An integrating approach to the study of burnout
in University Professors

José Manuel Otero-López, María José Santiago Mariño and Cristina Castro Bolaño
Universidad de Santiago de Compostela

The aim of this paper is to use an integrative approach to identify the main correlates and/or predictors at different levels (personal, psychosocial, occupational and outside the workplace) of the burnout dimensions. The sample consists of 813 university professors. Results from statistical analyses show that there are, indeed, both common and specific predictors for the different facets of the syndrome. Specifically, while social support and optimism are selected to confirm all manifestations of burnout, other factors (work hours per week, time in the profession, hardiness, Type A behavioural pattern, life events, daily hassles) do increase the emergence of differential profiles. Lastly, findings are discussed and the main conclusions are presented.

Una aproximación integradora al estudio del burnout en los profesores de Universidad. El objetivo del presente trabajo es identificar, desde un acercamiento integrador, cuáles son los principales correlatos y/o predictores de distintos ámbitos (personal, psicosocial, ocupacional y extralaboral) de las dimensiones del burnout. La muestra está formada por 813 profesores de Universidad. Los resultados de los análisis estadísticos realizados permiten constatar la existencia de predictores comunes y específicos para las facetas del síndrome. Concretamente, mientras se confirma que el apoyo social y el optimismo son seleccionados para explicar todas las manifestaciones del burnout, otros factores (horas de trabajo a la semana, tiempo en la profesión, personalidad resistente, patrón de conducta Tipo A, acontecimientos vitales, contrariedades cotidianas) acentúan la existencia de perfiles diferenciales. Finalmente, se discuten los hallazgos y se presentan las principales conclusiones.

There is currently a widespread consensus within the academic community working on occupational health on the fact that burnout is a health and social issue of uppermost importance. Indeed, the growing incidence and prevalence of this phenomenon, the high costs it entails (in occupational, health or social domains) and not least, the compelling need to come up with prevention and/intervention proposals seriously underscore the need to further study this issue.

In this respect, and despite the fact that over the last few years timid attempts have been made to study this phenomenon in other professional groups (see, e.g., Miró, Solanes, Martínez, Sánchez, & Rodríguez, 2007; Moreno, Morett, Rodríguez, & Morante, 2006), empirical evidence has revealed teachers and health care professionals as high risk samples and consequently they have become the focal point of numerous contemporary research projects (Maslach, Schaufeli, & Leiter, 2001; Shaufeli & Buunk, 2002).

From the always interesting conceptual perspective, which makes it possible to approach the identity the phenomenon under study, it is important to underscore that burnout —far from being a monolithic construct— has a number of different facets as Maslach & Jackson (1986) rightly claim: emotional exhaustion, depersonalization, lack of personal accomplishment are factors that make up this syndrome which is typical of caring and/ or helping professions (Gil-Monte & Peiró, 1997; Maslach & Jackson, 1986).

When approaching the boundaries, epicenters and research trajectories within this field of study, we encounter a panorama characterized by important strengths but also with some weak points. We will describe both next —although in a very general way— in the belief that dealing with the *status quo* of the field is a good argument in designing any research project.

As far as progress in the field is concerned, the establishment of the multicausality of the phenomenon, or, to put it more accurately, of its different manifestations, is particularly welcome (Friesen, Prokop, & Sarros, 1988; Kokkinos, 2007). Another issue on which empirical evidence has generated consensus is the link between burnout and the teaching profession (Schwab, Jackson, & Schuler, 1986; Maslach & Leiter, 1999); on this regard, the conclusions reached by studies regardless of geographical location (Doménech, 2006; Farber, 1991; Lau, Yuen, & Chan, 2005), of the educational levels analyzed (Byrne, 1991; Durán, Extremera, & Rey, 2001) and of the sample size selected (Capel, 1987; Hakanen, Bakker, & Schaufeli, 2006), strongly indicate that professors are vulnerable to the burnout. A final element of consensus amongst the scientific community with an interest in this phenomenon and one that is highlighted by some writers (Sharpley, Dua, Reynolds, & Acosta, 1995) is the need to adequately tackle the different sources of influence using integrative studies.

But at the same time, as we have already mentioned, there still remain some obstacles that have impeded the attainment of the much sought-after goal of cumulative knowledge.

One of the main hindrances for research as regards the professional groups being investigated is that university professors have been traditionally ignored. Indeed, numerous studies have been conducted with primary (see, e.g., Kokkinos, 2007; Moreno, Arcenillas, Morante, & Garrosa, 2005) and secondary (Capel, 1987; Lau et al., 2005) teachers but very few with university professors (the studies by Blix, Cruise, Mitchell, & Blix, 1994; Lackritz, 2004, are some of the healthy exceptions). We agree with Gmelch (1993) when, in his excellent study *Coping with faculty stress*, he claims that «while academicians devote much time and energy to the study of other professions, they rarely turn that scrutiny on themselves» (p. 15). Some authors (e.g., Blix et al., 1994) point out that many of the characteristics of the «burned out» professor (pressure, conflicts, strong demands and little reward, frustration in academic accomplishments) have installed in universities. Whatever the cause, a number of different researchers (Guerrero & Vicente, 2001; Lackritz, 2004) have reported that university professors show high percentages of prevalence (more than 20% report «high» burnout).

