

Burnout Among Occupational Physicians: A Threat to Occupational Health Systems?—A Nationwide Cross-sectional Survey

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Objectives: Burnout among occupational health physicians in France was measured in a nationwide cross-sectional survey. The relationships between each dimension of burnout (emotional exhaustion, depersonalization, and feelings of low personal accomplishment) and stress level, identity threat, and job characteristics were analysed.

Methods: E-mails were sent out to all occupational physicians working in France by the French Ministry of Labour, inviting them to fill out an online questionnaire. This questionnaire included the Maslach Burnout Inventory, the Perceived Stress Scale, and the Primary Appraisal of Identity scale. Job characteristics were measured with survey-specific questions.

Results: Of the 5010 occupational physicians who were potentially contacted, 1670 (33%) completed the online questionnaire. The estimated prevalence of burnout was 11.8%, twice as high as in a sample of French general practitioners (5%). The main characteristic of the burnout pattern was feelings of very low personal accomplishment (63.9%). Job characteristics were only weakly correlated with burnout, but stress level and identity threat were correlated with all three dimensions of burnout. The perceived stress was the main risk factor for emotional exhaustion and identity threat for feelings of low personal accomplishment.

Conclusions: The health status of occupational physicians is important for both the individual physicians and for the occupational health system. Occupational physicians are unwell, and we probably need to change the way we currently cope with burnout. This is not only a stress-induced syndrome, resulting from high workloads, but a low self-esteem-induced syndrome, too.

Keywords: burnout; occupational physician; psychology; stress

Work-related stress has been extensively studied in European workers. According to the European Agency for Safety and Health at Work, 'Work-related stress is one of the biggest health and safety challenges that we face in Europe. Nearly one in four workers is affected by it, and studies suggest that between 50 and 60% of all lost working

days are related to it. This represents a huge cost in terms of both human distress and impaired economic performance' (Brun and Malgorzata, 2007). A specific syndrome is described among healthcare workers, namely burnout syndrome, an entity that has gained increasing recognition over the years. Burnout is an occupational, psychological, stress-induced syndrome defined by three dimensions: emotional exhaustion (EE), depersonalization (DP) and feelings of low personal accomplishment (PA). Burnout has a detrimental

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effect on physicians' quality of life and is associated with an increased risk of substance abuse, depression, poorer quality of care, job withdrawal, absenteeism, suicidal ideation, and even death (Wallace et al., 2009).

According to Wallace, unwell physicians negatively affect healthcare systems. As a corollary, physician wellness is a major indicator of health-system quality (Wallace et al., 2009).

Most of the research on physicians has focused on junior staff, GPs, oncologists, and surgeons. Some factors are frequently described, such as emotional load, dealing with patient suffering, workload, feeling overloaded, work-home interference, high levels of stress, therapeutic responsibilities, and medical errors (Blanchard et al., 2010; Cathébras et al., 2004; Ramirez et al., 1996; Visser et al., 2003).

Remarkably, no study has yet focused on occupational physicians (OPs). And yet this group represents specific working conditions. OPs are probably less exposed to long working hours, dying patients, and therapeutic responsibilities than most other physicians, but this medical speciality has some specific strains of its own. One of these is undoubtedly the often-tense relationship with corporate executives. Repeated conflicts (and poor feedback on preventive actions) may lead to stress and burnout, particularly because of what they mean for the OPs' identity (personal and/or occupational), which is regularly called into question, devalued, and scorned (i.e. threatened). Poor occupational self-esteem, feelings of inadequacy, and devaluation of one's own work in general are all symptoms of DP (Schaufeli and Buunk, 2004). In a meta-analysis, Alarcon, Eschleman, and Bowling showed that core self-evaluations (self-esteem, self-efficacy, emotional stability, and locus of control) explained between 17 and 30% of the variance of the three burnout dimensions (30% for PA) (Alarcon et al., 2009). Furthermore, Maslach has suggested that DP (which implies derogating and blaming recipients) serves to protect or enhance the self (Maslach, 1982).

First, a survey was conducted to measure the prevalence of burnout and stress among OPs.

Second, in this population of physicians who are particularly committed to their profession and yet regularly see their work and role devalued, we explored the relationship between burnout and the way OPs appraise their work environment in terms of threat to their personal and/or occupational identity.

