

THE PHYSICIAN BURNOUT QUESTIONNAIRE: A NEW DEFINITION AND MEASURE

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The Maslach Burnout Inventory (MBI) has been the most widely used questionnaire in the evaluation of burnout. However, in both its theoretical formulation and its psychometric characteristics it poses some problems. In this paper we present the Physician Burnout Questionnaire (PhBQ), a new operationalization of physician burnout with three main components: Exhaustion, Disengagement, and loss of expectations. The PhBQ is a process model which includes four steps or subscales: antecedents, syndrome, consequences, and positive personal resources. This paper presents the development and validation of the PhBQ through two studies, the first on the psychometric characteristics of the measure, in particular concerning dimensionality of the PhBQ (examined by exploratory and confirmatory factor analysis), and internal consistency of its scales in a sample of 485 physicians working in 20 hospitals in Madrid (Spain). The second study focuses on convergent validation with a sample of 100 physicians working in 11 Primary Care centers in Madrid (Spain).

Key words: Physician burnout; Assessment; Burnout syndrome; Burnout process; Loss of expectations.

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THE BURNOUT SYNDROME

Over 30 years have elapsed since the construct and the main model of burnout were first proposed. During this time, the construct has been re-conceptualized and has evolved to account for a complex and multidimensional process. Meanwhile, many different theoretical perspectives have been followed to evaluate the burnout syndrome and various instruments have been developed for its assessment (Demerouti, Bakker, Nachreiner, & Schaufeli, 2001; Maslach, Jackson, & Leiter, 1996; Maslach, Schaufeli, & Leiter, 2001). Among these, the most widely used is the Maslach Burnout Inventory (MBI; Maslach & Jackson, 1981, 1986; Maslach, Jackson, & Leiter, 1996).

Even though the MBI has led to advancements in research and has allowed comparisons between studies, its use has presented problems. The MBI has hindered theoretical development by identifying the measure with the construct, and its broad application in various versions has shown psychometric problems such as low internal consistency in the depersonalization dimension in non English-speaking samples (Schaufeli & Enzman, 1998). Another limitation of the MBI is its exclusive focus on the emotional process at the expense of behavioral and cognitive aspects (Shirom & Melamed, 2006). In addition, the MBI has also received criticisms with regard to its structure. A strong criticism to the MBI has been the unique identification of burnout with three factors: exhaustion, depersonalization/cynicism, and personal accomplishment/personal efficacy (Halbesleben & Demerouti, 2005), ignoring other potential components of the syndrome, such as loss of resources (Hofboll & Freedy, 1993) or of the meaning of work (Pines, 1993). The inclusion of depersonalization in the dimensional configuration proposed by the MBI-HSS (Maslach Burnout Inventory-Human Services Survey) has also been criticized. Many researchers consider personal accomplishment to be not part of the syndrome but rather a consequence of it (Koeske & Koeske, 1989; Lee & Ashforth, 1996; Leiter, 1993; Shirom, 1989). As stated by Schutte, Toppinen, Kalimo, and Schaufeli (2000) "it becomes increasingly clear from studies with the original MBI that personal accomplishment develops largely independent from the other two burnout dimensions" (p. 55). Also, in the MBI/GS (Maslach Burnout Inventory-General Survey) model, the professional efficacy dimension encompasses a number of factors (self-efficacy, belief in one's skills or expectations of professional development) that are autonomous variables and consequences of burnout rather than components of it (Shirom, 2003).

MBI studies have focused on the dimensionality of the construct, but less attention has been paid to the elements of the process: antecedents, consequences, and personal modulators. The proposal and development of the demands-resource model in the 1990's widened understanding in this area by focusing on the process of burnout (Demerouti et al, 2001; Bakker, Demerouti, Taris, & Schaufeli, 2003), emphasizing the importance of work (Schaufeli & Bakker, 2004) and personal resources (Garrosa, Moreno-Jiménez, Liang, & Gonzalez, 2008; Xanthopoulos, Bakker, Demerouti, & Schaufeli, 2007).

NEW MEASURES AND PERSPECTIVES

The MBI has been the most widely used instrument, yet not the only one. Other frequently-used measures are the Burnout Measure (BM; Pines & Aronson, 1988; Pines, Aronson, & Kafry, 1981), and Shirom-Melamed Burnout Measure (SM-BM; Melamed, Kushnir, & Shirom, 1992); both considering exhaustion as the core of burnout. In Europe, new instruments have recently been formulated which represent a reconceptualization of the syndrome, such as the Copenhagen Burnout Inventory (CBI; Kristensen, Borritz, Villadsen, & Christensen, 2005) which breaks down burnout into three aspects: staff burnout, work-related burnout, and client-related burnout), the Oldenburg Burnout Inventory (OLBI; Demerouti & Bakker, 2008; Demerouti et al., 2001; Halbesleben & Demerouti, 2005), which includes two dimensions: Exhaustion and Disengagement considered as bipolar dimensions (Demerouti, Mostert, & Bakker, 2010), and the Bergen Burnout Inventory (BBI) that assesses exhaustion, cynicism about the significance of work, and occupational inadequacy (Salmela-Aro, Rantanen, Hyvönen, Tilleman, & Feldt, 2011).

Burnout is a complex phenomenon because it is not manifested in one single form and is influenced by broad social, cultural, and professional factors. Still, the dominant trend in the literature has been to provide a general definition of burnout across all professions, neglecting interprofessional and intercultural variations (Glazer, 2008; Meyerson, 1994; Schaufeli & Enzman, 1998). Although the subject has been little researched, there is certainly a sociology of burnout in the context of postmodernism and the loss of explanatory stories. As Pines (1993) observed, “a possible interpretation of burnout flourishing these days is the secularization of society” (p. 34).

