization of Chilean teacher resilience. Here was also an exploration of potential resilience profiles contrasted with mental health symptoms and well-being. We found that the high resilience group of teachers exhibited higher self-acceptance, personal growth, and purpose in life. These findings emphasize the critical role of resilience as a protective factor against stress and mental health problems. Additionally, they suggest that resilience can support the maintenance and development of teacher well-being (Hascher et al., 2021b). Therefore, promoting teacher resilience can help mitigate the aforementioned mental health problems.

Given the cross-sectional design of the present study, future investigators should address potential mediational associations between contextual factors (e.g., school climate) and individual factors other than resilience (e.g., teacher self-efficacy, autonomy). The main implication arising from our results is the salient differences between teacher resilience profiles, well-being, and mental health symptoms. Those differences can help school leadership in designing well-being intervention programs. Considering the potential of resilience as a capacity that contributes to a teacher's well-being and performance, we encourage the inclusion of individual factors in investigations that seek to explain the existence of high levels of resilience in related intervention programs, alongside the use of active methodologies that enable teachers to reflect on their practice (Fernandes et al., 2019; Ping, Schellings, & Beijgaard, 2018). However, based on the understanding of resilience as a dynamic capacity that is nourished by contextual variables, as well as the relationships that are built within educational communities, it is also necessary to explore the quality of these relationships to build resilient schools. Gu (2018) wrote: "Resilient schools are places where teachers and students are aspired to their own learning and development and where a clear sense of moral purpose is shared, valued and embedded in the daily lives of the school" (p. 25). At this point, and based on research

carried out in the Chilean context, it seems relevant to explore the link between teachers and students and the pedagogical relationship that promotes both learning and teacher resilience.

We propose the need for a randomized controlled trial focused on early career teachers, applying a resilience-based intervention, to assess the potential positive impact of resilience on well-being and mental health. Based on our findings, it is possible to plan interventions that seek to strengthen the professional, emotional, motivational, and social dimensions of resilience (Mansfield & Wosnitza, 2015). This can be done through professional training programs, which are one of the aspects of the context that, according to recent evidence, increase resilience (Pozo-Rico, Poveda, Gutiérrez-Fresneda, Castejón, & Gilar-Corbi, 2023). We hypothesize that by enhancing resilience in teachers, we can effectively improve mental health and reduce early career departure. This trial would probably provide valuable insights into the causal relationship between resilience and its influence on teachers' well-being.

It is important to acknowledge that our study did not specifically explore the specific features within the teachers' work environment that strengthen their capacity for resilience. Understanding these factors and their interactions with individual characteristics of the teaching staff is crucial for the comprehension of how teacher resilience can be effectively enhanced. Addressing this limitation in future studies will be essential to gain deeper insights into the mechanisms that enable and sustain teacher resilience.

#### Author contributions

JOSE CASTRO SILVA: Writing – review & editing, Writing – original draft, Methodology, Conceptualization. FRANCISCO PEIXOTO: Writing – review & editing, Writing – original draft, Methodology, Conceptualization. MARIA CATALINA SABANDO GÓMEZ: Writing – review & editing, Writing – original draft, Resources, Methodology, Investigation, Data curation, Conceptualization. RODRIGO VERGARA ORTUZAR: Writing – review & editing, Writing – original draft, Resources, Methodology, Formal analysis, Data curation, Conceptualization. PAULA VILLALOBOS VERGARA: Writing – review & editing, Writing – original draft, Resources, Methodology, Investigation, Formal analysis, Conceptualization

#### Declaration of competing interest

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.

#### Data availability

The data that has been used is confidential.

#### References

- Agresti, A. (2019). *An introduction to categorical data analysis* (3rd ed.). John Wiley & Sons.
