

Symptoms of distress when suffering from burnout: a comparison between the traditional and typological definitions of the syndrome

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Abstract

Objective: To compare the structure and explanatory power of the traditional and the subtype burnout definitions on symptoms of distress.

Methods: We used a cross-sectional design with a random sample of university employees ($n=429$), who completed the MBI-GS, BCSQ-12 and HSCL-30. The structure of the scales was assessed using parallel analysis from polychoric correlations, unweighted least squares and promin rotation. Multivariate regression models were built among symptoms and burnout models.

Results: The HSCL showed a two-factor structure (psychological and somatic; $IFS=0.87$; $GFI=0.99$; $RMSR=0.05$); the MBI a forced three-factor structure (exhaustion, efficacy and cynicism; $IFS=0.95$; $GFI>0.99$; $RMSR=0.03$); the BCSQ a three-factor structure (neglect, lack of development and overload; $IFS=0.98$; $GFI>0.99$; $RMSR=0.02$). The variance of psychological distress was for 40% explained by MBI-GS and for 27% by BCSQ-12; the variance of somatic

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symptoms was for 31% explained by MBI-GS and 16% by BCSQ-12. All the BCSQ-12 factors contributed to explain psychological and somatic symptoms, but only exhaustion from MBI-GS.

Conclusions: *The typological definition showed better structure, but worse explanatory power on symptoms, than the traditional perspective. Exhaustion seems to be the burnout core dimension, although the subtypes would explain a specific characterization of the syndrome.*

Key words: burnout types, distress symptoms, factorial analysis, MBI-GS, BCSQ-12.

INTRODUCTION

Occupational stress is a risk factor in developing mental disorders. It is associated with organizational troubles as lack of satisfaction, absenteeism or low productivity (Eschleman, Bowling, Michel, Burns, 2014). High levels of perceived stress occur when environmental demands overwhelm an individual's resources and threaten his personal well-being (Lazarus, 1993). When stress experience continues over time, burnout syndrome might appear, reflecting an accumulation of chronic state reactions. Burnout is associated with poor perceived mental health and high rates of somatic comorbidity (Buunk, Schaufeli, 1999). This syndrome has traditionally been characterised by states of exhaustion, cynicism and perceived inefficacy (Maslach, Jackson, Leiter, 1996; Toker, Melamed, Berliner, Zeltser, Shapira, 2012). Exhaustion is the feeling of not being able to offer any more of oneself at work, cynicism represents a distant attitude towards work, and inefficacy is the feeling of not performing tasks adequately.

This definition presents psychometric problems, such as the lack of consistency in its structure; it has not been developed from clinical observances; it has not been fundamented over systematic theorizations, but it has been inductively proposed through factor grouping of a rather arbitrary set of items (Shirom, Melamed, 2006). This proposal has also been criticized because it does not clarify the relationships among its components, nor about antecedents and consequences (Koeske, Koeske, 1989; Shirom, 2005; Demerouti, Verbeke, Bakker, 2005). However, a more comprehensive definition has recently been proposed differentiating three burnout clinical subtypes.

Subjects classified as 'frenetic' work increa-

singly harder to the point of exhaustion, in search of success (Montero-Marín, Prado-Abril, Carrasco, Asensio-Martínez, Gascón, García-Campayo, 2013). These workers are highly involved, ambitious and overloaded, invest a great deal of time in their work, and are usually complaining about the hierarchical structure where they are working, because of the barriers and difficulties they feel (Montero-Marín, Skapinakis, Araya, Gili, García-Campayo, 2011; Heiervang, Goodman, 2011; Montero-Marín, Prado-Abril, Demarzo, Gascón, García-Campayo, 2014). Its main feature is overload, the perception of jeopardizing one's health to pursue worthwhile results, which is highly associated with exhaustion and with a coping strategy based on venting of emotions (Calvete, Vila, 2000; Bresó, Salanova, Schaufeli, 2015).

