Social Psychology of Education

Associations between burnout and personal and professional characteristics: a study of Portuguese teachers

--Manuscript Draft--

Manuscript Number:	SPOE-D-20-00413R3
Full Title:	Associations between burnout and personal and professional characteristics: a study of Portuguese teachers
Article Type:	Original Research
Keywords:	burnout; Regular Teachers; Special Education Teachers; inclusion; Oldenburg Burnout Inventory (OLBI).
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Funding Information:	Fundação para a Ciência e a Tecnologia (UID/FIL/00683/2020) — Dr Paulo Dias
	Fundação para a Ciência e a Tecnologia (UIDB/PSI/01662/2020) — Dr Irene Cadime
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TITLE: Burnout in Regular and Special Education Teachers: Explanatory factors in a Portuguese sample

RUNNING HEAD: Burnout in Regular and Special Education Teachers

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Abstract

Research results has been pointing out how that teachers' burnout is growing with significative effects on their overall satisfaction with life and professional involvement. Considering the emphasis in inclusive education, we intend to explore burnout in regular and special teachers' burnout, based on Job Demands-Resource Model. To achieve it a sociodemographic questionnaire and the Oldenburg Burnout Inventory (OLBI; Demerouti & Bakker, 2008) were used in a sample of 262 teachers, mostly female (66.0%), aged between 26 and 63 years, from regular (86.6%) and special education. Results suggest adequate psychometric properties of the OLBI with Portuguese teachers. No gender differences were found, as well as no differences between teachers from public or private schools. A positive correlation was found between burnout, age and experience in regular education teachers. Despite no differences in burnout between teacher with and without experience in inclusive classrooms were found, a positive correlation with the number of students with special needs was obtained. Results are discussed according to the literature and suggestions for further studies are presented.

Keyword: Burnout; Regular Teachers; Special Education Teachers; Inclusion; Oldenburg Burnout Inventory.

Declarations

Funding

This work was supported by National Funds, provided through FCT (*Fundação para a Ciência e a Tecnologia*) to the strategic projects UID/FIL/00683/2019 and POCI-01-0145-FEDER-007562.

Conflict of Interest

The authors declare that they have no conflict of interest.

Availability of data and materials

Data is available by request.

Associations between burnout and personal and professional characteristics: a study of Portuguese teachers

Abstract

Recent research has suggested that teachers' burnout is growing and, consequently, affecting their overall satisfaction with life and professional involvement. The goal of this study was to assess burnout in Portuguese teachers and to explore whether burnout levels are associated with teachers' personal and professional characteristics. A sociodemographic questionnaire and the Oldenburg Burnout Inventory (OLBI; Demerouti, Bakker, Vardakou and Kantas 2003) were used to collect data from a sample of 262 teachers, who were mostly female (66.0%), were aged between 26 and 63 years (mean=44, std. dev.=7.95), and had an average of 18 years of experience in teaching regular classes (std. dev.=9.22) and an average of 2 years of experience in special education (std. dev.=4.97). The results suggested the adequate psychometric properties of the OLBI in Portuguese teachers. Moreover, the older the teachers were, the higher the levels of burnout they reported. Burnout was positively associated with the number of years of experience but only in regular education teachers. Although no differences in burnout as a function of experience in inclusive classrooms were found, a positive correlation of teachers' burnout with the number of students with special needs in the classroom was identified. The results are discussed according to the literature, and suggestions for future studies are presented.

Keywords: Burnout; Regular Education Teachers; Special Education Teachers; Inclusion; Oldenburg Burnout Inventory (OLBI).

1. Introduction

Burnout has increasingly attracted the attention of both researchers and the public over the last two decades in research fields such as health psychology and work and organizational psychology. Burnout is a psychological syndrome that individuals may experience when exposed to stressful working contexts as well as with demanding tasks and insufficient resources. Freudenberger first observed its symptoms in his free clinic workers, who were in contact with drug addicts. These workers not only had various physical symptoms but also developed depression and experienced lowered energy and motivation (Freudenberger 1974). Later, in 1993, Maslach described burnout as a "psychological syndrome of emotional exhaustion, depersonalization, and reduced personal accomplishment that can occur among individuals who work with other people in some capacity" (p. 19). There are several types of personal consequences of burnout: impaired physical health, reduced quality of life, loss of purpose, emotional problems, loneliness, lowered self-esteem, marital conflict, and a loss of closeness in relationships and enjoyment. Burnout also entails professional consequences—impaired job satisfaction, absenteeism, decreased productivity, and a reduced organizational commitment (Ayala and Carnero 2013; Maslach, Jackson and Leiter, 1996; Maslach, Schaufeli and Leiter 2001)—that can result in an individual leaving his or her profession (Maslach et al. 2001). There are health care consequences as well, given that burnout impacts a worker's health, increasing the costs of treatment (Ayala and Carnero 2013; Poghosyan, Clarke, Finlayson and Aiken 2010).

