



Original

Teachers' wellbeing, affects, and burnout during the pandemic in Chile

Jorge J. Varela ^{a,*}, Paulina Guzmán ^a, Xavier Oriol ^b, Francisca Romo ^c, and Rafael Miranda ^d

^a Universidad del Desarrollo, Chile

^b Universidad de Girona, España

^c Universidad Diego Portales, Chile

^d Universidad Continental del Perú, Perú

ARTICLE INFO

Article history:

Received 9 December 2021

Accepted 6 July 2022

Available online xxx

Keywords:

Pandemic

Wellbeing

Affects

Burnout

Social Support

ABSTRACT

The COVID-19 pandemic has had a dramatic impact upon teachers across the world. In Chile, the confinement also had a negative effect on teachers' wellbeing. However, there are no studies assessing teachers' mental health, affect, burnout, or social support during this period. Consequently, our study tested a mediation moderation model with Macro from SPSS in a sample of 635 teachers examining subjective wellbeing with the Pemberton Happiness Index, their emotions using the Positive and Negative Affect Schedule, their burnout with the Questionnaire for the Evaluation of Burnout Syndrome and their social support with the Social Support Questionnaire-Short Form. The study results suggest that the impact of burnout on teachers' wellbeing is mediated by negative and positive emotions. Additionally, this mediation was moderated by social support levels perceived by teachers. These results confirm the importance of providing additional support to teachers during the Pandemic.

© 2022 Published by Elsevier España, S.L.U. on behalf of Universidad de País Vasco.

Bienestar, afectos y desgaste laboral de los profesores durante la pandemia en Chile

RESUMEN

La pandemia de COVID-19 ha tenido un impacto negativo en el profesorado de todo el mundo. En Chile, el confinamiento también ha causado un efecto negativo en el bienestar de los profesores. Sin embargo, no hay estudios que evalúen la salud mental, los afectos, el agotamiento o el apoyo social de los profesores durante este período. De esta forma, este estudio ha probado un modelo de mediación moderada con Marco de SPSS en una muestra de 635 profesores a lo largo del país, examinando el bienestar subjetivo con el Índice de Felicidad de Pemberton, sus emociones mediante el Cuestionario de Afectos Positivos y Negativos, su estrés con el Cuestionario para la Evaluación del Síndrome de Burnout y su apoyo social con el Cuestionario de Apoyo Social-Forma Corta. Los resultados muestran que el impacto del desgaste laboral en el bienestar de los profesores está mediado por los afectos negativos y positivos. Además, esta mediación está moderada por los niveles de apoyo social percibidos por los profesores. Estos resultados confirman la importancia de proporcionar apoyo adicional a los profesores durante la pandemia.

© 2022 Publicado por Elsevier España, S.L.U. en nombre de Universidad de País Vasco.

Introduction

Worldwide, the COVID-19 pandemic has affected both people's physical and mental health (Greenberg, 2020; Kumar & Nayar, 2021). Despite the growing concerns on the impact of teachers' burnout and mental health, accelerated by the pandemic, only a few quantitative studies in Chile have addressed teachers' mental health and their wellbeing. Hence, the purpose of our study was

DOI of original article: <https://doi.org/10.1016/j.psicod.2022.07.002>

* Corresponding author at: Facultad de Psicología, Universidad del Desarrollo, Chile. Tel.: +56 (2) 25785731.

E-mail address: jovarela@udd.cl (J.J. Varela).

to examine the relationship between burnout and teacher well-being as mediated by both teacher's positive/negative affects. We also assess the impact of teacher's perceived social support as a moderator of this relationship.

Teacher wellbeing as a significant dimension for mental health

The concept of wellbeing refers to experiencing pleasure and achieving optimal functioning with two approaches: Hedonic and eudaimonic (Ryan & Deci, 2001). The hedonic or subjective well-being (Diener, 1984) has an affective and a cognitive component. The first refers to the person's evaluation of pleasant or unpleasant feelings experienced in his/her life. The cognitive component refers to an overall personal judgment of life satisfaction about an ideal situation (Tov, 2018). The second approach is eudaimonic wellbeing, associated with personal growth and development (Waterman, 1993). This approach is characterized by its multidimensional nature, such as a sense of self-determination (autonomy), positive self-evaluation of life (self-acceptance), recognition of the meaning of life (life purpose), and the position of high-quality personal relationships (positive relationships) (Ryff & Keyes, 1995).

Teachers rate their wellbeing lower compared to other professions and are more at risk of mental health problems (Grenville-Cleave & Boniwell, 2012; Kidger et al., 2016). Also, poor teachers' wellbeing has been associated with presenteeism (Gandy et al., 2014; Kidger et al., 2016) and depressive symptoms (Harding et al., 2019). In the literature, wellbeing has been found to relate to teachers' emotional regulation (e.g., Taxer & Frenzel, 2015), teachers' engagement (e.g., Parker et al., 2012), and student-teacher relationships (Spilt et al., 2011). For example, teachers experiencing poor wellbeing and poor mental health issues may find it challenging to develop good quality relationships with students (Kidger et al., 2016). Nevertheless, there are different risk factors for teacher wellbeing, such as emotional intelligence (Chung, 2019), teacher-student relationships (Spilt et al., 2011), and especially burnout syndrome (Guevara-Manrique et al., 2014).

Burnout syndrome in the teaching profession

Teaching is a profession characterized by high levels of burnout (Maslach et al., 2001). Maslach et al. (1986) characterize burnout syndrome by its emotional exhaustion. This occurs when a person feels emotionally exhausted and unable to cope with a situation that causes stress, depersonalization at work, which is reflected in an impersonal and cold response to users in the workplace, and feeling of low personal fulfillment, where the person constantly negatively evaluates his/her work. For teachers, burnout has implications for teachers' professional performance (e.g., Maslach et al., 2001) and outcomes, such as attrition (Madigan & Kim, 2021) and depression (Shin et al., 2013). Although there is empirical evidence of the relationship between burnout syndrome and wellbeing, in teaching contexts, the mediating role in this relationship of the experience of affects, both positive and negative, has not been sufficiently addressed. In addition, the role of social support as a moderator of the effects of burnout syndrome on the experience of positive and negative affects has not been advocated in school contexts.