THEORETICAL COMPONENTS OF THE PHYSICIAN BURNOUT

Without doubt, burnout components depend on the chosen theoretical model. The first task is to find a broad and general definition. Maybe, a psychological response to chronic work stress (Halbesleben & Demerouti, 2005; Maslach, 1993) can be assumed as a valid one. Starting from this definition there are many possible components, the choice of which depends on the background theory used. Cherniss' (1980) proposal includes different components, the sequential model by Edelwich and Brodsky (1980) involves four components or phases, Pines' (1993) existential model assumes as basic component the meaning of work, and Hobfoll and Freedy's (1993) model considers as the core component the loss of resources. Conversely, the formulation of the MBI (Maslach & Jackson, 1981) was not based on a theoretical approach but was largely empirical. The three factors that compose the MBI are the result of a statistical factorial analysis (Maslach & Jackson 1984). From a theoretical perspective, the possibilities are numerous. One parsimonious option to understand the central components of burnout may consist in checking the model of the MBI, some of the proposed alternatives, and the most common derived options.

Exhaustion — emotional and general — has been recognized as the core of burnout (Cox, Tisserand, & Taris, 2005; Lee & Ashforth, 1996; Schaufeli & Taris, 2005). As discussed by Schaufeli and Buunk (2003), exhaustion is the robust scale of the MBI and the most closely related to health, but it is also the least specific to the syndrome. If the burnout syndrome were restricted to exhaustion in its various manifestations (Melamed et al., 1992; Pines, Aronson, & Kafry, 1981), the multidimensional nature of the construct (Maslach et al., 2001) would be lost and likely reduced to chronic work-related stress (Cox et al., 2005). Although exhaustion is an essential component of burnout, the empirical and clinical data suggest that more dimensions are included into professional burnout.

The second factor comprised in the MBI is depersonalization (MBI/HSS) or cynicism (MBI/GS). Neither seems to reflect the real characteristics of burnout, or at least of physician burnout. The depersonalization factor has received numerous criticisms because of its theoretical proposal and its psychometric characteristics (Schaufeli & Enzman, 1998). Depersonalization is one of the dissociative disorders listed in the different versions of DSM (American Psychiatric Association, 1994) and, in addition, the term is commonly used in social psychology to describe processes of loss of individual identity (Spears, Postmes, Sakhel, & de Groot, 2001; Zimbardo, 1969), which does not occur in burnout.

The concept of cynicism does not seem to be appropriate to express the effects of professional burnout in general, and even less to express physician burnout. Usually, cynicism is a general distrust of others, falsehood, hypocrisy and lack of scruples in achieving selfish goals that are presented as rightful. This type of reaction has very little to do with physician burnout, which is

mainly related to distancing from conflicting tasks and avoiding problems that are not one's responsibility. Medical practice in situations of burnout is not primarily characterized by impersonal or cynical attitudes.

This reaction is better defined as disengagement, a behavior of avoidance of the conflictive situation. The recent formulation of the OLBI (Demerouti et al., 2010; Halbesleben & Demerouti, 2005) comprising two scales — exhaustion and disengagement — seems to confirm this approach. Disengagement is a form of breach of psychological contract with the organization (Topa-Cantisano, Morales-Domínguez, & Caeiro-García, 2007) which affects organizational commitment or civic organizational behavior (Gakovic & Tetrick, 2003; Leiter, 1999).

Disengagement can be understood as a coping mechanism resulting from emotional exhaustion. According to Leiter (1991), burnout is a form of coping with stress, in this case emotional stress. For Schaufeli and Enzman (1998), burnout is the result of dysfunctional coping, in this case consisting in avoiding the accumulation of problems. Understood in that way, disengagement could be considered as a component of physician burnout.

The third factor of the MBI — personal accomplishment and personal self-efficacy — does not seem to correspond to the processes of burnout. Firstly, due to its positive valence in a negative syndrome, but mainly because it includes content such as loss of productivity, loss of professional valuation, and other independent aspects which can hardly be grouped into a single factor (Shirom & Melamed, 2006). Probably, in the medical profession, this situation is especially clear because the professionals engaged in a process of burnout are not affected in their instrumental skills (exploration, diagnosis, and treatment) but in the motivational and psychosocial aspects (expectations, processes of interpersonal relationships at work, etc.).

It thus seems important to devise a new formulation theoretically more adjusted to physician burnout, an aspect that is insufficiently used. One of the first theoretical models (Meier, 1983) proposed as a central element of burnout wrong expectations about the profession itself. Pines (1993) detected the core of the problem in the loss of the existential meaning of work and associated expectations. Lang (1985), instead, described personal frustration when the expectations of the professional career are not met. From this perspective, the perception of inadequacy between the desired professional expectations and real situations can be a cognitive component of burnout. In Schaufeli and Buunk's (2003) view, burnout is the result of failed expectations in daily professional life. As Maslach and Jackson (1982) wrote, "the health practitioners' expectations of what they will accomplish in their jobs are important determinants of the emotional strains they are likely to experience" (p. 235). According to these considerations, the loss of expectations could be considered a possible component of burnout.

Antecedents and consequences of burnout have been studied and documented (Cordes & Dougherty, 1993; Schaufeli & Enzman, 1998; Schaufeli & Bakker, 2004; Maslach et al., 2001), although the general trend has been to analyze generic factors, valid for any profession and context. Only few studies professionally investigated specific antecedents and consequences. However, an interdisciplinary approach suggests the presence of specific factors of burnout in some professions highly associated with burnout, like medicine, nursing, or teaching.

