



Spanish version of the BAT: adaptation of the burnout scale and study of the impact on remote work

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Abstract

The Maslach Burnout Inventory (MBI) has been the most widely used instrument to assess burnout syndrome. However, the scientific literature has pointed out theoretical limitations, as well as the inability to determine whether an individual has burnout or not. To overcome these criticisms, the Burnout Assessment Tool (BAT) was developed. This study has two objectives: (1) To adapt the BAT-23 to the Spanish cultural context. (2) To analyse the relationship between burnout and different work modalities (on-site, remote work and hybrid work). The adaptation process of the BAT involved a sequence of EFA and CFA with different subsamples, as well as reliability and validity tests. Factor invariance was calculated according to the on-site or remote work variable. 803 workers participated in the study. The best fit of the BAT was obtained with a 4-factor model and without item 6 (CFI=0.986, TLI=0.985, RMSEA=0.075, SRMR=0.067, GFI=0.986, NFI=0.981). A second-order latent factor was obtained and the scale was found to be invariant. In addition, the BAT showed good reliability and validity indices. No differences were found in burnout levels according to the different work modalities, although different predictor variables were found. The BAT represents an alternative to the theoretical, practical and psychometric limitations of the MBI, offering a more comprehensive and coherent measurement of burnout syndrome. Work modality is not a variable that necessarily implies a higher level of burnout. It is necessary to take into account the characteristics of the job.

Keywords Burnout · Adaptation · Validation · Work modality · Remote work

Resumen

El Maslach Burnout Inventory (MBI) ha sido el instrumento más utilizado para evaluar el síndrome de burnout. No obstante, la literatura científica ha señalado limitaciones teóricas, así como la incapacidad para determinar si un individuo presenta burnout o no. Para superar esas críticas, se desarrolló el Burnout Assessment Tool (BAT). Este estudio plantea dos objetivos: (1) Adaptar el BAT-23 al contexto cultural español. (2) Analizar la relación entre el burnout y las diferentes modalidades de trabajo (presencial, teletrabajo y trabajo híbrido). El proceso de adaptación del BAT implicó una secuencia de EFA y CFA con diferentes submuestras, así como pruebas de fiabilidad y validez. Se calculó la invarianza factorial de acuerdo a la variable de trabajo presencial o telemático. Participaron 803 trabajadores en el estudio. El ajuste óptimo del BAT se obtuvo con un modelo de 4 factores y sin el ítem 6 (CFI=0.986, TLI=0.985, RMSEA=0.075, SRMR=0.067, GFI=0.986, NFI=0.981). Se obtuvo un factor latente de segundo orden y la escala se mostró invariante. Además, el BAT mostró buenos índices de fiabilidad y validez. No se encontraron diferencias en los niveles de burnout de acuerdo con las diferentes modalidades de trabajo, aunque se encontraron diferentes variables predictoras. El BAT representa una alternativa a las limitaciones teóricas, prácticas y psicométricas del MBI, ofreciendo una medida más completa y coherente del síndrome de burnout. La modalidad de trabajo no es una variable que implique necesariamente un mayor nivel de burnout. Es necesario tener en cuenta las características del puesto de trabajo.

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Versión Española del BAT: Adaptación de la escala de Burnout y estudio del impacto en el teletrabajo.

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Introduction

Burnout syndrome is an individual response to chronic work stress that develops progressively, being a consequence of certain features of work (Edú-Valsania et al., 2022). Historically, the origin of burnout syndrome is to be found in Maslach and Jackson (1981), who conceptualised it as a state of emotional exhaustion and cynicism that frequently occurs among individuals who work with people. As a result, these authors hypothesised three dimensions of burnout syndrome: emotional exhaustion, depersonalisation and ineffectiveness at work, developing a questionnaire dedicated to assessing them, the *Maslach Burnout Inventory* (MBI).

Thus, by the late 1990s, the MBI was used in 93% of the studies (Schaufeli et al., 2009), such that burnout became what the MBI measured (De Beer et al., 2020; De Beer et al., 2024; Schaufeli et al., 2020a). However, the concept of burnout as proposed by Maslach and Jackson (1981) has been heavily criticised on conceptual, practical and psychometric grounds (De Beer et al., 2020; Edú-Valsania et al., 2022).

As for the conceptual reasons, there is no theoretical basis to support the dimensions hypothesised by the MBI (De Beer et al., 2020), whose conceptualisation ignores the cognitive impairment systematically associated with burnout (Desart & De Witte, 2019). Moreover, according to Bianchi et al. (2022) both the definition of burnout and the creation of the MBI were not the result of a rigorous research process, but rather the opposite. Similarly, there is a circularity and mutual dependence of the concept of burnout and its assessment, which hinders the emergence of innovative studies that offer a better understanding of burnout (De Beer et al., 2020). This circularity of the concept, according to Schaufeli and Taris (2005), refers to the fact that burnout as measured by the MBI is limited to professionals working with people (“*human services*”). Thus, the original MBI was renamed the MBI-Human Services Survey (MBI-HSS), and the MBI-General Survey (MBI-GS), intended for a more general work context, was born (De Beer et al., 2024). Schaufeli and Enzmann (1998) summarise this aptly:

(...) burnout is what the MBI measures. This tautology is a serious problem, since the MBI has been developed inductively by factor-analyzing a rather arbitrary set of items. What would have happened if other items had been included? Most likely, other dimensions would have appeared (p. 188).

Interestingly, one of the major criticisms at the practical level is that the MBI, despite assessing burnout syndrome, cannot determine its existence (Bianchi et al., 2022). Thus, there is a contradiction between the conceptualisation and operationalisation of burnout in the MBI. The manual itself states that the scores of each scale must be interpreted and analysed separately (Maslach et al., 1997), so it is not possible to calculate a total burnout score. This contradicts the consideration of burnout as a syndrome, i.e. as a set of symptoms or signs that together indicate a particular disorder (American Psychiatric Association, 2018). Thus, the impossibility of detecting burnout has been an obstacle to the identification of cases, the development of treatments or workers’ access to compensation, such as sick leave (Bianchi et al., 2022).

Finally, at the psychometric level, a recent meta-analysis (De Beer et al., 2024) concluded that less than 50% of the studies evaluated provided evidence of internal consistency above 0.80 for the dimensions of cynicism and professional efficacy. Furthermore, these dimensions also showed low criterion validity in predicting mental health problems. Similarly, the factorial validity of the MBI is inconsistent, as the 3-factor structure is not always replicated and even two-, four- or five-factor structures are found (De Beer et al., 2020).

In response to these criticisms and as an alternative to the MBI, the Burnout Assessment Tool or BAT (Schaufeli et al., 2020a) has recently appeared, an instrument whose theoretical basis is by Schaufeli and Taris (2005) and involves an alternative and comprehensive conceptualisation of burnout syndrome (Edú-Valsania et al., 2022). Thus, burnout is conceptualised as a form of work fatigue whose key aspects are the inability to work, understood as extreme exhaustion; and unwillingness, understood as a disengagement or mental distancing from work (Desart & De White, 2019; Schaufeli & Taris, 2005).

This inability refers to a lack of energy, constituting the energetic dimension of burnout, while unwillingness implies reduced commitment or lack of interest, constituting the motivational dimension of burnout (Schaufeli et al., 2020a). Thus, low professional efficacy may be either a precursor or a consequence of burnout, rather than a constitutive dimension (Desart & De White, 2019).