Workers developing the 'underchallenged' subtype have to cope with monotonous and unstimulating conditions that fail to provide the necessary satisfaction (Montero-Marín et al., 2013). They feel limited by their type of work, and feel indifferent and bored; feelings which do not encourage personal development in their jobs, so that they are often complaining of the routine duties they have to carry out (Heiervang, Goodman, 2011; Montero-Marín et al., 2011; Montero-Marín et al., 2014). Its main characteristic is lack of development, the absence of personal growth experiences, together with the desire for taking on other jobs where they could better develop their skills, which is strongly associated with cynicism and with cognitive avoidance as coping strategy (Calvete, Vila, 2000; Bresó, Salanova, Schaufeli, 2015).

Finally, workers presenting the 'worn-out' subtype give up when faced with stress or absence of gratification (Farber, 2000), and are

negatively influenced by the effect accumulated over time related to the control systems and the rigidity of the organizational structure of their employing institution, which causes much discomfort. They show feelings of lack of control and feel there is lack of acknowledgement of their efforts, leading them to neglect their responsibilities (Montero-Marín, García-Campayo, Mera, López, 2009; Montero-Marín, García-Campayo, 2010; Montero-Marín et al., 2013). Therefore, neglect refers to individuals' disregard as a response to any difficulty, which is closely associated with inefficacy and with a behavioural disengagement as coping strategy (Montero-Marín et al., 2011; Montero-Marín et al., 2014).

The comparison between both perspectives on burnout could bring to light their strengths and limitations, clarifying the nature of the syndrome. The goal of the present study was to evaluate the factorial structure and explanatory power of the referred classical and typological definitions of burnout, taking symptomatology as a criterion.

METHODS

Design

We used an analytical cross-sectional design.

Participants

The study population consisted of all employees of the University of Zaragoza, Spain, who were working in January 2008 (N=5,493). The required sample size was calculated to be able to make estimates with a 95% confidence level, with a 3.5% margin of error, and assuming an 18% prevalence of burnout; thus, the sample size needed was 427 participants. Given that the response rate for previous web-mail surveys had been roughly 27% (Heiervang, Goodman, 2011), 1,600 people were selected from an alphabetical list of the entire workforce by means of random stratified sampling with proportional allocation depending on occupation: 58% teaching and research staff (TRS), 33% administration and service personnel (ASP) and 9% grant holders (GRH).

Procedure and ethics

In April 2008, an email was sent to the selec-

ted individuals explaining the aims of the research, the voluntary nature of participation, potential benefits/risks, and data confidentiality. This message contained access passwords and a link to complete the online questionnaire, after providing informed consent. The project was approved by the Ethics committee of Aragón, Spain.

Measures

Sociodemographics

Subjects were asked about age, sex, education, relationships, occupation type, length of service, contract duration, contract type, and number of sick leave days in the previous year.

Symptoms of distress

Participants were given a short Spanish version of the Hopkins Symptoms Checklist (HSCL-30) (Calvete, Vila, 2000). This self-report rating scale consists of 30 items selected to include clinical symptoms of somatization, depression, anxiety, cognitive difficulties and interpersonal sensitivity. This questionnaire has to be responded using a Likert-type scale, with four response options scored from 0 ('never') to 3 ('almost always').

Classic burnout

Subjects were asked to complete the Maslach Burnout Inventory General Survey (MBI-GS) (Maslach et al., 1996), in its validated Spanish version (Bresó et al., 2015). This adaptation consists of 15 items grouped into exhaustion cynicism, and efficacy. Responses are arranged in a Likert-type scale with seven response options, scored from 0 ('never') to 6 ('always').

Burnout subtypes

Participants were also given the Burnout Clinical Subtypes Questionnaire in its short Spanish version (BCSQ-12) (Montero-Marín et al., 2011). This questionnaire consists of 12 items, distributed into overload, lack of development, and neglect. Participants had to indicate the degree to which they agreed with each of the statements, according to a Likert-type scale with seven response options, scored from 1 ('totally disagree') to 7 ('totally agree').