METHODS

Study design and participants

This was a nationwide cross-sectional survey. E-mails were sent out to all registered OPs working in France by the French Ministry of Labour, according the following process: the central administration of the Medical Inspection of Labour in Paris (one of the departments of the French Ministry of Labour) contacted the peripheral administrations in France (the Regional Medical Inspections) who invited all French OP to participate this national survey by the way of their mailing list. Only the Regional Inspector Doctors have a mailing list of the OPs. The message explained clearly the aims of this study, the rights of participant to refuse or withdraw at any time. Data collection was carried out with a secure hosting (our own secure server and the survey software LimeSurvey, <http://www.limesurvey.org/>), which ensured data protection and the all rights of participants (confidentiality, anonymity, withdrawal, . . .). Only the three authors of this survey could access to the database. Data collection was carried out with an online anonymous questionnaire, which could be completed at the workplace or at home, and the OP could withdraw at any time during the process. This process allowed a completely anonymous study.

The physicians received a reminder 1 month later, but it was not technically possible to check for duplicate responses with the data-collecting process. However, given the length of the questionnaire (~30 min), it was unlikely that numerous OP duplicated their responses. Moreover, given the size of the sample, this is unlikely to have had a great impact on our results. The period of recruitment was between July and October 2011. The responses were kept anonymous, and no geographical data were requested. Given the study design, approval by a medical ethics review board was not required under French research ethics legislation. The questionnaire was divided into four sections: demographic data, working conditions, threat to identity, and health outcomes (burnout and perceived stress).

The questionnaire

Demographic data and job characteristics. A French Occupational Physician may be employed by just one large company in an in-house health service, or the OP may work for

many little companies (up to several hundred) as an employee of an independent health service provider. In any case, an OP cannot be self-employed in France. Each OP has to follow-up the workers of the companies the OP works with, whether a big one or numerous little or medium-sized ones. The follow-up consists of regular medical examinations, analysis of work conditions, etc. Each OP has to follow up ~3000 workers. It can be fewer in some in-house health service, but there is a serious medical demographic crisis in France and numerous independent health service providers need more OPs. Consequently, some OPs may have to follow-up 4000 or 5000 workers.

The following information was collected: sex, age, and years of practice.

Two dimensions of working conditions were explored: material or objective working conditions and interpersonal relations. First, seven items were specifically designed to evaluate material working conditions, such as the amount of time an assistant was present, the number of hygienists, or occupational nurses, the size of the occupational health service, or the number of workers followed by the OP. One question asked whether the OP worked for an in-house health service or for an independent health service provider. Second, interpersonal relations were assessed with the Quality of Interpersonal Relations Scale (Senecal et al., 1992). Only the occupational interpersonal relation subscale (four items, rated on a four-point scale) was used in this study.

Threat to identity. The two dimensions of threat to identity (threat to personal identity, TPI, and threat to occupational identity, TOI) were assessed with the Primary Appraisal of Identity scale (Berjot et al., 2012). TPI expresses the notion that the self can be called into question, threatened (in its integrity and positivity) or denied (e.g. 'I had the feeling that people thought I was a nobody'). TOI expresses a threat to the positivity and distinctiveness of an individual's identity.

Psychological outcomes (burnout and perceived stress) and job satisfaction

Perceived stress. Perceived stress was assessed on Cohen's Perceived Stress Scale (PSS), a 14-item questionnaire (Lesage et al., 2012). The PSS is a one-dimensional scale that measures perceived stress by asking respondents to report whether their lives seem unpredictable, uncontrollable or overloaded (Cohen et al., 1983). Based on

Lazarus' transactional model of stress, it assesses cognitively mediated emotional responses to objective events (e.g. 'In the past month, how often did you feel unable to control the important things in your life?'), rather than the objective events themselves, as a checklist of stressor events would (e.g. divorce, redundancy) (Lazarus and Folkman, 1984).