While a criticism in the development of the MBI was that it was developed inductively (De Beer et al., 2020), the development of the BAT involved several phases, (Schaufeli et al., 2020a). The redefinition of burnout syndrome was carried out by conducting semi-structured interviews with professionals working with people with burnout. As a result,

burnout syndrome is defined as follows (Schaufeli et al., 2020a):

A work-related state of exhaustion that occurs among employees, which is characterized by extreme tiredness, reduced ability to regulate cognitive and emotional processes, and mental distancing. These four core dimensions of burnout are accompanied by depressed mood as well as by non-specific psychological and psychosomatic complaints (p. 4).

It should be noted that burnout is not limited to paid employment, but to the psychological consideration of work, such that athletes or students can also suffer from burnout.

For the choice of items, a review of the items included in the questionnaires used to assess burnout in a generic work context was carried out. A selection of items (15 per dimension) was formulated and reduced to arrive at the current version of the BAT. Finally, the reliability and validity of the resulting scale was tested with 2 samples from Belgium ($n=1500$) and the Netherlands ($n=1500$), with the scale showing good psychometric properties (Schaufeli et al., 2020b).

Currently, the BAT has already been validated in a number of countries, such as: Portugal (Sinval et al., 2022), Italy (Angelini et al., 2021; Borrelli et al., 2022; Consiglio et al., 2021; Mazzetti et al., 2022; Romano et al., 2022), Croatia (Tomas et al., 2024), Greece (Androulakis et al., 2023), Lithuania (Lazauskaitė-Zabielskė et al., 2023), Norway (De Beer et al., 2023), Romania (Oprea et al., 2021; Popescu et al., 2024), Ecuador (Vinueza-Solórzano et al., 2021), Brazil (Sinval et al., 2022), Japan (Sakakibara et al., 2020) and South Africa (De Beer et al., 2022). It should be noted that there is also a short version of the BAT, the BAT-12, whose discriminative power and psychometric properties are similar to those of the full version (Schaufeli et al., 2020b).

Given the historical background to the concept of burnout, and bearing in mind that it is a consequence of exposure to certain working conditions (Edú-Valsania et al., 2022), a brief review of the literature was carried out.

Thus, some variables that have shown a significant relationship with burnout are: a high workload (Galanis et al., 2021; Edú-Valsania et al., 2022; Jiménez & Dunkl., 2017; O'Connor et al., 2018; Patel et al., 2018; Prado-Gascó et al., 2020), ambiguity and/or role conflict (Edú-Valsania et al., 2022; O'Connor et al., 2018; Prado-Gascó et al., 2020), lack of autonomy at work (Edú-Valsania et al., 2022; Kim et al., 2019; O'Connor et al., 2018; Patel et al., 2018), interference between professional and private life (Patel et al., 2018; Wu et al., 2018; Zhao et al., 2022), lack of perceived social

support (Edú-Valsania et al., 2022; Wu et al., 2023), long working hours (Lin et al., 2021; Patel et al., 2018) or low job satisfaction (Kim et al., 2019). In this study, we specifically allude to two phenomena that are of interest in this study: job insecurity and remote forms of employment.

Job insecurity is defined as the subjectively perceived and unwanted possibility of losing one's current job in the future (Llosa et al., 2017; Vander Elst et al., 2016). It is therefore a subjective dimension of precarious work (Llosa et al., 2020), which has been linked to the deterioration of workers' mental health (Llosa et al., 2018; Piccoli & De Witte, 2015).

On the other hand, interest in the effects of remote work has increased markedly in the wake of the COVID-19 pandemic (Belzunegui-Eraso & Erro-Garcés, 2020). Nonetheless, remote work does not seem to have any effect on the level of burnout (Barriga Medina et al., 2021; Heiden et al., 2023), as no differences have been found between on-site and remote workers (Arenas et al., 2022). However, evidence on the relationship between remote work and workers' well-being is scarce, as many of the published studies present various methodological problems (Lunde et al., 2022).

Based on the above, this paper presents two studies with their corresponding objectives: The first aims to adapt the Burnout Assessment Tool - Work Related Version (BAT-23) to the Spanish cultural context. The second aims to detect a differential manifestation and origin of burnout in on-site and remote jobs in the post-covid context.

To date, there is no validated adaptation of the BAT for the Spanish cultural and occupational context, although it has been used in several studies (i.e. Prado-Gascó et al., 2020). The high prevalence of burnout in various professional sectors in Spain, along with the need for valid, reliable and culturally appropriate instruments, justifies this study. Thus, recent systematic reviews and meta-analyses have reported burnout prevalence rates of approximately 25% among physicians (Pujol-de Castro et al., 2024) and up to 37% among teachers (Fernández-Suárez et al., 2021).

In addition, the study incorporates variables such as work-family and family-work conflict, job insecurity, mental overload at work and job satisfaction, factors widely addressed in the literature on burnout (Edú-Valsania et al., 2022; Verweij et al., 2017). These variables have also gained particular relevance in recent research on emerging work modalities, such as remote work (Hong & Jex, 2022; Silva et al., 2022). Their inclusion in the present study responds to a dual purpose: first, to provide evidence of the criterion validity of the BAT (Study 1); and second, to identify predictors of burnout according to work modality (Study 2).

Method

Participants

The sample consisted of $n=803$ workers (44.6% male, 55% female), all currently employed in Spain. Although the sampling was non-probabilistic, the proportion of men and women in the sample was approximated to match the labor activity quotas by gender in Spain. Official data indicate that 53.48% of the active population in Spain are men, while 46.52% are women (Eurostat, 2025). This approximate 50% balance is also reflected in the gender distribution of the sample used in the study.

The mean age was 37.6 years ($SD=12$), 61.8% had no children and 83.3% had higher education. The majority of the respondents were salaried employees (74.3%) and with a permanent contract (68.6%). In addition, 55.3% worked on-site, 27.5% in hybrid mode, and 17.2% worked remotely. Finally, 5.6% of the sample was of immigrant origin.

Instruments

Burnout assessment tool– work related version (BAT-23)

It assesses the presence of burnout syndrome (Schaufeli et al., 2019a, 2020b). This is the scale that this research aims to adapt to the population in Spain, for which the translated questionnaire can be found in Appendix 1. The scale consists of 23 items that are answered on a 5-point Likert scale (1: Never, 5: Always). These items are distributed in 4 dimensions: exhaustion, mental distancing, cognitive impairment and emotional impairment. Exhaustion refers to a severe loss of energy resulting in physical and mental fatigue. Mental distancing implies a strong aversion to work, or a cynical and indifferent attitude. Cognitive impairment is manifested by problems with attention, memory, concentration, and poor cognitive performance. Lastly, emotional impairment refers to intense emotional reactions or feeling overwhelmed by one's emotions (Schaufeli et al., 2020b). Finally, the scale, in its original validation in the Belgian context, obtained good internal consistency indices for the total score ($\alpha=0.96$), as well as for its subscales: exhaustion ($\alpha=0.92$), mental distancing ($\alpha=0.91$), cognitive impairment ($\alpha=0.92$), and emotional impairment ($\alpha=0.90$) (Schaufeli et al., 2020b).