All the dimensions were calculated using factorial scores, and their psychometric properties are shown in the results section.

Data analysis

Descriptives

Means (SD) and Mardia's coefficients were calculated to describe the performance of all the items.

Exploratory Factor Analysis (EFA)

Polychoric correlation matrices were estimated. We used Parallel Analyses (PA) to identify the number of factors to retain. A factor is considered significant if its percentage of explained variance is greater than that corresponding to 95th percentile of the distribution of percentages derived from a random dataset. PA is considered the most recommendable solution to decide the number-of-factors-to-retain (Hayton, Allen, Scarpello, 2004). We verified the adequacy of the matrix assessing the determinant, KMO index and Barlett's test. Unweighted Least Squares method (ULS) for factor extraction, and promin rotation were used (Lorenzo-Seva, 1999). Factor weights (w) and the percentage of explained variance in each item (h^2) were calculated. IRT parameterization by multidimensional normal-ogive graded response showed us the pattern of item discriminations (a_n), with poor values when $a_n < 0.65$ (Muñiz, Fidalgo, 2005).

We estimated the index of factorial simplicity (IFS) and the factor scale fit index (SFI), being all of them good when ≥ 0.80 , using a cut-off for salient loadings $= 0.45$ and for hyperplane $= 0.15$ (Fleming, 2003). We examined the fit of the models using the goodness-of-fit index (GFI) and the root mean square of the standardized residuals (RMSR). GFI refers to explained variance, and values > 0.90 are acceptable (Byrne, 2001). RMSR is the difference between the observed and the predicted covariance, indicating a good fit for values < 0.08 (Hu, Bentler, 1999). Factor scores were calculated according to the Bayes expected a posteriori estimation (EAP) of latent trait scores for ordinal data. The reliability of rotated factors was estimated by the greatest lower bound (GLB)

for non-homogeneous items (Woodhouse, Jackson, 1977).

Multiple Linear Regression (MLR)

The explanatory power of the burnout models in relation to the symptoms of distress was assessed by MLR models. The EAP scores of the HSCL-30 factors were considered dependent variables, while the EAP scores of the MBI-GS or the BCSQ-12 were considered independent variables.

The raw relationships among variables were calculated by Pearson's r coefficient. Multiple correlation ($R_{y,123}$) and multiple determination coefficients ($R^2_{y,123}$) were estimated to evaluate the explanatory capacity of the models. Semi-partial correlation and partial correlation coefficients ($R_{y3,12}$) were also calculated. The individual contribution of the independent variables in each model was estimated by means of standardized slopes (Beta). The Wald test was used to evaluate the contribution of each variable to each multivariate model. The K-S test was used to determine whether the distribution of the residuals met the corresponding assumptions. It was calculated the Durbin-Watson values (DW) to rule out autocorrelation problems in the errors.

All of tests were bilateral, with a significance level of $p < 0.05$. SPSSv19.0, FACTORv9.02 and SIMLOAD packages were used for conducting the analysis.

RESULTS

Sample

429 respondents were included in the study (response rate=26.8%). The mean age was 40.10 years ($SD=9.98$), with 43.9% males. The majority (78.4%) were in a stable relationship and 13.6% had secondary or lower schooling; 50.2% had university degrees and 36.2% held PhD. In terms of job position, 46.9% were TRS; 38.5% were ASP; and 14.6% were GRH. 25.5% had been working at the university for < 4 years, 41.1% between 4-16 years, and 33.4% for > 16 years. 58.7% were permanent employees and the majority (88.3%) worked full time. During the previous year, 29.8% had taken sick leave (mean=24.88 days; $SD=66.22$).

EFA

Table 1 shows the HSCL-30 items (Mardia's=27.57; $p<0.001$). The matrix revealed that 88.1% of coefficients were ≥ 0.30 [determinant <0.001 ; KMO=0.95; Bartlett's=6,120.80; ($p<0.001$)]. PA identified a two-factor structure, explaining 54.6% of the variance. F1 presented

topics associated with 'psychological' distress, and F2 with 'somatic' symptoms. There were some factorially complex items, although the h^2 values were high (mean=0.48), and the model presented good simplicity and appropriate fit. The reliability of factors were F1=0.95 and F2=0.93.