Teachers' affects

Teaching is perhaps one of the most emotionally demanding professions (Roeser et al., 2012). They are expected to respond to students' individual and collective needs. Furthermore, teachers are also expected to regulate their emotions in class without the possibility of leaving or disconnecting (e.g., O'Connor, 2008). This explains the importance of studying teaching affective experiences

in relation to their wellbeing, for example, as possible significant mediator variable in that relationship. One of the theoretical perspectives in studying affective experience is the dimensional one, which characterizes affects by values along distinctive dimensions, the most common being valence and arousal (Watson et al., 1988). This means that it is measured by how, for example, positive or negative teachers feel (i.e., valence) and how excited they feel (i.e., arousal). The self-report dimensional affect literature has consistently established two dominant dimensions: Positive and negative affects (Watson et al., 1988). Positive Affect (PA) is defined as feeling enthusiastic, active, and alert. High PA is an emotional state of high energy, whereas low PA is characterized by feeling sad and lethargic. Conversely, Negative Affect (NA) is a general dimension of subjective distress that comprises a variety of negative mood states, including anger, contempt, disgust, guilt, fear, and nervousness, among others. Low NA is characterized as a state of calm and serenity (Watson et al., 1988). Previous research has not examined yet the role of the affects as mediator variables in the context of the pandemic for teachers.

Linking burnout, stress, affects, and wellbeing

Teachers' emotional experiences are related to wellbeing and mental and physical health (e.g., Chang, 2009). However, the evidence linking teachers' wellbeing and affects is scarce (Frenzel, 2014). Although these two aspects are probably bidirectionally related, an empirical demonstration of this relationship is still pending. Some studies indicate that repeated daily experiences of unpleasant affects cause negative changes in wellbeing, while repeated experiences of pleasant affects can promote wellbeing (e.g., Chang, 2009; Spilt et al., 2011). Moreover, teachers under stress may develop intense negative feelings about their work, including anxiety, anger, or frustration (Frenzel, 2014). Other investigators suggest that the need to comply with emotional rules is a stressor for teachers (Day, 2004; Philipp & Schüpbach, 2010). In this context, Carson (2006) observed that burnout was associated with exhibiting positive affects or suppression of negative affects. However, some teachers could proactively regulate their emotions or generate positive feelings while teaching. Therefore, emotional rules may promote teachers' positive emotional regulation and, consequently, higher levels of wellbeing (Tsang, 2011).

Although the evidence about teachers' affects and wellbeing is scarce, many studies in other areas have tested the protective role of positive affects in facing challenging life events, generating positive wellbeing and health outcomes, such as flourishing mental health (Catalino & Fredrickson, 2011); life satisfaction, and a decrease in depressive symptoms (Fredrickson et al., 2008). These empirical studies state that positive affect helps build an individual's resources essential to creating wellbeing and healthy living conditions (Fredrickson, 2013). Taking Fredrickson's perspective, research on teachers' affect has found similar results, albeit scarce. For example, Buonomo et al. (2017) showed that teachers' positive emotions towards students partially protected teachers from the detrimental effect of negative ones on self-efficacy. Also, Carboneau et al. (2008) found that increases in harmonious passion for teaching predicted increases in work satisfaction and decreases in burnout symptoms over time. In summary, positive affect play a role in teachers' wellbeing as a mediator, predictor, or protective factor from negative emotions.

Additionally, studies on job stress also may help understand the relationship between stress, affects, and wellbeing in teaching. Lazarus and Folkman (1984) postulate that the factors determining stress intensity are individual and transactional in nature (Bibou-Nakou et al., 1999; Fiorilli et al., 2017, 2019). Thus, it is reasonable to speculate that personal and organizational factors and their interactions are related to positive or negative affects and wellbeing at

schools (Frenzel, 2014). Hence, we could hypothesize that highly stressed or burned-out teachers that perceive high levels of social support in their workplace could be protected against the adverse effects on their wellbeing. Moreover, highly stressed- or burned-out teachers that feel supported by the school organization and their peers still might feel enthusiastic about teaching.

Social support

Although there is no consensus in the literature on the definition of social support (Cooke et al., 1988), it has been expounded that it occurs in interaction with others, within an established network (Sendra et al., 2020) and that its quality depends on the structure of the community (Wright, 2016). Medical and behavioral studies have demonstrated the importance of social relationships to treat various illnesses or maintain good health and wellbeing (Cohen et al., 2000). In this regard, Lakey and Cohen (2000) have postulated that support can reduce the impact of stressful life events. Stress is buffered via supportive actions (attentive listening, advice, etc.) or by the belief that social support will be available. Teaching is based on social relationships, mainly established between teachers and students. However, the relationships play a central role in the quality and the type of resources that the teacher can obtain from these relationships, particularly during challenging or stressful situations. Certain studies have addressed the issue of social support in teachers. They have described a negative relationship between social support and physical symptoms, anxiety, and depression (Nabavi et al., 2017), a negative correlation between a high perception of social support and the burnout syndrome (Fiorilli et al., 2019; Langher et al., 2017), and a positive relationship between social support and team cohesion and unity, effectiveness, and commitment to the school (Chung, 2019). Similarly, teachers' perceived social support is linked to collaborative work and seeking solutions (Avanzi et al., 2018).

Our study aims to examine the relationship between burnout and teacher well-being while considering teacher's positive/negative effects as mediator variables. Moreover, we want to explore the impact of the teacher's perceived social support as a moderator variable of these relationships. We hypothesize that social support has a moderating role in the relationship between burnout and wellbeing when it is mediated by the emotions experienced by teachers. The study of this hypothesis becomes especially relevant in the context of pandemic since, as explained above, teachers, who are normally exposed to various specific stressors in their area of work (i.e. school), from the onset of the health crisis to date have had to deal with the stress caused by the global situation and the adaptation to changes in the teaching experience in a relatively short period of time, altering the interaction with colleagues and students. Therefore, we hypothesize that positive and negative affects can mediate the impact of burnout on teachers' wellbeing (see Figure 1). This mediation is also moderated by teachers' perceived social support, which acts as a protective factor not only in the relationship between burnout and wellbeing, but also between burnout and the positive and negative affects experienced by teachers during the COVID-19 confinement.

Method

Participants

Data were collected from a convenience sample of 635 Chilean teachers across the country, ages of 21 and 72 ($M=40.66$, $SD=10.33$). Of the total sample, 586 were female (92.3%), and 377 from municipal schools, 213 semi-public and 41 private. Inclusion

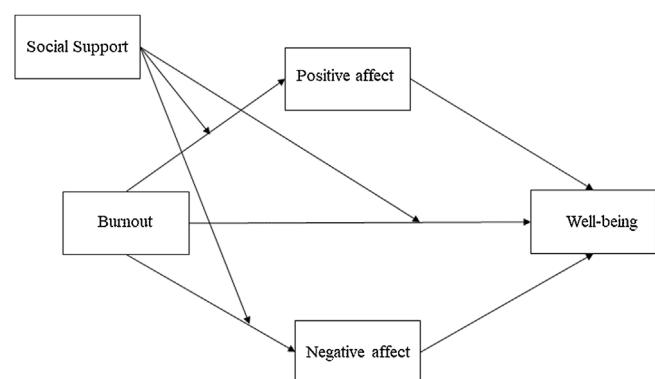


Figure 1. Conceptual model: Relationship between burnout and wellbeing mediated by positive and negative affect conditioned by social support.