Maslach burnout inventory– General Survey (MBI-GS)

Burnout syndrome was also assessed using the Spanish version of the MBI-GS (Salanova et al., 2000), which consists of 16 items answered on a 7-point Likert scale (1: Never, 7:

Always). It comprises 3 dimensions: Exhaustion ($\alpha=0.85$), cynicism ($\alpha=0.78$) and professional efficacy ($\alpha=0.73$, Salanova et al., 2000). High scores in exhaustion and cynicism, and low scores in professional efficacy indicate the presence of burnout.

Work-family conflict questionnaire (CCTF)

The interference of work with family life, and vice versa, was assessed using the CCTF scale (Blanch & Aluja, 2009). It consists of 8 Likert-7 items (1: strongly disagree, 7: strongly agree). The initial 4 items measure work-family conflict ($\alpha=0.83$, Blanch & Aluja, 2009); while the last 4 items assess family-work conflict ($\alpha=0.75$). The higher the score, the greater the interference in one direction.

Job Insecurity Scale (JIS-8)

Job insecurity was assessed through the Spanish adaptation and subsequent validation of the JIS (Pienaar et al., 2013), resulting in a new 8-item version, the JIS-8 (Llosa et al., 2017). It is answered on a 5-point Likert scale (1: strongly disagree, 5: strongly agree). The first 4 items assess the cognitive component of job insecurity and require a reverse coding of the scores, while the last 4 items assess the affective component and provide direct coding. The higher the total score, the higher the levels of job insecurity. Again, this instrument has shown high internal consistency ($\alpha=0.88$) (Llosa et al., 2017).

CARMEN-Q

In order to assess mental overload at work, the CARMEN-Q ($\alpha=0.905$, Rubio-Valdehita et al., 2017) was administered. The scale consists of 29 items answered using a 4-point Likert scale (1: Never, 4: Always), and includes 4 sub-dimensions: cognitive ($\alpha=0.88$), emotional ($\alpha=0.84$), temporal ($\alpha=0.79$) and performance ($\alpha=0.80$) demands. The higher the score, the higher the mental overload in each construct.

General satisfaction scale

Job satisfaction was assessed using the general satisfaction scale (Bilbao & Vega, 1995), a Spanish adaptation of the *Overall Job Satisfaction* (Warr et al., 1979). It consists of 15 items answered on a 7-point Likert scale (1: Very dissatisfied, 7: Very satisfied) that reflect an overall score ($\alpha=0.85$ - 0.88 , Bilbao & Vega, 1995) and 2 sub-dimensions: intrinsic satisfaction (even items, $\alpha=0.79$ - 0.85) and extrinsic satisfaction (odd items $\alpha=0.74$ - 0.78). The higher the score, the higher the satisfaction in each construct.

Socio-demographic block and employment situation

Finally, a block of items was included to consult ad hoc socio-demographic and socio-occupational information. Questions were asked about age, gender, territory of residence and aspects related to their employment situation.

Procedure

To collect the sample, non-probabilistic sampling was used. This is a common type of sampling in the analysis of phenomena that are not directly observable, such as this one. Also, when the exact population incidence in the analysed context is unknown (Martínez-Mesa et al., 2016; Santos & Vasconcelos, 2018). A self-administered questionnaire was used on the SurveyMonkey platform and responses were accepted between April and June 2023. Participants were informed of the objectives of the study and of the anonymous processing of their data, signing the informed consent form before starting the study. The research followed the requirements of the APA's Ethical Principles of Psychologists and Code of Conduct (2017). Likewise, this work has the endorsement of the ethics committee of the Department of Psychology of the University of Oviedo and follows the guidelines of the Declaration of Helsinki of the World Medical Association (WMA) related to research involving contact with people. The questionnaires were self-administered and were answered in the following order: socio-demographic and socio-economic data, CCTF, BAT, JIS-8, General Satisfaction Scale, CARMEN-Q and MBI-GS.

In order to respond to the research objectives, two studies were carried out. Study 1 aimed to adapt and validate the BAT-23 to the Spanish population, while study 2 established a comparison between the explanatory factors of burnout between workers in on-site and remote jobs.

Study 1: adaptation and validation of the BAT-23

The translation, adaptation and validation process followed the recommendations of the International Test Commission (2017), considering that the adaptation of a test consists of transferring it to a different language and culture. A translation of the questionnaire was carried out, introducing slight variations to adapt the items to the Spanish cultural context. This translation was carried out independently using the blind-back translation procedure (Muñiz et al., 2013). To carry out the adaptation of the BAT to the Spanish population, an exploratory and confirmatory factor analysis sequence was carried out, followed by an internal consistency and validation study (Muñiz & Fonseca-Predrero, 2019).

In addition, cut-off points were calculated for the different levels of burnout, corresponding to the 25th, 75th and 95th percentiles (Schaufeli et al., 2020b). It should be noted that these cut-off points have been clinically validated in Belgian and Dutch populations (Schaufeli et al., 2020b), but not in Spain. Similarly, our cut-off points were calculated using sample data, not population data.

Study 2: comparison of the level of burnout between on-site and remote workers

For the comparative analysis between work modalities, the sample was divided into 2 groups: workers with an on-site modality and workers with some remote component (partial or total, i.e. a hybrid or fully remote modality). They were then subjected to a comparative analysis of regression models.

Data analysis

Study 1: adaptation and validation of the BAT-23

To evaluate the structure of the scale, 2 random subsamples were created ($n_1=397$, $n_2=406$). With the first group (n_1) an exploratory factor analysis (EFA) of a polychoric correlation matrix was carried out with the program FACTOR v. 12.04.02 (Lorenzo-Seva & Ferrando, 2006). In order to determine the number of factors, Parallel analyses (PA) was used with 500 bootstrap samples. Direct Oblimin rotation was used.

The adequacy of the data was checked using the KMO (Kaiser-Meyer-Olkin) index and Bartlett's test of sphericity. Values above 0.7 in the KMO (Lorenzo-Seva & Ferrando, 2021) and the significant contrast ($NC=95\%$) of Bartlett's test allow the factor analysis to be carried out. The factor weights of the rotated matrix and the communality of the items were analysed, as well as the percentage of accumulated variance to determine the appropriate number of dimensions for the test. Item factor weights above 0.3 were considered adequate (Yong & Pearce, 2013). As for communality, values between 0.4 and 0.7 are considered acceptable (Costello & Osborne, 2005). Regarding the cumulative percentage variance, an adequate number of factors was assumed as a criterion when a cumulative variance of 60% or more was achieved.

The structure obtained in the EFA was validated with the second group (n_2) by means of a confirmatory factor analysis (CFA), carried out with the JASP software (0.17.3). Factors were extracted using the DWLS method due to the large sample size (Li, 2021). As goodness-of-fit indices, the following were examined: the comparative fit index (CFI), the Tucker-Lewis index (TLI), the Bentler-Bonett normed

fit index (NFI), the root mean square error of approximation (RMSEA), the standardised root mean square residual (SRMR), and the goodness-of-fit index (GFI). As criterion values for these indices, the following were considered: $CFI \geq 0.95$, $TLI \geq 0.95$, $RMSEA \leq 0.10$, $SRMR \leq 0.08$, $GFI \geq 0.95$, $NFI \geq 0.95$ (Hooper et al., 2008; Yaşlıoğlu & Yaşlıoğlu, 2020). The fit of models in which a second-order latent factor was extracted for the scale was also analysed.

