

## ORIGINAL RESEARCH

## Physician Wellness

# Determinants of emergency physician wellness in Belgium

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## Abstract

**Objectives:** This cross-sectional study examines first whether emergency physicians differ from a comparison group of surgeons, more specifically general surgeons and orthopedic surgeons, in terms of job and organizational characteristics and second to what extent these characteristics are determinants of professional well-being outcomes in emergency physicians.

**Methods:** Belgian emergency physicians (n = 346) were invited to participate in this study. Forty-three percent of the eligible participants completed a questionnaire. The survey instrument contained 48 questions on determinants (personal characteristics, job conditions [Job Demand Control Support], organizational and environmental work conditions) as well as 39 questions on outcomes (job satisfaction, turnover intention, subjective fatigue, psychological distress, work-home interference, work engagement) by means of the Leiden Quality of Work Questionnaire for Medical Doctors, the Checklist Individual Strength, the Brief Symptom Inventory, and the Utrecht Work Engagement Scale. Hierarchical multiple regression analyses were used to examine the association between the determinants and each of the outcomes.

**Results:** Emergency physicians reported higher job demands, lower job control, and less adequate work conditions compared with the group of surgeons. High job demands increased turnover intention, subjective fatigue, psychological distress, work-home interference in emergency physicians, but lack of job control, lack of social support from the supervisor, and inadequate communication also contributed in an unfavorable way to some of these outcomes.

**Conclusion:** Emergency medicine departments must reduce the constant exposure to high job demands by allowing emergency physicians to have enough time for both physical and mental recovery. Work motivation and work conditions might be improved by increasing job control over job demands by giving emergency physicians more decision latitude and autonomy, improving good communication and teamwork and adequate social support from the supervisor and providing good material resources. These interventions can improve professional well-being outcomes in emergency physicians.

## KEYWORDS

emergency physicians, job satisfaction, occupational stress, psychological distress, social support, turnover intention, subjective fatigue, wellness, work engagement, work home interference

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## 1 | INTRODUCTION

Emergency physicians report high work pressure, long working shifts, increasing patient volumes and acuity of problems, staff shortages, and often a chaotic work environment characterized by unpredictability.<sup>1,2</sup> Recent reviews of work stress in emergency physicians show that higher levels of stress (in excess of 60%) are reported compared to physicians in general (38%), which can be attributed to the stressful work conditions but also to high psychological demands, lack of job control, and poor social support, despite a relatively high job satisfaction.<sup>1,3,4</sup> Johnston et al stated that autonomy and teamwork might buffer these adverse well-being-health consequences.

West et al mentioned that causes of burnout are mainly embedded within healthcare systems and organizations. They include excessive workloads, inefficient work processes, office burdens, work-home conflicts, lack of input or control for physicians with respect to issues affecting their work lives, organizational support structures, and management philosophy.<sup>5</sup> West et al also stated that an intervention for physicians based on a facilitated small-group curriculum improves meaning and work engagement and a reduced depersonalization, with persistent results already after 12 months.<sup>6</sup> In conclusion, previous research comes to the conclusion that this research area is deemed necessary because of the ongoing need to identify job-related factors responsible for adverse stress consequences and burnout in order to improve adequate interventions. The present study is based upon the Job Demand Control Support (JDCS) model.<sup>7-9</sup> Although the JDCS model explains substantial parts of the variance in occupational stress and a wide range of professional well-being consequences, the model does not fully address the environmental or organizational work context.<sup>10</sup> Therefore, an extended JDCS model, including environmental and organizational hazards, was used. We also included professional well-being consequences including psychological strain (subjective fatigue and stress: anxiety and depression) and other important job-related outcomes in emergency medicine personnel such as job satisfaction, work engagement, and turnover intention.<sup>2,11</sup>

To our knowledge, this is the first study on the well-being consequences in emergency physicians that is based on such an extended model, assessing both work conditions and environmental and organizational work characteristics as determinants of relevant professional well-being outcomes.<sup>7-9</sup>

## 2 | AIMS

First, we investigated whether emergency physicians differ in the aforementioned determinants and outcomes from a group of other medical specialists (in this study surgeons).