Burnout. Burnout was assessed using the Maslach Burnout Inventory (MBI), a 22-item questionnaire (Maslach et al., 2001). The MBI assesses all three dimensions of burnout: EE (feeling emotionally overextended by work: nine items), DP (an unfeeling and impersonal response to people: five items), and PA (feelings of incompetence and lack of achievement at work: eight items), rated on a seven-point Likert-like scale, ranging from 'never' to 'every day'. The total score for each dimension was categorized as low, average, or high, in accordance with Maslach's cut-off points, derived from a sample of 1104 US physicians (Christina Maslach and Jackson, 1981). These cut-offs were determined using the lower, middle, and upper thirds of the normative distribution of each score from this sample. We used a validated French translation of the MBI (Dion and Tessier, 1994).

Statistical analysis

Analyses of variance were used to compare the continuous variables. The health outcome measures (stress and the three dimensions of burnout) were analyzed as continuous dependent variables and categorical variables. Low and medium burnout levels were combined to form dichotomous dependent variables. The criteria we used for burnout were high EE, high DP, and low PA.

The relationship between job characteristics, threat perception, burnout, and perceived stress scores was assessed using Spearman's rank correlation coefficient (for continuous variables). Chi-square tests were used for a univariate analysis of the relationships between the dichotomous variables.

The stress variable was analysed both as a health outcome and as a risk factor for burnout. The relationships between the potential risk factors for burnout (stress and identity threat) and the outcome variables (three dimensions of burnout: EE, DP, and PA) were analysed using a multivariate model. Stress scores and identity threat scores were categorized as low, average, and high, using the lower, middle, and upper thirds, to provide odds

ratios (ORs). These ORs were adjusted for age, sex, job satisfaction, interpersonal relations at work, and the number of workers followed, using logistic regression models. All the analyses were carried out with R software and epicalc package (available from the Comprehensive R Archive Network website).

RESULTS

Population characteristics and response rate

A total of 1670 responses were collected, corresponding to a response rate of 33%. Only the 1440 questionnaires that had been completed were analysed. Women made up 71% of the respondents, which is consistent with data from the French National Council of Medical Doctors, showing that 71% of OPs in France are women. However, respondents' mean age was 52.6 years, and the over-60 age group may, therefore, have been under-represented in our study (Fig. 1). In all, 77% of respondents worked for an independent health service provider, and 23% for an in-house service.

Job characteristics, threat to identity, and psychological outcomes

Among the job characteristic variables, only number of followed-up workers and interpersonal relations were weakly but significantly correlated with job satisfaction, threat to identity, and

psychological outcomes. All the other objective job characteristics were poorly correlated ($\rho < 0.07$) with these variables (Table 1).

Stress was positively correlated with TOI and TPI (0.38 and 0.53) and negatively correlated with job satisfaction (-0.45) and interpersonal relations (-0.23).

Burnout

The prevalence (95% confidence interval) of high EE, high DP, and low PA was 34.3% (31.2, 37.4), 20.1% (17.5, 22.6), and 63.9% (60.8, 67.0), respectively. The overall prevalence of burnout syndrome was 11.8% (9.6, 14.0) (Table 2).

All three dimensions of burnout were correlated with stress and threat to identity (Table 1).

These relationships between the three dimensions of burnout and their potential risk factors (stress and identity threat) were included in logistic regression models.

Multivariate analysis

Stress was the main factor for high EE (OR: 27.21). Concerning DP, both high stress levels and high TPI were risk factors of similar importance (OR = 3.62 and 3.57). TOI was significantly, but more weakly, correlated with DP (OR = 1.92). However, TPI was the main factor for low PA (OR = 3.19 versus 1.93 for high stress level) (Table 3).