Table 2 shows the MBI-GS items (Mardia's=53.19; $p<0.001$). The matrix had a

Table 1
Psychometric features of the HSCL-30

Items	Md	SD	h^2	a1	a2	F1	F2	IFS
Suddenly scared	1.65	0.80	0.50	0.48	0.57	0.34	0.40	0.17
Go often to the doctor	1.58	0.76	0.38	-0.09	0.85	-0.07	0.67	0.98
Feeling low in energy	2.45	0.82	0.54	0.41	0.73	0.28	0.49	0.51
Pain in the heart	1.55	0.78	0.48	-0.01	0.97	-0.01	0.70	>0.99
Trouble remembering	2.18	0.90	0.38	0.41	0.41	0.32	0.32	<0.01
Blaming yourself	2.22	0.91	0.53	1.14	-0.11	0.79	-0.08	0.98
Feeling fearful	1.86	0.87	0.59	0.80	0.46	0.51	0.29	0.50
Feeling critical of others	2.62	0.76	0.32	1.04	-0.52	0.85	-0.42	0.60
Avoid places	1.44	0.74	0.41	0.58	0.28	0.45	0.22	0.62
Heavy feelings in your arms or leg	1.92	0.92	0.54	-0.20	1.23	-0.14	0.84	0.95
Faintness or dizziness	1.63	0.81	0.56	-0.41	1.43	-0.27	0.95	0.85
Crying easily	1.89	0.90	0.53	0.73	0.39	0.50	0.27	0.55
Your feelings being easily hurt	2.07	0.86	0.58	1.14	0.04	0.74	0.03	>0.99
Loss of pleasure	1.88	0.95	0.35	0.53	0.24	0.42	0.19	0.65
Irritated	2.35	0.81	0.61	1.29	-0.04	0.80	-0.03	>0.99
Poor appetite	1.57	0.73	0.36	0.26	0.52	0.21	0.42	0.60
Difficulty making decisions	2.01	0.80	0.39	0.71	0.10	0.55	0.08	0.96
Insomnia	2.21	0.90	0.25	0.35	0.26	0.30	0.23	0.27
Feeling lonely	2.08	0.99	0.52	1.22	-0.23	0.84	-0.16	0.93
Loss of control	2.10	0.78	0.35	0.81	-0.11	0.66	-0.09	0.97
Headaches	2.06	0.90	0.47	-0.41	1.23	-0.30	0.90	0.80
Heart pounding	1.83	0.84	0.49	-0.11	1.06	-0.08	0.76	0.98
Trouble concentrating	2.29	0.79	0.58	0.91	0.32	0.59	0.21	0.78
Worry	2.56	0.81	0.61	1.17	0.10	0.73	0.06	0.99
Feeling no interest in things	2.06	0.82	0.51	0.84	0.21	0.59	0.15	0.88
Feeling others do not understand you	2.11	0.88	0.61	1.56	-0.43	0.98	-0.27	0.86
Feeling that people are unfriendly	1.75	0.81	0.48	1.09	-0.16	0.78	-0.12	0.96
Soreness of your muscles	1.96	0.94	0.51	-0.30	1.25	-0.21	0.87	0.89
Shakiness inside	2.52	0.85	0.60	0.65	0.65	0.41	0.41	0.01
Upset stomach	1.72	0.89	0.45	-0.17	1.04	-0.13	0.77	0.95
						SFI1	SFI2	IFST
						0.86	0.81	0.87

h^2 =communality. a1 & a2 =IRT discrimination. F1 & F2= factor weights. IFS=index of factor simplicity. SFI=scale fit index