The reason we used surgeons as comparison group in this study was because of their comparable working conditions, ie, stressful work environment, but it is clear that emergency physicians are working in even more stressful situations compared to surgeons, as

### The Bottom Line

This cross-sectional survey of 346 emergency physicians in Belgium found emergency physicians reported higher job demands, lower job control, and less adequate work conditions compared to the other high-stress specialties, including a sample of surgeons.

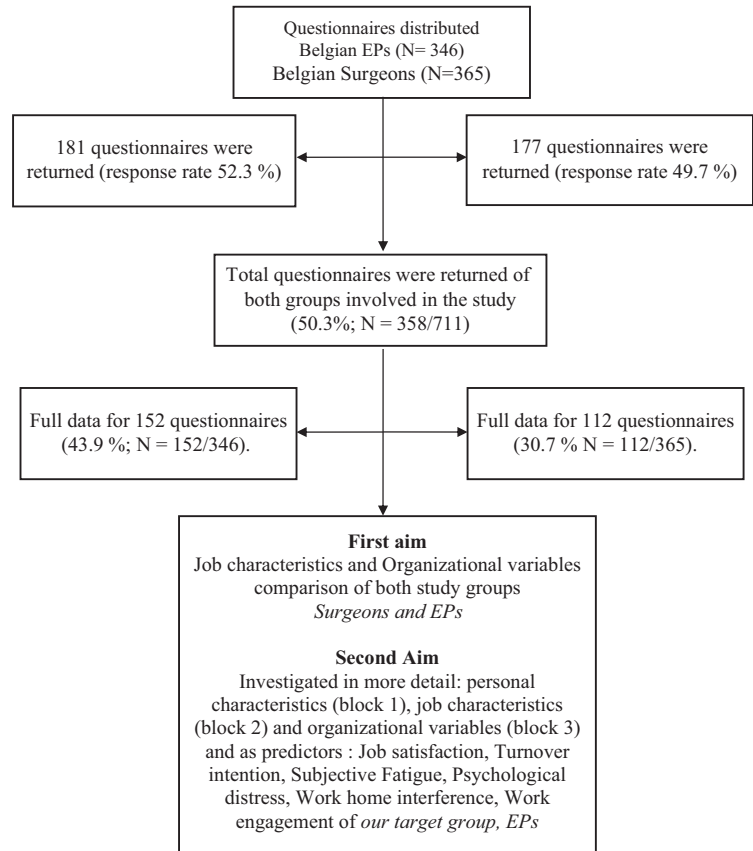
they have to deal with an even wider variety of pathologies than surgeons.

Second, to elaborate our target group, emergency physicians, we investigated in more detail to what extent do (1) personal characteristics (including sex, age, work schedule, and professional qualification), (2) job characteristics, and (3) environmental and organizational factors predict job satisfaction, turnover intention, and professional well-being in emergency physicians.

## 3 | METHODS

The study population consisted of Belgian emergency physicians (N = 346), who were recruited at 2 national emergency medicine conferences. Each conference participant got an invitational letter and an informed consent form. The invitational letter explained the study background and objectives. After signing the informed consent form, each respondent was given the option to complete the questionnaire online or via regular email (Supplemental Digital Content). Every attending emergency physician who agreed to participate to the study was sent the study questionnaire in the requested form so they could complete the questionnaire individually in their own time. The survey included questions about demographic and personal information; job characteristics; organizational factors and also job satisfaction, work engagement, turnover intention, perceived fatigue, and psychosomatic distress. One month after the initial invitation a reminder was sent. Questionnaires could be returned in a closed envelope or online protected by a secret personal code. Of the 346 questionnaires that were sent out, a total of 181 questionnaires were returned (response rate 52.3%). Total data were available for 152 questionnaires (43.9%; N = 152/346). The comparison reference group of Belgian surgeons (N = 365) was recruited in a similar way using the same questionnaire. Of the 356 questionnaires that were sent out, a total of 177 questionnaires were returned (response rate 49.7%). Full data were available for 112 questionnaires (response rate 30.7%; N = 112/365). Both of the populations worked in the same kind of hospitals. Specifically, they worked in a mixed group of teaching and non-teaching hospitals, both >400-bed hospital and <400-bed hospital and working along emergency physicians-colleagues to treat the patients who come through the emergency station to the hospital for solving acute problems.