- Ainsworth, S., & Oldfield, J. (2019). Quantifying teacher resilience: Context matters. *Teaching and Teacher Education*, 82, 117–128. <https://doi.org/10.1016/j.tate.2019.03.012>
- Antúnez, Z., & Vinet, E. V. (2012). Escalas de Depresión, Ansiedad y Estrés (DASS - 21): Validación de la versión abreviada en estudiantes universitarios Chilenos [Depression Anxiety Stress Scales (DASS-21): Validation of the abbreviated version in Chilean university students]. *Terapia Psicológica*, 30, 49–55. <https://doi.org/10.4067/S0718-48082012000300005>
- Arcelay-Rojas, Y. (2019). Exploring Puerto Rican preservice teachers' resilience: A focus group study. *Journal of Educational Research and Practice*, 9(1), 369–385. <https://doi.org/10.5590/JERAP.2019.09.1.26>
- Ávalos, B., & Valenzuela, J. P. (2016). Education for all and attrition retention of new teachers A trajectory study in Chile. *International Journal of Educational Development*, 49, 279–290. <https://repositorio.uchile.cl/handle/2250/141592>
- Beltman, S. (2020). Understanding and examining teacher resilience from multiple perspectives. In C. Mansfield (Ed.), *Cultivating teacher resilience* (pp. 11–26). Springer. [https://doi.org/10.1007/978-981-15-5963-1\\_2](https://doi.org/10.1007/978-981-15-5963-1_2)

- Beltman, S., Hascher, T., & Mansfield, C. (2022). In the midst of a pandemic: Australian teachers talk about their well-being. *Zeitschrift für Psychologie*, 230(3), 253–263. <https://doi.org/10.1027/2151-2604/a000502>
- Beltman, S., & Mansfield, C. (2018). Resilience in education: An introduction. In M. Wosnitzer, F. Peixoto, S. Beltman, & C. Mansfield (Eds.), *Resilience in education: Concepts, contexts and connections* (pp. 3–9). Springer. [https://doi.org/10.1007/978-3-319-76690-4\\_20](https://doi.org/10.1007/978-3-319-76690-4_20).
- Berger, E., Quiñones, G., Barnes, M., & Reupert, A. (2022). Early childhood educators' psychological distress and wellbeing during the COVID-19 pandemic. *Early Childhood Research Quarterly*, 60, 298–306. <https://doi.org/10.1016/j.ecresq.2022.03.005>
- Billaudeau, N., Alexander, S., Magnard, L., Temam, S., & Vercambre, M.-N. (2022). What levers to promote teachers' wellbeing during the COVID-19 pandemic and beyond: Lessons learned from a study in six countries. *International Journal of Environmental Research and Public Health*, 19, 9151. <https://doi.org/10.3390/ijerph19159151>
- Billett, P., Turner, K., & Li, X. (2022). Australian teacher stress, well-being, self-efficacy, and safety during the COVID-19 pandemic. *Psychology in the Schools*, 60, 1394–1414. <https://doi.org/10.1002/pits.22713>
- Bonanno, G. A., Westphal, M., & Mancini, A. D. (2011). Resilience to loss and potential trauma. *Annual Review of Clinical Psychology*, 7, 511–535. <https://doi.org/10.1146/annurev-clinpsy-032210-104526>
- Boon, H. J. (2020). Teachers' resilience: Conceived, perceived or lived-in. In C. Mansfield (Ed.), *Cultivating teacher resilience* (pp. 263–278). Springer. [https://doi.org/10.1007/978-981-15-5963-1\\_16](https://doi.org/10.1007/978-981-15-5963-1_16).
- Brown, T. A. (2015). *Confirmatory factor analysis for applied research*. Guilford Publications.
- Cabezas, V., Narea, M., Irribarra, D. T., Icaza, M., Escalona, G., & Reyes, A. (2022). Bienestar docente durante la pandemia de COVID-19 en Chile: Demandas y recursos para afrontar la angustia psicológica [Teacher well-being during the COVID-19 pandemic in Chile: Demands and resources for coping with psychological distress]. *Psykhe*, 31(1). <https://doi.org/10.7764/psykhe.2020.22427>
- Casely-Hayford, J., Björklund, C., Bergström, G., Lindqvist, P., & Kwak, L. (2022). What makes teachers stay? A cross-sectional exploration of the individual and contextual factors associated with teacher retention in Sweden. *Teaching and Teacher Education*, 113, Article 103664. <https://doi.org/10.1016/j.tate.2022.103664>
- Cefai, C. (2021). A transactional, whole-school approach to resilience. In M. Ungar (Ed.), *Multisystemic resilience: Adaptation and transformation in contexts of change* (pp. 220–231). Oxford Academic. <https://doi.org/10.1093/oso/9780190095888.003.0013>.