Table 2
Psychometric features of the MBI-GS and BCSQ-12

Items	Md	SD	h2	a1	a2	a3	F1	F2	F3	IFS
MBI-GS										
Emotionally exhausted	2.17	1.55	0.71	1.48	-0.10	0.10	0.79	-0.05	0.05	0.99
Consumed	2.60	1.63	0.69	1.67	0.11	-0.31	0.93	0.06	-0.17	0.95
Tired in the morning	2.18	1.68	0.64	1.23	-0.03	1.24	0.73	-0.02	0.10	0.97
Work as a tension	1.67	1.56	0.69	1.35	-0.10	0.14	0.76	-0.06	0.08	0.98
Burn-out	1.85	1.77	0.70	1.19	-0.01	0.47	0.65	-0.01	0.26	0.80
Lost interest	1.75	0.88	0.77	-0.09	0.03	1.90	-0.04	0.02	0.91	>0.99
Less enthusiasm	1.94	1.69	0.82	0.15	0.06	2.09	0.06	0.03	0.88	0.99
Cynical	2.15	1.78	0.72	0.11	0.02	1.55	0.06	0.01	0.82	0.99
Doubt about transcendence	1.96	1.75	0.62	0.09	-0.06	1.19	0.06	-0.04	0.74	0.99
Solve problems	4.49	1.20	0.54	-0.32	1.06	0.27	-0.22	0.73	0.18	0.80
Contribute effectively	4.41	1.33	0.57	-0.13	1.13	0.05	-0.08	0.74	0.03	0.98
Good at workplace	4.69	1.09	0.66	0.03	1.51	0.28	0.02	0.88	0.16	0.95
Achieve goals is stimulating	4.82	1.29	0.46	0.23	0.81	-0.31	0.17	0.60	-0.23	0.72
Get valuable things	3.93	1.58	0.41	0.23	0.60	-0.48	0.18	0.46	-0.37	0.42
Effective ending things	4.53	1.19	0.68	0.05	1.50	0.05	0.03	0.85	0.03	>0.99
							SFI1	SFI2	SFI3	IFST
							0.96	0.99	0.88	0.95
BCSQ-12										
Endangering health	3.49	1.80	0.60	-0.09	-0.02	1.24	-0.06	-0.01	0.79	0.99
Not challenges	3.14	1.99	0.68	-0.14	1.54	-0.11	-0.08	0.87	-0.06	0.98
Stop making effort	2.34	1.34	0.48	0.96	0.01	-0.02	0.69	0.01	-0.01	>0.99
More than healthy	3.86	1.78	0.64	-0.21	0.12	1.35	-0.13	0.07	0.81	0.95
Not opportunities	3.22	1.97	0.65	0.12	1.33	-0.12	0.07	0.79	-0.07	0.98
Obstacles	2.20	1.36	0.75	1.75	0.04	-0.06	0.87	0.02	-0.03	>0.99
Not personal life	3.03	1.80	0.69	0.01	-0.09	1.50	0.01	-0.05	0.84	0.99
Hamper talents	2.85	1.77	0.70	0.30	1.28	0.32	0.16	0.70	0.18	0.84
Not enough effort	2.31	1.30	0.75	1.79	-0.17	-0.05	0.90	-0.09	-0.02	0.99
Ignoring own needs	3.28	1.76	0.70	0.15	-0.05	1.89	0.08	-0.03	0.82	0.98
Not develop abilities	3.36	2.02	0.85	-0.25	2.47	-0.04	-0.10	0.96	-0.02	0.99
Difficulties	1.93	1.15	0.63	1.21	0.16	0.04	0.74	0.10	0.02	0.98
							SFI1	SFI2	SFI3	IFST
							0.97	0.99	0.98	0.98
h2=communality. a1 & a2=IRT discrimination. F1 & F2=factor weights. IFS=index of factor simplicity. SFI=scale fit index										

60.0% of coefficients ≥ 0.30 [determinant < 0.001 ; KMO=0.89; Bartlett's=4,211.20; ($p < 0.001$)]. PA identified a two-factor structure. We forced three factors following the traditional model, with eigenvalues > 1 in all of them and explaining a 76.2% of the variance. F1 presented topics related to 'exhaustion', F2 to 'efficacy', and F3 to 'cynicism'. The item 'I have accomplished many worthwhile things in this job' resulted complex (IFS=0.42). In general, h^2 values were high (mean=0.65), and the model presented good simplicity and fit. The reliability of factors were $F_1=0.91$, $F_2=0.89$ and $F_3=0.93$.