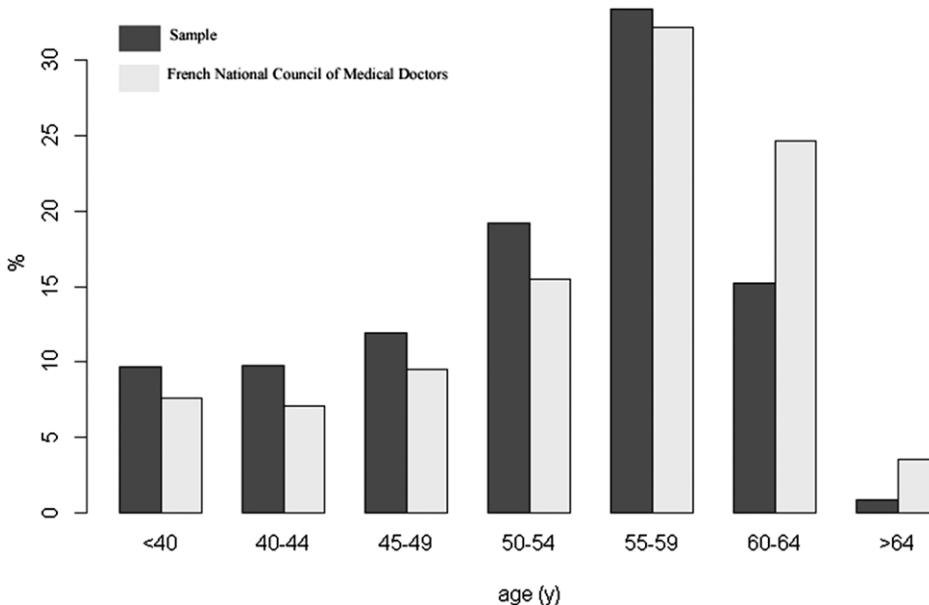


Fig. 1. Distribution of age groups in our sample and according to French National Council of Medical Doctors' data.

Table 1. Univariate Spearman correlations (rho) between job satisfaction, threat to identity and psychological outcomes.

	Stress	EE	DP	AP	TOI	TPI	Job satisfaction
Stress	1	0.77****	0.36*	-0.38****			
TOI	0.38****	0.43****	0.31****	-0.23****	1		
TPI	0.53****	0.54****	0.36****	-0.35****	0.68****	1	
Job satisfaction	-0.45****	-0.51****	-0.21****	0.28****	-0.31****	-0.27****	1
Interpersonal relations	-0.23****	-0.25****	-0.11****	0.13****	0.20****	-0.16****	0.24****
No. workers	0.09***	0.12****	0.11****	-0.13****	0.07***	0.10*	-0.22****

* $P < 0.05$, ** $P < 0.01$, *** $P < 0.001$, **** $P < 0.0001$.

Table 2. Stress and burnout characteristics.

	Overall (n = 1440)
Stress [0–56]	26.19
High EE % [95% confidence interval]	34.3 [31.2;37.4]
High DP % [95% confidence interval]	20.1 [17.5;22.6]
Low PA % [95% confidence interval]	63.9 [60.8;67.0]
Burnout % [95% confidence interval]	11.8 [9.6;14.0]

Table 3. Multivariate analysis between the three dimensions of burnout and its risk factors: stress and threat to identity.

Risk factors		High emotional exhaustion (OR ^a)	High depersonalization (OR ^a)	Feelings of low personal accomplishment (OR ^a)
Stress	low	1.00	1.00	1.00
	medium	6.06***	1.74*	1.79***
	high	27.21***	3.62***	1.93***
TPI	low	1.00	1.00	1.00
	medium	1.93**	2.49**	1.74***
	high	2.95***	3.57***	3.19***
TOI	low	1.00	1.00	1.00
	medium	1.12 (NS)	1.75*	1.16 (NS)
	high	1.70*	1.92*	0.84 (NS)

* $P < 0.05$, ** $P < 0.01$, *** $P < 0.001$, **** $P < 0.0001$; NS = non-significant.

^aOR adjusted for age, sex, job satisfaction, interpersonal relationships, and number of workers followed.

DISCUSSION

This is the first study to have examined markers of OPs' mental health. It consisted of an extensive, nationwide survey. The primary weakness of this study is the low response rate (around one-third). Such a response rate may induce a selection bias. It is not possible to determine the influence of this bias: neither its direction nor its importance. The response rate (33%) is an underestimate. The total number of OPs was the one published by the French National Council of Medical Doctors, but the number of OPs really contacted was probably lower. Some e-mail addresses may be invalid, and some may not use a computer.

OPs >60 years were under-represented in our sample. There are several possible explanations

for this. First, OPs who had recently retired had not yet been removed from the French National Council of Medical Doctors database. Second, computer use may be less frequent among OPs >60 years. Third and last, OPs nearing retirement or the many aged over 60 years who are part-retired and working only a few hours a week may have felt less concerned by the survey.