The study of isolated variables to the detriment of the integration of explanatory determinants has been one of the weak points that has characterized research on the field (see, for instance, Maslach et al., 2001). That is, in spite of the proven multicausality of burnout, there is currently extensive empirical evidence on the 'parts' while it is scarce for the phenomenon seen as a 'whole'. We will introduce next, therefore, some lines of work that have articulated research. Thus, whereas some writers (e.g., Capel, 1987; Lau et al., 2005) have focused on contextual and/or occupational factors, others (e.g., Sahu & Misra, 1995) have looked at triggering factors outside the workplace (such as life events and daily hassles); there have also been writers (e.g., Maekikangas & Kinnunen, 2003; Moreno et al., 2005; Nagy & Davis, 1985; Paulik, 2001) who have essentially focused on 'personal factors' (such as, for instance, type-A behavioural pattern, hardiness, optimism). Variables of psychosocial nature, particularly, social support, have also aroused the interest of numerous researchers working on an explanation for burnout in teachers (Fang & Yan, 2004; Greenglass, Burke, & Konarski, 1997; Kahn, Schneider, Jenkins, & Moyle, 2006).

In sum, by drawing on the state of the art in the field and taking into account the above considerations, this study aims at a clear integrative approach. In other words, determinants from different domains are brought together so as to explain the facets of burnout. The selection of the variables included, although guided by the principle of economy, seeks to combine different domains: personal factors (e.g. Type A behavioural pattern, hardiness) along with interactional factors (e.g. friend support) occupational factors (work hours per week…) but without losing sight of non-occupational factors (life events), 'new' factors (optimism) as well as 'old' ones (family support). Undoubtedly, this is 'our selection', but it is one based on the empirical and theoretical corpus on the field. Let us devote some space, though, to elaborate on some of the reasons that explain our 'particular' selection of variables in the different domains of analysis.

As to the relational domain, social support (whether by friends, the family and «or» work peers) was had an undeniable prominence in this array of explanatory determinants of occupational health (e.g., Cohen & Wills, 1985). Indeed, positive interaction with the others together with the resulting perception of the existence of support 'providers' has proved to have a powerful 'cushioning' effect in teacher occupational distress (see, for instance, Greenglass et al., 1997; Kahn et al., 2006).

Beyond the relational domain, personal factors (i.e. the intrinsic characteristics of the teacher) have also aroused the interest of many researchers (Moreno et al., 2005; Paulik, 2001) and this domain has turned out to be amongst those with a greater heuristic value. The problem here lies in the fact that, given the wide range of personal determinants with attested predictive capability, which of them should be singled out? Well, our proposal seeks to take into account two lines of research. The first line, with an important weight in the scientific community makes the Type-A behavior pattern a good exponent of the personality-health link. On this regard, many a study report that the presence of this 'personal pattern' is a powerful risk factor for stress and/or burnout in university professors (Jamal & Baba, 2001; Sharpley et al., 1995); the second line is confined to the emerging and undoubtedly promising field of Positive Psychology (hardiness and optimism are the variables analyzed in this study). Indeed, in spite of our awareness of the existence of a wide range of 'other' positive constructs (self-efficiency, self-esteem, resilience, emotional intelligence, …) and more specifically, of the important relationship between self-efficiency and burnout (e.g., Grau, Salanova, & Peiró, 2000), the extensive research tradition of the *hardiness*-occupational distress link (see review by Maddi & Harvey, 2006) as well as the undeniable prominence that optimism is being given in the field of occupational health (Carver & Scheier, 1992) support our selection. There is furthermore some complementary evidence as regards the important explanatory contribution of hardiness (Chan, 2003) and optimism (Moreno et al., 2005; Riolli & Savicki, 2003) in all three dimensions of burnout.

Another scenario of interest in the research on teacher professional distress has been the occupational domain. The variables that have been more frequently analyzed in the professional group under study (apart from others such as professional status also evaluated) have been workload (Chen, 2002; Lackritz, 2004; Misra & Sahu, 1993) and professional experience (Durán et al., 2001; Lau et al., 2005; Pierce & Molloy, 1990).

A final domain of interest, which undoubtedly complements the set of influences analyzed, is that of the impact of 'other major circumstances' (life events) and/or other 'lesser' ones (daily hassles) on teacher stress-burnout. On this regard, many researchers have confirmed their negative influence on occupational distress suffered by both secondary and university teachers (Dunn, Whelton, & Sharpe, 2006; Hogan, Carlson, & Dua, 2002).