In addition, burnout syndrome has been studied in various groups, including health professionals (e.g., Aronsson et al. 2017; Monsalve-Reyeset al 2018; O'Connor, Muller Neff and Pitman 2018), members of law enforcement and the military (Aguayo, Vargas, Cañadas and de la Fuente 2017; McCarty, Aldirawi, Dewald and Palacios 2019), students (e.g., Kim, Jee, Lee, An and Lee 2018; Sinval, Queirós, Pasian and Marôco 2019), other professions, and even unemployed people (Bianchi, Truchot, Laurent, Brisson and Schonfeld 2014; Lim, Sherry, Aw and Tan 2016).

Especially since the turn of the century (Maslach et al. 2001), new models and instruments to evaluate burnout have been presented. One is the job demands-resources model (JD-R; Bakker and Demerouti 2017; Demerouti et al. 2001), which has higher sensitivity to a large set of professions and centers on positive (engagement) and negative (disengagement) psychological indicators (Bakker and Demerouti 2017). The job demands-resources model (JD-R) focuses on the dynamic and bidimensional nature of burnout, suggesting that burnout can result whenever work demands are high and resources

scarce in any profession. Thus, the JD-R may be applied to a broad spectrum of professions to improve both workers' well-being and performance by focusing on positive (engagement) and negative (burnout) psychological indicators (Bakker and Demerouti 2017).

The JD-R model assumes that burnout may occur in any profession and that each has its own set of risks associated with occupational stress, classified into two different categories: work demands and resources. Work demands comprise the physical, social, and organizational nature of the work that require continuous and sustained responses that are associated with negative physiological and psychological consequences. Role ambiguity, role conflict, work overload, stress, and specific stressful events such as work pressure are a few of the significant work demands that result in burnout (Alarcon 2011), and there is evidence that they are positively connected to emotional exhaustion (Demerouti et al. 2001). Resources (Demerouti et al. 2001; Schaufeli and Bakker 2004) include the physical, psychological, social, and organizational work aspects that are activated to attain work goals. These resources may reduce professional demands and inherent physiological and psychological costs, or they may encourage personal growth, learning, and development (Demerouti et al. 2001) through autonomy, skill variety, performance feedback, and growth opportunities (Bakker and Demerouti 2017). The lack of these resources increases the incidence of burnout, as demonstrated by a consistent negative relationship between work resources and burnout, which, in turn, entails that low work resources are associated with high burnout levels, specifically in the detachment dimension (Demerouti et al. 2001).

The JD-R model has evolved over the years. Bakker and Demerouti (2017) added personal resources, such as optimism and expectations of self-efficacy. These resources may play a similar role to other work resources, protecting the individual from work demands. The current JD-R model includes a set of specific propositions concerning the interactions between work demands and work resources and workers' proactive behaviors and outcomes. The research thus far supports this model's assumptions regarding the positive and negative causal effects between demands, resources, and well-being (Bakker and Demerouti 2017; Lesener, Gusy and Wolter 2019). This model contrasts with the classical tridimensional model presented by Maslach (1998), which was tailored primarily to human services and assistance professions (Demerouti, Bakker, Nachreiner, & Schaufeli, 2001) and therefore focused on exhaustion, depersonalization, and reduced accomplishment. With a broader perspective and adjusted to a wider range of professions (Demerouti, Bakker, Nachreiner, & Schaufeli, 2001), the updated JD-R model explores two basic dimensions of burnout—emotional exhaustion and depersonalization—that can be

found across every occupational field. To test burnout, scholars presented a new measure, the Oldenburg Burnout Inventory (Demerouti, Bakker, Vardakou, and Kantas 2003). This measure was developed and validated among diverse occupational groups, covering the affective as well as physical and cognitive dimensions of exhaustion in addition to disengagement—concerning engagement and identification with one's job. Reduced accomplishment, however, is a related variable but not an element of burnout, as has been discussed (G. Koeske & R. Koeske, 1989).

In this paper, we explore teachers' burnout and investigate the role of personal and professional factors. Teachers are a group with high levels of stress and burnout (García-Carmona, Marín and Aguayo 2019), and several studies have pointed out how teachers' burnout affects teaching quality and student outcomes (e.g., Shen, McCaughtry, Martin, Garn, Kulik and Fahlman 2015; Skaalvik and Skaalvik 2017; Wong, Ruble, Yu and McGrew 2017). Exploring the factors that influence teachers' burnout is central to designing more effective intervention programs and implementing preventive measures.

1.1. Personal and professional factors related to teachers' burnout

In the last few years, teachers have faced numerous challenges in their role as educators, including work overload, low wages, an increase in bureaucracy, social criticism, and greater demands (e.g., Foley and Murphy 2015; Jani 2017). Consequently, the literature has indicated that teachers are one of the groups with a higher risk of burnout (Capel 2006). Carlotto (2011) showed that older women with no children or partner working a high number of hours who teach more students and work in public schools have an increased risk of being burnt out. There are several other important stressors: lack of student motivation, unruly student behavior and indiscipline, time pressures, workload, evaluation by others, conflict with colleagues, coping with change, individual personality, dealing with the school administration/management, role conflicts, role ambiguity, and poor working conditions (Howard and Johnson 2004; Kyriacou 2001). Skaalvik and Skaalvik (2010) found that four potential stressors from the school environment—discipline problems, time pressure, low student motivation, and value dissonance—relate to emotional exhaustion. Time pressure was discovered to be the strongest predictor of burnout. Depersonalization and lack of personal accomplishments were predicted by disciplinary problems, low student motivation, and value dissonance in the same study.