**FIGURE 1** Flow diagram of strategy used to collect survey data and work out strategy for the study. EP, emergency physician



## 4 | MEASURES

### 4.1 | Independent variables

#### 4.1.1 | Sociodemographics and personal characteristics

Data were gathered on the sociodemographic status of each respondent, including age, sex, work regime (part or full time), marital status, children living at home, education, seniority, shift work, and task diversity (emergency station emergency physician, mobile urgency group emergency physician).

#### 4.1.2 | Job characteristics and environmental/organizational variables

In this study, the Leiden Quality of Work Questionnaire for physicians (LQWQ-MD)<sup>9</sup> was used. The LQWQ-MD consists of 14 subscales measuring job characteristics (work and time demands, physical demands, decision authority, skill discretion, social support from supervisor and colleagues), organizational and environmental characteristics (social harassment, personnel resources, material resources, work agreements, and internal communication) and 3 outcome variables, namely job satisfaction, turnover intention and work-home interference. This validated questionnaire was derived from the LQWQ.<sup>12</sup> All items are

formulated as statements that are rated on a 4-point Likert scale, ranging from “totally disagree” to “totally agree.” The subscales are described next.

#### 4.1.3 | Job demands

For the purpose of this study and in accordance with guidelines the LQWQ-MD,<sup>12</sup> the sum score for the subscales Work and Time Demands and Physical Demands was used to measure Job Demands ( $\alpha = 0.72$ ; 9 items).

#### 4.1.4 | Job control

For the purpose of this study and in accordance with guidelines the LQWQ-MD,<sup>12</sup> the sum score for the subscales Skill Discretion and Decision Authority was used as measure of Job Control ( $\alpha = 0.78$ ; 6 items).

#### 4.1.5 | Social support

Social support by the supervisor and colleagues was measured by means of two subscales of the validated LQWQ-MD.<sup>12</sup> Social support supervisor ( $\alpha = 0.91$ ; 4 items) measures perceived social support by the

supervisor. Social support colleagues ( $\alpha = 0.87$ ; 4 items) measures perceived instrumental and emotional support by colleagues.

#### 4.1.6 | Organizational and environmental variables

Social Harassment ( $\alpha = 0.91$ ; 4 items): work-related harassment. Personnel Resources ( $\alpha = 0.74$ ; 4 items): amount and quality of personnel on a particular ward or department. Material Resources ( $\alpha = 0.83$ ; 3 items): availability and quality of materials and instruments on a particular ward. Work agreements ( $\alpha = 0.85$ ; 4 items): quality and feasibility of work procedures. Internal communication ( $\alpha = 0.73$ ; 5 items): communication between departments, information provision.

### 4.2 | Outcome variables

The outcomes were operationalized in terms of job satisfaction, turnover intention, and professional well-being.

#### 4.2.1 | Job satisfaction

Job satisfaction was measured by means of the job satisfaction subscale ( $\alpha = 0.79$ ; 3 items) of the validated LQWQ-MD.<sup>12</sup>

#### 4.2.2 | Turnover intention

This outcome is measured by the turnover subscale ( $\alpha = 0.89$ ; 3 items) of the validated LQWQ-MD.<sup>10</sup>

#### 4.2.3 | Professional well-being factors

1. Perceived fatigue: Fatigue was measured by means of the validated Dutch version of the Checklist Individual Strength (CIS-20R).<sup>13,14</sup> This instrument assesses the presence of fatigue symptoms in the past 2 weeks. The main dimension is "subjective experience of fatigue" (perceived fatigue) ( $\alpha = 0.93$ ; 8 items). For the purpose of this study only this main dimension was used. Items are rated on a 7-point Likert scale ranging from "No, that's not correct" to "Yes, that's correct." The higher score is indicative of a higher level of fatigue.
2. Psychological distress: Psychological distress was assessed by means of the validated Dutch version of the Brief Symptom Inventory (BSI).<sup>15</sup> Only the subscales "anxiety" ( $\alpha = 0.87$ ; 6 items), "depression" ( $\alpha = 0.87$ ; 6 items), were used for this study. The BSI has been found to be a good and shorter alternative for the Symptom Checklist (SCL)-90R.<sup>14,15</sup> Items are rated on a 5-point Likert scale ranging from "not at all" to "very much." Higher scores are indicative of more problems in a specific dimension. The variable

"psychological distress" ( $\alpha = 0.93$ ; 12 items) is the sum score of the subscales anxiety and depression.