In sum, it is the aim of this study to identify what the main correlates and/or predictors are from a number of (personal, psychosocial, ocupational and outside the workplace) domains for each of the facets of burnout. In spite of the evident exploratory nature of this study, two general hypotheses may be put forward: 1) all determinants included are expected to contribute to explaining burnout in university professors, and 2) social support (whether family support or work peer support) is expected to become the main predictor in the different dimensions of burnout.

Method

Participants

The final study sample is made up of 813 professors (44 subjects were excluded due to incomplete questionnaires or other biases in their responses to self-reports) from different schools of the Universidad de Santiago de Compostela. Specifically, if we take schools as sampling unit, then the sample can be said to be made up of 12 schools from the campus in Santiago (86% of its schools) and 3 from the campus in Lugo (75% of the total).

As to the characteristics of the sample, 55.2% of the subjects were men and 44.8% female, their mean age being 38.2 (range of age between 27 and 68, SD= 6.5). As to marital status, 49.5% were married, 39.3% single and 11.2% widow(er), separated or divorced. The resulting distribution as to professional status was the following: 6.7% *catedráticos* (chairs), 69.8% *titulares* (associate professors), 17.1% *asociados* (assistant professors), 6.4% «other categories» (including *profesores interinos* [adjunct assistant professors] and *becarios con docencia en los dos últimos años* [teaching assistants]).

Instruments

So as to conduct this study, professors completed a battery of self-reports, translated into Spanish and then back-translated, where the following variables were evaluated: burnout, Type-A behaviour pattern, hardiness, optimism, social support, life events and daily hassles. Subjects were also asked to respond to a number of items designed by us dealing with demographic and occupational issues.

The *Maslach Burnout Inventory - Educators Survey* (MBI-ES), developed by Maslach & Jackson (1986), was used to evaluate the burnout syndrome. The MBI-ES consists of 22 items dealing with the frequency (Likert-type scale whose range is between 0 «never» and 6 «daily») with which teachers have specific feelings, thoughts or attitudes towards their work and their students. This instrument provides a score for each dimension of the syndrome: emotional exhaustion, depersonalization and personal accomplishment. Cronbach's alpha coefficients were 0.90 for emotional exhaustion, 0.79 for depersonalization, and 0.71 for personal accomplishment.

Type A behavioural pattern has been measured using the *Bortner Rating Scale* —BRS— (Bortner, 1969). The BRS consists of 14 bipolar items with continuous scoring from 1 to 11, which yield a total score for Type A. Reliability (Cronbach's alpha) was 0.77.

The self-report used to evaluate hardiness was the *Personal Views Survey* (PVS) designed by the «Hardiness Institute» (1985). It consists of 50 items (range of answer from 1 «totally disagree» to 3 «totally agree») which make it possible both the evaluation of its dimensions (commitment, challenge and control) and obtaining an overall score. In this study, give the amount of selected variables, we have only used total score. Cronbach's alpha coefficient for the scale is 0.88.

The reviewed version of the *Life Orientation Test* —LOT-R— (Scheier, Carver, & Bridges, 1994) was the instrument chosen to measure the optimism variable. The LOT-R consists of 10 items to which answers are given following a Likert-type scale (0 «totally disagree», 3 «totally agree»). Cronbach's alpha coefficient is 0.78; this is similar to results obtained by other writers using Spanish samples (Martínez, Reyes del Paso, García, & González, 2006).

Social support was measured using the *Provision of Social Relations* (PSR) scale elaborated by Turner, Frankel & Levin (1983). The PSR comprises 15 items (providing a choice of answers from 0 «totally disagree» to 5 «totally agree») grouped in two subscales: family support and friend support. An *ad hoc* item has also been added to the scale the purpose of which was to find out what kind of friends respondents had thought of when completing the PSR: 98% of professors answered «work peers». As to the psychometric properties of the PSR (dimensions and total score) alpha coefficients ranged between 0.75 and 0.87.

The instrument selected for evaluating life events has been the *Life Events Inventory* (LEI), designed by Hammen and Mayol (1982). It consists of 55 items, which tackle different types of «major» events (e.g., death of a close relative, serious injury or physical illness) which bring about serious changes in people's lives. Professors assess the impact level of 'undesirable' events that occurred in the previous year (range: 1 «no impact» up to 4 «serious impact»). Different researchers have confirmed the adequate psychometric properties of this inventory (see, e.g. Spurgeon, Jackson, & Beach, 2001).

The instrument to evaluate daily hassles has been the *Hassles Scale* (HS) by Holm, Holroyd, Hursey & Penzien (1986). This self-report evaluates the perceived seriousness (Likert scale: 0 «none», 1 «low», 2 «moderate», 3 «severe») of 117 daily stressful situations that encompass a number of domains (for instance, family, friends, health, finances). The scale showed internal consistency (Cronbach's alpha) of 0.74.