The research results have found a consistent relationship between teachers' burnout, age, and gender. Regarding age, burnout tends to be higher among older professionals (Parrello, Ambrosetti, Iorio

and Castelli 2019; Van Droogenbroeck, Spruyt and Vanroelen 2014). As to gender differences, females typically have higher scores in exhaustion (Kumar and Mellsop 2013; Pu et al. 2017; Purvanova and Muros 2010; Schadenhofer et al. 2018), whereas males tend to present higher depersonalization (Purvanova and Muros 2010).

Results concerning differences in the comparative burnout levels of special education and regular education teachers have been mixed. For example, Küçüksüleymanoğlu (2011) claimed that special education teachers have much higher levels of burnout. Nevertheless, there seems to be some variation among special education teachers. For example, the work by Jovanović, Karić, Mihajlović, Džamonja-Ignjatović, and Hinić (2019) found that emotional exhaustion, depersonalization, and lack of personal accomplishment are high for special education teachers who work with children with motor skill disorders and low in teachers working with intellectually disabled children or students with social behavior problems. The high levels of burnout in special education teachers seem to be related to the characteristics of their work, as indicated by a mixed-method study by Garwood, Werts, Varghese, and Gosey (2018): data collected from special education teachers suggested that the lack of clarity of their role, excessive facets to their roles, emotional exhaustion, and lack of accomplishment may contribute to their perception of stress and burnout. However, the authors noted that good working relationships with colleagues and administrators, the ability to build relationships with students, and high levels of self-advocacy help to maintain teachers' mental health and work-life balance.

Nevertheless, other studies obtained an opposite result. For example, Braun and Carlotto (2014) found that regular education teachers showed higher overall levels of burnout than special education teachers. Similarly, Dubelluit and López (2014) found that depersonalization is higher for regular education teachers. Comparing teachers of children with autism spectrum disorder (ASD) in specialized settings, Cappe, Bolduc, Poirier, Popa-Roch, and Boujut (2017) also found differences between groups: regular education teachers presented higher levels of exhaustion than teachers of children with ASD in mainstream classes and more depersonalization than teachers in specialized settings.

The results of studies addressing the differences in burnout between teachers working in public and private schools have also been mixed. Some studies found a higher level of teacher burnout in public schools (e.g., Carlotto, 2011); others did not find a significant difference (e.g., Lee and Wolf 2019). Mixed results have also been reported regarding the relationship between teachers' burnout and the teaching cycle. For example, Stasio, Fiorilli, Benevene, Uusitalo-Malmivaara, and Ciacchio (2017) did

not find differences in burnout between special education teachers working in preschool and those working in primary school. However, other studies (e.g., García-Carmona, Marín, and Aguayo 2019) reported higher burnout in teachers who work in higher education levels, such as secondary education.

1.2 The present study

A recent systematic review (Mota et al. 2021) of the studies published since 2000 explored burnout levels in teachers working in the Portuguese educational context (from the 1st cycle of basic education to secondary education). Seven studies met the inclusion criteria. Most of their findings supported the results obtained in other countries: Portuguese female and older teachers had higher levels of exhaustion, while male, younger, and single teachers had higher depersonalization scores (Mota et al. 2021). However, this systematic review identified two studies in which no significant relationships were found between burnout and teachers' gender or age. It also identified one study in which positive correlations between exhaustion and professional experience were found, entailing that the more experience teachers have, the more exhausted they feel. Another study suggested that public school teachers had higher levels of exhaustion. The review also indicated that the studies of Portuguese teachers consistently suggest that the number of students per class, different students' skills, and students' misbehavior are closely related to teachers' exhaustion. Moreover, although most of the studies conducted in Portugal included samples of two to four groups of teachers during different teaching cycles, they did not compare burnout between the teaching levels. Finally, this review showed that only one out of the seven identified studies used the Oldenburg Burnout Inventory. Therefore, this instrument has not been widely used in this context. Nevertheless, focusing in a broader evaluation of burnout—exploring exhaustion from the emotional, physical, and cognitive perspectives in addition to the lack of engagement and identification with one's job—this measure seems appropriate to evaluate teacher burnout. It excludes professional efficacy that might be understood as a precursor or a consequence from an individual's perspective (Taris, Le Blanc, Schaufeli & Schreurs, 2005).

The present study explores teachers' burnout in Portugal using the Oldenburg Burnout Inventory (Demerouti, Bakker, Vardakou, and Kantas 2003). This inventory was adapted to Portuguese higher education students, and the adapted version showed good psychometric properties after eliminating two items, one in each dimension (Campos, Carlotto, and Marôco 2012). A second study involving Portuguese adult employees found similar results by excluding a single item (Sinval, Queirós, and

Marôco 2019). As stated above, the systematic review by Mota et al. (2021) identified only one study on Portuguese teachers' burnout that applied the Oldenburg Burnout Inventory (Santos, Teixeira, and Queirós 2018). However, this study did not test the psychometric properties of the inventory among Portuguese teachers.