Although the micro analysis of such professions remains to be done, a basic presupposition allows us to suppose that they may encompass specific elements of burnout that could be important. For example, Maslach and Leiter (1997) indicated responsibility of treating disease and organizational inadequacy as important factors of burnout in physicians. Garrosa et al. (2008)

pointed out the importance of contact with pain and death and the conflictive interaction with patients and relatives in nursing burnout. In this sense, the existence of specific medical professional antecedents that may be associated with the genesis of burnout can be supposed. The same is expected of the specific consequences or outcomes.

It is not possible to describe or explain burnout without paying attention to dispositional variables. Schaufeli and Enzman (1998) recognized its importance and complexity, and Maslach et al. (2001) considered them as factors of vulnerability and resistance. Although since the beginning of the study of burnout, personal dispositions have been considered (Farber, 1983; Freudenberg & Richelson, 1980; Maslach, 1976), their study has been overlooked. However, data seem to indicate that burnout cannot be explained without considering the processes and transactions of the person within his/her context, and the passive and active processes of individual response to the organization (Code & Langan-Fox, 2001).

In this perspective, personality dispositions are part of the overall process of burnout. Although the choice of personality variables may be multiple, more classical developments have chosen the model of narrow traits of personality as hardiness, locus of control, and self-esteem (Garrosa et al., 2008; Semmer, 1996; Xanthopoulou et al., 2007). The application of the general models of personality — for example the Big Five — has recently increased (Armon, Shirom, & Melamed, 2012; Langelaan, Bakker, Van Doornen, & Schaufeli, 2006). While both options may be valid, according to research in Occupational Health Psychology on narrow traits of personality, the option for this type of traits seems to be more based on specific and direct models of influence (Code & Langan-Fox, 2001).

On the basis of the literature examined the Physician Burnout Questionnaire (PhBQ) was developed, attending mainly to the different moments of the process: antecedents, syndrome, outcomes or consequences, and positive personal resources as shown in Figure 1. This paper presents the development and validation of the questionnaire through two studies, the first on the psychometric characteristics of the measure, in particular the dimensionality of the PhBQ (examined by means of exploratory and confirmatory factor analysis), and the internal consistency of its scales. The second study is about the convergent validation of the measure.

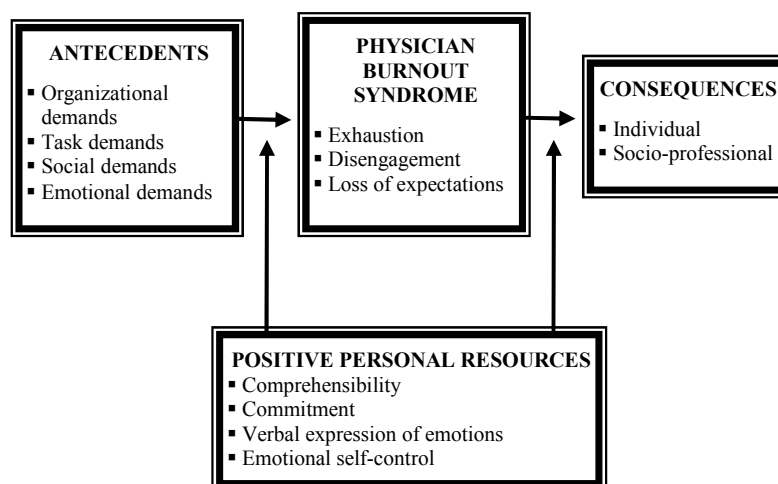


FIGURE 1
Theoretical model of the physician burnout process.

STUDY 1: DEVELOPMENT AND ANALYSIS
OF THE PHYSICIAN BURNOUT QUESTIONNAIRE (PhBQ)

Participants

Development and factorialization of the PhBQ was carried out on a sample of 485 physicians of all medical areas working in 20 public hospitals of Madrid. One thousand three hundred and five copies of the questionnaire were distributed and 485 were collected (37.16%). Of them, 162 pertained to primary care (33.4% of the sample) and 323 to specialized care (66.6%). In the total sample, 53.2% of physicians were male and 45.8% female. The average age was approximately 44 years ($SD = 7.82$) and professional experience averaged 18.33 years ($SD = 8.42$).

Procedure

The PhBQ was developed by following four steps: 1) theoretical review of burnout, measurement issues and specific characteristics of the syndrome in physicians, 2) semi-structured interviews with 30 physicians and health care organization managers, 3) elaboration of a pilot questionnaire and analysis of results in a sample of 30 physicians, 4) application to the final sample of 485 physicians.

Development of the Measure

The PhBQ is composed of four subscales that can be used conjointly or independently, with a 4-point Likert-type response format, where 1 is *strongly disagree* and 4 *totally agree*. The four scales are: 1) the Physician Burnout Syndrome Scale (PhBSS) with 12 items assessing cognitive components, behavioral and emotional syndromes, 2) the Physician Burnout Antecedents Scale (PhBAS) with 24 items analyzing issues related to physicians' work and social and organizational climate (social deterioration of the profession, time pressure, social pressure, relationship and supervision with management, contact with pain and death, and difficult interaction with patients), 3) the Physician Burnout Consequences Scale (PhBCS) with 16 items considering the personal (physical and emotional) and organizational consequences, such as professional isolation and intentions to quit, and 4) the Positive Personal Resources Scale (PPRS) with 20 items including four individual moderators of the process of burnout: verbal emotional expression, commitment, comprehensibility, and emotional self-regulation. All theoretical dimensions are the result of the previous analysis of the literature and the results of interviews with physicians and medical managers. All of them are specific to the medical profession.