The factorial invariance was also calculated with the full sample ($n=803$) and the DWLS estimation method, grouping on the one hand on-site work, and on the other work with some remote component. Configural invariance was tested, followed by metric, scalar and strict invariance. As invariance criterion, scale invariance was assumed when the variation is $\Delta \leq 0.01$ in CFI, TLI, RMSEA and SRMR (Putnick & Bornstein, 2016).

Reliability was analysed as internal consistency, using Cronbach's α and McDonald's ω . Values above 0.7 indicate good internal consistency for both indices (Tavakol & Dennick, 2011). Construct validity was assessed by analysing Pearson correlations between the dimensions of the BAT and the MBI, as other authors have already done with the BAT (Borrelli et al., 2022). Criterion validity was assessed by analysing other measures related to the BAT in the literature, such as: work-family conflict and vice versa (Akerstrom et al., 2023; Innstrand, 2022), job satisfaction (Akerstrom et al., 2023) or various aspects of work overload (Mazzetti et al., 2022; Sinval et al., 2022).

Study 2: comparison of the level of burnout between on-site and remote workers

Once the BAT was validated, a comparison was made of the burnout predictor factors for on-site workers and workers with some degree of remote work. To do this, firstly, correlation analyses were carried out between the different scales. Next, a comparison of means was carried out using Welch's F ($NC=95\%$) to observe differences between the total burnout score measured with the BAT between on-site and remote workers. Further analysis was carried out by designing three linear regression models ($NC=95\%$), in which the total score of the BAT was included as a dependent variable, and as independent variables: age, work-family conflict and vice versa, cognitive and affective job insecurity, extrinsic and intrinsic job satisfaction, and cognitive, temporal, emotional and performance demands. The first of the linear regression models is carried out with the total sample, the next two disaggregating into on-site workers on the one hand (group 1) and remote workers on the other (group 2). The differences between the two groups were observed, both in the explanatory capacity of the models using the R^2 std,

and in the relevance of the independent variables in each case.

Results

Study 1: adaptation and validation of the BAT-23

Exploratory factor analysis

The KMO index=0.91 and Bartlett's test of sphericity ($p < .01$) enabled the EFA to be conducted. The rotated matrix of factor weights points to a 4-factor structure for the 23 items analysed, coinciding with the theoretical assumptions of the BAT (Schaufeli et al., 2020b). The explained variance percentage values also accumulate a variance above 70% when reaching the 4-factor possibility, reinforcing this possible structure.

The factor loadings of the rotated matrix are in Table 1, showing that item 6 (“*I want to be active at work, but for whatever reason, I am unable to do so*”) has factor weights above 0.30 in 2 factors, with no great difference between the two values, meaning that it does not discriminate correctly. In fact, this item has a higher factor weight in the “Cognitive impairment” dimension, and not in the “Exhaustion” dimension, where it is theoretically conceptualised (Schaufeli et al., 2020b). Although it should be noted that taking as a reference the $MSA=0.93$, it is not recommended to eliminate item 6, or any other item.

The EFA was replicated without the sixth item. The KMO index=0.91 and Bartlett's test of sphericity ($p < .01$) are adequate. Again, the explained variance percentage values also accumulate a variance above 70% when reaching the 4-factor possibility. In general, the explained variance is higher when eliminating item 6 (with 4 factors, 76.4% versus 74%). Similarly, the factor weights of the remaining items show better values.

Confirmatory factor analysis

According to the EFA results, four different models are tested in the CFA (Table 2). It can be seen that the models without item 6 achieve a better fit. In particular, the best fit is achieved by the 4-factor model without item 6 ($CFI=0.986$, $TLI=0.985$, $RMSEA=0.075$, $SRMR=0.067$, $GFI=0.986$, $NFI=0.981$). When calculating the models with a second-order latent factor, the model without item 6 also shows a better fit ($CFI=0.985$, $TLI=0.984$, $RMSEA=0.077$, $SRMR=0.069$, $GFI=0.985$, $NFI=0.980$) (Fig. 1). Thus, item 6 was eliminated, resulting in a BAT, with a scale of 22 items in its adaptation to the Spanish population. This is also consistent with the principle of parsimony and the

Table 1 EFA: factor loadings

	Fac- tor I	Factor II	Factor III	Fac- tor IV
1. En mi trabajo, me siento mentalmente agotado/a (<i>At work, I feel mentally exhausted</i>)	0.796			
2. Cada cosa que hago en el trabajo requiere una gran cantidad de esfuerzo (<i>Everything I do at work requires a great deal of effort</i>)	0.804			
3. Después de un día de trabajo, me cuesta recuperar la energía (<i>After a day at work, I find it hard to recover my energy</i>)	0.850			
4. En mi trabajo, me siento físicamente agotado/a (<i>At work, I feel physically exhausted</i>)	0.703			
5. Cuando me levanto por la mañana, me falta energía para empezar un nuevo día de trabajo (<i>When I get up in the morning, I lack the energy to start a new day at work</i>)	0.564			
6. Quiero estar activo/a en el trabajo, pero por lo que sea, soy incapaz de hacerlo (<i>I want to be active at work, but somehow I am unable to manage</i>)	0.378		0.471	
7. Cuando me esfuerzo en el trabajo, me canso rápidamente (<i>When I exert myself at work, I quickly get tired</i>)	0.529		0.339	
8. Al final de una jornada laboral, me siento mentalmente exhausto/a y agotado/a (<i>At the end of my working day, I feel mentally exhausted and drained</i>)	0.857			
9. Me cuesta encontrar algo de entusiasmo por mi trabajo (<i>I struggle to find any enthusiasm for my work</i>)			0.825	
10. En el trabajo, tiendo a realizar las tareas en “piloto automático” (<i>At work, I do not think much about what I am doing and I function on autopilot</i>)			0.682	
11. Siento una fuerte aversión hacia mi trabajo (<i>I feel a strong aversion towards my job</i>)			0.789	
12. Siento indiferencia hacia mi trabajo (<i>I feel indifferent about my job</i>)			0.930	
13. Soy escéptico/a sobre lo que mi trabajo significa para los demás (<i>I'm cynical about what my work means to others</i>)			0.571	
14. En mi trabajo, me cuesta mantenerme concentrado/a (<i>At work, I have trouble staying focused</i>)				0.958
15. En mi trabajo, me cuesta pensar con claridad (<i>At work I struggle to think clearly</i>)				0.788
16. Soy olvidadizo/a y distraído/a en mi trabajo (<i>I'm forgetful and distracted at work</i>)				0.745
17. Cuando estoy trabajando, me cuesta concentrarme (<i>When I'm working, I have trouble concentrating</i>)				0.924
18. Cometo errores en mi trabajo porque tengo la cabeza en otras cosas (<i>I make mistakes in my work because I have my mind on other things</i>)				0.578
19. En el trabajo, soy incapaz de controlar mis emociones (<i>At work, I feel unable to control my emotions</i>)				0.765
20. No me reconozco en la manera en la que reacciono emocionalmente en el trabajo (<i>I do not recognize myself in the way I react emotionally at work</i>)				0.736
21. Me vuelvo irritable cuando las cosas no van como yo quiero en mi trabajo (<i>During my work I become irritable when things don't go my way</i>)				0.768
22. Me enfado o pongo triste en el trabajo sin saber por qué (<i>I get upset or sad at work without knowing why</i>)				0.611
23. En mi trabajo puedo reaccionar exageradamente sin querer (<i>At work I may overreact unintentionally</i>)				0.896

recommendation to eliminate items that do not provide meaningful information (Ferrando et al., 2022).