Additionally, as demonstrated in the literature review, the research results regarding the relationships between teachers' burnout and other variables, such as teaching cycle, type of school, or being a regular/special education teacher, are limited or mixed.

The specific goals of this study were therefore (a) to investigate the psychometric properties (factor structure and reliability) of the Oldenburg Burnout Inventory in a sample of Portuguese teachers;

(b) to analyze the role of personal and professional experience in teachers' burnout;

(c) to explore the effect of inclusive experience on teachers' burnout.

2. Method

2.1 Participants

The sample was composed of 262 Portuguese teachers teaching in all cycles of studies, i.e., from preschool to secondary education. Most of them were female (n = 173, 66.0%), and the mean age was 44 years old (std. dev.=7.95; minimum=26, maximum=63). Approximately one-sixth of the sample was composed of special education teachers, whereas the vast majority were regular class teachers (n = 227, 86.6%). Approximately two-thirds of the participants were from public schools (175, 66.8%) and had students with special educational needs in their classrooms (n = 201, 76.7%). Regarding their academic qualifications, most of the sample had a bachelor's degree (n = 186, 71.0%), whereas only 17.2% had a master's degree or a PhD. Teachers had, on average, 18 years of experience in teaching regular classes (std. dev.=9.22) and 2 years of experience in special education (std. dev.=4.97).

2.2 Measures

A sociodemographic questionnaire and the Oldenburg Burnout Inventory (Demerouti, Bakker, Vardakou, and Kantas 2003) were used in the present study.

A sociodemographic questionnaire was used to collect information about the demographic characteristics of the teachers in the sample, namely, age, gender and education, as well as professional information, namely, type of teacher (teacher in regular or special education), teaching cycle (from preschool to secondary education), type of school where they taught (private or public), and years of experience in regular or special education. This questionnaire also collected information about teachers' inclusive experience by asking if the teachers had children with special educational needs (SEN) in their classrooms and, in the case of an affirmative response, how many students.

The Oldenburg Burnout Inventory developed by Demerouti, Bakker, Vardakou, and Kantas (2003) consists of 16 items that describe different states of emotional exhaustion and disengagement, with four response options (from strongly agree to strongly disagree) assessing two dimensions of burnout: exhaustion and disengagement. The Portuguese translation of the adult workers' version (Sinval, Queirós, Pasian, and Marôco 2019), was tested in a sample of adults and adjusted to fit the bidimensional structure; good reliability was found after item 13 was deleted.

2.3 Data collection

The study was approved by the board of the research center of the first two authors. After authorizations from the authors of the instruments were obtained, the institutions where the questionnaires would be administered were chosen based on pragmatic reasons, in particular geographical reasons,. The director of each school was contacted, and with their permission, the questionnaires were delivered in the schools along with informed consent forms and descriptions of the general objectives of the study. The teachers' voluntary participation, as well as the anonymity and confidentiality of their replies, were emphasized. The instruments were delivered to the institutions through technical directors and distributed by employees, and they were accompanied by envelopes to return the answers. The collected responses were then coded in IBM SPSS Statistics 25.

2.4 Statistical analysis

Items 2, 3, 4, 6, 8, 9, 11 and 12 were reverse coded before the analysis was conducted so that higher scores indicated higher levels of burnout. A confirmatory factor analysis was performed to test the fit of the data to the two-factor model (exhaustion and disengagement) and the one-factor model. The analysis was conducted using Mplus software (version 7) (Muthén and Muthén 2012). The maximum likelihood estimator with robust errors (MLR) was implemented. To assess the model fit, the following indicators were used: the ratio between the chi-square and the degrees of freedom (χ^2/df), the comparative fit index (CFI), the root mean square error of approximation (RMSEA), and the standardized root mean square residual (SRMR). Values less than 3.00 for the χ^2/df ratio are generally considered to indicate an acceptable fit, and values less than 2.00 indicate a good model fit (Bollen 1989). The model fit is also considered acceptable when the CFI and TLI values are greater than .90 (Hoyle and Panter 1995), the RMSEA value is lower than .08 (Browne and Cudeck 1993), and the SRMR is below .10 (Browne and Cudeck 1993; Schermelleh-Engel, Moosbrugger and Müller 2003). A minimum value of .30 for the factor loadings was considered acceptable. Internal consistency was tested by means of Cronbach's alpha. A minimum value of .70 was considered acceptable (Hair, Black, Babin, and Anderson 2009).