- Charrad, M., Ghazzali, N., Boiteau, V., & Niknafs, A. (2014). NbClust: An R package for determining the relevant number of clusters in a data set. *Journal of Statistical Software*, 61(6), 1–36. <https://doi.org/10.18637/jss.v061.i06>
- Cortés-Álvarez, N. Y., Garduño, A. S., Sánchez-Vidaña, D. I., Marmolejo-Murillo, L. G., & Vuelvas-Olmos, C. R. (2022). A longitudinal study of the psychological state of teachers before and during the COVID-19 outbreak in Mexico. *Psychological Reports*. <https://doi.org/10.1177/00332941221100458>, 332941221100458.
- Day, C., & Gu, Q. (2014). *Resilient teachers, resilient schools*. Routledge.
- Derakhshan, A., Coombe, C., Arabmofrad, A., & Taghizadeh, M. (2020). Investigating the effects of English language teachers' professional identity and autonomy in their success. *Issues in Language Teaching*, 9, 1–28. <https://doi.org/10.22054/ilt.2020.52263.496>
- Díaz, C., & Barra, E. (2017). Resiliencia y satisfacción laboral en profesores de colegios municipales y particulares subvencionados de la comuna de Machalí [Resilience and job satisfaction among teachers from public and private subsidized schools from the commune of Machalí]. *Estudios Pedagógicos*, 43(1), 75–86. <https://doi.org/10.4067/S0718-07052017000100005>
- Draelants, H., & Dupriez, V. (2018). *Ecole: 30 ans de reformes inabouties? Sociétés en changement [school: 30 years of unfulfilled reforms? Societies in change]*. Université Catholique de Louvain. [https://www.researchgate.net/publication/323934364\\_Ecole\\_30\\_ans\\_de\\_reformes\\_inabouties](https://www.researchgate.net/publication/323934364_Ecole_30_ans_de_reformes_inabouties).
- Dreer, B. (2022). Teacher well-being: Investigating the contributions of school climate and job crafting. *Cogent Education*, 9(1), Article 2044583. <https://doi.org/10.1080/2331186X.2022.2044583>
- Ebersold, S., Rahm, T., & Heise, E. (2019). Autonomy support and well-being in teachers: Differential mediations through basic psychological need satisfaction and frustration. *Social Psychology of Education. International Journal*, 22(4), 921–942. <https://doi.org/10.1007/s11218-019-09499-1>
- Educar, E. (2022). *Resumen ejecutivo: Retención, rotación, salidas de aula y reincorporación docente [Executive summary: Retention, rotation, classroom exits and teacher re-entry]*. Santiago, Chile.