Table 2 also shows the BCSQ-12 items (Mardia's=38.02; $p < 0.001$). The matrix revealed a 39.4% of coefficients ≥ 0.30 [determinant =0.001; KMO=0.84; Bartlett's=2,735.60; ($p < 0.001$)]. PA identified three factors, explaining 81.8% of the variance. This solution replicated the original proposal. F1 presented topics associated with 'neglect', F2 with 'lack of development', and F3

with 'overload'. The solution exhibited high h^2 values (mean=0.68), and the model good simplicity and fit. All the items showed a simple factorial solution. The reliability of factors were $F_1=0.90$, $F_2=0.92$ and $F_3=0.89$.

MLR

The raw correlations (Table 3) were all significant (except 'efficacy'-'overload'). The explanatory power of the models was high (Tables 4 and 5). 'Psychological' distress was the best explained, while 'somatic' symptoms was the worst. The MBI-GS explained more 'psychological' distress ($\Delta R^2_{y,123}=0.13$; $p < 0.001$) and more 'somatic' symptoms ($\Delta R^2_{y,123}=0.15$; $p < 0.001$) than the BCSQ-12. All the BCSQ-12 factors contributed to explain 'psychological' distress and 'somatic' symptoms, but only 'exhaustion' from the MBI-GS explained both. The fit of the models was adequate, with low standard errors. DW values were good and the residual distributions normal.

Table 3
Raw Pearson correlations

Models/Dimensions	1	2	3	4	5	6	7
MBI-GS							
1. Exhaustion							
2. Cynicism	0.53 [‡]						
3. Efficacy	-0.24 [‡]						
	-0.37 [‡]						
BCSQ-12							
4. Overload	0.55 [‡]	0.16 [†]	-0.02				
5. L. Development	0.31 [‡]	0.59 [‡]	-0.18 [‡]	0.15 [†]			
6. Neglect	0.25 [‡]						
	0.36 [‡]	-0.44 [‡]					
	0.15 [†]						
	0.32 [‡]						
HSCL-30							
7. Psychological	0.61 [‡]	0.47 [‡]	-0.22 [‡]	0.39 [‡]	0.36 [‡]	0.30 [‡]	
8. Somatic	0.55 [‡]	0.36 [‡]	-0.20 [‡]	0.31 [‡]	0.27 [‡]	0.22 [‡]	0.73 [‡]

[‡]= $p < 0.001$; [†]= $p < 0.01$ (bilateral).

Table 4
Regression models with regard to the 'psychological' symptoms

Burnout Models	R_{y,123}	R²_{y,123}	F (df₁ / df₂)	p^a	Se	DW	p^b
MBI-GS	0.64	0.40	95.53 (3/422)	<0.001	0.76	2.06	0.772
	R_{y3,12}	R²_{y(3,12)}	B (95 % CI)		Se	Beta	p^c
Exhaustion	0.48	0.19	0.51 (0.42 – 0.60)		0.05	0.50	<0.001
Cynicism	0.20	0.03	0.20 (0.11 – 0.30)		0.05	0.20	<0.001
Efficacy	-0.03	<0.01	-0.02 (-0.11 – 0.06)		0.04	-0.02	0.612
	R_{y3,12}	R²_{y(3,12)}	F (df₁ / df₂)	p^a	Se	DW	p^b
BCSQ-12	0.52	0.27	51.51 (3/422)	<0.001	0.84	2.10	0.550
	R_{y3,12}	R²_{y(3,12)}	B (95 % CI)		Se	Beta	p^c
Overload	0.35	0.10	0.34 (0.25 – 0.42)		0.04	0.33	<0.001
L. Development	0.27	0.06	0.25 (0.17 – 0.34)		0.04	0.25	<0.001
Neglect	0.18	0.03	0.18 (0.09 – 0.28)		0.05	0.17	<0.001