The only existing demographic data are the number of registered OPs, the age groups, and the genders. It was not possible to analyse the consistency of job characteristics. The ratio of OPs working for an independent health service provider to in-house service is unknown. Consequently, it is hard to assess how representative is our sample. Nevertheless, except for the over-60 age group, our sample seems consistent with available data

from the French National Council of Medical Doctors (age distribution and gender).

In conclusion, the low response rate may induce a selection bias, so our findings need to be interpreted with caution. However, several arguments plead for the fact that our sample is likely to be a satisfactory reflection of French OPs: (i) the estimate of one-third response rate is probably an underestimate; (ii) the sample is large (the questionnaires were sent to the whole population of French OPs, not to a sample of just a few regions); (iii) the gender rate and the age distribution in our sample are consistent with the national data. This gave the survey-added legitimacy, despite the relatively low response rate. Few studies have included such a large sample of medical doctors practising the same speciality. Our findings can therefore be regarded as a valid assessment of French OPs' mental health.

This study focused on job satisfaction, threat to identity (occupational and personal), and mental health. There was only a limited assessment of job characteristics, as we wished to focus on psychological perceptions and outcomes, rather than on an extended analysis of working conditions. Job satisfaction was not correlated with objective job characteristics. Visser found that job characteristics contributed little to either stress or satisfaction (Visser et al., 2003). One of the most relevant job characteristics in our study seemed to be the number of workers followed. We can hypothesize that increased numbers of workers to follow prevent OPs from performing all their tasks properly, thus inducing a feeling of unfinished work.

The estimated prevalence of burnout (11.8%) and the high rate of people at high risk of low PA (63.9%) were higher than in most of the studies that have investigated other specialist groups. However, authors do not always use the same criteria to assess the prevalence of burnout. For example, Shanafelt considered a high score on the DP or EE scales to be indicative of burnout syndrome and consequently reported a very high prevalence of burnout (Shanafelt et al., 2002). Conversely, a French study of 300 GPs, using the same criteria as us, put the prevalence of burnout at 5% (Cathébras et al., 2004). Going on the results for this GP sample, burnout syndrome would appear to be more frequent among OPs (OR = 2.45, $P < 0.001$).

When we looked more closely at the three dimensions of burnout, we were rather surprised by the low PA rate (66.9%). Ramirez et al. (1996) found a similarly high rate (49%) of low PA rate

among radiologists, associated with low job satisfaction. When they examined the differences between medical specialities, the authors observed that radiologists had the lowest scores on stress (feeling of being overloaded and its effect on home life, having managerial responsibilities, and dealing with patients' suffering), the feeling of being poorly managed and resourced, and job satisfaction. The burnout pattern (EE, DP, and PA) of the OPs in our study was very similar to that of the radiologists: 34.3, 20.1, and 63.9% versus 33, 21 and 49%. This pattern was characterized by weak DP and very low PA. Neither OPs nor radiologists benefit from positive feedback from patients, or, for that matter, from their corporate managers. They have to deal with inappropriate requests (from corporations for the OPs) and ongoing expectations of immediate responses.

Like Ramirez, we did not find stress to be the main factor for low PA. Instead, TPI seemed to be a greater risk factor for low PA.

OPs are frequently undervalued in society and among other specialists, and often have a tense relationship with corporate management and their own practice management. We believe that these characteristics may be detrimental to their identity, and consequently to their self-esteem. Threat to identity, and to self-esteem, is certainly the key to burnout syndrome in some medical specialities. Low PA and threat to identity may also be found in other non-therapeutic medical groups, for example in biology, or public health medicine.

If we take physicians' wellness as an indicator of health-system quality, the occupational health system must be facing a very real threat, at least in France (Wallace et al., 2009).

The place and function of OPs may differ from one European country to another, even if occupational health systems are striving for ever greater convergence. OP wellness, therefore, needs to be assessed in each separate country. If this is done, individual physicians will benefit, the organizations employing those physicians will benefit, and so too will the occupational health systems and the workers.

It is difficult to address the factors for burnout, such as TPI, because they are not linked to material or organizational working conditions. Even so, we probably need to change the way we currently cope with burnout. This is not only a stress-induced syndrome but a low self-esteem-induced syndrome, too. It is imperative to acknowledge the role of OPs in the occupational health system, value their skills and actions, and strengthen

the feedback they receive. OPs' tasks have to reconcile health policies with their own identity as physicians.

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