- Ellison, D. W., & Woods, A. M. (2019). Physical education teacher resilience in high-poverty school environments. *European Physical Education Review*, 25(4), 1110–1127. <https://doi.org/10.1177/1356336X18800091>
- European Commission. (2019). *Education and training monitor 2019*. Publications Office. <https://data.europa.eu/doi/10.2766/442033>
- Fernandes, L., Peixoto, F., Gouveia, M. J., Castro Silva, J., & Wosnitzer, M. (2019). Fostering teachers' resilience and well-being through professional learning: Effects from a training programme. *Australian Educational Researcher*, 46(4), 681–698. <https://doi.org/10.1007/s13384-019-00344-0>
- Fletcher, D., & Sarkar, M. (2013). Psychological resilience: A review and critique of definitions, concepts, and theory. *European Psychologist*, 18(1), 12–23. <https://doi.org/10.1027/1016-9040/a000124>
- Flores, M. A. (2018). Teacher resilience in adverse contexts: Issues of professionalism and professional identity. In M. Wosnitzer, F. Peixoto, S. Beltman, & C. Mansfield (Eds.), *Resilience in education: Concepts, contexts and connections* (pp. 167–184). Springer. [https://doi.org/10.1007/978-3-319-76690-4\\_10](https://doi.org/10.1007/978-3-319-76690-4_10)
- Fray, L., Jaremus, F., Gore, J., Miller, A., & Harris, J. (2022). Under pressure and overlooked: The impact of COVID-19 on teachers in NSW public schools. *Australian Educational Researcher*. <https://doi.org/10.1007/s13384-022-00518-3>
- Fredrickson, B. L., Tugade, M. M., Waugh, C. E., & Larkin, G. R. (2003). What good are positive emotions in crises? A prospective study of resilience and emotions following the terrorist attacks on the United States on september 11th, 2001. *Journal of Personality and Social Psychology*, 84(2), 365–376. <https://doi.org/10.1037/0022-3514.84.2.365>
- Fu, C., Ouyang, M., Liu, X., Xu, G., Wang, H., Ye, Z., et al. (2023). The role of school organizational conditions in teacher psychological resilience and stress during COVID-19 pandemic: A moderated mediation model. *Frontiers in Psychology*, 13, Article 1047831. <https://doi.org/10.3389/fpsyg.2022.1047831>
- Granziera, H., Martin, A. J., & Collie, R. J. (2023). Teacher well-being and student achievement: A multilevel analysis. *Social Psychology of Education*, 26, 279–291. <https://doi.org/10.1007/s11218-022-09751-1>
- Greenfield, B. (2015). How can teacher resilience be protected and promoted. *Educational and Child Psychology*, 32(4), 52–68. <https://doi.org/10.53841/bpsecp.2015.32.4.52>
- Gu, Q. (2018). (Re) conceptualizing teacher resilience: A social-ecological approach to understanding teachers' professional worlds. In M. Wosnitzer, F. Peixoto, S. Beltman, & C. Mansfield (Eds.), *Resilience in education: Concepts, contexts and connections* (pp. 13–33). Springer. [https://doi.org/10.1007/978-3-319-76690-4\\_2](https://doi.org/10.1007/978-3-319-76690-4_2)
- Gu, Q., & Day, C. (2007). Teachers' resilience: A necessary condition for effectiveness. *Teaching and Teacher Education*, 23(8), 1302–1316. <https://doi.org/10.1016/j.tate.2006.06.006>
- Guo, J., Liu, L., Zhao, B., & Wang, D. (2020). Teacher support and mental well-being in Chinese adolescents: The mediating role of negative emotions and resilience. *Frontiers in Psychology*, 10, 3081. <https://doi.org/10.3389/fpsyg.2019.03081>
- Hascher, T., Beltman, S., & Mansfield, C. (2021a). Swiss primary teachers' professional well-being during school closure due to the COVID-19 pandemic. *Frontiers in Psychology*, 12, Article 687512. <https://doi.org/10.3389/fpsyg.2021.687512>
- Hascher, T., Beltman, S., & Mansfield, C. (2021b). Teacher wellbeing and resilience: Towards an integrative model. *Educational Research*, 63(4), 416–439. <https://doi.org/10.1080/00131881.2021.1980416>
- Henry, J. D., & Crawford, J. R. (2005). The short-form version of the Depression Anxiety Stress Scales (DASS-21): Construct validity and normative data in a large non-clinical sample. *British Journal of Clinical Psychology*, 44(2), 227–239. <https://doi.org/10.1348/014466505X29657>
- Hepburn, S.-J., Carroll, A., & McCuaig-Holcroft, L. (2021). A complementary intervention to promote wellbeing and stress management for early career teachers. *International Journal of Environmental Research and Public Health*, 18(12), 6320. <https://doi.org/10.3390/ijerph18126320>
- Hernández, R., Fernández, C., & Baptista, P. (2010). *Fundamentos de metodología de la investigación [Fundamentals of research methodology (2a.ed)]*. McGraw-Hill.