3. Work-home interference: The outcome work-home interference ( $\alpha = 0.84$ ; 4 items): interference between work and home activity is measured by a subscale of the LQWQ-MD.<sup>12</sup>
4. Work engagement: Work Engagement was assessed by means of the Utrecht Work Engagement Scale (UWES) ( $\alpha = 0.94$ ; 9 items). The UWES has been found to have adequate consistency, reliability, and validity.<sup>16</sup> The items of the UWES are grouped into 3 subscales: Vigor ( $\alpha = 0.90$ ; 3 items), Dedication ( $\alpha = 0.90$ ; 3 items), and Absorption ( $\alpha = 0.76$ ; 3 items). All items were scored on a 7-point rating scale, ranging from 0 (never) to 6 (daily). As a result of the high intercorrelations of the subscales, only the total score was used in the present study. High scores are indicative of work engagement.

### 5 | DATA ANALYSIS

The statistical software package for Windows SPSS 23.0 (IBM SPSS Chicago, IL, USA) was used to analyze the data. Descriptive statistics (means, standard deviations) were computed. Chi-square test and independent samples *t* test were used to compare the emergency physician sample with hospital specialists (surgeons). Pearson correlations were calculated between predictors and outcomes. Hierarchical regression analysis was performed to estimate the strength of the association between sociodemographic characteristics (block-1), job characteristics (JDCS dimensions) (block-2), and organizational and environmental characteristics (block-3) on the one hand and the outcome variables job satisfaction, turnover intention, and professional well-being on the other hand. *P* value of 0.05 or lower was considered to be statistically significant.

### 6 | ETHICAL APPROVAL AND CONSENT TO PARTICIPATE

Approval from the Ethical Committee of AZ St. Dimpna Geel (Belgium) for this study was attained and supported by the national association of emergency physicians (BeSEDiM = Belgian Society of Emergency and Disaster Medicine). Confidentiality was assured to all participants. An informed consent was signed by each respondent previous to data collection.

### 7 | RESULTS

First, in Table 1 the comparison between a reference group of surgeons and emergency physicians concerning the job and organizational characteristics is presented. Emergency physicians did not differ in terms of social support of their supervisor, social support of their colleagues, personnel, and material resources and internal communication compared to the reference group of surgeons. They reported,

**TABLE 1** Comparison of the LQWQ-MD predictors for the emergency physicians and the surgeons

	Emergency Physicians (N = 152) Mean (SD)	Surgeons (N = 112) Mean (SD)	Independent t test P
Job demands	2.64 (0.41)	2.42 (0.41)	$P < 0.001$
Job control	2.79 (0.59)	3.03 (0.51)	$P < 0.001$
Social support supervisor	2.75 (0.79)	2.71 (0.89)	n.s.
Social support colleagues	2.93 (0.62)	2.89 (0.78)	n.s.
<b>Organizational variables</b>			
Social harassment	2.13 (0.76)	1.83 (0.73)	$P < 0.001$
Personnel resources	2.49 (0.54)	2.53 (0.58)	n.s.
Material resources	2.82 (0.65)	2.87 (0.59)	n.s.
Work agreements	2.72 (0.63)	3.02 (0.74)	$P < 0.001$
Communication	2.57 (0.52)	2.65 (0.55)	n.s.

Sign. = significance; n.s. = not significant (Independent sample t test)

however, significantly higher job demands, a lower job control, more social harassment, and less adequate work agreements.

Second, as we see in the target group of the emergency physicians, we generally looked at the sociodemographics and personal characteristics of these persons. As for the emergency physician group, the majority of the 152 emergency physicians were male (62.3%). The mean age of the respondents was 44.39 years ( $SD = 9.22$ ). Approximately 86% were living with a partner and 69% had children living at home. Most of the emergency physicians had an emergency specialization degree (78%). The mean job experience (seniority) in emergency care was 15.44 years ( $SD = 9.40$ ). Over two-thirds of the emergency physicians (76.8%) worked full time (16 shifts of 12 h/d in a month) and 84.1% worked in varying shifts, including night shifts. Almost two thirds functioned in a non-university teaching hospital (73.5%). All of the respondents provided in-hospital emergency care, but a large number (82.2%) also participated as emergency physicians in emergency out-of-hospital facilities as a mobile urgency group (MUG) physician. In addition, 87.4% were members of an in-hospital resuscitation team.