Exploratory Factor Analysis of PhBQ Scales

The *Physician Burnout Syndrome Scale* (PhBSS) consists of items related to exhaustion, behaviors of disengagement with patients and the profession in general, and loss of expectations. In order to determine its internal structure, an exploratory factor analysis of the initial set of items

was carried out by the principal axis method with Promax rotation and Kaiser criterion for the selection of factors with eigenvalues greater than 1. Saturation of the items in the factors greater than .40 and apparent validity was used as a criterion for inclusion. The EFA analysis was performed with the SPSS 19 statistical package.

Table 1 reproduces the factorial solution obtained. Twelve items were selected from an initial pool of 69, through different factor analyses. These 12 items loaded three factors. The three factors accounted for 53.52% of the variance. Based on item content, they were called: exhaustion (with 23.68% of variance explained after the rotation), disengagement (16.34%), and loss of expectations (13.50%). Exhaustion refers to the loss of energy at work, disengagement is a form of breach of psychological contract with the organization, loss of expectations indicates the loss of professional objectives.

TABLE 1
 Factor analysis of the PhBSS

Item	Factor		
	1	2	3
BS42	.969		
BS43	.909		
BS44	.744		
BS18	.678		
BS51		.839	
BS41		.750	
BA50		.561	
BS58		.545	
BS32			.672
BS30			.625
BS46			.617
BS47			.582
Explained variance	23.68	16.34	13.50
Cumulated explained variance	23.68	40.02	53.52

The *Physician Burnout Antecedents Scale* (PhBAS) is composed of items related to the theoretical factors of physician burnout: organizational, task, social, and emotional demands.

To determine its internal structure, a factor analysis was performed by the principal axis method, using Promax rotation and Kaiser criterion for the selection of factors with eigenvalues greater than 1. Twentyfour items out of an initial item pool of 62 were selected through a series of factor analyses. A loading of the items in the factors greater than .40 and apparent validity were used as criteria for inclusion. The four theoretical dimensions were grouped in a six-factor factorial solution, with a global 43.47% explained variance.

The first factor (see Table 2) includes aspects related to the management's and immediate supervisors' response to demands by the physicians, possibility of participation in decision making and conflicting criteria of management. The factor called "Management and supervision" explains the greater proportion of variance of the scales with an explained variance of 8.22% after

rotation. The second factor, “Social deterioration” refers to the loss of the social prestige of medicine, as well as the loss of importance, relevance, and social impact of medical work, and explains 7.32% of variance. The third factor, “Time pressure,” refers to work overload and the difficulty of devoting sufficient time to patients and making decisions, and explains 7.12% of the variance. The fourth factor includes the evaluation of emotional demands related to daily interaction with patients’ health complications or death, pain and/or distress in them and their families, and prescription of painful treatments. This factor explains 7.04% of the variance, and was called “Interaction with pain and death.” The fifth factor is made up of items referring to the demands of patients and society about doctors and their obligations, control of their work, and the weight of administrative tasks. This factor, called “Social pressure,” explains 7.03% of the variance. Finally, the sixth factor, “Interaction problems,” explains 6.74% of the variance, and includes items related to difficulties in dealing with patients with problematic communication, with a diagnosis of chronic or terminal illness, or critical or violent attitudes.

TABLE 2
 Factor analysis of the PhBAS

Item	Factor					
	1	2	3	4	5	6
BA26	.889					
BA49	.650					
BA25	.609					
BA27	.506					
BA33		.842				
BA21		.741				
BA32		.532				
BA54		.428				
BA29			.735			
BA60			.663			
BA41			.551			
BA4			.530			
BA35				.797		
BA22				.612		
BA31				.544		
BA24				.496		
BA14					.769	
BA6					.650	
BA20					.546	
BA61					.447	
BA57						.688
BA44						.640
BA47						.505
BA43						.468
Explained variance	8.22	7.32	7.12	7.04	7.03	6.74
Cumulated explained variance	8.22	15.54	22.66	29.70	36.74	43.47

The *Physician Burnout Consequences Scale* (PhBCS). From a theoretical stand point, the dimension was set up with two large areas: 1) personal consequences, with items related to physical, psychological, and social health, and 2) occupational outcomes, related to absenteeism, isolation, intentions to quit, and deterioration of occupational climate.

Factorial analysis was performed by the principal axis method with Promax rotation and Kaiser criterion, selecting factors with eigenvalues greater than 1. Sixteen items out of an initial pool of 30 were selected. A loading of the items in the factors greater than .40 in addition to apparent validity were used as criteria for inclusion. The two initial theoretical dimensions finally resulted in a four-factor factorial solution.

This factorial solution explains 62.54% of the variance. The first factor (see Table 3), with 18.96% of the explained variance after rotation, was called “Intentions to quit,” and is related to the thoughts and desires of abandoning the profession or job change. The second factor, “Health consequences,” with an explained variance of 18.20%, refers to the effects of medical practice on health. The third factor, “Socio-professional isolation,” with 13.58% variance, refers to professional isolation and medical professional relationship difficulties. Finally, the fourth factor, “Emotional impact,” with an explained variance of 11.80%, includes all the aspects of loss of self-confidence and general increase in irritability in relationships.