- Hope, A. C. A. (1968). A simplified Monte Carlo significance test procedure. *Journal of the Royal Statistical Society Series B-Methodological*, 30, 582–598. <https://doi.org/10.1111/J.2517-6161.1968.TB00759.X>
- Hu, L. T., & Bentler, P. M. (1999). Cutoff criteria for fit indexes in covariance structure analysis: Conventional criteria versus new alternatives. *Structural Equation Modeling*, 6, 1–55. <https://doi.org/10.1080/10705519909540118>
- Hurtubia Toro, V., Tartakowsky, V., Acuña, M., & Landoni, M. (2021). Espacios de contención y resiliencia en comunidades educativas frente al contexto de la COVID-19 en Chile [Containment and resilience spaces in educational communities in the context of COVID-19 in Chile]. *Revista Iberoamericana de Educación*, 86(2), 113–123. <https://doi.org/10.35362/rie8624383>
- Hu, T., Zhang, D., & Wang, J. (2015). A meta-analysis of the trait resilience and mental health. *Personality and Individual Differences*, 76, 18–27. <https://doi.org/10.1016/j.paid.2014.11.039>
- Jin, J., Mercer, S., Babic, S., & Mairitsch, A. (2021). Understanding the ecology of foreign language teacher wellbeing. In K. Budzińska, & O. Majchrzak (Eds.), *Positive psychology in second and foreign language education* (pp. 18–41). Springer. [https://doi.org/10.1007/978-3-030-64444-4\\_2](https://doi.org/10.1007/978-3-030-64444-4_2)
- Johnson, B., Down, B., Le Cornu, R., Peters, J., Sullivan, A., Pearce, J., et al. (2015). *Early career teachers. Stories of resilience*. Springer. <https://doi.org/10.1007/978-981-287-173-2>
- Johnson, B., Down, B., Le Cornu, R., Peters, J., Sullivan, A., Pearce, J., et al. (2016). *Promoting early career teacher resilience: A socio-cultural and critical guide to action*. <https://doi.org/10.4324/9781315745602>. Routledge.
- Kangas-Dick, K., & O'Shaughnessy, E. (2020). Interventions that promote resilience among teachers: A systematic review of the literature. *International Journal of School & Educational Psychology*, 8, 131–146. <https://doi.org/10.1080/21683603.2020.1734125>
- Keim, R., Pfitscher, G., Leitner, S., Burger, K., Giacomoni, F., & Wiedermann, C. J. (2022). Teachers' emotional well-being during the SARS-CoV-2 pandemic with long school closures: A large-scale cross-sectional survey in northern Italy. *Public Health*, 208, 1–8. <https://doi.org/10.1016/j.puhe.2022.04.006>
- Kilroy, S., Flood, P. C., Bosak, J., & Chênevert, D. (2017). Perceptions of high-involvement work practices, person-organization fit, and burnout: A time-lagged study of health care employees. *Human Resource Management*, 56(5), 821–835. <https://doi.org/10.1002/hrm.21803>
- Kline, R. B. (2011). *Principles and practice of structural equation modelling (3rd ed.)*. Guilford Press.
- Kuldas, S., & Foody, M. (2022). Neither Resilience-Trait nor Resilience-State: Transnational Resiliency/e. *Youth & Society*, 54(8), 1352–1376. <https://doi.org/10.1177/0044118X211029309>

- Lacobucci, D. (2010). Structural equations modelling: Fit Indices, sample size, and advanced topics. *Journal of Consumer Psychology*, 20, 90–98. <https://doi.org/10.1016/j.jcps.2009.09.003>
- Lacomba-Trejo, L., Schoeps, K., Valero-Moreno, S., del Rosario, C., & Montoya-Castilla, I. (2022). Teachers' response to stress, anxiety and depression during COVID-19 lockdown: What have we learned from the pandemic? *Journal of School Health*, 92, 864–872. <https://doi.org/10.1111/josh.13192>
- Lee, J.-S., Ahn, Y.-S., Jeong, K.-S., Chae, J.-H., & Choi, K.-S. (2014). Resilience buffers the impact of traumatic events on the development of PTSD symptoms in firefighters. *Journal of Affective Disorders*, 162, 128–133. <https://doi.org/10.1016/j.jad.2014.02.031>
- Lizana, P. A., & Lera, L. (2022). Depression, anxiety, and stress among teachers during the second COVID-19 Wave. *International Journal of Environmental Research and Public Health*, 19(10), 5968. <https://doi.org/10.3390/ijerph19105968>
- Lizana, P. A., Vega-Fernández, G., Gómez-Bruton, A., Leyton, B., & Lera, L. (2021). Impact of the COVID-19 pandemic on teacher quality of life: A longitudinal study from before and during the health crisis. *International Journal of Environmental Research and Public Health*, 18(7), 3764. <https://doi.org/10.3390/ijerph18073764>
- Lovibond, S. H., & Lovibond, P. F. (1995). *Manual for the depression anxiety stress scales*. Sydney: Psychology Foundation.