The results of the CFA also show an adequate fit for the second-order model (Table 2), with barely remarkable differences in the goodness-of-fit indices, and in any case, within the predicted criteria. Therefore, it is considered

possible to extract a second-order factor in the adaptation of the BAT to the Spanish population (Fig. 1), providing a total burnout score.

As for the multi-group invariance of the factor structure, the data showed configural, metric, scalar and strict invariance between those workers with an on-site modality

Table 2 CFA: comparison of models, fit indices and invariance of the factor structure

CFA	CFI	TLI	RMSEA	SRMR	GFI	NFI
Criteria values	≥0.95	≥0.95	≤0.10	≤0.08	≥0.95	≥0.95
4-factor model	0.982	0.980	0.087	0.073	0.983	0.976
4-factor model (without item 6)	0.986	0.985	0.075	0.067	0.986	0.981
Second-order factor	0.982	0.980	0.087	0.074	0.982	0.976
Second-order factor (without item 6)	0.985	0.984	0.077	0.069	0.985	0.980
Invariance test	CFI (ΔCFI)	TLI (ΔTLI)	RMSEA (ΔRMSEA)	SRMR (ΔSRMR)		
Configural	0.988	0.987	0.073	0.066		
Metric	0.987 (0.001)	0.986 (0.001)	0.075 (0.002)	0.070 (0.004)		
Scalar	0.987 (0.000)	0.988 (0.002)	0.069 (0.006)	0.066 (0.004)		
Strict	0.987 (0.000)	0.988 (0.000)	0.069 (0.000)	0.066 (0.000)		

or with some form of remote work (partial or total). Goodness-of-fit indices indicated in all cases an increase of less than $\Delta \leq 0.10$ (Table 2). In all cases the assumption was met, such that the scale structure did not vary between groups. It should be noted that the analyses were conducted with the full database, without item no. 6 and taking into account a 2nd order latent factor.

Finally, the cut-off points for the different levels of burnout have been calculated, corresponding to the 25th (2.00), 75th (2.77) and 95th (3.45) percentiles (Schaufeli et al., 2020b). The mean score on the BAT was 2.41 (SD=0.60). 23.9% of the sample presented low levels of burnout and 48.7% medium levels. More importantly, 21.5% had high and 5.9% very high levels of burnout.

Reliability and validity of the BAT

In general, the BAT in the Spanish data shows very good levels of internal consistency ($\omega=0.927$, $\alpha=0.925$), higher than those of the MBI (Exhaustion: $\omega=0.934$, $\alpha=0.934$; Professional Efficacy: $\omega=0.779$, $\alpha=0.787$; Cynicism: $\omega=0.855$, $\alpha=0.855$). The internal consistency of the different sub-dimensions of the BAT was also assessed (Exhaustion: $\omega=0.880$, $\alpha=0.877$; Mental Distancing: $\omega=0.868$, $\alpha=0.866$; Cognitive Impairment: $\omega=0.881$, $\alpha=0.877$; Emotional Impairment: $\omega=0.850$, $\alpha=0.849$).

To study the construct validity of the BAT in the Spanish population, the results of the Pearson correlations (NC=95%) between the BAT and MBI-GS scales are presented (Appendix 2). The BAT correlated positively with its respective subscales, i.e.: Exhaustion ($r=.825$, $p<.01$), mental distancing ($r=.813$, $p<.01$), cognitive impairment ($r=.746$, $p<.01$) and emotional impairment ($r=.767$). It also correlated positively with the exhaustion and cynicism subscales of the MBI, ($r=.778$ and $r=.719$ respectively, $p<.01$), and negatively with professional efficacy ($r=-.393$, $p<.01$). On the other hand, both instruments contain some subscales that assess similar specific theoretical constructs, such as exhaustion or mental distancing (similar to the cynicism subscale of the MBI). The correlation between

the exhaustion subscales of the BAT and the MBI is high ($r=.813$, $p<.01$), as well as between the mental distancing (BAT) and cynicism (MBI) subscales with an $r=.795$. In fact, the exhaustion dimension of the BAT shows similar correlations with the mental distancing (BAT) and cynicism (MBI) dimensions of $r=.531$ and $r=.535$ respectively.

Furthermore, when correlating the rest of the variables with the BAT and MBI subscales, those sub-dimensions that are similar in their theoretical conceptualisation show similar correlation coefficients (Appendix 3). For example, for general job satisfaction the correlation coefficients are as follows: Exhaustion (BAT, $r=.598$; MBI, $r=.555$); mental distancing (BAT), $r=.340$ and cynicism (MBI), $r=.139$. The same is true for job insecurity: Exhaustion (BAT, $r=.333$; MBI, $r=.323$); mental distancing, $r=.335$ and cynicism, $r=.327$. The high correlations between the BAT and its subscales with the MBI-GS and its subscales show a good indication of construct validity.

In addition, the results of the criterion validity analyses are reported. High correlations are observed in the expected direction between the BAT scores in the Spanish population and the different constructs studied. The score obtained in the BAT correlated significantly with: work-family conflict ($r=.480$, $p<.01$), family-work conflict ($r=.278$, $p<.01$), cognitive job insecurity ($r=.399$, $p<.01$), affective job insecurity ($r=.369$, $p<.01$), as well as with intrinsic ($r=-.603$, $p<.01$), extrinsic ($r=-.619$, $p<.01$) and general job satisfaction ($r=-.633$, $p<.01$). Finally, also with cognitive ($r=.083$, $p<.05$), temporal ($r=.474$, $p<.01$) and emotional ($r=.691$, $p<.01$) demands of the job.

Study 2: analysis of the relationship between on-site work and burnout

In order to respond to the second objective of this study, and once the BAT scale has been adapted and validated for use in the Spanish population, the second study aims to determine which variables explain the fact of experiencing more or less burnout in relation to the conditions of on-site or off-site employment. This is feasible, since it has previously