criteria were: they were active teachers in preschool, elementary or secondary schools within the national territory. 48% have been teaching for 1 year to 10 years, 45% have been teaching for between 11 and 30 years, while only 7% have been teaching for more than 31 years. Regarding the type of working day, 84.4% of the teachers work full time, while 12.3% work part time and 2.4% work double time. The study was instrumental (Ato et al., 2013). The sample size was determined with Soper's (2020) software that considers the number of predictors; the size of the anticipated effect ($\lambda = .1$), the desired statistical significance ($\alpha = .01$), and the level of statistical power ($1 - \beta = .99$). Through this analysis, a minimum of 344 individuals are needed to be evaluated. None of the items reported missing values higher than 10%. We used multiple imputations (MI) to handle missing data. Thirty copies of the data were formed in the imputation process, each with missing data imputed using Monte Carlo Method (White et al., 2011).

Measures

The Pemberton Happiness Index (PHI, Hervás & Vázquez, 2013) was used to measure subjective wellbeing. This index measures several domains including general, hedonic, eudaimonic, and social wellbeing. We used a subsection of this index that measures remembered wellbeing based on 11 items (e.g., "I am very satisfied with my life") following an 11-point Likert scale (0 = totally disagree; 10 = totally agree). Higher scores indicate higher levels of subjective wellbeing. One item was reverse coded to facilitate interpretation of results. PHI was validated across different ages (16 to 60 years old), languages (including Spanish), and countries, with higher levels of Cronbach's α range .84 to .93 (Hervás & Vázquez, 2013). For the current sample Cronbach's α was: .92 and for McDonald's omega (Ω) was .92. In the case of adjustment indicators for the confirmatory factor analysis (CFA), the values were a comparative fit index (CFI) of .94, Tucker-Lewis index (TLI) of .92 and root mean square error of approximation (RMSEA) of .09.

A self-report measure with two subscales (Positive and Negative Affect, PANAS) (Watson et al., 1988) was used to assess teachers' positive and negative affect. For its validation in Spanish, PANAS was administered to a sample of university students (Sandín et al., 1999). Previous studies in Chile have shown good psychometric properties of the scale consistent with previous literature (e.g., Dufey & Fernandez, 2012). The instrument has a 5-point Likert scale (nothing = 1, extremely = 5). Higher scores indicate more presence of the emotion positive or negative respectively. Examples of items are: "Thinking about your work, respond according to what you feel or have felt in the LAST MONTH. Please check the alternative that best represents you. Cheerful, Happy, Irritated, Sad". The internal consistency of scale for the current sample Cronbach's α was: .85

and Ω of .83 for *negative affects* and .93 for *positive affects* subscale; as well Ω of .80. Regarding the confirmatory factor analysis indicators, it is reported that for negative affects the CFI is .92, and the reported TLI is .90; for the RMSEA a value of .17 is reported. Moreover, for positive affects, the reported CFI is .98 and the TLI is .97; likewise, the reported RMSEA is .09.

Teachers' burnout was measured using the *Questionnaire for the Evaluation of Burnout Syndrome* (CESQT; [Gil-Monte, 2019](#)). This scale assesses the individual's cognitions, emotions and attitudes related to work experiences with four scales (*illusion about work, psychic burnout, indolence and guilt*). It consists of 20 items (e.g., "I feel emotionally drained") with a Likert five-point scale (never = 0 to very frequently: every day = 4). The scale was adapted and 4 items were eliminated, corresponding to the teacher's perception of the students and their families. Higher scores indicate higher levels of burnout. Cronbach's α was: .85 and the Ω of .84; likewise, reliability indicators are reported for each of the dimensions that are part of the burnout scale; for the *guilt* subscale, the Cronbach's α was .79 and the Ω of .79 as well; the *psychic burnout* subscale reports a Cronbach's α of .92 and an Ω of .92; the *illusion* subscale reports a Cronbach's α of .88 as does the Ω of .88. Because *indolence* subscale only has two items, no reliability analysis was computed, however there is a correlation between these two items ($r = .33$, $p < .01$). As for the confirmatory factorial indicators, it is observed that the CFI and TLI reported are above the threshold of .9 (CFI = .94, TLI = .92, RMSEA = .07).

Social support was assessed using an instrument from the *Social Provisions Scale* (SPS) which was validated with college Spanish students ([Martínez-López et al., 2014](#)). We used three dimensions of this measure with a total of 12 items (e.g., "I don't feel comfortable talking to anyone about my problems") with a Likert response (totally disagree = 1, very agree = 6). Five items were reverse coded to facilitate the interpretation of the scale. Thus, higher scores indicate more self report of perceived social support. For the current sample at overall level Cronbach's α was: .79 and the Ω was .83. Taking into account the three factors linked to this scale, it is reported that for the *reliable alliance* case the Ω was .83 and the Cronbach's α alpha reported was .81. Likewise, for the *orientation* subscale the Cronbach's α alpha reported was .81 and the Ω coefficient was .82; finally for the *reinforcement of worth* subscale the Cronbach's α alpha was .70 and the Ω coefficient was .68. Finally, regarding the validity indicators, it is reported that, for the model with three correlated factors, the CFI = .90, TLI = .91 and RMSEA = .081.

Procedure

Data were collected in November 2021 using an online platform (Odoo). The study was approved by the Universidad del Desarrollo's ethics committee. All protocols strictly adhered to university ethical guidelines. All participants signed written informed consent forms to be part of the study. A pilot questionnaire was applied in October 2020 in a smaller diverse sample of 10 teachers from 10 schools. As a result of this application, adjustments were made mainly related to the use of inclusive language since in Spanish nouns, adjectives and pronouns are differentiated between masculine and feminine.

Data analysis

For the internal consistency assessment, reliability indicators such as the McDonalds Omega coefficient ([Dueber, 2017](#)) and Cronbach's alpha ([Hancock & An, 2018](#)) were used. The validity of the scales was assessed with a structural model relating scale factors to relevant variables. The estimation used was WLSMV (weighted least squares mean and variance corrected), an estimation that

Table 1
Descriptives and correlations between student variables

Variable	M	SD	As	Sk	1	2	3	4	5
1. Burnout	2.4	.56	.13	-.09	–				
2. Social support	4.7	.97	-.81	.43	-.49**	–			
3. Wellbeing	7.0	1.83	-.68	.02	-.66. **	.56**	–		
4. Positive affect	2.7	.84	-.03	-.39	-.48**	.35**	.53**	–	
5. Negative affect	2.3	.90	.65	-.16	.50**	-.37**	-.47**	-.40**	–

Note. ** $p < .001$.

serves for models that present non-normality and the items have an ordinal character ([Hancock & Mueller, 2013](#)). To verify the fit indicators, different statistics were taken into account, such as Chi-square, comparative fit index (CFI), Tucker Lewis Index (TLI), standardized root mean residual and root mean square error of approximation (RMSEA); according to [Marsh et al. \(2004\)](#), the acceptable indicators for the case of CFI and TLI should be greater than .9; for the case of RMSEA this should be less than .8. The normal distribution of the variables was tested following [West et al. \(1995\)](#) who proposed as a reference for substantial deviation from normality an absolute skewness value > 2 and an absolute (proper) kurtosis value > 7 .