Next, the raw scores for exhaustion and disengagement were calculated by adding the scores of the items and dividing this sum by the number of items in each factor. A similar procedure was used to calculate a total burnout score: the scores of all items were summed and divided by the total number of items. Descriptive statistics (minimum, maximum, mean, standard deviation, skewness, and kurtosis) were then calculated for each burnout dimension. Values of skewness and kurtosis between -2 and +2 are considered acceptable (George and Mallery 2002). Independent samples t-tests were performed to test for differences in burnout as a function of teachers' gender, type of teacher (special education/regular class), private/public school, and presence of students with special educational needs in the classroom. Cohen's *d* was computed as a measure of effect size for these analyses: values higher than .20 represent a small effect, values higher than .50 represent a medium effect, and values higher than .80 represent a large effect (Cohen 1988). One-way analysis of variance (ANOVA) was used to test for differences in burnout as a function of the educational level of the teacher and as a function of the teaching cycle. The partial eta squared ($_p\eta^2$) was computed as a measure of effect size: values higher than 0.01 represent a small effect, values higher than 0.06 represent a medium effect, and values higher than 0.14 represent a large effect (Cohen 1988). Pearson correlation coefficients were used to investigate the relationships between the

burnout dimensions, teachers' ages, and years of experience. The significance level was 5% for all analyses.

3. Results

Table 1 presents the fit indices for the one-factor and two-factor models tested in CFA. None of the models demonstrated adequate fit. The inspection of the factor loadings indicated that item 13 ("This is the only type of work that I can imagine myself doing") had a factor loading lower than .30 in both the one-factor and the two-factor models. The inspection of the modification indices (MIs) also indicated that the estimation of four error covariances would improve the model fit. Therefore, both models were revised: item 13 was excluded, and the four error covariances were included in the estimation. The fit increased for both models, but only the two-factor model reached acceptable values. Therefore, this model was retained as the best fitting model. Figure 1 shows the results of its local fit indicators. All loadings were higher than .30, and the correlation between exhaustion and disengagement was very high (r=.831). After item 13 was excluded, the Cronbach's alpha was .713 for the disengagement subscale and .749 for the exhaustion subscale. Thus, item 13 was discarded in the next analyses.

---- introduce Table 1 ----

---- introduce Figure 1 ----

Table 2 shows the descriptive statistics in the two burnout dimensions and the total score of the measure for the full sample. The mean scores for disengagement and exhaustion were similar. The skewness and kurtosis values were lower than 2, suggesting no robust violations to the normality of the distributions.

---- introduce Table 2 ----

Tables 3, 4 and 5 present the results of the tests of differences in teachers' burnout as a function of gender, type of school, type of teacher, presence of children with SEN in the classroom, teachers' educational level and teaching cycle.

---- introduce Table 3 ----

No differences in burnout were found as a function of the type of school where the teachers worked (private or public), their educational levels, teaching cycle, or presence of children with special educational needs in the classroom. Regarding gender, the results of the independent samples t-test indicated that there were no differences between men and women in either disengagement or the total burnout score, though a marginal difference with a small effect size was found in exhaustion, with women showing slightly higher levels of exhaustion than men.

---- introduce Table 4 ----

Moreover, no differences were found between special education teachers and regular class teachers in exhaustion or total burnout, but a marginal difference with a small effect size was found in disengagement, with regular education teachers demonstrating slightly higher levels of disengagement compared to special education teachers.

---- introduce Table 5 ----

Table 6 presents the Pearson correlation coefficients between teachers' burnout and age, years of experience, and the number of children with special educational needs in the classroom. There was a significant correlation between teachers' exhaustion and the number of students with SEN in their classrooms: the higher the number of students with SEN in the classroom, the more exhausted teachers felt. Additionally, significant correlations between age and all dimensions of burnout were found, indicating that the older the teacher was, the higher his or her levels of exhaustion, disengagement, and burnout in general. When considering only regular class teachers, significant correlations between all

burnout indicators and the years of experience teaching classes were found. This result indicates that the more experience teaching regular classes the teachers had, the more disengaged and exhausted they felt. In contrast, for special education teachers, no significant associations between burnout and years of experience were found.

---- introduce Table 6 ----

4. Discussion

The study of teachers' burnout is crucial, not only to inform lines of action to promote teachers' satisfaction and prevent their dropout (García-Carmona, Marín, and Aguayo 2019) but also to improve teaching quality (e.g., Shen et al. 2015; Skaalvik and Skaalvik 2017; Wong et al. 2017). The main aim of this study was to explore the psychometric properties of the Oldenburg Burnout Inventory in Portuguese teachers as well as the personal and professional determinants of their burnout, particularly their experience in inclusive education.

In the first step, we analyzed the psychometric properties of the OLBI in a sample of Portuguese teachers. The results replicated the two-factor model of the original version of the instrument (Bakker, Demerouti, and Verbeke 2004; Demerouti and Bakker 2008; Demerouti, Bakker, Vardakou, and Kantas 2003) with the exclusion of item 13 ("This is the only type of work that I can imagine myself doing") and the covariance of four errors. A low loading of this item has already been found in other studies (e.g., Baka and Basinska 2016; Schuster and Dias 2018; Sinval, Queirós, Pasian, and Marôco 2019); therefore, the consistent finding for the Portuguese version in this study should be re-evaluated. A Cronbach's alpha higher than .70 provides evidence of the reliability of the measure. Accordingly, this evidence suggests that the OLBI is a valid and reliable measure of burnout in Portuguese teachers from different teaching cycles.