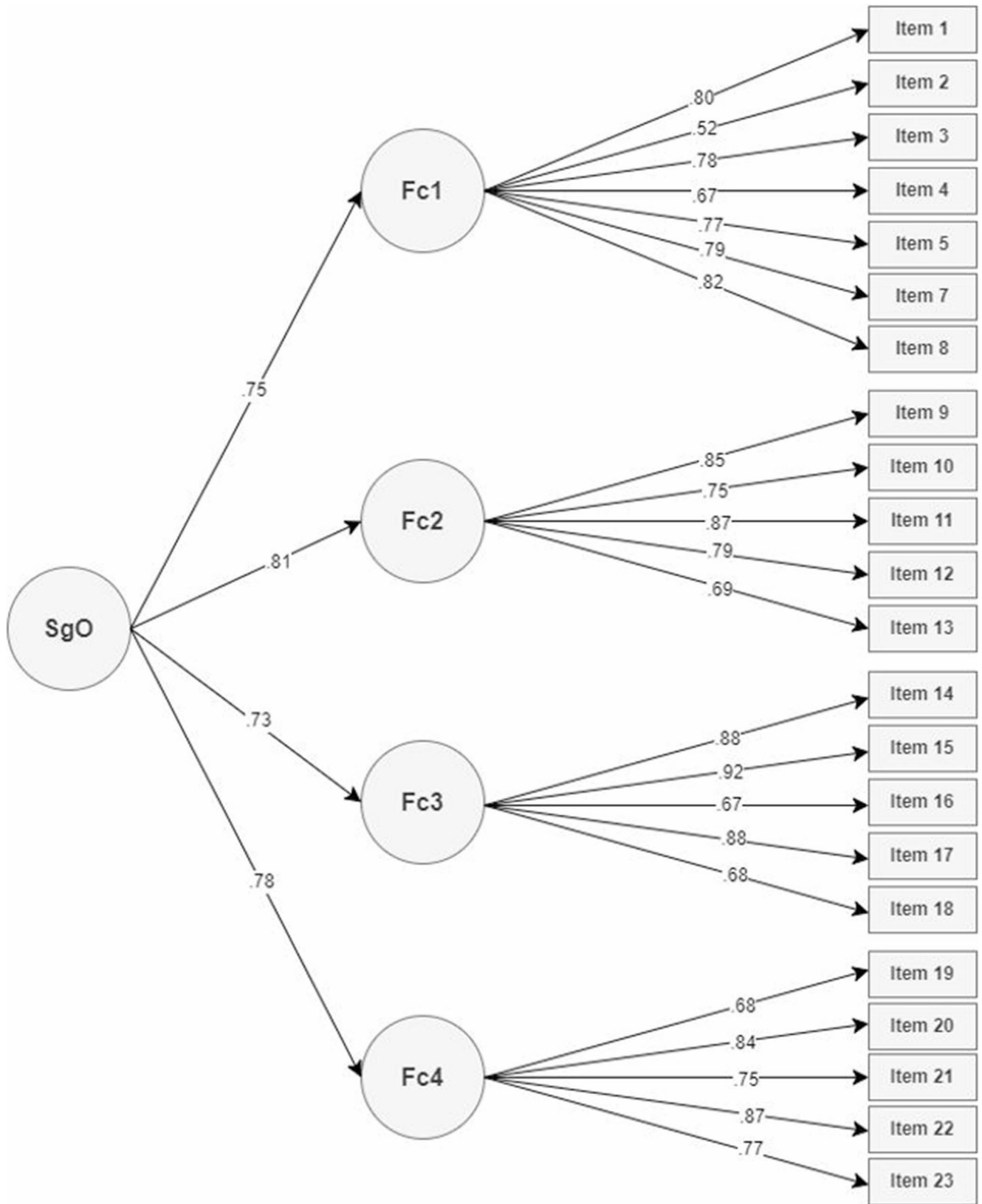


Fig. 1 Graph of the 2nd order model (typified)

Table 3 Regression model to explain burnout (measured with the BAT) in the whole sample.

Model	Non-standardized coefficients		Standardized coefficients		Sig.
	B	Standard error	β	t	
(Constant)	2.628	0.102		25.838	0.000
Emotional demands	0.067	0.004	0.499	17.054	0.000
Intrinsic job satisfaction	-0.020	0.002	-0.311	-12.482	0.000
Age	-0.008	0.001	-0.154	-7.078	0.000
Performance demands	-0.025	0.005	-0.125	-5.195	0.000
Temporal demands	0.015	0.004	0.103	3.655	0.000
Family-work conflict	0.015	0.004	0.090	3.976	0.000
Cognitive job insecurity	0.014	0.005	0.070	2.953	0.003

been shown that the BAT scale is invariant to the on-site/remote nature of the job.

Firstly, it is observed that there are no differences in the levels of burnout in the sample according to the attendance variable grouping (on-site, remote or hybrid employment) ($F=2.169, p>.05$). Nor between having some degree of remote work in their working day or not ($t=-1.365, p>.05$). It is worth noting that the majority of respondents consider that they would be more productive working in their own work modality. However, 25.5% of on-site workers felt that they would be more productive with a hybrid modality.

By designing a regression model with the total sample ($n=803$), and selecting the variables previously observed to correlate with the burnout score, this manages to explain 63.9% of the total variance ($R^2_{std}=0.639$). The independent variables in this model are: emotional demands ($\beta_{std}=0.499, p<.01$), intrinsic job satisfaction ($\beta_{std}=-0.311, p<.01$), age ($\beta_{std}=-0.154, p<.01$), performance demands ($\beta_{std}=-0.125, p<.01$), temporal demands ($\beta_{std}=0.103, p<.01$), family-work conflict ($\beta_{std}=0.090, p<.01$) and cognitive job insecurity ($\beta_{std}=0.070, p<.01$) (Table 3).

Impact of remote work on the prediction of burnout

Although the two groups do not differ in their level of burnout, they may differ in the variables that explain burnout in each case. To address this issue, two linear regression models were run, dividing the sample into 2 groups. Group 1 ($n_1=431$) is made up of on-site workers. Group 2 ($n_2=372$) includes workers with some form of remote work

Table 4 Regression models explaining burnout among on-site and remote workers

Group 1: on-site workers ($n=431$)			Group 2: workers with some form of remote work ($n=372$)		
R^2_{std}	0.676		R^2_{std}	0.606	
	β	Sig.		β	Sig.
Age	-0.118	0.000	Age	-0.141	0.000
Intrinsic job satisfaction	-0.323	0.000	Intrinsic job satisfaction	-0.291	0.000
Emotional demands	0.449	0.000	Emotional demands	0.551	0.000
Performance demands	-0.153	0.000	Performance demands	-0.143	0.000
Temporal demands	0.101	0.007	-	-	-
Cognitive demands	0.092	0.014	-	-	-
Work-family conflict	0.070	0.049	-	-	-
Family-work conflict	0.076	0.011	Family-work conflict	0.077	0.032
Cognitive job insecurity	0.077	0.012	-	-	-
-	-	-	Affective job insecurity	0.128	0.001

Note. Omitted data refer to non-significant correlations

(total or partial). As for burnout levels, these are slightly lower in group 1 ($M=2.38, SD=0.56$) compared to group 2 ($M=2.44, SD=0.63$).

The regression model of group 1 manages to explain 67.6% of the total variance ($R^2_{std}=0.676$). In this model, the significant variables are: emotional demands ($\beta_{std}=0.449$), intrinsic job satisfaction ($\beta_{std}=-0.323$), performance demands ($\beta_{std}=-0.153$), age ($\beta_{std}=-0.118$), temporal demands ($\beta_{std}=0.101$), cognitive demands ($\beta_{std}=0.092$), family-work ($\beta_{std}=0.076$) and work-family conflict ($\beta_{std}=0.070$), and cognitive job insecurity ($\beta_{std}=0.077$). The regression model of group 2 manages to explain 60.6% of the total variance ($R^2_{std}=0.606$). In this model, the predictors are: emotional demands ($\beta_{std}=0.551$), intrinsic job satisfaction ($\beta_{std}=-0.291$), performance demands ($\beta_{std}=-0.143$), age ($\beta_{std}=-0.141$), affective job insecurity ($\beta_{std}=0.128$) and family-work conflict ($\beta_{std}=0.077$) (Table 4).