Secondly, a moderated mediation model was calculated using SPSS 23.0 and the PROCESS macro ([Hayes, 2012](#)). PROCESS uses an ordinary least squares (OLS) or a logistic regression-based path analytical framework for estimating indirect effects on both un-modulated and moderated mediation models with single or multiple mediators and moderators ([Preacher et al., 2007](#)). In concrete, model 8 of the PROCESS was performed and bootstrapping was set to 5000 resamples. To smooth the multicollinearity of the model variables, they were centered to the mean ([Iacobucci et al., 2007](#)). Age and sex are included as covariates in the regression models. To calculate moderations in the model, simple slopes computation was performed and the interactions were categorized using high (1SD above the mean) and low (1SD below the mean) levels of the moderator variables.

Regarding normality assumption for linear regression, Bootstrapping, a nonparametric resampling procedure, is an additional method advocated for testing mediation that does not impose the assumption of normality of the sampling distribution. For the issue of heteroscedasticity, the option to use robust standard errors, also referred to as Huber-White (or Huber-White-Eicker) was included within the Hayes analysis to make it robust against heteroscedasticity ([Field & Wilcox, 2017](#)). Johnson-Neyman analysis ([Johnson & Fay, 1950](#)) was included to explore whether the conditional effects of *burnout* on *wellbeing* were different at given values of the moderator of *social support* and the statistical significance of the conditional effect within the range of the moderator measure.

Results

As can be seen in [Table 1](#), *wellbeing* is positively and significantly related to *positive affect* ($r = .53$, $p < .001$) and *social support* ($r = .56$, $p < .001$). On the other hand, *wellbeing* is negatively and significantly related to *negative affect* ($r = -.47$, $p < .001$) and *burnout* ($r = -.66$, $p < .001$). Regarding the normality of the study variables, none of the skewness and normality indicators presents an absolute value higher than 2 and 7 determining substantial normality.

Mediation and moderated mediation models

The moderated mediation model was controlled for sex and age. In the first model, the moderator variable *negative affect* is used as dependent variable. Model summary (R^2 of .52 and R^2 of .27); as well $F(df_1, df_2) = 49.88$ (5, 629), $p < .001$. For this model, *burnout* has a significant impact over *negative affect* ($b = .68$, $SE = .16$, $p < .001$);

Table 2

Direct effects of burnout and social support and its interaction over negative affects

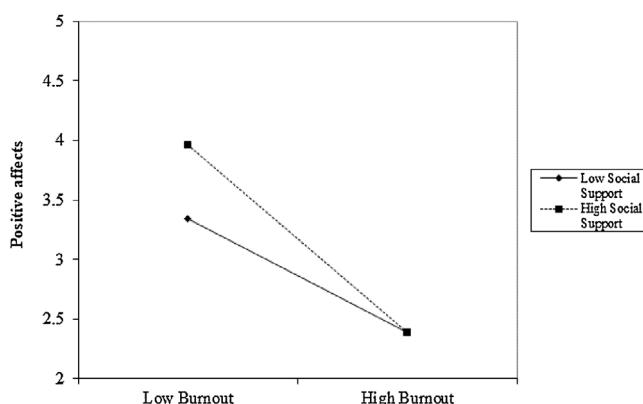
Predictor	B	SE	p
Mediator variable model (DV = negative affect)			
Burnout	.68	.16	.00
Social support	-.16	.04	.00
Burnout x social support	.07	.05	.18
Sex	.12	.11	.30
Age	.00	.00	.41

Note. Wellbeing as a dependent variable.

Table 3

Direct effects of burnout and social support and its interaction over positive affects

Predictor	B	SE	p
Mediator variable model positive affect			
Burnout	-.63	.06	.00
Social Support	.16	.04	.00
Burnout x social support	-.16	.05	.00
Sex	-.17	.11	.13
Age	-.01	.00	.03

**Figure 2.** Interaction between burnout and social support on positive affect.

in the case of *social support*, it has a negative effect over *negative affect* ($b = -.16$, $SE = .16$, $p < .001$). However, interaction variables result in non-significant ($b = .07$, $SE = .05$, $p > .05$). **Table 2** presents these results.

When the mediator variable *positive effect* is the dependent variable, **Table 3** presents the results. The regression model presents a R of .52 and a R^2 of .27, $F(df1, df2) = 49.88(5, 629)$, $p < .01$. Specifically, *burnout* has a negative effect over *positive affects* ($b = -.63$, $SE = .06$, $p < .001$) and *social support* has a positive effect over *positive affects* ($b = .16$, $SE = .06$, $p < .001$). Likewise, the interaction was $b = -.16$, $SE = .05$, $p < .001$. Lastly, age is significant ($b = -.01$, $p < .05$). Using the Johnson-Neyman technique we determine that the effect of the moderator variable remained significant from 1.31 CI [-1.01, -.66] to -2.49 [-.40, .00], below this point the effect is non-significant.

Figure 2 shows that teachers with high levels of *social support* (+1 SD) show higher *positive affect* in both the groups of teachers with *low burnout* (3.22) compared with *high burnout* (2.34). However, when there is *high burnout*, the *positive affects* are more likely to be equal whether we report *low social support* (2.19) or *high social support* (2.73).