Finally, a number of *ad hoc* items have been included so as to obtain information on both socio-demographic (e.g., gender, age, marital status) and occupational issues (number of labor hours per week, length of time in the profession).

Procedure

Self-reports were administered by both research team members and hired personnel, who had been previously trained to collaborate in field work tasks. The task was organized in the following manner: professors were visited at their offices and, after explaining to them the objectives of this study, their collaboration was requested. They were also given an envelope with the address of the main researcher so that those who wished to collaborate could do so via internal mail. This ensured anonymity and confidentiality in their answers. The rate of answers was 38.6%.

Data analysis

Data were processed using SPSS (version 14). At an early stage, besides descriptive statistics, a number of correlate analyses were conducted to assess the relation between the dimensions of burnout and a number of selected variables. Next, given the interest in defining which of the variables included in this study best predicted the different facets of the syndrome, a number of stepwise multiple regression analyses were conducted taking on the one hand as criterion variables emotional exhaustion, depersonalization and personal accomplishment and, on the other, independent variables, taken from different domains, namely weekly hours, length of time in the profession, Type A behavioural pattern, hardiness, optimism, social support (family and work peers), daily hassles and life events.

Results

Table 1 shows the means, standard deviations and Pearson correlation coefficients of the variables included in the study. As to co-variation between the different manifestations of burnout, results demonstrate —as expected— the existence of two profiles of association: emotional exhaustion is positively associated with depersonalisation (r= .45, p<.001), whereas accomplishment negatively co-varies with exhaustion (r= -.29, p<.001) and depersonalization (r= -.31, p<.001).

As to the remaining associations, all variables prove statistically significant when related to facets of burnout. It should be highlighted, however, that only social support (family and friends) and optimism significantly co-vary with all the dimensions of the phenomenon (range of coefficients between -.19 and -.34). As to the remaining variables, some associations of interest must be singled out: daily hassles to emotional exhaustion (r= .27, p<.001) and hardiness to accomplishment (r= .25, p<.001).

In an attempt to compare the relations that the different variables establish with the dimensions of burnout it could be claimed that whereas emotional exhaustion significantly co-varies with almost every variable (the exception being length of time in the profession), personal accomplishment shows the lowest number of significant associations (it is only significant in social support and positive personal variables).

More specifically, the lack of support (family and friends) and the stable belief that things are not going to work out (low optimism) are associated to emotional exhaustion, depersonalization and decreased personal accomplishment. The presence of a Type A behavioural pattern, the occurrence of life events, daily hassles and a strong involvement in work (high number of labor hours) also characterizes professors reporting emotional exhaustion and depersonalization. Hardiness qualifies subjects with high accomplishment and is negatively associated with emotional exhaustion.

Next (see table 2) different stepwise multiple regression analyses were made using as criterion the different facets of burnout and as predictors the remaining variables.

Generally speaking, all the variables included in the study are selected as valid predictors, regardless of the different manifestations of the syndrome. More specifically, all determinants —with the sole exception of family support— contribute to explaining emotional exhaustion in professors (26% of the variance explained), whereas this variable is precisely what contributes to predicting (along with the three others) depersonalization and personal accomplishment within this professional group (14.1 and 12.2% of variance explained, respectively).

As to the variables with a greater predictive capacity for each of the facets of the syndrome, the relevance of friend support is particularly remarkable (main predictor of emotional exhaustion and depersonalization) as well as of hardiness (it comes first in the analysis that explains personal accomplishment). Results confirm that optimism emerges as yet another personal variables that contributes to explaining the different dimensions of burnout. Looking at each of the manifestations of burnout, it seems adequate to point out that the occurrence of daily hassles, the amount of labor hours, a short career, together with the presence of a Type-A behavioural pattern qualify the emotional exhaustion of this professional group. Feelings of depersonalization and of decreased accomplishment are also explained by the lack of family support.

In sum, the selected determinants have demonstrated their suitability to predict the different dimensions of burnout, emotional exhaustion being the best explained facet. In any event, according to our findings, it could be argued that if we wish to predict the phenomenon of burnout we must necessarily resort to variables from different domains (personal, psychosocial, occupational and non-occupational domains).

Table 1
Descriptive analysis and Pearson's correlations between the dimensions of burnout and a set of variables from different domains

Variables	M	SD	Emotional exhaustion	Depersonalization	Personal accomplishment
Emotional exhaustion	25.06	8.64	1		
Depersonalization	7.13	4.71	.45***	1	
Personal accomplishment	28.72	6.39	-.29***	-.31***	1
Work hours	38.12	5.72	.16***	.12***	.02
Time in the profession	16.23	9.42	-.05	.11**	.01
Type A behavioural pattern	91.54	12.81	.18***	.10**	-.01
Hardiness	79.65	8.43	-.21***	-.04	.25***
Optimism	8.26	3.15	-.31***	-.20***	.22***
Family support	20.14	4.39	-.19***	-.29***	.22***
Friend support	25.44	4.92	-.34***	-.33***	.22***
Daily hassles	59.03	8.78	.27***	.07*	.06
Life events	9.72	5.22	.18***	.09**	.01