For on-site workers, cognitive or temporal demands, as well as work-family conflict are significant variables in the model. This is not the case for remote workers or those with a hybrid modality, as shown in Table 4. Moreover, for group 1, cognitive job insecurity is a significant variable in explaining burnout ($\beta_{std}=0.77$), while for group 2, affective job insecurity is significant ($\beta_{std}=0.128$).

Discussion

As for the adaptation study carried out, there is no precedent for the use of the BAT in Spain, at least not without the instrument being validated. Thus, this is the first study to offer a valid adaptation of the BAT-23 (Work Related Version) in the Spanish cultural context, using for this purpose a large sample of workers from different work sectors. The results confirmed the 4-factor model proposed by Schaufeli et al. (2020b), with a second-order latent factor also being present. However, in the adapted scale, the sixth item (“I want to be active at work, but for whatever reason, I am unable to do so”) is removed. This does not affect internal consistency because the affected dimension still consists of seven items, with at least three items per dimension being recommended (Schreiber, 2021). Exhaustion is a key component in understanding Burnout Syndrome and is assessed through a subscale with a sufficient number of items. These items capture various manifestations of exhaustion, ensuring a reliable measurement. Furthermore, this subscale demonstrates consistency with other established instruments, such as the MBI. Therefore, the scale in Spain offers good reliability and validity indices, configured as a 22-item scale suitable for use in the working population in this cultural setting.

The scale has been shown to be invariant between those workers with an on-site or remote work modality. Therefore, the BAT can be considered a reliable tool regardless of work modality. This is relevant given that classic instruments such as the MBI (Maslach & Jackson, 1981) were originally developed for on-site work contexts, which may limit their applicability in hybrid or remote settings. Thus, the present study offers a culturally adapted scale that retains its psychometric properties across a range of contemporary work modalities.

Moreover, the BAT has shown invariance with respect to gender (De Beer et al., 2022; Sinval et al., 2022), ethnicity (De Beer et al., 2022), or nationality (De Beer et al., 2020; Redelinguys & Morgan, 2023; Sinval et al., 2022), the latter allowing for comparisons between countries. In this study, invariance with respect to gender could not be tested, as there are response options that were never selected by women. For example, in item 15 (“In my job, I find it difficult to think clearly”), no female respondent gave the highest score.

In any case, the BAT emerges as a solid alternative that addresses the theoretical, practical and psychometric limitations of the MBI. Our results support the idea that the BAT provides a more comprehensive measurement of burnout than the MBI (Redelinguys & Morgan, 2023). For example, the existence of a second-order latent factor has been confirmed, which makes it easy to determine whether an

individual has burnout or not. This inability of the MBI to provide a total burnout score is a major limitation (Bianchi et al., 2022). Even so, this has been ignored in some studies, as observed in a recent meta-analysis between suicidal ideation and burnout (Esparza-Reig, & Julián, 2024). This second-order factor has also been confirmed by other authors (Borrelli et al., 2022; Consiglio et al., 2021; De Beer et al., 2020; De Beer et al., 2023; Mazzetti et al., 2022; Sakakibara et al., 2020; Schaufeli et al., 2020a; Sinval et al., 2022; Vinuesa-Solórzano et al., 2021).

Regarding criterion validity, the relationships between the BAT and the other scales are congruent with the existing scientific literature. For example, the paper by López-Núñez et al. (2020) confirms the relationship between burnout and cognitive, temporal, emotional and performance demands. The same is true for work-family conflict and burnout (Giancaspro et al., 2023; Innstrand, 2022). Likewise, the scale shows good construct validity, reaffirming the findings of De Beer et al. (2022). Also, our data reveal a mean burnout score higher than that found in Italy, the Netherlands, Belgium, Germany, Austria, Finland (Consiglio et al., 2021), similar to Ireland and Portugal (Sinval et al., 2022), and slightly lower than Japan (Consiglio et al., 2021).

Finally, it is worth noting that the cut-off points calculated in this study are based on the statistical distribution of scores (25th, 75th, and 95th percentiles). This means that clinically validated cut-off points have not been established. These points are typically estimated using methods such as ROC curves, which evaluate parameters like specificity and sensitivity (Cerdeira & Cifuentes, 2012). In the case of the BAT, clinically validated cut-off points already exist in the Netherlands, Belgium, and Finland (Schaufeli et al., 2023). In Spain, these points have been calculated exclusively for veterinarians (Osca et al., 2024). It is important to remember that clinical validation is necessary to consider the BAT as a diagnostic tool.

On the other hand, with respect to the second study carried out, it can be concluded that the work modality does not significantly influence burnout levels, concurring with the study by Arenas et al. (2022). Note that the study mentioned was carried out during covid-19, while ours is situated in a post-pandemic context. Moreover, it is still too early to determine whether remote work is positive or not for workers' mental health (Lunde et al., 2022).

Some authors point out that remote work is beneficial, reducing work overload and emotional exhaustion (Silva et al., 2022) or fostering worker autonomy (Sardeshmukh et al., 2012). In fact, autonomy has been found to act as a protective factor against workload (Weinert et al., 2015). Interestingly, the study by Sterkens et al. (2024) found that workers with a recent diagnosis of burnout prefer jobs that allow remote working, while workers with high levels of

burnout are more attracted to part-time jobs (Sterkens et al., 2024).

Among the negative consequences of remote work we should highlight reduced social support, a major protective factor against burnout (Velando-Soriano et al., 2020) or even suicide (Llosa et al., 2023). Another is isolation and lack of information, which often aggravates work-family conflict (Weinert et al., 2015). In addition, remote pressure is a variable of great importance. This is defined as the obsession with responding quickly to messages, within a work context and using technology (Barber & Santuzzi, 2015). While remote work reduces work-family conflict for those with low remote pressure, this effect is weakened as remote pressure increases (Hong & Jex, 2022). In line with this, Zhang et al. (2020) highlight that remote work aggravates the work-family and family-work conflict, leading to the redivision of household tasks and aggravating gender differences. These authors point to a pattern: men do remote work more when they are single or with childless partners; when there are children, it is women who tend to do remote work more.

In short, job demands and resources are the mediating variables between remote work and burnout (Sardeshmukh et al., 2012). However, hybrid work may be more beneficial for workers, offering a better work-life balance and greater job satisfaction (Hopkins & Bardoel, 2023).

A theoretical framework that supports this view is the conservation of resources theory (Hobfoll, 1989). This theory proposes that individuals seek to protect, conserve and accumulate resources to achieve their goals and minimize stress. Thus, hybrid work models provides greater autonomy and reduces commuting time, while mitigating isolation by allowing employees to attend the office on certain days. Additionally, this work modality enables companies to reduce the resources allocated to office spaces (Hopkins & Bardoel, 2023).

In general, hybrid work can enhance work-life balance, reduce stress, and improve physical health by allowing more time for non-work-related activities. However, it may also lead to isolation, difficulty in switching off, and physical health issues due to prolonged sedentary behaviour (Dale et al., 2024). In this context, the success of hybrid work models will depend on their ability to preserve the benefits of both remote and on-site work while minimizing their negative impacts. To achieve this, it is essential to distinguish between tasks that are best performed in the office and those that can be effectively executed remotely, ensuring proper coordination between them (Hopkins & Bardoel, 2023).