Table 4 presents the results of the mediated moderation analysis. Considering the reported independent variables, it is observed that the reported R^2 is .59, $F(df1, df2) = 131.96 (7, 627)$, $p < .001$. In particular, it is observed that *burnout* has a negative and significant effect on *wellbeing* ($b = -1.18$, $SE = .11$, $p < .001$); and *positive affect* a significant effect on *wellbeing* ($b = .50$, $SE = .07$, $p < .001$); for *negative affect* it has a significant effect on *wellbeing* ($b = -.21$, $SE = .06$,

Table 4

Direct relationships of moderated mediation models

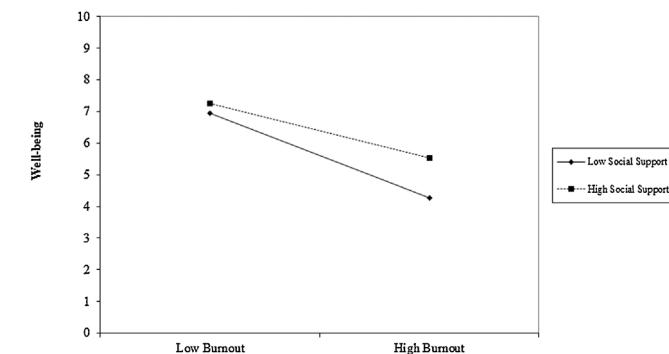
Direct relationship	Unstandardized coefficient	SE	P
Burnout → Positive affects	-.63	.06	.00
Burnout → Negative affects	.68	.07	.00
Negative affects → Wellbeing	-.21	.06	.00
Positive affects → Wellbeing	.5	.07	.00
Burnout → Wellbeing	-1.18	.11	.00
Burnout * Social Support → Positive affects	-.16	.04	.00
Burnout * Social Support → Negative affects	.07	.05	.18
Burnout * Social Support → Wellbeing	.23	.07	.00

Table 5

Indirect relationships of moderated mediation models

Probing moderated indirect Relationship	Effect	SE	95% CI	
			LL	UL
Mediator: Positive affects				
Low level of social support	-.24	.05	-.35	-.15
Medium level of social support	-.32	.06	-.44	-.22
High level of social support	-.39	.07	-.54	-.26
Index moderated mediation	-.08	.03	-.13	-.03
Mediator: negative affects				
Low level of social support	-.13	.04	-.22	-.05
Medium level of social support	-.14	.05	-.24	-.05
High level of social support	-.15	.05	-.26	-.06
Index moderated mediation	-.01	.04	-.04	.01

Note. CI = confidence interval; LL = lower limit; UL = upper limit.

**Figure 3.** Interaction between burnout and social support on subjective wellbeing.

$p < .001$). Considering the interaction variable between *burnout* and *social support*, it is observed that there is a positive effect on *wellbeing* ($b = .23$, $SE = .07$, $p < .001$).

Regarding the results of indirect effects on moderation, it is suggested that the indirect effect of *burnout* on *wellbeing* through *positive affect* is moderated by *social support*. As shown in **Table 5** the moderate mediation index (index = -.08, 95% CI [-.13 / -.03]) is significant as the 95% CI does not include zero. When moderator is *negative affects* the moderate mediation index is not significant (index = -.01, 95% CI [-.04 / .01]).

Figure 3 shows that teachers who present high levels of *social support* (+1 SD) and *high burnout* show greater *wellbeing* (6.94) than those who present *low social support* and *high burnout* (5.87). However, greater *wellbeing* is observed in those who perceive *low social support* but also *low burnout* (7.44) with respect to those who perceive *high social support* and *low social support* (5.87).

Discussion

The purpose of our study was to examine the relationship between *burnout* and teacher *wellbeing* as mediated by both teacher's positive/negative affects. Moreover, explored the impact of the teacher's perceived *social support* as a moderator of this rela-

tionship. Our results suggest that the impact of burnout on teachers' wellbeing is mediated by negative and positive affects. Also, the mediation of positive and negative affects is moderated or buffered by the level of social support perceived by teachers; on the contrary, a moderate mediation effect was not observed in the case of negative emotions. This negative effect on teachers' wellbeing can be explained by the switch to online teaching over a relatively short period of time (Chan et al., 2021; Hascher et al., 2021). As occurred in most countries, Chilean teachers did not receive any kind of training or support to deal with this new context. Evidently, this could at least partially explain the negative impact on their wellbeing. Previous studies have demonstrated that teachers have suffered grief, distress, worry, and frustration during the Pandemic (e.g., Ramos-Huenteo et al., 2020). Our findings expand on this negative impact on teachers, adding emotions as part of the underlying mechanism and social support as a potential buffering variable.

Studies suggest that burnout syndrome leads to physical symptoms, absenteeism and job turnover (Maslach, 2017, p. 8) and therefore it has implications for teachers' job retention. This has been confirmed by Rajendran et al. (2020) who propose a model in which emotional exhaustion mediates the relationship between job and personal demands and the attempt to leave teaching. A study by Lee (2019) observed that burnout syndrome was a mediator in the relationship between emotional labor strategies and the intention to leave the teaching profession. In this context, social support emerges as a protective factor for teachers' wellbeing, and against burnout. Beehr and McGrath (1992) suggest that the perception social support has three main effects: first, an effect on psychological stress produced by job burnout, a second positive affects that promotes wellbeing, and finally, a buffering effect on job burnout and the subsequent psychological stress. Zhang et al. (2020) found the same buffering effect of perceived social support on the relationship between job burnout and wellbeing in a study that involved female Chinese physicians. However, investigators did not include negative and positive emotions as mediators of this relationship. In contrast, our study found that higher levels of social support can buffer the negative effects of burnout on Chilean teachers' wellbeing.

Our results also demonstrate a significant relationship between teachers' positive emotions and wellbeing, adding to the scarce evidence in this topic (Frenzel, 2014). These results suggest that repeated experiences of pleasant emotions can promote wellbeing (e.g. Chang, 2009; Spilt et al., 2011). However, many of these interactions are probably bidirectional, and therefore it is possible that feelings of subjective wellbeing enable teachers to feel enjoyment in their work. Evidently, future longitudinal studies should determine the directionality on the wellbeing/ positive emotion relationship. Interestingly, our findings also suggest an indirect association between burnout and wellbeing via positive emotions. We speculate that positive emotions are part of a mechanism that explains the relationship between burnout and wellbeing. Hence, teachers that experience higher levels of burnout perceive higher levels of subjective wellbeing because they experience positive emotions. Social support also seems to play a role in this relationship. Teachers with high levels of social support display higher levels of positive affect in low and high burnout individuals. Therefore, social support operates as a protective factor against the negative effects of low burnout on teachers' wellbeing. Previous studies (e.g., Bibou-nakou et al., 1999; Fiorilli et al., 2017, 2019) have suggested that the interaction between transactional and individual factors (Lazarus & Folkman, 1984), such as the perception of social support by the employee in its workplace is key to understand wellbeing. On the contrary, the results show that social support does not moderate the indirect associations between burnout and wellbeing through negative emotions. These findings suggest that it may be very difficult for perceived social support

acts as a protective factor in those teachers who present burn-out and, in addition, a high presence of negative emotions.