* p<.05; ** p<.01; *** p<.001

Table 2
Stepwise regression analysis taking as dependent variable the dimensions of burnout and as independent variables a set of variables

Predictors	Adjusted R^2	Incr. R^2	F	p
(Criterion: emotional exhaustion)				
1. Friend support	.113	.113	79.984	.000
2. Daily hassles	.177	.064	48.855	.000
3. Optimism	.210	.033	25.879	.000
4. Work hours per week	.225	.015	11.878	.000
5. Time in the profession	.237	.012	9.747	.000
6. Type A behavioural pattern	.247	.010	8.249	.000
7. Hardiness	.255	.008	6.881	.000
8. Life events	.260	.005	4.530	.000
(Criterion: depersonalization)				
1. Friends support	.108	.108	75.803	.000
2. Family support	.123	.015	10.497	.000
3. Work hours per week	.133	.010	6.988	.000
4. Optimism	.141	.008	5.709	.000
(Criterion: personal accomplishment)				
1. Hardiness	.063	.063	41.807	.000
2. Family support	.096	.033	22.993	.000
3. Optimism	.110	.014	9.493	.000
4. Daily hassles	.122	.012	8.444	.000

Discussion and conclusions

The aim of this study has been to throw light on what the main determinants of burnout in university professor are. Such determinants were taken from a number of different domains.

Roughly speaking, the results obtained from the statistical analyses conducted (correlation and regression) demonstrate that, regardless of their nature, the selected variables are associated to burnout in professors. In other words, the first hypothesis of put forward in this study seems to be confirmed.

Specifically, results demonstrate the existence of important commonalities as well as differences between the correlates and/or predictors of the different facets of the syndrome. Thus, while findings confirm the important role of social support and optimism in all three dimensions of burnout, the contribution of other factors (such as daily hassles, weekly hours and hardiness) is more specific. However, and so as to combine the main results, it could be claimed that in order to satisfactorily predict emotional exhaustion, attention must be paid to work peers support, daily hassles and optimism. So as to explain 'coldness and aloofness' in behavior and attitudes towards students —depersonalization— attention must be paid to social support by peers and the family, and the weekly work hours. Hardiness, family support and optimism satisfactorily predict the professor's personal fulfillment.

The explanatory relevance of these variables, as we will elaborate below, has been reported in the literature, although not always to the same extent.

As to social support (the variable that is the main predictor of emotional exhaustion and depersonalization), the empirical evidence of its 'shield' effect in burnout (regardless of geographical location, the educational levels analyzed or when the study was conducted) is very strong. In this regard, different writers (see, e.g., Fang & Yan, 2004; Greenglass et al., 1997; Kahn et al., 2006; Lee & Ashforth, 1996; Otero-López et al., 2006), using samples from primary and secondary school teachers, have found that the lack of social support in both superiors and peers, is a risk factor for burnout. Jackson, Schwab & Schuler (1986) provide further evidence in a longitudinal design. They confirm that the presence of social support acts by inhibiting the levels of exhaustion and depersonalization and, as expected, by encouraging the personal fulfillment of teachers. In any event, our findings confirm, at least partially, the second working hypothesis that posited the predictive relevance of social support in all three dimensions of burnout. In other words, the hypothesis is confirmed for the exhaustion and depersonalization dimensions but not for personal accomplishment (in this case although family support comes second, hardiness is the variable that provides the best explanation). Thus, while the protective role of social support in burnout is beyond any reasonable doubt, it is also true that, to our mind, further research into clarifying the main mechanisms that explain its influence should be encouraged. In other words, we should find an answer for the following question: What is the most plausible 'main effect' or 'protective quality' of social support in burnout? Some tentative hypothesis, that must be empirically confirmed, may be put forward: a) it has a positive influence on evaluation and the threatening nature of certain occupational situations, b) it increases motivation and the professor's positive attitudes and c) it encourages the use of more efficient coping strategies. While we are aware that these different hypotheses may

be seen as complementary, it is our belief that it is only through research that answers may be discerned.

The results of this study, as it has already been pointed out, also confirm optimism as one of the explanatory arguments of the three facets of burnout. However, and since it is an emerging, positive disposition in this field, not many writers (Chan, Kwok, & Yueng, 2004; Maekikangas & Kinnunen, 2003; Moreno et al., 2005; Paulik, 2001) have studied its impact on occupational distress. In any case, and in spite of the relative scarcity of studies, our findings are consistent with those in the literature: seeing life 'positively' cushions burnout. Thus, and by way of example, Chan et al., (2004) found that university professors with high scores in optimism, as opposed to their pessimistic colleagues, made more benign attributions to stressing circumstances, and also reported a greater job satisfaction. In Spain, Moreno et al. (2005), using a sample of primary education teachers, confirmed the predictive capability of optimism for all three dimensions of burnout. It seems, therefore, in view of our data and the empirical evidence available, that this personal dimension has a positive influence on the negative consequences of teaching (meaning here, emotional exhaustion, depersonalization and decreased personal accomplishment).