The results from the inferential statistics indicated that there were no overall differences as a function of gender, but a marginal difference was found in exhaustion, which was higher in females. This result is consistent with several other studies that found higher exhaustion scores for female teachers than for male teachers (Kumar and Mellsop 2013; Mota et al. 2021; Pu et al. 2017; Purvanova and Muros 2010; Schadenhofer et al. 2018). Nonetheless, in our study, this difference was small, suggesting that other variables than gender may play a stronger role in teachers' burnout.

Similar to certain other studies (e.g., Lee and Wolf 2019; Stasio, Fiorilli, Benevene, Uusitalo-Malmivaara, and Ciacchio 2017), we did not find differences in burnout between teachers working in public or private schools and those working in different cycles of education. However, we should note that previous research in the Portuguese context (Mota et al. 2021) suggested higher levels of burnout among teachers from public schools, while studies in Portugal investigating the role of the teaching level are scarce. The contradictory findings regarding the differences between public and private school teachers may suggest that this variable may not be determinant of teachers' burnout. Research has suggested that other school variables, such as the school climate, decision-making authority, colleague support, or workload (Grayson and Alvarez 2008; Ho 2016; Marić et al. 2020; Parrello et al. 2019), play an important role in teachers' burnout. The large variation in these factors across different types of schools may explain the mixed results obtained in studies conducted in Portugal. Future research should explore whether the control of these school-level variables is relevant when comparing the burnout levels of teachers from public and private schools.

Overall, the results suggest no differences in burnout between teachers with students with special educational needs in their classrooms compared to those who had none, but a marginal difference with a small effect size was found in disengagement, with regular education teachers demonstrating slightly higher levels of disengagement compared to special education teachers. A slightly higher level of depersonalization in regular education teachers has already been found in other studies (e.g., Dubelluit and López 2014), yet the results as to the differences in burnout between regular and special education teachers have been mixed (Braun and Carlotto 2014; Cappe et al. 2017; Küçüksüleymanoğlu 2011). The job demands resource model may help to interpret these results by classifying both kinds of teachers in the same burnout levels. As mentioned above, this model predicts two different processes: the job demands that lead to constant psychological overload and, in the long run, to exhaustion (Lee and Ashfort 1996; Wright and Croparizano 2004). The lack of work resources impedes one's success in attaining objectives that, in turn, causes failure and frustration (Bakker, Demerouti, De Boer and Schaufeli 2003). The expectation was that teachers who had to deal with more complex situations—namely, with the needs of students with SEN—would reveal their perception of having more emotional demands than other teachers. However, that was not the case, and the two groups in our study did not present meaningful differences. This may be explained by the way that the classes were organized since many included both special needs students and regular students. This may mitigate the effect on emotional demands because

we actually compared special education teachers who worked only with students with SEN with regular education teachers worked with children both with and without SEN. Additionally, the high number of students in regular classes, in contrast to the smaller groups (or even individual teacher-student work) in special education, may also mitigate this effect, leading to similar burnout levels among regular and special education teachers. The number of students in a class has been consistently proposed in the literature as a positive correlate of teachers' burnout, especially emotional exhaustion (Mota et al. 2021). In our study, we did not collect the total number of students per class, but we analyzed the relationship between teachers' burnout and the number of students with SEN in their classes. Our findings are similar to those indicating a relationship between burnout and class size: the more SEN students in the classroom, the more exhausted teachers feel. We should also note that the demands of teaching large regular education classes are probably more impactful on older regular education teachers, given that a correlation between burnout and years of experience was verified in this group of teachers but not in the special education teachers. Overall, our findings provide important insights for educational policies and stakeholders.

5. Limitations

As limitations of this study, we acknowledge the use of a nonprobabilistic sample and the possible effect of social desirability bias in the responses to the OLBI. Future studies should use larger and more representative samples to investigate the correlates of Portuguese teachers' burnout. Additionally, using more than one burnout measure may mitigate some threats to the validity of the scores. Another limitation is that causality cannot be inferred, given the correlational nature of this study. Finally, no information regarding additional relational- and organizational-level variables, other than the type of school and the teaching cycle, was collected. Including measures of variables such as teacher-student ratio, resources and materials available to implement an effective inclusive education, as well as students' and parental involvement would facilitate a broader depiction of teachers' burnout.

6. Conclusion

The study of burnout is capturing the attention of researchers and professionals due to the growing general demands on educative systems and the increased specific demands placed on teachers. With an inclusive education paradigm, studying regular and special education teachers' burnout might provide a

deeper look into organizational issues and resources for a more successful intervention among all students. Numerous studies have utilized the Maslach Burnout Inventory, but doubts and inconsistencies have led to the development of new measures, such as the OLBI. In the present study, replicating the theoretical model of the OLBI in confirmatory factor analysis reinforces its validity and calls for its broad application to the educational field and to teachers' burnout in particular.

In addition to this important contribution concerning teachers' burnout, the results highlight the role of age and experience in regular education as determinants of teachers' burnout. Considering that teachers' workload is higher than the OECD average (OECD, 2014) and considering the advancing ages of teachers in Portugal—41% are over 50 years old (OECD, 2019)—these data should be integrated into continuous training and public policies to foster both teachers' health and their students' achievements.