On the other hand, these results also pose a challenge for both schools and for public policies in education to continue developing classes in the context of the pandemic and to deal with the return to presential classes once the health crisis is over. A recent OECD report (Viac & Fraser, 2020) confirms this at a global level, including high levels of work dropout and labor demands, exacerbated during the pandemic, calling for urgent interventions to ensure teachers' wellbeing. Interventions at school level are important to promote the development of support networks among teachers, not only for the planning of academic activities, but also for the development of instances that promote positive collaborative relationships and the reduction of the effects of stress. At the same time, teacher training should include strategies for self-care, emotional management and coping strategies necessary not only for dealing with extraordinary contexts, such as the one left by the COVID-19 pandemic, but also for a normally challenging day-to-day life for teachers.

Finally, our study has some limitations that must be considered. First, we used a convenience sample to collect our data. Nevertheless, we were able of build a diverse and representative sample. Secondly, our strategy did not account for the existence of different teaching settings, such as urban or rural contexts. Although during the pandemic the Chilean government decided to close school across the country, neither all teachers nor all students had the resources to continue with online classes due to a lack of internet connectivity or by economic reasons. Third, our study performed a cross sectional data analysis that may limit the interpretation or the scope of our findings. Therefore, the existence of longitudinal effects should be explored by future studies.

Despite previous study limitations, our study contributes to the literature by highlighting the negative effects of burnout on teachers' wellbeing during the Pandemic. Second, recognizing the role of positive and negative emotions as mediators variables for this relationship. Lastly, reinforce the importance of social support as a moderator variable for the native effect of burnout on positive emotions and wellbeing among teachers.

Funding

This research was supported by FONDECYT Regular N° 1180607, CONICYT, Chile.

Conflicts of interest

None.

Acknowledgements

The authors would like to thank the Fundación Liderazgo Chile (FLICH) for their collaboration in the development of this study.

References

- Ato, M., López-García, J. J., & Benavente, A. (2013). Un sistema de clasificación de los diseños de investigación en psicología. *Annales de Psicología/Annals of Psychology*, 29(3), 1038–1059. <https://doi.org/10.6018/analesps.29.3.178511>
- Avanzi, L., Fraccaroli, F., Castelli, L., Marcionetti, J., Crescentini, A., Balducci, C., & van Dick, R. (2018). How to mobilize social support against workload and burnout: The role of organizational identification. *Teaching and Teacher Education*, 69, 154–167. <https://doi.org/10.1016/j.tate.2017.10.001>
- Beehr, T. A., & McGrath, J. E. (1992). Social support, occupational stress and anxiety. *Anxiety, Stress, and Coping*, 5(1), 7–19. <https://doi.org/10.1080/10615809208250484>
- Bibou-Nakou, I., Stogiannidou, A., & Kiosseoglou, G. (1999). The relation between teacher burnout and teachers' attributions and practices regarding school behaviour problems. *School Psychology International*, 20(2), 209–217. <https://doi.org/10.1177/0143034399020002004>

Buonomo, I., Fatigante, M., & Fiorilli, C. (2017). Teachers' burnout profile: Risk and protective factors. *The Open Psychology Journal*, 10(1), 190–201. <https://doi.org/10.2174/1874350101710010190>

Carboneau, N., Vallerand, R. J., Fernet, C., & Guay, F. (2008). The role of passion for teaching in intrapersonal and interpersonal outcomes. *Journal of Educational Psychology*, 100(4), 977–987. <https://doi.org/10.1037/a0012545>

Carson, R. L. (2006). *Exploring the episodic nature of teachers' emotions as it relates to teacher burnout*. Purdue University.

Catalino, L. I., & Fredrickson, B. L. (2011). A Tuesday in the life of a flourisher: The role of positive emotional reactivity in optimal mental health. *Emotion (Washington, D.C.)*, 11(4), 938–950. <https://doi.org/10.1037/a0024889>

Chan, M. K., Sharkey, J. D., Lawrie, S. I., Arch, D. A. N., & Nylund-Gibson, K. (2021). Elementary school teacher wellbeing and supportive measures amid COVID-19: An exploratory study. *School Psychology*, 36(6), 533–545. <https://doi.org/10.1037/spq0000441>

Chang, M. L. (2009). An appraisal perspective of teacher burnout: Examining the emotional work of teachers. *Educational Psychology Review*, 21(3), 193–218. <https://doi.org/10.1007/s10648-009-9106-y>

Chung, M. S. (2019). Teacher efficacy, collective self-esteem, and organizational commitment of childcare teachers: A moderated mediation model of social support. *Frontiers in Psychology*, 10, Article 955. <https://doi.org/10.3389/fpsyg.2019.00955>

Cohen, S., Underwood, L. G., & Gottlieb, B. H. (Eds.). (2000). *Social support measurement and intervention: A guide for health and social scientists*. Oxford University Press. <https://doi.org/10.1093/med:psych/9780195126709.001.0001>

Cooke, B. D., Rossmann, M. M., McCubbin, H. I., & Patterson, J. M. (1988). Examining the definition and assessment of social support: A resource for individuals and families. *Family Relations*, 37(2), 211. <https://doi.org/10.2307/584322>

Day, C. (2004). *A passion for teaching* (1st ed.). Routledge Falmer. <https://doi.org/10.4324/9780203464342>

Diener, E. (1984). Subjective wellbeing. *Psychological Bulletin*, 95(3), 542–575. <https://doi.org/10.1037/0033-2909.95.3.542>

Dueber, D. M. (2017). Bifactor indices calculator: A Microsoft Excel-based tool to calculate various indices relevant to bifactor CFA models. <http://sites.education.uky.edu/apslab/resources/> <https://doi.org/10.13023/edp.tool.01>

Dufey, M., & Fernandez, A. M. (2012). *Validez y confiabilidad del Positive Affect and Negative Affect Schedule (PANAS) en estudiantes universitarios chilenos*. *Revista Iberoamericana de Diagnóstico y Evaluación Psicológica*, 2(34), 157–173.

Field, A. P., & Wilcox, R. R. (2017). Robust statistical methods: A primer for clinical psychology and experimental psychopathology researchers. *Behaviour Research and Therapy*, 98, 19–38. <https://doi.org/10.1016/j.brat.2017.05.013>

Fiorilli, C., Albanese, O., Gabola, P., & Pepe, A. (2017). Teachers' emotional competence and social support: Assessing the mediating role of teacher burnout. *Scandinavian Journal of Educational Research*, 61(2), 127–138. <https://doi.org/10.1080/00313831.2015.1119722>

Fiorilli, C., Benevene, P., De Stasio, S., Buonomo, I., Romano, L., Pepe, A., & Addimando, L. (2019). Teachers' burnout: The role of trait emotional intelligence and social support. *Frontiers in Psychology*, 10, 2743. <https://doi.org/10.3389/fpsyg.2019.02743>

Fredrickson, B. L. (2013). Positive emotions broaden and build. In P. Devine, & A. Plant (Eds.), *Advances in experimental social psychology* (Vol. 47) (pp. 1–54). Academic Press. <https://doi.org/10.1016/B978-0-12-407236-7.00001-2>

Fredrickson, B. L., Cohn, M. A., Coffey, K. A., Pek, J., & Finkel, S. M. (2008). Open hearts build lives: Positive emotions, induced through loving-kindness meditation, build consequential personal resources. *Journal of Personality and Social Psychology*, 95(5), 1045–1062. <https://doi.org/10.1037/a0013262>

Frenzel, A. C. (2014). Teacher emotions. In R. Pekrun, & L. Linnenbrink-Garcia (Eds.), *International handbook of emotions in education* (1st ed., Vol. 47, pp. 494–518). Routledge/Taylor & Francis Group.