Beyond common predictors, there are other variables that also contribute to explaining the different facets of burnout, although in a differential manner. Specifically, daily hassles, number of labor hours, length of time in the profession, Type A behavioural pattern, hardiness and life events also explain exhaustion. Although some determinants are dealt with in isolation, references to all these determinants of emotional exhaustion in teachers are found in the literature (see, for instance, Durán et al., 2001; Lackritz, 2004; Moreno, Garrosa, & González, 2000; Nagy & Davis, 1985; Sahu & Misra, 1995). As to depersonalization, besides the influence of family and friends support and optimism mentioned above, work hours are also a significant predictor of this dimension of burnout. Hardiness becomes particularly relevant (first step in the equation) in explaining personal achievement, while family support and daily hassles (along with optimism) are the other determinants that must be taken into account to predict this facet of the syndrome. Moreno et al. (2005) have found, in keeping with our findings, that commitment and challenge (two of the three dimensions of the hardiness construct) are important predictors of personal fulfillment. On this regard, it could be particularly interesting as an issue for further research to look at the role of the different components of the hardiness construct in the dimension of personal accomplishment in university professors. Going deeper in the differences between the different facets (the argument on which the dimensional conceptualization of the syndrome is based) another finding of interest emerges: emotional exhaustion is the dimension of burnout that has the greatest number of predictors and that is best explained in terms of variance. This was only to be expected as numerous researchers (e.g., Cox, Tisserand & Taris, 2005) claim that emotional exhaustion is the most representative 'face' of burnout. Therefore, in view of the modest percentages of explained variance that our data yield (particularly, as regards depersonalization and personal accomplishment) it is fair to say that so as to increase its predictive value it is probably necessary to pay attention to other influences as well (such as occupational stressors, coping resources, self-efficiency) but without losing sight of the 'idiosyncrasy' of each of the dimensions of the syndrome.

At this point and in the hope that future research confirms these findings, it seems adequate to mention here some of the potential limitation of this study: the correlational nature of the study which makes it impossible to establish causal relations, the self-selection of the sample, the possible multicolinearity between some predictive variables and the professor's moderate rate of response that makes it difficult to assess the biases that may be generated by the non-response (it is likely that the professors with greater occupational distress are those who were less participative in the research). In any case, the design of longitudinal studies, the incorporation of other explanatory determinants, the clarification the role of gender, age and socio-cultural context will be, in our opinion, important steps forward for this field of study.

In short, and in an attempt to advance the main conclusions, we may point out that: 1) all the variables included (personal, psychosocial, occupational and non-occupational) contribute to explaining burnout; 2) social support —whether family or friend/peer support— contributes along with optimism to predicting each and every manifestation of the syndrome; and 3) while the absence of social support by work peers is, of all the determinants analyzed, the main risk factor in emotional exhaustion and depersonalization of teachers, hardiness is the best predictor of accomplishment. In sum, and in view of the analysis conducted, it seems relevant to highlight that so as to effectively prevent and intervene in university professors' burnout we must focus on encouraging the networks of social support (family and friends) and strengthen the belief that things will work out (optimism). A word of caution is necessary here, though. We must not ignore other personal sources of influence (hardiness, Type A behavioural pattern), occupational factors (number of work hours per week, length of time in the profession) and non-occupational factors (daily hassles and life events). Finally, there only remains to mention that one of the challenges that future research must face is to clarify to a greater extent —by incorporating other domains of influence— the common and the specific determinants of the different dimensions of burnout in the assurance that any empirical gain in their understanding shall have a positive effect on the occupational health of professors.

Acknowledgements

References

Blix, A.G., Cruise, R.J., Mitchell, B.M., & Blix, G.G. (1994). Occupational stress among university teachers. *Educational Research*, *36*, 157-169.

Bortner, R.W. (1969). A short rating scale as a potential measure of pattern A behavior. *Journal of Chronic Disease*, *22*, 87-91.

Byrne, B.M. (1991). Burnout: Investigating the impact of background variables for elementary, intermediate, secondary and university educators. *Teaching & Teacher Education*, *7*, 197-209.

Capel, S.A. (1987). The incidence of and influences on stress and burnout in secondary school teachers. *British Journal of Educational Psychology*, *57*, 279-288.

Carver, C.S., & Scheier, M.F. (1992). Effects of optimism on psychological and physical wellbeing: Theoretical overview and empirical update. *Cognitive Therapy and Research, 16*, 201-228.

Cohen, S., & Wills, T.A. (1985). Stress, social support and the buffering hypothesis. *Psychological Bulletin*, *98*, 310-357.