Limitations and future research

This study has several limitations. (1) Only the main scale (main symptoms) of the *Burnout Assessment Tool– work*

related version (BAT-23) has been validated. The secondary symptoms scale (Psychological distress and Psychosomatic complaints) was not included in the questionnaire. (2) The cut-off points obtained have not been clinically validated, as in other contexts and countries. (3) The sample was recruited in a non-probabilistic manner and may not be representative of the Spanish population in aspects such as the distribution of education levels or the average age. However, the sampling maintained quotas for men and women within the employed population. This was determined as it is a fundamental sociodemographic characteristic of the study. (4) The design of both studies is cross-sectional, not longitudinal, which affects the quality of the data.

A more detailed explanation is required for the observed limitation when attempting to analyse gender invariance. This is due to item 15 not receiving the maximum number of responses from women. However, in previous studies, this item has performed similarly to the other components of the scale (De Beer et al., 2022, 2023). Additionally, its content does not contain ambiguous meanings in the language that could hinder comprehension in Spanish, nor has it shown excessively low factor loadings that would make it susceptible to elimination.

Therefore, we consider the overall functioning of the scale to be adequate. However, we suggest addressing this issue in future research. On one hand, we recommend expanding the sample and including a more diverse profile of male and female workers. On the other hand, further studies are needed to explore gender differences in work-related stress and burnout, as well as their impact on performance, particularly at the cognitive level, as indicated by this item.

Regarding future lines of research, it is recommended to start from the theoretical basis proposed by Schaufeli and Taris (2005) in order to continue understanding burnout. Likewise, the need for studies that clarify the relationship between work modality and burnout syndrome is advocated. It is recommended that these studies are longitudinal in design.

Conclusions

In short, the BAT shows good psychometric properties, and its use in the Spanish context can be recommended. It has maintained the 4-factor structure proposed by its authors, although item 6 has been eliminated. The existence of a second-order latent factor that provides a total burnout score has been confirmed, a major limitation of previous instruments such as the MBI. In addition, the scale was found to be invariant to work modality. As for the work modality (in-person, remote or hybrid), it does not seem that this is a variable that in itself implies higher levels of burnout. Rather, it is the characteristics of the job that are responsible for these levels of burnout.

Appendix 1. Traducción española del BAT-23 (versión para trabajadores).

- Agotamiento:** 1. En mi trabajo, me siento mentalmente agotado/a.
 2. Cada cosa que hago en el trabajo requiere una gran cantidad de esfuerzo.
 3. Después de un día de trabajo, me cuesta recuperar la energía.
 4. En mi trabajo, me siento físicamente agotado/a.
 5. Cuando me levanto por la mañana, me falta energía para empezar un nuevo día de trabajo.
 6. Quiero estar activo/a en el trabajo, pero por lo que sea, soy incapaz de hacerlo.
 7. Cuando me esfuerzo en el trabajo, me canso rápidamente.
 8. Al final de una jornada laboral, me siento mentalmente exhausto/a y agotado/a.

- Distancia mental:** 9. Me cuesta encontrar algo de entusiasmo por mi trabajo.
 10. En el trabajo, tiendo a realizar las tareas en piloto automático.

11. Siento una fuerte aversión hacia mi trabajo.
 12. Siento indiferencia hacia mi trabajo.
 13. Soy escéptico/a sobre lo que mi trabajo significa para los demás.

- Deterioro cognitivo:** 14. En mi trabajo, me cuesta mantenerme concentrado/a.
 15. En mi trabajo, me cuesta pensar con claridad.
 16. Soy olvidadizo/a y distraído/a en mi trabajo.
 17. Cuando estoy trabajando, me cuesta concentrarme.
 18. Cometo errores en mi trabajo porque tengo la cabeza en otras cosas.

- Deterioro emocional:** 19. En el trabajo, soy incapaz de controlar mis emociones.
 20. No me reconozco en la manera en la que reacciono emocionalmente en el trabajo.
 21. Me vuelvo irritable cuando las cosas no van como yo quiero en mi trabajo.
 22. Me enfado o pongo triste en el trabajo sin saber por qué.
 23. En mi trabajo puedo reaccionar exageradamente sin querer

Appendix 2

Table 5 Correlations between BAT - MBI

	1	2	3	4	5	6	7
1. BAT	1						
2. Exhaustion (BAT)	0.825**	1					
3. Mental distancing (BAT)	0.813**	0.531**	1				
4. Cognitive impairment (BAT)	0.746**	0.455**	0.515**	1			
5. Emotional impairment (BAT)	0.767**	0.518**	0.488**	0.484**	1		
6. Exhaustion (MBI)	0.778**	0.813**	0.618**	0.407**	0.544**	1	
7. Cynicism (MBI)	0.719**	0.535**	0.795**	0.422**	0.483**	0.669**	1
8. Professional efficacy (MBI)	-0.393**	-0.195**	-0.413**	-0.378**	-0.285**	-0.220**	-0.348**

Note. ** $p < .01$

Appendix 3

Table 6 Correlations between BAT, CCTF, JIS-8, general satisfaction scale and CARMEN-Q

	BAT	BAT-EX	BAT-MD	BAT-CI	BAT-EI
1. Work-family conflict	0.480**	0.598**	0.340**	0.209**	0.293**
2. Family-work conflict	0.278**	0.230**	0.193**	0.206**	0.255**
3. Job insecurity	0.427**	0.333**	0.335**	0.337**	0.353**
4. Cognitive job insecurity	0.399**	0.318**	0.332**	0.295**	0.314**
5. Affective job insecurity	0.369**	0.282**	0.274**	0.305**	0.316**
6. Intrinsic job satisfaction	-0.603**	-0.463**	-0.660**	-0.342**	-0.404**
7. Extrinsic job satisfaction	-0.619**	-0.536**	-0.602**	-0.320**	-0.457**
8. Job satisfaction	-0.633**	-0.516**	-0.654**	-0.343**	-0.445**
9. Cognitive demands	0.083*	0.195**	-0.062	0.071*	0.040
10. Temporal demands	0.474**	0.564**	0.291**	0.214**	0.373**
11. Emotional demands	0.691**	0.764**	0.425**	0.349**	0.589**
12. Performance demands	0.053	0.220**	-0.094**	-0.083*	0.082*

Note. * $p < .05$, ** $p < .01$. BAT-EX=exhaustion, BAT-MD=mental distancing, BAT-CI=cognitive impairment, BAT-EI=emotional impairment

Author contributions PM, JALL, SMM and EAT designed the study and collected the data. PM and JALL did the statistical analysis. PM wrote the paper. JALL and EAT contributed to the interpretation and the write of the paper, supervising it. All authors read and approved the final manuscript.

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Data availability The dataset is available from the corresponding author on reasonable request.

Declarations

Ethics approval and consent to participate All participants in the study took part in it voluntarily, giving their consent after being informed of the objectives and data processing of this research. This work is approved by the Ethical Committee of the Psychology Department of the University of Oviedo (Spain). In addition, it follows the guidelines set by the Declaration of Helsinki of the World Medical Association (WMA) related to research involving contact with people.

Conflict of interest The authors declare no conflicts of interest.

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