R_{y,123}=multiple correlation coefficient. R²_{y,123}=multiple determination coefficient. p^a=p value for variance analysis. Se=standard error. DW=Dubin-Watson value. p^b=p value for K-S test on residuals. R_{y3,12}=partial correlation coefficient. R²_{y(3,12)}=semi-partial correlation coefficient square. B=slope. Beta=standardized slope. p^c=p value of Wald test result.

Table 5
Regression models with regard to the 'somatic' symptoms

Burnout Models	R_{y,123}	R²_{y,123}	F (df₁ / df₂)	p^a	Se	DW	p^b
MBI-GS	0.56	0.31	64.13 (3/423)	<0.001	0.82	2.02	0.391
	R_{y3,12}	R²_{y(3,12)}	B (95 % CI)		Se	Beta	p^c
Exhaustion	0.45	0.18	0.50 (0.40 – 0.59)		0.05	0.49	<0.001
Cynicism	0.08	0.01	0.09 (-0.01 – 0.19)		0.05	0.08	0.122
Efficacy	-0.05	<0.01	-0.05 (-0.14 – 0.04)		0.05	-0.05	0.272
	R_{y3,12}	R²_{y(3,12)}	F (df₁ / df₂)	p^a	Se	DW	p^b
BCSQ-12	0.40	0.16	27.01 (3/423)	<0.001	0.90	2.04	0.649
	R_{y3,12}	R²_{y(3,12)}	B (95 % CI)		Se	Beta	p^c
Overload	0.27	0.07	0.27 (0.18 – 0.36)		0.05	0.26	<0.001
L. Development	0.20	0.03	0.19 (0.10 – 0.29)		0.05	0.20	<0.001
Neglect	0.12	0.01	0.13 (0.03 – 0.23)		0.05	0.12	0.012

R_{y,123}=multiple correlation coefficient. R²_{y,123}=multiple determination coefficient. p^a=p value for variance analysis. Se=standard error. DW=Dubin-Watson value. p^b=p value for K-S test on residuals. R_{y3,12}=partial correlation coefficient. R²_{y(3,12)}=semi-partial correlation coefficient square. B=slope. Beta=standardized slope. p^c=p value of Wald test result.

DISCUSSION

This is the first study that has compared the traditional and typological burnout definitions in its association with the dysfunctional experience of distress. Other works have indicated the relevance of the traditional model over symptoms (Bauer et al., 2006; Ahola, Hakanen, 2007), but have not studied the specific contribution of the burnout subtypes. Data showed that exhaustion from the MBI-GS was strongly associated with distress, and this is consistent with the idea of exhaustion as a core dimension of burnout (Shirom, 2005; Kristensen, Borritz, Villadsen, Christensen, 2005). However, it also suggests that the other two dimensions add little to the traditional definition. On the other hand, the BCSQ-12 could seem to be farther from the centre of the syndrome, but all the particular profiles contributed in a significant and equilibrate way to explain distress.

The PA yielded a three-factor structure for the typological burnout model that replicated the original proposal of clinical profiles (García-Campayo, 2010; Montero-Marín et al., 2011; Montero-Marín et al., 2013). This solution explained a very high percentage of the variance, with good reliability, factorial simplicity and fit, which evidenced its psychometric adequacy. On the contrary, the PA over the traditional model did not replicate the original structure, since it was necessary to force the solution. This result, together with the finding of an item with a complex factorial solution, jeopardized the construct validity of the MBI-GS, at least in our sample of university workers, in line with other studies where its structure was not clear beyond exhaustion (Shirom, 2006; Qiao, Schaufeli, 2011). Nevertheless, although poorer than the structure obtained for the BCSQ-12, the overall psychometric results of reliability, fit and factorial simplicity were rather acceptable.