Authors Short Bio

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Table 1. Model fit of the one-factor and two-factor models of burnout

Model	χ^2 (df)	χ^2/df	CFI	RMSEA	90% CI RMSEA	SRMR	BIC
1-factor: initial model	363.066*** (104)	3.491	.644	.098	[.087, .109]	.090	8956.333
1-factor: revised model	166.139*** (86)	1.932	.883	.060	[.046, .073]	.068	8110.615
2-factor: initial model	347.703*** (103)	3.376	.664	.095	[.084, .106]	.088	8936.588
2-factor revised model	152.101*** (85)	1.789	.902	.055	[.040, .069]	.065	8097.172

Note: the revised models did not include item 13 of the Oldenburg Burnout Inventory and included the estimation of four error covariances (in items 1 and 7, 6 and 9, 15 and 16, and 4 and 12).

Table 2. Descriptive statistics of the scores on the burnout dimensions

Variable	N	Min.-Max.	M	SD	Skewness	Kurtosis
Disengagement	262	1.00 -3.43	2.191	0.451	-0.246	-0.142
Exhaustion	262	1.00-4.00	2.474	0.437	-0.213	1.155
Total burnout score	262	1.00-3.53	2.342	0.390	-0.515	0.798

Note: M=Mean; SD=Standard deviation.

Table 3. Differences in burnout as a function of teachers' gender and type of school

	Gender					Type of school				
	Men M (SD)	Women M (SD)	t (df)	*p*	Cohen's d	Public school M (SD)	Private school M (SD)	t (df)	*p*	Cohen's d
Disengagement	2.193 (0.484)	2.190 (0.435)	0.046 (260)	.964	0.006	2.209 (0.437)	2.154 (0.480)	0.922 (260)	.357	0.120
Exhaustion	2.406 (0.490)	2.509 (0.404)	-1.702 (150)	.091	0.229	2.479 (0.421)	2.464 (0.469)	0.252 (260)	.801	0.034
Total burnout score	2.306 (0.432)	2.360 (0.367)	-1.052 (260)	.294	0.135	2.353 (0.376)	2.320 (0.419)	0.648 (260)	.518	0.083

Note: M=Mean; SD=Standard deviation; df=degrees of freedom.

Table 4. Differences in burnout as a function of the type of teacher (regular education/special education) and as a function of the presence of children with special educational needs in the classroom

	Type of function					Children with SEN in the classroom				
	Regular education teacher M (SD)	Special education teacher M (SD)	t (df)	*p*	Cohen's d	No M (SD)	Yes M (SD)	t (df)	*p*	Cohen's d
Disengagement	2.210 (0.451)	2.050 (0.441)	1.934 (259)	.054	0.359	2.183 (0.456)	2.195 (0.437)	-.191 (253)	.849	0.027
Exhaustion	2.474 (0.445)	2.467 (0.385)	0.083 (259)	.934	0.017	2.438 (0.385)	2.488 (0.437)	-.765 (253)	.445	0.121
Total burnout score	2.351 (0.396)	2.273 (0.350)	1.088 (259)	.278	0.209	2.319 (0.357)	2.351 (0.384)	-.564 (253)	.573	0.086

Note: M=Mean; SD=Standard deviation; df=degrees of freedom; SEN=Special educational needs.

Table 5. Differences in burnout as a function of teachers' educational level and as a function of the teaching cycle

	Teaching cycle								Education					
	Preschool	1st cycle	2nd cycle	3rd cycle	Secondary education	F (df)	*p*	$_p\eta 2$	Undergraduate degree	Post-graduate	Master's or PhD	F (gl)	*p*	$_p\eta 2$
	M (SD)	M (SD)	M (SD)	M (SD)	M (SD)				M (SD)	M (SD)	M (SD)			
Disengagement	2.294 (0.434)	2.131 (0.426)	2.176 (0.446)	2.295 (0.416)	2.177 (0.501)	1.465 (4, 211)	.214	.027	2.183 (0.432)	2.161 (0.472)	2.244 (0.517)	.411 (2, 259)	.663	.003
Exhaustion	2.604 (0.396)	2.445 (0.384)	2.407 (0.507)	2.568 (0.423)	2.429 (0.480)	1.574 (4, 211)	.182	.029	2.487 (0.437)	2.468 (0.371)	2.425 (0.480)	.361 (2, 259)	.697	.003
Total burnout score	2.459 (0.342)	2.298 (0.357)	2.299 (0.451)	2.441 (0.340)	2.311 (0.415)	1.939 (4, 211)	.105	.035	2.345 (0.388)	2.325 (0.355)	2.341 (0.430)	.035 (2, 259)	.966	.000

Note: df=degrees of freedom

Table 6. Correlation coefficients between teachers' burnout and age, years of experience and number of children with special educational needs in the classroom

	Disengagement	Exhaustion	Total burnout score
Age	.190**	.160*	.197**
Years of experience as a regular class teacher[a]	.129*	.122*	.142*
Years of experience as a special education teacher[b]	.095	.058	.09
Number of children with special educational needs in classroom	.011	.147*	.094

Note: [a] for teachers who are currently regular class teachers (n=225); [b] for teachers who are currently special education teachers (n=34). *p<.05; **p<.01.