TABLE 3
 Factor analysis of the PhBCS

Item	Factor			
	1	2	3	4
BC23	.928			
BC7	.890			
BC5	.791			
BC19	.761			
BC8		.944		
BC9		.907		
BC2		.723		
BC3		.580		
BC18			.839	
BC12			.809	
BC13			.625	
BC24			.593	
BC15				.700
BC21				.674
BC16				.564
BC20				.49
Explained variance	18.96	18.20	13.58	11.80
Cumulated explained variance	18.96	37.17	50.76	62.54

The *Positive Personal Resources Scale* (PPRS). According to the literature reviewed and a transactional model of burnout, four positive dispositions of personality were selected as moderators of physician burnout. The scale was developed with the following four theoretical vari-

ables: 1) Comprehensibility, the cognitive dimension of Sense of Coherence, which evaluates the orderly, consistent, and clear understanding of the events; 2) Commitment, the dimension of Hardiness related to the tendency to become involved and identify with one's own behavior. It involves the understanding of the goals and values that guide personal conduct; 3) Verbal expression of emotions, a dimension of emotional self-regulation, which includes the ability to express emotions verbally; 4) Emotional self-control, which refers to the ability to control one's emotions in response to situational requirements.

Factor analysis was performed using the principal axis method with Promax rotation and Kaiser criterion for the selection of factors with eigenvalues greater than 1. A saturation of the items in the factors greater than .40 in addition to apparent validity criteria was used as a criterion for inclusion.

The four theoretical dimensions are reflected in the four-factor solution presented in Table 4, which explains 45.52% of the overall variance. Twenty items out of an initial pool of 49 were selected using the same criteria described before. The first factor corresponds to "Verbal expression of emotions," which explains 15.60% of the variance after rotation, and refers to aspects such as the skill to verbally express emotions. The second factor, "Commitment" with 13.62% of explained variance, refers to the ability to engage and identify oneself at work. The third factor, "Comprehensibility" (8.07% of the variance), refers to the clarity and coherence of one's way of thinking to personal guidance. Finally, the fourth factor, that brings together items of the "Emotional self-control" variable (8.23% of the variance), expresses the capacity to control one's emotions according to the situation.

TABLE 4
 Factor analysis of the PPRS

Item	Factor			
	1	2	3	4
PPR37	.856			
PPR38	.839			
PPR36	.788			
PPR19	.651			
PPR5		.850		
PPR4		.746		
PPR17		.631		
PPR6		.493		
PPR23			.677	
PPR13			.618	
PPR15			.436	
PPR24			.423	
PPR7				-.683
PPR9				-.572
PPR28				.510
PPR8				.498
Explained variance	15.60	13.62	8.07	8.23
Cumulated explained variance	15.60	22.22	37.29	45.52

Description, correlations, and internal consistency of the PhBQ

Table 5 shows basic descriptive statistics, mean, and standard deviation of 17 variables resulting from the EFA, the correlation matrix, and Cronbach's alpha values. Values of the 4-point Likert scale are in a range between 3.19 (Social pressure) and 1.88 (Isolation). The highest scores tend to be on the PhBAS. Skewness varies between $-.52$ (Social pressure) and $.57$ (Isolation), and kurtosis varies between $-.54$ (Intentions to quit) and 1.18 (Commitment). Kurtosis greater than 1.00 derives from two positive personality dispositions, in all other cases it is below 1.00 .

In the PhBAS, the highest average corresponds to social pressure (3.19) and Time pressure (3.12), in the PhBSS, the variable with the highest score is loss of expectations (2.67), in the PhBCS the highest average value corresponds to emotional consequences (2.25) and the highest average in the PPRS corresponds to verbal expression of emotions (2.91). The profile that emerges from the overall results of the PhBQ is a professional medical situation with high Social deterioration and Time pressure, medium level of burnout, mainly characterized by loss of expectations, with a medium level of personal, rather than organizational, consequences, and positive dispositions of personality that tend to be high.

Correlations in each of the four scales and between different scales correspond, in general, with the expected findings. It can be observed that the correlations within each scale are all positive and significant, except in the PPRS where Emotional self-control correlates negatively with Verbal expression ($-.204$) and is not significantly correlated with Commitment and Comprehensibility.

The correlations between the four scales fit the expected values. Typically, the PhBAS variables are positively and significantly associated with the variables of the PhBSS, indicating that the considered antecedents are factors of physician burnout. Social deterioration of the profession is the variable with the highest correlations with the dimensions of physician burnout. The only exception is Contact with pain and death that is not significantly associated with exhaustion or with disengagement. Also all the variables of PhBAS, except Contact with pain and death, are positively and significantly associated with the PhBCS variable, indicating that greater loads of antecedents are associated with greater consequences.

The PhBSS variables are positively and significantly associated in all cases with the PhBCS variable, which indicates that burnout levels are associated with the levels of personal and social consequences. The PPRS variables tend to correlate negatively and significantly with the majority of the scales. Commitment has the highest correlations with the PhBSS variables and emotional self-control is the variable with the lowest level of association.

Confirmatory Factor Analysis of PhBQS

A series of confirmatory factor analyses was conducted on the four sets of scales related to syndrome, antecedents, consequences, and personal resources. All analyses were performed with MPLUS 6.11 (Muthén & Muthén, 1998/2010). Given that the data were normally distributed, maximum likelihood estimation was used in all CFAs, where only the primary loadings were allowed to be freely estimated, while all cross loading were fixed at 0. Results of the four analyses are reported in Table 6.