- Madigan, D. J., & Kim, L. E. (2021). Does teacher burnout affect students? A systematic review of its association with academic achievement and student-reported outcomes. *International Journal of Educational Research*, 105, Article 101714. <https://doi.org/10.1016/j.ijer.2020.101714>
- Mansfield, C. F., Beltman, S., Price, A., & McConney, A. (2012). Don't sweat the small stuff: Understanding teacher resilience at the chalkface. *Teaching and Teacher Education*, 28(3), 357–367. <https://doi.org/10.1016/j.tate.2011.11.001>
- Mansfield, C. F., Ebersöhn, L., Beltman, S., & Loots, T. (2018). Great Southern lands: Making space for teacher resilience in South Africa and Australia. In M. Wosnitzer, F. Peixoto, S. Beltman, & C. F. Mansfield (Eds.), *Resilience in education: Concepts, contexts and connections* (pp. 53–71). Springer. [https://doi.org/10.1007/978-3-319-76690-4\\_4](https://doi.org/10.1007/978-3-319-76690-4_4)
- Mansfield, C. F., & Wosnitzer, M. (2015). *Teacher resilience questionnaire—version, 1.5*. Perth, Australia: Murdoch University.
- Mardones, C. (2019). Admisión 2019: Disminuye interés por carreras de pedagogía pese a que aumentan las vacantes. *El mercurio* [Admission 2019: Decline in interest in pedagogy careers despite an increase in available positions] <https://rb.gy/s6psj9>
- Morgan, M. (2011). Resilience and recurring adverse events: Testing an assets-based model of beginning teachers' experiences. *Irish Journal of Psychology*, 32(3–4), 92–104. <https://doi.org/10.1080/03033910.2011.613189>
- Muthén, L. K., & Muthén, B. O. (1998–2017). *Mplus user's guide* (8th ed.). Muthén & Muthén.
- Oldfield, J., & Ainsworth, S. (2022). Decentering the 'resilient teacher': Exploring interactions between individuals and their social ecologies. *Cambridge Journal of Education*, 52(4), 409–430. <https://doi.org/10.1080/0305764X.2021.2011139>
- Patefield, W. M. (1981). Algorithm AS 159: An efficient method of generating rxc tables with given row and column totals. *Applied Statistics*, 30, 91–97. <https://doi.org/10.2307/2346669>
- Peixoto, F., Silva, J. C., Pipa, J., Wosnitzer, M., & Mansfield, C. (2020). The multidimensional teachers' resilience scale: Validation for Portuguese teachers. *Journal of Psychoeducational Assessment*, 38(3), 402–408. <https://doi.org/10.1177/0734282919836853>
- Peixoto, F., Wosnitzer, M., Pipa, J., Morgan, M., & Cefai, C. (2018). A multidimensional view on pre-service teacher resilience in Germany, Ireland, Malta and Portugal. In M. Wosnitzer, F. Peixoto, S. Beltman, & C. Mansfield (Eds.), *Resilience in education: Concepts, contexts and connections* (pp. 73–89). Springer. [https://doi.org/10.1007/978-3-319-76690-4\\_5](https://doi.org/10.1007/978-3-319-76690-4_5)
- Ping, C., Schellings, G., & Beijgaard, D. (2018). Teacher educators' professional learning: A literature review. *Teaching and Teacher Education*, 75, 93–104. <https://doi.org/10.1016/j.tate.2018.06.003>
- Pozo-Rico, T., Poveda, R., Gutiérrez-Fresneda, R., Castejón, J. L., & Gilar-Corbi, R. (2023). Revamping teacher training for challenging times: Teachers' well-being, resilience, emotional intelligence, and innovative methodologies as key teaching competencies. *Psychology Research and Behavior Management*, 16, 1–18. <https://doi.org/10.2147/PRBM.S382572>
- Rajesh, C., Ashok, L., Rao, C. R., Kamath, V., Kamath, A., & Sekaran, V. C. (2020). Predictors of psychological well-being among high school teachers: A cross-sectional study from southern India. *Indian Journal of Community Health*, 32(4), 722–726. <https://doi.org/10.47203/IJCH.2020.v32i04.019>