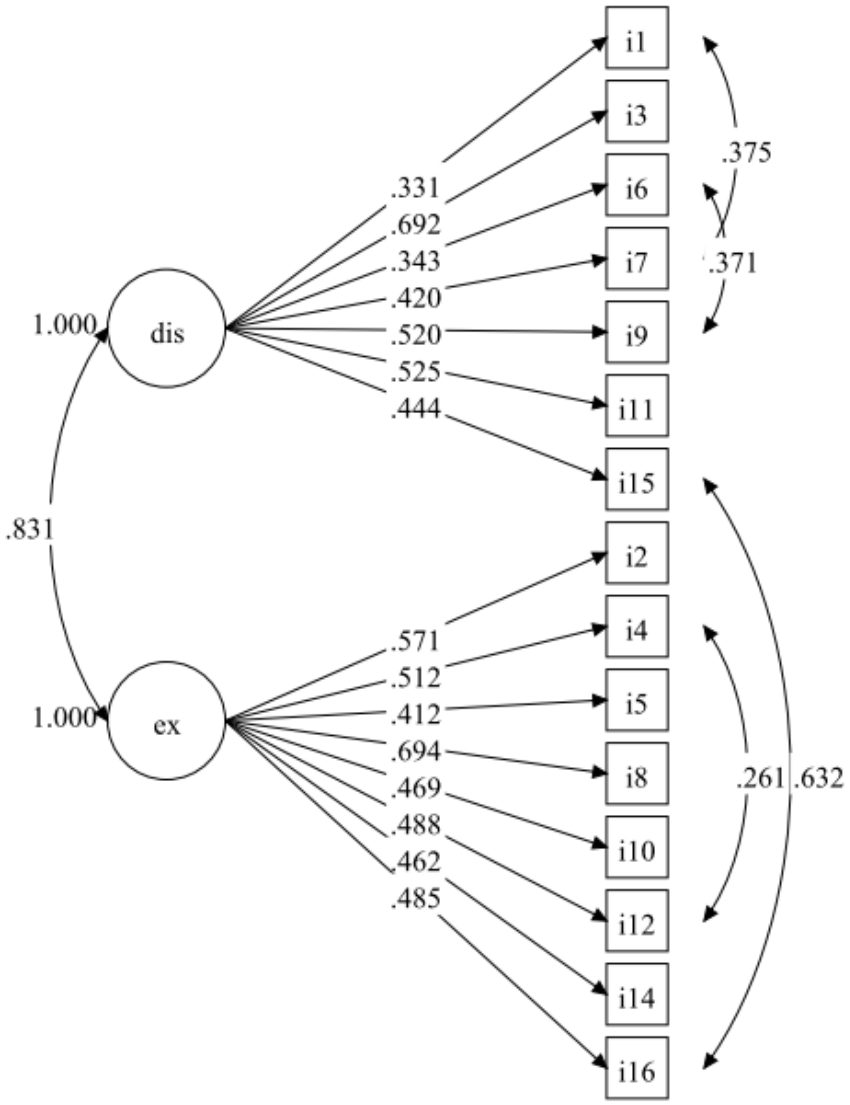

Figure 1. Standardized coefficients of the revised two-factor model.

Note: dis=disengagement, ex=exhaustion.

Dear Prof. Lawrence J. Saha

Editor-in-Chief

Social Psychology of Education

We would like to thank you for the opportunity to revise and resubmit the manuscript entitled " Burnout in Regular and Special Education Teachers: Explanatory factors in a Portuguese sample". We are grateful for the time and effort devoted to providing us feedback on the manuscript. Please find below a response to the comments for the authors we received.

Sincerely

The authors

COMMENTS FOR THE AUTHOR:

COMMENT 1: *Your revisions are good and they do improve the paper. There remain other issues, and in particular the quality of English, which need careful proofing. Also, we prefer the limitations to come before the conclusions. The paper should end with a positive statement about its contribution to our knowledge about burnout. Our suggestions are as follows:*

1. Provide an all-black final copy.

RESPONSE 1: Thanks for the positive comments to our revised paper. This version is presented is all-black.

COMMENT 2: *Carefully proofread the paper for quality of English. If necessary, get a native English language speaker to read the text. There remain a number of grammatical errors in the text.*

Please carefully read the manuscript. Also keep in mind the difference between the singular and plural form: "a teacher's …" and "teachers' …"

RESPONSE 2: We submit the paper to proof reading. The certificate is presented bellow.

COMMENT 3: *Your limitation section at the end of the paper is fine, but it is not good to put it at the end of the paper. We suggest you insert the paragraphs beginning with "As limitations of this study, we should acknowledge..." (Page 14), at the end of the page, to a section or subsection, with heading, before the conclusion. The paper should end with the conclusion, which should state clearly the positive contribution of the paper.*

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