Cox, T., Tisserand, M., & Taris, T. (2005). The conceptualization and measurement of burnout: Questions and directions. *Work & Stress*, *19*, 187-191.

Chan, D.W. (2003). Hardiness and its role in the stress-burnout relationship among prospective Chinese teachers in Hong Kong. *Teaching & Teacher Education*, *19*, 381-395.

Chan, D.W., Kwok, K.F., & Yeung, S.M.A. (2004). Facing challenging circumstance: Optimisms and job insecurity. *Journal of Psychology in Chinese Societies*, *5*, 81-95.

Chen, H. (2002). Stress and life events of middle school teachers. *Chinese Mental Health Journal*, *16*, 527-544.

Doménech, F. (2006). Stressors, self-efficacy, coping resources and burnout among secondary school teachers in Spain. *Educational Psychology*, *26*, 519-539.

Dunn, J.C., Whelton, W.J., & Sharpe, D. (2006). Maladaptative perfectionism, hassles, coping and psychological distress in university professors. *Journal of Consulting Psychology, 53*, 511-523.

Durán, M.A., Extremera, N., & Rey, L. (2001). El síndrome de burnout en el ámbito educativo: una aproximación diferencial. *Apuntes de Psicología*, *19*, 251-262.

Fang, W., & Yan, X. (2004). Job burnout among elementary and high school teachers: Characteristics and relationship with social support. *Acta Psychologica Sinica*, *36*, 568-574.

Farber, B.A. (1991). *Crisis in education. Stress and burnout in the American teacher*. California: Jossey-Bass.

Friesen, D., Prokop, C.M., & Sarros, J.C. (1988). Why teachers burn out. *Educational Research Quarterly*, *12*(3), 9-19.

Gil-Monte, P., & Peiró, J.M. (1997). *Desgaste psíquico en el trabajo: el síndrome de quemarse*. Madrid: Síntesis.

Gmelch, W.H. (1993): *Coping with faculty stress*. Newbury Park: SAGE.

Grau, R., Salanova, M., & Peiró, J.M. (2000). Efectos moduladores de la autoeficacia en el estrés laboral. *Apuntes de Psicología*, *18*, 57-75.

Greenglass, E.R., Burke, R.J., & Konarski, R. (1997). The impact of social support on the development of burnout in teachers: Examination of a model. *Work & Stress*, *11*, 267-278.

Guerrero, E., & Vicente, F. (2001). *Síndrome de «burnout» o desgaste profesional y afrontamiento del estrés en el profesorado*. Cáceres: Universidad de Extremadura.

Hakanen, J.J., Bakker, A.B., & Schaufeli, W.B. (2006). Burnout and work engagement among teachers. *Journal of School Psychology*, *43*, 495-513.

Hammen, C., & Mayol, A. (1982). Depression and cognitive characteristics of stressful life-events types. *Journal of Abnormal Psychology*, *91*, 165-174.

Hardiness Institute (1985). *Personal Views Survey*. Arlington Heights, IL: Author.

Hogan, J.M., Carlson, J.G., & Dua, J. (2002). Stressors and stress reactions among university personnel. *International Journal of Stress Management*, *9,* 289-310.

Holm, T.E., Holroyd, K.A., Hursey, K.E., & Penzien, D.B. (1986). The role of stress in recurrent tension headache. *Headache*, *26*, 160-194.

Jackson, S.E., Schwab, R.L., & Schuler, R.S. (1986). Toward an understanding of the burnout phenomenon. *Journal of Applied Psychology*, *71*, 630-640.

Jamal, M., & Baba, V.V. (2001). Type-A behavior, job performance and well-being in college teachers. *International Journal of Stress Management*, *8*, 231-240.

Kahn, J.H., Schneider, K.T., Jenkins, T.M., & Moyle, L.L. (2006). Emotional social support and job burnout among high-school teachers: Is it all due to dispositional affectivity? *Journal of Organizational Behaviour*, *27*, 793-807.

Kokkinos, C.M. (2007). Job stressors, personality and burnout in primary school teachers. *British Journal of Educational Psychology*, 77, 229-243.

Lackritz, J.R. (2004). Exploring burnout among university faculty: Incidence, performance and demographic issues. *Teaching & Teacher Education*, 20, 713-729.

Lau, P.S.Y., Yuen, M.T., & Chan, R.M.C. (2005). Do demographic characteristics make a difference to burnout among Hong Kong secondary school teachers? *Social Indicators Research*, 71, 491-516.

Lee, R.T., & Ashforth, B.E. (1996). A meta-analytic examination of the correlates of the three dimensions of job burnout. *Journal of Applied Psychology*, 81, 123-133.

Maddi, S.R., & Harvey, R.H. (2006). Hardiness considered across cultures. In P.T.P. Wong & L.C.J. Wong (Eds.): *Handbook of multicultural perspectives on stress and coping* (pp. 409-426). New York: Springer.