TABLE 5
 Pearson correlation matrix between the scales of the PhBQ

	M	SD	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17
<i>Antecedents</i>																			
1. Management	3.00	.60	(.75)																
2. Time pressure	3.12	.58	.413**	(.74)															
3. Social deterioration	2.53	.58	.346**	.225**	(.74)														
4. P-D Interaction	3.04	.47	.229**	.180**	.115*	(.69)													
5. Social pressure	3.19	.54	.411**	.338**	.455**	.244**	(.71)												
6. Interaction prob.	2.52	.58	.235**	.225**	.147**	.303**	.266**	(.66)											
<i>Syndrome</i>																			
7. Exhaustion	2.08	.70	.277**	.256**	.297**	.072	.226**	.357**	(.90)										
8. Disengagement	2.03	.55	.187**	.159**	.348**	-.059	.190**	.291**	.533**	(.77)									
9. Loss expectations	2.67	.52	.398**	.195**	.441**	.184**	.400**	.227**	.353**	.402**	(.71)								
<i>Consequences</i>																			
10. Intentions to quit	2.11	.85	.229**	.198**	.376**	.066	.188**	.210**	.561**	.515**	.340**	(.91)							
11. Health conseq.	2.23	.73	.276**	.282**	.227**	.191**	.243**	.263**	.626**	.339**	.303**	.507**	(.88)						
12. Isolation	1.88	.60	.223**	.131**	.238**	.028	.067	.225**	.460**	.479**	.304**	.433**	.376**	(.82)					
13. Emotional impact	2.25	.60	.216**	.276**	.234**	.181**	.201**	.320**	.600**	.402**	.332**	.510**	.608**	.412**	(.76)				
<i>Personal positive resources</i>																			
14. Verbal express.	2.91	.52	-.082	-.067	-.148**	-.088	-.009	-.186**	-.129**	-.157**	-.119**	-.096*	-.116*	-.188**	-.220**	(.86)			
15. Commitment	2.74	.52	-.202**	-.190**	-.378**	.058	-.144**	-.248**	-.537**	-.602**	-.293**	-.540**	-.364**	-.383**	-.382**	.186**	(.78)		
16. Comprehensibility	2.57	.47	-.085	-.194**	-.095*	-.004	.015	-.135**	-.222**	-.232**	-.150**	-.234**	-.149**	-.163**	-.359**	.201**	.392**	(.62)	
17. Emotional s-c.	2.63	.44	-.058	-.046	.039	-.022	.018	-.063	-.075	-.100*	-.058	.010	-.080	-.093*	-.125**	-.204**	.063	.001	(.63)

Note. Antecedents: P-D interaction = Interaction with Pain and Death. Interaction prob. = Interaction with problems. Consequences: Health conseq. = Health consequences. Personal Positive Resources: Verbal express. = Verbal expressions; Emotional s-c. = Emotional self-control.

** $p < .01$. * $p < .05$.

TABLE 6
Results from confirmatory factor analyses: Factor loadings and goodness of fit indices

Syndrome		Antecedents		Consequences		Positive P.R.
Exhaustion		Mnagement		Intentions to quit		Verbal expression
BS42	.905	BA26	.739	BC23	.917	PPR37
BS43	.925	BA49	.689	BC7	.846	PPR38
BS44	.791	BA25	.504	BC5	.871	PPR36
BS18	.732	BA27	.703	BC19	.811	PPR19
Disengagement		Time pressure		Health consequences		Commitment
BS51	.778	BA33	.797	BC8	.874	PPR5
BS41	.740	BA21	.690	BC9	.905	PPR4
BS50	.722	BA32	.577	BC2	.795	PPR17
BS58	.478	BA54	.537	BC3	.676	PPR6
Loss expectations		Social deterioration		Isolation		Comprehensibility
BS32	.615	BA29	.651	BC18	.736	PPR23
BS30	.474	BA60	.705	BC12	.776	PPR13
BS46	.707	BA41	.729	BC13	.760	PPR15
BS47	.648	BA4	.507	BC24	.691	PPR24
		Interaction pain and death		Emotional consequences		Emotional self-control
		BA35	.686	BC15	.625	PPR7*
		BA22	.545	BC21	.642	PPR9*
		BA31	.641	BC16	.741	PPR28
		BA24	.538	BC20	.686	PPR8
		Social pressure				
		BA14	.626			
		BA6	.544			
		BA20	.606			
		BA61	.691			
		Interaction problems				
		BA57	.657			
		BA44	.523			
		BA47	.464			
		BA43	.632			
Fit indices						
Chi-square	109.945		524.740		327.556	240.213
df	51		237		98	97
RMSEA	.049		.050		.069	.055
90% C.I.	(.036 – 0.061)		(.044 – .056)		(.061 – .078)	(.046 – .064)
PRMSEA <= .05	.543		.487		.000	.160
CFI	.976		.899		.949	.937
TLI	.969		.882		.937	.922
SRMR	.039		.055		.050	.067

Note. Items “*” have been reversed before the analysis. All factor loadings were statistically significant.

Burnout Syndrome (PhBSS). The model goodness of fit indices supported a very good fit of the model to the data. Only the chi-square statistic was significant, thus evidencing a bad fit. However, the dependency of this index from sample size is well known. Factor loadings were all positive, high, and significant. Factors presented significant and high correlations: .61 (Disengagement with Exhaustion), .44 (Loss of expectations with Exhaustion), and .58 (Loss of Expectations with Disengagement).

Antecedents (PhBAS). Considering the model goodness of fit indices, RMSEA and SRMR converged in supporting a very good fit of the model to the data, while the two incremental fit indices (CFI and TLI) supported a weaker, yet adequate, fit. The chi-square statistic was significant. Factor loadings were all positive, high, and significant. Factors correlations ranged from .14 (Time pressure with Social deterioration) to .59 (Social pressure with Social deterioration), with an average inter-factor correlation of .37.