Gandy, W. M., Coberley, C., Pope, J. E., Wells, A., & Rula, E. Y. (2014). Comparing the contributions of well-being and disease status to employee productivity. *Journal of Occupational and Environmental Medicine*, 56(3), 252–257. <https://doi.org/10.1097/JOM.0000000000000109>

Gil-Monte, P. R. (2019). *CESQT: Cuestionario para la Evaluación del Síndrome de Que-marse por el Trabajo: Manual. TEA*.

Greenberg, N. (2020). Mental health of health-care workers in the COVID-19 era. *Nature Reviews Nephrology*, 16(8), 425–426. <https://doi.org/10.1038/s41581-020-0314-5>

Grenville-Cleave, B., & Boniwell, I. (2012). Surviving or thriving? Do teachers have lower perceived control and well-being than other professions? *Management in Education*, 26(1), 3–5. <https://doi.org/10.1177/0892020611429252>

Guevara-Manrique, A. C., Sánchez-Lozano, C. M., & Parra, L. (2014). Estrés laboral y salud mental en docentes de primaria y secundaria. *Revista Colombiana de Salud Ocupacional*, 4(4), 30–32. <https://doi.org/10.18041/2322-634X/rco.4.2014.4963>

Hancock, G. R., & An, J. (2018). Digital items module 2: Scale reliability in structural equation modeling. *Educational Measurement: Issues and Practice*, 37(2), 73–74. <https://doi.org/10.1111/emip.12210>

Hancock, G. R., & Mueller, R. O. (Eds.). (2013). *Structural equation modeling: A second course*. IAP.

Harding, S., Evans, R., Morris, R., Gunnell, D., Ford, T., Hollingworth, W., Tilling, K., Bell, S., Grey, J., Brockman, R., Campbell, R., Araya, R., Murphy, S., & Kidger, J. (2019). Is teachers' mental health and wellbeing associated with students' mental health and wellbeing? *Journal of Affective Disorders*, 242, 180–187. <https://doi.org/10.1016/j.jad.2018.08.080>

Hascher, T., Beltman, S., & Mansfield, C. (2021). Swiss primary teachers' professional wellbeing during school closure due to the COVID-19 Pandemic. *Frontiers in Psychology*, 12, Article 687512. <https://doi.org/10.3389/fpsyg.2021.687512>

Hayes, A. F. (2012). *PROCESS: A versatile computational tool for observed variable mediation, moderation, and conditional process modeling* [White paper] Retrieved from <http://www.afhayes.com/public/process2012.pdf>.

Hervás, G., & Vázquez, C. (2013). Construction and validation of a measure of integrative well-being in seven languages: The Pemberton Happiness Index. *Health and Quality of Life Outcomes*, 11(1), 1–13. <https://doi.org/10.1186/1477-7525-11-66>

Iacobucci, D., Saldanha, N., & Deng, X. (2007). A meditation on mediation: Evidence that structural equations models perform better than regressions. *Journal of Consumer Psychology*, 17(2), 139–153. [https://doi.org/10.1016/S1057-7408\(07\)70020-7](https://doi.org/10.1016/S1057-7408(07)70020-7)

Johnson, P. O., & Fay, L. C. (1950). The Johnson-Neyman technique, its theory and application. *Psychometrika*, 15(4), 349–367. <https://doi.org/10.1007/BF02288864>

Kidger, J., Brockman, R., Tilling, K., Campbell, R., Ford, T., Araya, R., King, M., & Gunnell, D. (2016). Teachers' wellbeing and depressive symptoms, and associated risk factors: A large cross sectional study in English secondary schools. *Journal of Affective Disorders*, 192, 76–82. <https://doi.org/10.1016/j.jad.2015.11.054>

Kumar, A., & Nayar, K. R. (2021). COVID-19 and its mental health consequences. *Journal of Mental Health*, 30(1), 1–2. <https://doi.org/10.1080/09638237.2020.1757052>

Lakey, B., & Cohen, S. (2000). Social support theory and measurement. In S. Cohen, L. G. Underwood, & B. H. Gottlieb (Eds.), *Social support measurement and intervention: A guide for health and social scientists* (2nd ed., pp. 29–52). Oxford University Press. <https://doi.org/10.1093/med:psych/9780195126709.003.0002>

Langher, V., Caputo, A., & Ricci, M. E. (2017). The potential role of perceived support for reduction of special education teachers' burnout. *International Journal of Educational Psychology*, 6(2), 120–147. <https://doi.org/10.17583/jiep.2017.2126>

Lazarus, R. S., & Folkman, S. (1984). *Stress, appraisal and coping*. Springer.

Lee, Y. H. (2019). Emotional labor, teacher burnout, and turnover intention in high-school physical education teaching. *European Physical Education Review*, 25(1), 236–253. <https://doi.org/10.1177/1356336X17719559>

Madigan, D. J., & Kim, L. E. (2021). Towards an understanding of teacher attrition: A meta-analysis of burnout, job satisfaction, and teachers' intentions to quit. *Teaching and Teacher Education*, 105, Article 103425. <https://doi.org/10.1016/j.tate.2021.103425>

Marsh, H. W., Hau, K. T., & Wen, Z. (2004). In search of golden rules: Comment on hypothesis-testing approaches to setting cutoff values for fit indexes and dangers in overgeneralizing Hu and Bentler's (1999) findings. *Structural Equation Modeling*, 11, 320–341. <https://doi.org/10.1207/s15328007sem1103>

Martínez-López, Z., Fernández, M. F. P., Couñago, M. A. G., Vacas, C. T., da Silva Almeida, L., & González, M. S. R. (2014). Apoyo social en universitarios españoles de primer año: propiedades psicométricas del Social Support Questionnaire-Short Form y el Social Provisions Scale. *Revista Latinoamericana de Psicología*, 46(2), 102–110. [https://doi.org/10.1016/S0120-0534\(14\)70013-5](https://doi.org/10.1016/S0120-0534(14)70013-5)

Maslach, C. (2017). Finding solutions to the problem of burnout. *Consulting Psychology Journal: Practice and Research*, 69(2), 143–152. <https://doi.org/10.1037/cpb0000090>

Maslach, C., Jackson, S. E., Leiter, M. P., Schaufeli, W. B., & Schwab, R. L. (1986). *Maslach Burnout Inventory*. Consulting Psychologists Press.