The correlation matrix between the relevant predictors for the emergency physician sample is shown in Table 3. Correlation coefficients were all lower than 0.63 (social support supervisor/colleagues) indicating that there is no multicollinearity with one exception, the correlation coefficient between age and job seniority ( $r = 0.98$ ). Job seniority was therefore excluded from the hierarchical regression analyses. Significant correlations coefficients were identified between age, seniority, the dimensions of the (LQWQ-MD), the BSI sum score of psychological distress, the subjective fatigue dimension of the CIS20R, the total score of the UWES).

In order to examine the association between the determinants (personal characteristics, job conditions [JDCS], organizational and environmental work conditions) and each of the outcomes (job satisfaction,

turnover intention, subjective fatigue, psychological distress, work-home interference, work engagement) we performed linear regression analyses for all the relevant parameters for the emergency physicians group which are shown in Table 3.

1. With regard to *job satisfaction*, the regression model showed that job control had a strong significant positive association, while job demands and social support did not contribute significantly to job satisfaction. Communication was significant positive associated with job satisfaction. The final model explained 51% of the variance in job satisfaction.
2. Regarding *turnover intention*, age was negatively related to turnover intention. Both job demands and lower social support of the supervisor prove to be significantly associated with turnover intention. Internal communication was negatively associated with turnover intention. The final model explained 46% of the variance in turnover intention.
3.
  - a. With respect to the outcome variable *subjective fatigue*, male sex was negatively associated with subjective fatigue. Job demands had a strong positive association with subjective fatigue, whereas job control had a strong negative association with subjective fatigue. Communication was negatively associated with fatigue. The final model explained 40% of the variance in subjective fatigue.
  - b. With regard to *psychological distress*, male sex was negatively associated with psychological distress. Job demands were strongly associated with psychological distress. Good communication was negatively associated with psychological distress. The final model explained 33% of the variance in psychological distress.
  - c. With respect to *work-home interference*, job demands were significantly associated with it. Good communication predicted a lower work-home interference. The final model explained 26% of the variance in work-home interference.
  - d. With regard to *work engagement*, job control was strongly associated with work engagement. Good material resources contributed significantly to work engagement. The final model explained 27% of the variance in work engagement.

## 8 | DISCUSSION

The differences in the job and organizational characteristics between the surgeons and emergency physicians are presented. The emergency physicians did not differ in relationships of social support of their supervisor, social support of their colleagues, personnel, and material resources as well as internal communication compared with the surgeons. In this study, emergency physicians also reported more difficult work conditions, higher job demands, and less job control compared with a sample of general surgeons.<sup>17</sup> Moreover, as emergency physicians, job control is often restricted by having to decide which patient needs the most urgent care and by the medical risks involved.

**TABLE 2** Intercorrelations in emergency physicians (Pearson correlation coefficients) for age, seniority, the dimensions of the Leiden Quality of Work Questionnaire for emergency physicians (LQWQ-MD), the Brief Symptom Inventory (BSI) sum score of psychosomatic distress, the total score of the Checklist individual strength (CIS20R), and the total score of the Utrecht Work Engagement Scale (UWES)