Consequences (PhBCS). Considering the model goodness of fit indices, CFI, TLI, and SRMR converged in supporting a very good fit of the model to the data, while the RMSEA was marginally adequate, supporting weaker, yet adequate, fit. Again, the chi-square statistic was significant. Factor loadings were all positive, high, and significant. Factor correlations ranged from .44 (Isolation with Health consequences) to .72 (Emotional impact with Health consequences), with an average inter-factor correlation of .55.

Personal resources (PPRS). Because this scale is composed by two negatively-worded and two positively-worded items, following Marsh (1996) we posited a correlation among the uniquenesses of the two positively-worded items, to account for shared variance due to method. Goodness of fit indices converged in showing a very good fit, with the usual exception of the chi-square. However, the two negatively-worded items showed high loadings whereas the two positively-worded items loadings were much lower (though statistically significant).

Positive and significant factor correlations were obtained between: Commitment and Verbal expression of emotions (.20), Comprehensibility and Verbal expression of emotions (.24), Commitment and Comprehensibility (.54), Emotional self-control and Verbal expression of emotions (.13). Negative correlations were obtained between: Emotional self-control and Commitment (–.30), and Emotional self-control and Comprehensibility (–.20). The uniqueness of the two positively-worded items showed a correlation of .35.

STUDY 2: CONVERGENT VALIDATION OF THE PHBQ

Procedure

The PhBQ is a new measure of the process of medical burnout with the PhBSS as the core element of the whole process that includes a new proposal for the configuration of the physician burnout syndrome. Because the PhBSS is a new scale, its validity has been established by the convergent validity of the PhBSS with three of the most commonly used measures of burnout: MBI, SM-BM, and BM. A global score (mean) was established for all scales.

Participants

The sample used for the convergent validation of the PhBSS consisted of 100 physicians working in 11 primary care centres in Madrid. The sample was randomly chosen and stratified.

Measures

The battery used, in addition to the PhBSS, includes the following measures.

Maslach Burnout Inventory (MBI; Maslach & Jackson, 1981), composed of 22 items on a 7-point Likert-type scale ranging from 0 (*never*) to 6 (*every day*), with three dimensions: Emotional exhaustion, Depersonalization, and Personal accomplishment, whose items were inverted for the analysis of a global score.

Shirom-Melamed Burnout Measure (SM-BM; Melamed et al., 1992). This questionnaire is composed of three dimensions: Physical fatigue, Emotional exhaustion, and Cognitive exhaustion. Each includes four items rated on a 7-point (1 = *never*; 7 = *always*) Likert-type scale.

Burnout Measure (BM; Pines & Aronson, 1988); the authors define the syndrome as a state of physical, mental, and emotional exhaustion resulting from engaging with people in emotionally demanding situations. It is composed of 21 items on a 7-point Likert-type scale. Scale scores as well as global scores for the four different measures of burnout were used.

Results

The findings were consistent with our expectations. As shown in Table 7, within each scale [applied] the expected internal correlations were found. The MBI scale of Personal Accomplishment (inverted) did not show a significant correlation with Emotional Exhaustion, the highest internal correlations were obtained in the SM-BM and BM scales, all of them exceeding .70, perhaps because of their internal unidimensionality.

The correlations between the scales resulted in the expected values as well. The PhBSS global score correlated above .60 with all global scores on the remaining scales, indicating a high degree of convergence in all cases. The highest correlation was obtained with the MBI total score (.73). The PhBSS dimensions had the following correlations with the MBI: the Exhaustion subscale (PhBSS) had significant correlations with Emotional exhaustion (.75) and with Depersonalization (.39), the Disengagement subscale (PhBSS) correlated significantly with Emotional exhaustion (.28), Depersonalization (.52), and Diminished personal accomplishment (.32). Loss of expectations (PhBSS) significantly correlated with Emotional exhaustion (.42) and with Depersonalization (.52), while showing nonsignificant correlations with Diminished personal accomplishment. The highest correlations of the PhBSS dimensions with all the other scales were found primarily in the Exhaustion subscale, secondly in the Loss of expectations subscale, and thirdly in the Disengagement subscale.

DISCUSSION

This paper has two complementary objectives: presenting a new configuration of the physician burnout (PhBSS) and submitting a proposal for the process of physician burnout (PhBQ), from a theoretical and empirical perspective. The main goal is to show the structure and psychometric characteristics of the Physician Burnout Questionnaire (PhBQ) with four subscales: Physician Burnout Syndrome Scale (PhBSS), Physician Burnout Antecedents Scale (PhBAS), Personal Positive Resources Scale (PPRS), and Physician Burnout Consequences Scale (PhBCS).

TABLE 7
Pearson correlation between the scales and subscales of the PhBSS, MBI, SM-BM, and BM

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
PhBSS	1															
1. Exhaustion	.408**	1														
2. Loss expectations	.306**	.515**	1													
3. Disengagement	.775**	.803**	.754**	1												
4. Global score					1											
MBI						1										
5. Emotional exhaustion	.753**	.421**	.288**	.652**	.468**	.335**	1									
6. Depersonalization	.394**	.521**	.327**	.610**	.127	.847**	.563**	1								
7. Personal accomplishment (R)	.163	.161	.327**	.280**	.127	.335**	.1	.730**	1							
8. Global score	.636**	.536**	.520**	.733**	.787**	.847**	.563**	.730**	.750**	1						
SM-BM											1					
9. Physical exhaustion	.777**	.353**	.080	.553**	.818**	.351**	.153	.650**	.706**	.719**	.909**	1				
10. Emotional exhaustion	.696**	.375**	.377**	.641**	.802**	.477**	.246*	.730**	.706**	.719**	.909**	.896**	1			
11. Cognitive exhaustion	.675**	.354**	.215*	.558**	.704**	.429**	.249*	.649**	.768**	.719**	.909**	.846**	.900**	1		
12. Global score	.790**	.399**	.255*	.648**	.857**	.466**	.241*	.750**	.905**	.903**	.909**	.749**	.788**	.788**	1	
BM																1
13. Physical exhaustion	.771**	.321**	.163	.571**	.815**	.309**	.133	.625**	.901**	.768**	.770**	.896**	.896**	.896**	.896**	1
14. Emotional exhaustion	.693**	.381**	.305**	.613**	.802**	.459**	.153	.700**	.760**	.906**	.765**	.900**	.846**	.900**	.900**	.846**
15. Cognitive exhaustion	.541**	.294**	.301**	.502**	.640**	.405**	.318**	.647**	.601**	.714**	.646**	.725**	.749**	.788**	.788**	.749**
16. Global Score	.730**	.360**	.271**	.609**	.819**	.419**	.205*	.707**	.824**	.862**	.788**	.913**	.940**	.951**	.894**	.894**