- Ramakrishna, M., & Singh, P. (2022). The way we teach now: Exploring resilience and teacher identity in school teachers during COVID-19. *Frontiers in Education*, 7, Article 882983. <https://doi.org/10.3389/educ.2022.882983>
- Richards, K., Wilson, W. J., Holland, S. K., & Haeghele, J. A. (2020). The relationships among perceived organization support, resilience, perceived mattering, emotional exhaustion, and job satisfaction in adapted physical educators. *Adapted Physical Activity Quarterly: Adapted Physical Activity Quarterly*, 37(1), 90–111. <https://doi.org/10.1123/apaq.2019-0053>
- Rizqi, M. (2017). Stress and resilience among teachers: An interview study of an Indonesian junior high school teacher. *TEFLIN Journal*, 28(1), 22–37. <https://doi.org/10.15639/teflinjournal.v28i1/22-37>
- Robinet-Serrano, A., & y Pérez-Azuanché, M. (2020). Estrés en los docentes en tiempos de pandemia Covid-19. *Revista Polo del Conocimiento*, 5(12), 637–653. <https://rb.gy/bbdmxb>
- Robinson, L. E., Valido, A., Drescher, A., Woolweaver, A. B., Espelage, D. L., LoMurray, S., et al. (2022). Teachers, stress, and the COVID-19 pandemic: A qualitative analysis. *School Mental Health*, 15, 78–89. <https://doi.org/10.1007/s12310-022-09533-2>
- Ryff, C. D. (2013). Psychological well-being revisited: Advances in the science and practice of eudaimonia. *Psychotherapy and Psychosomatics*, 83, 10–28. <https://doi.org/10.1159/000353263>
- Ryff, C. D. (2018). Well-being with soul: Science in pursuit of human potential. *Perspectives on Psychological Science*, 13(2), 242–248. <https://doi.org/10.1177/1745691617699836>
- Salinas-Falquez, S., Roman-Lorente, C., Buzica, M., Álvarez, J., Gutiérrez, N., & Trigueros, R. (2022). Teachers' mental health and their involvement in educational inclusion. *Behavioral Sciences*, 12(8), 261. <https://doi.org/10.3390/bs12080261>
- Southwick, S. M., Vythilingam, M., & Charney, D. S. (2005). The psychobiology of depression and resilience to stress: Implications for prevention and treatment. *Annual Review of Clinical Psychology*, 1(1), 255–291. <https://doi.org/10.1146/annurev.clinpsy.1.102803.143948>
- Sudibjo, N., & Manihuruk, A. M. (2022). How do happiness at work and perceived organizational support affect teachers' mental health through job satisfaction during the COVID-19 pandemic? *Psychology Research and Behavior Management*, 15, 939–951. <https://doi.org/10.2147/PRBM.S361881>
- Ungar, M. (2012). Social ecologies and their contribution to resilience. In M. Ungar (Ed.), *The social ecology of resilience: A handbook of theory and practice* (pp. 13–32). Springer. [https://doi.org/10.1007/978-1-4614-0586-3\\_2](https://doi.org/10.1007/978-1-4614-0586-3_2)
- Vallés, A., & Clara, M. (2022). Conceptualizing teacher resilience: A comprehensive framework to articulate the research field. *Teachers and Teaching: Theory and Practice*, 29(1), 105–117. <https://doi.org/10.1080/13540602.2022.2149483>
- Varela, J. J., Guzmán, P., Oriol, X., Romo, F., & Miranda, R. (2022). Teachers' wellbeing, affects, and burnout during the pandemic in Chile. *Revista de Psicodidáctica*, 28(1), 10–18. <https://doi.org/10.1016/j.psicoe.2022.07.001>
- Véliz Burgos, A. (2012). Propiedades psicométricas de la Escala de Bienestar Psicológico y su estructura factorial en universitarios Chilenos [Psychometric properties and factor structure of scale of psychological well-being in Chilean university students]. *Psicoperspectivas*, 11(2), 143–163.