Maekikangas, A., & Kinnunen, U. (2003). Psychosocial work stressors and well-being: Self-esteem and optimism as moderators in a one-year longitudinal sample. *Personality and Individual Differences*, 35, 537-557.

Martínez, A., Reyes del Paso, G.A., García, A., & González, M.I. (2006). Optimismo/pesimismo disposicional y estrategias de afrontamiento. *Psicothema*, 16, 66-72.

Maslach, C., & Jackson, S.E. (1986). *MBI: Maslach Burnout Inventory; Manual Research Edition* (2nd ed.). Palo Alto, CA: Consulting Psychological Press.

Maslach, C., & Leiter, M.P. (1999): Teacher burnout: A research agenda. In R. Vanderberghe & A.M. Huberman (Eds.): *Understanding and preventing teacher burnout* (pp. 295-303). Cambridge: Cambridge University Press.

Maslach, C., Schaufeli, W.B., & Leiter, M.P. (2001). Job burnout. *Annual Review Psychology, 52*, 397-422.

Misra, N., & Sahu, K. (1993). Burnout and role stress among teachers. *Indian Journal of Behaviour*, 17, 19-26.

Miró, E., Solanes, A., Martínez, P., Sánchez, A.I., & Rodríguez, J. (2007). Relación entre el burnout o «síndrome de quemarse por el trabajo», la tensión laboral y las características del sueño. *Psicothema*, 19, 388-394.

Moreno, B., Arcenillas, M.V., Morante, M.E., & Garrosa, E. (2005). Burnout en profesores de Primaria: personalidad y sintomatología. *Revista de Psicología del Trabajo y de las Organizaciones*, 21, 71-87.

Moreno, B., Garrosa, E., & González, J.L. (2000). Personalidad resistente, burnout y salud. *Escritos de Psicología*, 4, 64-77.

Moreno, B., Morett, N.I., Rodríguez, A., & Morante, M.E. (2006). La personalidad resistente como variable moduladora del síndrome de burnout en una muestra de bomberos. *Psicothema, 18,* 413-418.

Nagy, S., & Davis, L.G. (1985). Burnout: A comparative analysis of personality and environmental variables. *Psychological Reports*, 57, 1319-1326.

Paulik, K. (2001). Hardiness, optimism, self-confidence and occupational stress among university teachers. *Studia Psychologica*, 43, 91-100.

Otero-López, J.M., Santiago, M.J., Castro, C., Pardiñas, M.C., Mirón, L., y Ponte, D. (2006). *Estrés laboral y burnout en profesores de Enseñanza Secundaria.* Santiago de Compostela: Servicio de Publicaciones e Intercambio Científico.

Otero-López, J.M., Santiago, M.J., Godás, A., Castro, C., Villardefrancos, E., & Ponte, D. (2008). An integrative approach to burnout in secondary school teachers: Examining the role of student disruptive behaviour and disciplinary issues. *International Journal of Psychology and Psychological Therapy, 8*(2), 259-270.

Pierce, C.M., & Molloy, G.N. (1990). Psychological and biographical differences between secondary teachers experiencing high and low levels of burnout. *British Journal of Educational Psychology*, 60, 37-51.

Riolli, L., & Savicki, V. (2003). Optimism and coping as moderators of the relation between work resources and burnout in information service workers. *International Journal of Stress Management*, 10, 235-252.

Sahu, K., & Misra, N. (1995). Life stress and burnout in female college teachers. *Journal of the Indian Academy of Applied Psychology*, 21, 109-113.

Schaufeli, W.B., & Buunk, B.P. (2002). Burnout and overview of 25 years of research and theorizing. En M. Schabracq, J.A.K. Winnubst & C.L. Cooper (Eds.): *The handbook of work and health psychology* (2ª ed.; pp. 282-424). Chichester: Wiley.

Scheier, M.F., Carver, C.S., & Bridges, M.W. (1994). Distinguishing optimism from neuroticism: A reevaluation of the Life Orientation Test. *Journal of Personality and Social Psychology*, 67, 1063-1078.

Schwab, R.L., Jackson, S.E., & Schuler, R.S. (1986). Educator burnout: Sources and consequences. *Educational Research Quarterly*, 10(3), 14-29.

Sharpley, C.F., Dua, J.K., Reynolds, R., & Acosta, A. (1995). The direct and relative efficacy of cognitive hardiness, type A behaviour pattern, coping behaviour and social support as predictors of stress and illhealth. *Scandinavian Journal of Behaviour Therapy*, 24, 15-29.

Spurgeon, A., Jackson, C.A., & Beach, J.R. (2001). The Life Events Inventory: Re-scaling based on an occupational sample. *Occupational Medicine, 51*, 287-293.

Turner, R.J., Frankel, B.G., & Levin, D.M. (1983). Social support: Conceptualization, measurement and implications for mental health. *Research in Community and Community Health*, 3, 67-111.