Note. PhBSS = Physician Burnout Scale; MBI = Maslach Burnout Inventory; SM-BM = Shirom-Melamed Burnout Measure; BM = Burnout Measure.
** $p < .01$. * $p < .05$.

Despite the time elapsed since the formulation of the burnout syndrome and the huge amount of investigation carried out, the definition of the syndrome is still controversial (Cox, Tisserand, & Taris, 2005) and its measurement remains an open discussion (Halbesleben & Demerouti, 2005). The proposal of the PhBSS is a complex and multidimensional configuration of the burnout syndrome with three dimensions: Exhaustion, Disengagement, and Loss of expectations. The first two are generally considered in the study of burnout, the third responds to the need to include a cognitive component, different from cognitive fatigue.

The dimension of exhaustion on PhBSS is a central one. Exhaustion is generally recognized as the core component of burnout (Halbesleben & Demerouti, 2005; Lee & Ashforth, 1996; Maslach, Schaufeli, & Leiter, 2001; Schaufeli & Enzman, 1998). But if burnout is reduced to exhaustion, it is sufficiently explained by the general model of stress (Selye, 1955) that directly associates it with workload. Keeping the concept of burnout separate from chronic stress requires multidimensionality (Maslach & Schaufeli, 1993).

Disengagement is not the opposite of engagement (Demerouti et al., 2010) but an autonomous variable (Demerouti & Bakker, 2008; Halbesleben & Demerouti, 2005) basically consisting of a behavior of distancing from the organization, the breach of the psychological contract with the organization (Gakovic & Tetrick, 2003; Leiter, 1999), without involving the depersonalization of clients or the development of cynical attitudes about work and the organization. The core of disengagement is withdrawal from organizational work.

Loss of expectations is the cognitive dimension of burnout on the PhBSS. Although the cognitive aspects of burnout have been widely considered, they have been practically ignored in the configuration and measurement of the syndrome. The formulation of cognitive exhaustion (Pines & Aronson, 1988; Shirom, 2003) is nothing but a kind of exhaustion. Loss of expectations expresses the contrast between the previous cognitive representation of expected reinforcements and the real facts at work. Loss of expectations entails loss of confidence in work-related goals and break of the perspectives of personal progress in the organization (Nurmi, Salmela-Aro, Keskivaara, & Naatanen, 2008). The core of the cognitive dimensions of burnout is not cognitive fatigue, but the contrast between what is expected and reality.

This paper also presents the PhBQ, a general questionnaire on the process of physician burnout comprising three subscales: Antecedents (PhBAS), Personal Positive Resources (PPRS), and Consequences (PhBCS). According to this proposal, the process of physician burnout would have general and specific components.

The results obtained with the PhBAS show specific antecedent variables that are associated with the elements of the physician burnout process. Although the study of the antecedents of burnout has been broad (Maslach et al., 2001; Schaufeli & Bakker, 2004; Schaufeli & Enzman, 1998), generic antecedents have usually been considered, from any type of work. The staff survey (Maslach & Leiter, 1997) is a specific effort for listing factors specific to burnout in organizations, yet maintaining the same factors for all professions. One possible reason for this practice is the consideration that the factors of burnout are mainly linked to work overload (Schaufeli & Enzman, 1998). However, the correlation matrix obtained shows significant and positive associations between the specific antecedents of physician burnout and the process of burnout, indicating that the specific antecedents are also associated to the dimensions of the syndrome, except in the case of interaction with pain and death.

The results of PPRS also show that personal positive variables are associated with the different elements of the process of physician burnout. Of the four variables, emotional self-control does not seem to be associated with physician burnout so its suppression from the subscale would be appropriate, while commitment would be the personal variable most closely associated with the process. Usually, the inclusion of the positive personal resources seems relevant for explaining the process. Finally, the consequences subscale (PhBCS) shows high levels of association with most of the elements of the process, indicating the unit of the process through different moments and the need to take into account the four components to achieve a proper understanding of the phenomenon.

In the Study 2, the convergent validation of the PhBSS, the central subscale of the PhBQ, with the most usual measures for burnout assessment shows a good fit with the global scores of the three used measures. The global score of the PhBSS correlates especially very well with the global score of MBI and with the dimensions of Exhaustion and Depersonalization, the core dimensions of it. According to these results, the PhBSS can be used as an alternative tool for measuring burnout.

The limitations of the study are mainly due to the adequate, yet limited, sample size and the transversal nature of the data. It would be necessary to expand the sample size and the medical specialties considered. Similarly, although the goal of the study was mainly to analyze the psychometric characteristics of the PhBQS and its four subscales, the proposal of a process model would require the use of longitudinal methods.

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