- Villalobos, P. (2018). *Dimensiones individuales, relacionales e institucionales en la resiliencia de profesores principiantes de la Región Metropolitana [Individual, relational and institutional dimensions in the resilience of beginning teachers in the Metropolitan Region]* [Doctoral dissertation, Facultad de Ciencias Sociales. Universidad de Chile] <https://repositorio.uchile.cl/handle/2250/191928>
- Villalobos, P., & Assael, J. (2018). Dimensiones individuales, relacionales e institucionales en la resiliencia de profesores principiantes egresados de una universidad pública. [Individual, relational and institutional dimensions of resilience of beginning teachers graduated from a public university]. *Psicoperspectivas*, 17(1), 1–11. <https://doi.org/10.5027/psicoperspectivas-vol17-issue1-fulltext-1145>
- Villalobos, P., Barría-Herrera, P., & Pasmanik, D. (2022). Relación docentes - estudiantes y resiliencia docente en contexto de pandemia [Teacher-student relationships and teacher resilience in the context of a pandemic]. *Psicoperspectivas*, 21(2), 131–143. <https://doi.org/10.5027/psicoperspectivas-vol21-issue2-fulltext-2567>
- Villalobos, P., & Flores, C. (2022). La renovación de las prácticas: Su aporte al fortalecimiento de la resiliencia en profesorado principiante [The renewal of practices: Their contribution to strengthening resilience in beginning teachers]. *Revista Electrónica Educare*, 26(2), 589–608. <https://doi.org/10.15359/ree.26-2.31>
- Weißenfels, M., Klopp, E., & Perels, F. (2022). Changes in teacher burnout and self-efficacy during the covid-19 pandemic: Interrelations and e-learning variables related to change. *Frontiers in Education*, 6, Article 736992. <https://doi.org/10.3389/educ.2021.736992>
- Wilcox, K., & Lawson, H. (2018). Teachers' agency, efficacy, engagement, and emotional resilience during policy innovation implementation. *Journal of Educational Change*, 19, 181–204. <https://doi.org/10.1007/s10833-017-9313-0>
- Wong, V. W., Ruble, L. A., Yu, Y., & McGrew, J. H. (2017). Too stressed to teach? Teaching quality, student engagement, and IEP outcomes. *Exceptional Children*, 83(4), 412–427. <https://doi.org/10.1177/0014402917690729>
- Wosnitzer, M., & Peixoto, F. (2018). Resilience in education: Emerging trends in recent research. In M. Wosnitzer, F. Peixoto, S. Beltman, & C. Mansfield (Eds.), *Resilience in education: Concepts, contexts and connections* (pp. 335–340). Springer.
- Yeigh, T., Willis, R., James, S., Lake, W., Lynch, D., Peddell, L., et al. (2022). Teacher of mathematics identity as a predictor of teacher wellbeing. *Australian Educational Researcher*, 50, 1403–1420. <https://doi.org/10.1007/s13384-022-00553-0>
- Zhang, X., Brown, A. M., & Rhubart, D. C. (2023). Can resilience buffer the effects of loneliness on mental distress among working-age adults in the United States during the COVID-19 pandemic? A latent moderated structural modeling analysis. *International Journal of Behavioral Medicine*. <https://doi.org/10.1007/s12529-022-10151-0>
- Zilioli, S., Slaticher, R., Ong, A. D., & Gruenewald, T. L. (2015). Purpose in life predicts allostatic load ten years later. *Journal of Psychosomatic Research*, 79, 451–457. <https://doi.org/10.1016/j.jpsychores.2015.09.013>