Maslach, C., Schaufeli, W. B., & Leiter, M. P. (2001). Job burnout. *Annual Review of Psychology*, 52, 397–422. <https://doi.org/10.1146/annurev.psych.52.1.397>

Nabavi, S., Sohrabi, F., Afrouz, G., Delavar, A., & Hosseiniyan, S. (2017). Predicting the mental health of teachers based on the variables of self-efficacy and social support. *Health Education and Health Promotion*, 5(2), 129–138. <https://doi.org/10.30699/acadpub.ijhehp.5.2.129>

O'Connor, K. E. (2008). "You choose to care": Teachers, emotions and professional identity. *Teaching and Teacher Education*, 24(1), 117–126. <https://doi.org/10.1016/j.tate.2006.11.008>

Parker, P. D., Martin, A. J., Colmar, S., & Liem, G. A. (2012). Teachers' workplace well-being: Exploring a process model of goal orientation, coping behavior, engagement, and burnout. *Teaching and Teacher Education*, 28(4), 503–513. <https://doi.org/10.1016/j.tate.2012.01.001>

Philipp, A., & Schüpbach, H. (2010). Longitudinal effects of emotional labour on emotional exhaustion and dedication of teachers. *Journal of Occupational Health Psychology*, 15(4), 494–504. <https://doi.org/10.1037/a0021046>

Preacher, K. J., Rucker, D. D., & Hayes, A. F. (2007). Addressing moderated mediation hypotheses: Theory, methods, and prescriptions. *Multivariate Behavioral Research*, 42(1), 185–227. <https://doi.org/10.1080/00273170701341316>

Rajendran, N., Watt, H. M. G., & Richardson, P. W. (2020). Teacher burnout and turnover intent. *Australian Educational Researcher*, 47, 477–550. <https://doi.org/10.1007/s13384-019-00371-x>

Ramos-Huente, V., García-Vásquez, H., Olea-González, C., Lobos-Peña, K., & Sáez-Delgado, F. (2020). Percepción docente respecto al trabajo pedagógico durante la COVID-19. *CienciAmérica*, 9(2), 334–353. <https://doi.org/10.33210/ca.v9i2.325>

Roeser, R. W., Skinner, E., Beers, J., & Jennings, P. A. (2012). Mindfulness training and teachers' professional development: An emerging area of research and practice. *Child Development Perspectives*, 6(2), 167–173. <https://doi.org/10.1111/j.1750-8606.2012.00238.x>

Ryan, R. M., & Deci, E. L. (2001). On happiness and human potentials: A review of research on hedonic and eudaimonic well-being. *Annual Review of Psychology*, 52(1), 141–166. <https://doi.org/10.1146/annurev.psych.52.1.141>

Ryff, C. D., & Keyes, C. L. M. (1995). The structure of psychological well-being revisited. *Journal of Personality and Social Psychology*, 69(4), 719-727. <https://doi.org/10.1037/0022-3514.69.4.719>

Sandín, B., Chorot, P., Lostao, L., Joiner, T. E., Santed, M., & Valiente, R. M. (1999). *Escalas PANAS de afecto positivo y negativo: validación factorial y convergencia transcultural*. *Psicothema*, 11(1), 37-51.

Sendra, A., Farré, J., & Vaagan, R. W. (2020). Seeking, sharing and co-creating: A systematic review of the relation between social support theory, social media use and chronic diseases. *Social Theory & Health*, 18(4), 317-339. <https://doi.org/10.1057/s41285-019-00106-z>

Shin, H., Noh, H., Jang, Y., Park, Y. M., & Lee, S. M. (2013). A longitudinal examination of the relationship between teacher burnout and depression. *Journal of Employment Counseling*, 50(3), 124-137. <https://doi.org/10.1002/j.2161-1920.2013.00031.x>

Soper, D. S. (2020). A-priori sample size calculator for structural equation models [Computer Software]. <https://www.danielsoper.com/statcalc.h>

Spilt, J. L., Koomen, H. M., & Thijss, J. T. (2011). Teacher wellbeing: The importance of teacher-student relationships. *Educational Psychology Review*, 23(4), 457-477. <https://doi.org/10.1007/s10648-011-9170-y>

Taxer, J. L., & Frenzel, A. C. (2015). Facets of teachers' emotional lives: A quantitative investigation of teachers' genuine, faked, and hidden emotions. *Teaching and Teacher Education*, 49, 78-88. <https://doi.org/10.1016/j.tate.2015.03.003>

Tov, W. (2018). Well-being concepts and components. In *Handbook of subjective well-being*. pp. 1-15. Noba Scholar.

Tsang, K. K. (2011). Emotional labor of teaching. *Educational Research*, 2(8), 1312-1316.

Viac, C., & Fraser, P. (2020). *Teachers' well-being: A framework for data collection and analysis*. OECD Education Working Papers, No. 213. OECD Publishing. <https://doi.org/10.1787/c36fc9d3-en>

Waterman, A. S. (1993). Two conceptions of happiness: Contrasts of personal expressiveness (eudaimonia) and hedonic enjoyment. *Journal of Personality and Social Psychology*, 64(4), 678-691. <https://doi.org/10.1037/0022-3514.64.4.678>

Watson, D., Clark, L. A., & Tellegen, A. (1988). Development and validation of brief measures of positive and negative affect: The PANAS scales. *Journal of Personality and Social Psychology*, 54, 1063-1070. <https://doi.org/10.1037/0022-3514.54.6.1063>

West, S. G., Finch, J. F., & Curran, P. J. (1995). *Structural equation models with nonnormal variables: problems and remedies*. In R. H. Hoyle (Ed.), *Structural equation modeling: Concepts, issues, and applications* (pp. 56-75). Sage Publications, Inc.

White, I. R., Royston, P., & Wood, A. M. (2011). Multiple imputation using chained equations: Issues and guidance for practice. *Statistics in Medicine*, 30(4), 377-399. <https://doi.org/10.1002/sim.4067>

Wright, K. (2016). Social networks, interpersonal social support, and health outcomes: A health communication perspective. *Frontiers in Communication*, 1, Article 10 <https://doi.org/10.3389/fcomm.2016.00010>

Zhang, S., Wang, J., Xie, F., Yin, D., Shi, Y., Zhang, M., Yin, H., Li, F., Yang, L., Cao, D., & Sun, T. (2020). A cross-sectional study of job burnout, psychological attachment, and the career calling of Chinese doctors. *BMC Health Services Research*, 20, Article 193 <https://doi.org/10.1186/s12913-020-4996-y>