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17
Age	1	-															
Seniority	2	0.96**	-														
LQWQ-MD job demands	3	-0.01	-0.01	-													
LQWQ-MD job control	4	0.03	0.04	-0.44**	-												
LQWQ-MD social support supervisor	5	-0.11	-0.10	-0.30**	0.52**	-											
LQWQ-MD social support colleagues	6	-0.02	-0.01	-0.36**	0.58**	0.62**	-										
LQWQ-MD social harassment	7	-0.14	-0.10	0.48**	-0.51**	-0.49**	-0.57**	-									
LQWQ-MD personal resources	8	-0.00	-0.01	-0.46**	0.48**	0.33**	0.44**	-0.40**	-								
LQWQ-MD material resources	9	0.03	0.02	-0.32**	0.43**	0.24**	0.42**	-0.32**	0.38**	-							
LQWQ-MD work agreements	10	0.09	0.09	-0.32**	0.53**	0.39**	0.48**	-0.44**	0.49**	0.47**	-						
LQWQ-MD communication	11	0.03	-0.01	-0.36**	0.48**	0.31**	0.39**	-0.35**	0.52**	0.40**	0.50**	-					
LQWQ-MD job satisfaction	12	-0.01	-0.03	-0.42**	0.63**	0.47**	0.55**	-0.47**	0.46**	0.44**	0.43**	0.57**	-				
LQWQ-MD turnover	13	-0.16	-0.14	0.47**	-0.58**	-0.48**	-0.49**	0.47**	-0.48**	-0.31**	-0.41**	-0.48**	-0.68**	-			
CIS20 perceived fatigue	14	-0.12	-0.13	0.55**	-0.44**	-0.15	-0.28**	0.32**	-0.29**	-0.33**	-0.28**	-0.43**	-0.54**	0.47**	-		
BSI Psychological distress	15	-0.17	-0.18	0.52**	-0.31**	-0.21**	-0.31**	0.38**	-0.25**	-0.25**	-0.32**	-0.37**	-0.39**	0.44**	0.71**	-	
LQWQ-MD Work home interference	16	0.01	0.02	0.42**	-0.30**	-0.12	-0.21**	0.17	-0.26**	-0.25**	-0.25**	-0.43**	-0.34**	0.37**	0.53**	0.45**	-
UWES work engagement	17	0.09	0.09	-0.37**	0.49**	0.26**	0.40**	-0.31**	0.38**	0.38**	0.26**	0.37**	0.65**	-0.49**	-0.62**	-0.48**	-0.33**

\*\*Correlation is significant at the 0.01 level (2-tailed).

\*Correlation is significant at the 0.05 level (2-tailed).



**TABLE 3** Summary of hierarchical regression analysis of emergency physicians: personal characteristics (block 1), job characteristics (block 2), and organizational variables (block 3) as predictors: job satisfaction, turnover intention, subjective fatigue, psychological distress, work-home interference, work engagement

	Job satisfaction			Turnover intention			Subjective fatigue			Psychological distress			Work-home interference			Work engagement		
	ΔR2	β	Sign	ΔR2	β	Sign	ΔR2	β	Sign	ΔR2	β	Sign	ΔR2	β	Sign	ΔR2	β	Sign
<b>Block 1: sociodemographic</b>																		
Age	0.00	-0.01		0.03	0.05**		0.08***	0.03		0.06	0.10		0.01		0.10			
Sex		-0.02		n.s.	-0.17		n.s.	-0.04		-0.10	n.s.		n.s.		0.06			
Work regime		0.01		n.s.	0.00		n.s.	-0.18		-0.17			n.s.		-0.11			-0.02
<b>Block 2: job characteristics</b>																		
	0.47***	-0.06		0.44***	0.35***		0.27***	0.19***		0.29***								
Job demands		0.30		n.s.	0.18		0.41	0.42		0.35					0.35			-0.13
Job control		0.10		***	-0.24		n.s.	-0.27		n.s.					-0.09			0.31
Social support supervisor		0.12		n.s.	-0.19		**	0.17	0.06	0.05	n.s.				0.11	n.s.		-0.04
Social support colleagues				n.s.	-0.08		n.s.	-0.03	n.s.	-0.10	n.s.				-0.06	n.s.		0.16
<b>Block 3: organizational</b>																		
<b>Factors</b>	0.07***	-0.07		0.03***	0.05**		0.04	0.09***		0.05*								0.05*
Social harassment		0.03		n.s.	0.02		n.s.	-0.01	n.s.	0.07	n.s.				-0.13	n.s.		0.05
Personnel resources		0.11		n.s.	-0.12		n.s.	0.13	n.s.	0.15	n.s.				0.11	n.s.		0.11
Material resources		-0.07		n.s.	0.04		n.s.	-0.07	n.s.	0.02	n.s.				-0.02	n.s.		0.16
Work agreements		0.29		n.s.	0.04		n.s.	0.06	n.s.	-0.08	n.s.				-0.04	n.s.		-0.18
Communication		0.54		***	-0.17		**	-0.27	***	-0.22	***				-0.34	***		0.11
R2		0.51		R2	0.50		R2	0.45	R2	0.39	R2				0.31	R2		0.35
Adj. R2				***	Adj. R2		**	Adj. R2	0.40	Adj. R2	0.33	Adj. R2	0.26	Adj. R2	0.26	Adj. R2	0.27	0.27
model		-0.01		model			model		model		model		model		model		model	

Abbreviations: ΔR2 change in R2 values from one model to another, R2 model R2 values in one model, Adj R2 model adjusted R2 values in one model, β beta resulting standardized regression coefficients, Sign significant, n.s not significant, \* Correlation is significant at the 0.05 level, \*\* Correlation is significant at the 0.01 level, \*\*\* Correlation is significant at the 0.001 level, the bold data are significant

Specific organizational factors such as social harassment and work agreements are also perceived as less adequate by emergency physicians in our study.<sup>18,19</sup> Although in the present study we observe a significant difference between our emergency physicians and surgeons sample in terms of sex, age, and job experience, emergency physicians reported to be younger with less job experience and more females.