Our results also provide evidence of a clear bifactor structure of the HSCL-30, consisting of a psychological and a somatic factor. This solution was easy to interpret in theoretical terms with good psychometric properties related to reliability,

factorial simplicity and fit, although it could be advised to discard some non-discriminative items in future studies to develop shorter and factorially more simple versions. In fact, the original HSCL has been subject to deep and numerous alterations. Shortened versions of this scale seem to perform as well as the full version (Strand, 2003).

Our study revealed different relationship patterns among psychological and somatic symptoms, and the dimensions of both burnout definitions. Firstly, the traditional perspective was able to explain more psychological and somatic distress than the typological model. As we have seen, exhaustion presented high relationships with both kind of symptoms, so that exhaustion may be presented as a feature of a fully established syndrome (Kristensen et al., 2005; Qiao, Schaufeli, 2011). In this sense, the traditional model based on exhaustion would be able to detect burnout when patients are suffering from a very instaurated but hardly reversible disease (Ahola, Hakanen, 2007). Previous studies have indicated associations mainly between exhaustion and relevant health variables (Kristensen et al., 2005). This fact has suggested the idea of exhaustion as a core dimension of burnout (Shirom, 1989). At the same time this is a noteworthy difficulty of the traditional definition of the syndrome that additionally includes cynicism and perceived inefficacy.

Secondly, we have seen important associations among all of the typological factors and both psychological and somatic symptoms, in a balanced and significant way. The explanatory power of the typological model, compared to the traditional, was noticeably lower for both kinds of distress, especially for the somatic one. This could mean that while the classical model seems to describe a very advanced syndrome, the typological perspective would rather explain a more specific characterization of the different ways to develop burnout in its very early risk stages (Montero-Marín et al., 2009; Heiervang, Goodman, 2011). Burnout is a syndrome in which early interventions become a keystone to stop progression and establishment of the disease (Ahola, Hakanen, 2007). This new typological approximation could allow the evaluation and

design of preventive interventions, tailored to the features of specific developmental courses according to different sources of distress, associated to both somatic and psychological symptoms.

We have seen through both burnout models that this syndrome seems to be more affected by psychological than somatic symptomatology. In this sense, the typological perspective may explain symptoms along different deterioration processes and physiological alterations which burnout could involve in its developmental course, by reducing levels of engagement (Tops, 2007). By contrast, the traditional model appears only apply to the burnout syndrome in its final established form, or at least does not discriminate different processes (Montero-Marín et al., 2010; Montero-Marín et al., 2013). To support research of these processes, we have presented a theoretical framework of Protective Inhibition of Self-regulation and Motivation (PRISM) (Tops, 2014), which propose that acute overcommitment might be associated with increases in cortisol, a modulator of energetic resources (frenetic subtype). However, trait overcommitment, which involves chronic overmobilization of resources, might be associated with decreased cortisol levels (worn-out subtype). Combining PRISM with the typological approach could drive future research to explain different dynamics and processes in developing burnout and symptoms.

The main limitation of this study was that its cross-sectional design did not allow us to draw strict causal relationships about aetiology. Additionally, the self-reported nature of the measures might carry along social desirability. As strengths, this study was carried out with a random, broad and multi-occupational sample of employees in at burnout risk occupations. Additionally, analysis respected the true nature of the variables; the assumptions for the type of analysis were accepted; true factor scores were used; and the fit of the factorial and regression models was adequate.

CONCLUSIONS

Our findings show a psychometric superiority of the BCSQ-12 compared to the MBI-GS, in

terms of structure and factorial simplicity. The explanatory power over symptoms by the traditional definition was higher than that shown by the typological model, although all the typological dimensions contributed to explain both sources of distress. By contrast, only exhaustion from the MBI-GS explained both kinds of symptoms at the same time. The need for future follow up studies is evident, not only to know possible causal relationships among burnout and distress, but also for recognizing different developmental courses on burnout. Preventing and treating burnout by interventions tailored to each particular case in his/her own discomfort is needed.

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