In our study sample of emergency physicians, the association between personal characteristics and work conditions (job characteristics and organizational factors) on the one hand and professional well-being outcomes on the other hand was investigated. The models explained an important part of the variance in the outcome measures: job satisfaction (54%), turnover intention (50%), subjective fatigue (45%), psychological distress (39%), work-home interference (31%), and work engagement (35%). In line with previous studies, female emergency physicians reported a higher turnover intention, more fatigue, and more psychological distress.<sup>21</sup> Personal characteristics were not predictive for the outcomes job satisfaction, work-home interference, and work engagement (1%) but explained a statistically significant part of the variance in psychosomatic distress (8%), subjective fatigue (5%), and turnover intention (3%).<sup>22</sup> The fact that job demands were not associated with job satisfaction and work engagement might be because job demands can also be experienced as a challenge.<sup>20</sup> Job control explained substantial parts of the variance in job satisfaction, turnover intention, and work engagement. Lack of job control is also described in earlier studies as a major determinant of high levels of occupational stress in physicians.<sup>23</sup>

Lack of control is supposed to be inherent in emergency medicine, as emergency physicians are constantly confronted with acute health problems that involve immediate decisions about life and death. Lack of social support from the supervisor appeared to be an important determinant of turnover intention. Social support from colleagues did not contribute to any of the outcomes. Previous studies also reported that lack of social support, especially by the supervisor, as a strong predictor of distress in emergency physicians.<sup>18,24</sup> These findings point at the importance of competent, supportive and connecting leadership in an emergency department.<sup>23</sup> Job-oriented and personnel-oriented leadership also proved to be positively associated with work satisfaction in emergency department nurses.<sup>25,26</sup>

Furthermore, our study extends the findings in another study that investigated associations between work/job characteristics such as social capital (the extent of shared values and perceived mutual trust within teams and organizations), decision latitude (the ability to make decisions, be creative, and use and develop their professional and personal skills at the workplace), and workload as explanatory variables and job satisfaction, turnover intentions, and perceived quality of care as dependent variables in a study population of nursing, healthcare, and medical staff. Social capital and decision latitude were positively and workload was negatively associated with staff members who were very satisfied with their current job in the hospital. This confirms previous findings that show a positive impact on staff job outcomes and assessed quality of care by balanced work characteristics, as described

previously. However, mechanisms that support continuous improvement efforts structurally need to be aligned between hospital and team governance level.<sup>27</sup>

Among the organizational variables especially communication proved to be significantly associated with all outcomes. Although the effect of (lack of) good communication in emergency departments has not been studied in previous studies, it is obvious that in a chaotic, unpredictable work environment, lack of communication can have more severe consequences. Lack of communication is, however, understandable in work situations that are characterized by time and decision urgency.<sup>23,28</sup> Moreover, good material resources contributed to the explanation of variance in work engagement. This is no surprise as good equipment and materials increase the quality of care and prevent a lot of frustration.<sup>23,28</sup> This study also has limitations. First, we consider an underestimation of adverse consequence, in view of the fact that we recruited at 2 Belgian emergency medicine conferences, where the emergency physicians were really engaged in sharing their workplace experiences. Another limitation is its cross-sectional design, which does not allow for causal relationships. Despite these shortcomings, this study is of added value because of the many determinants (personal and job characteristics and organizational factors) and professional well-being outcomes that were included in this study. The first conclusion of this study is that emergency physicians work under more unfavorable job and organizational conditions. As a consequence, systematic screening of emergency medicine departments on job demands, job control, social support, and organizational characteristics is essential in the prevention of professional well-being problems in emergency physicians. Second, professional well-being in emergency physicians seems to be influenced by a wide range of stressors as well as job characteristics and organizational variables. Low levels of clinical autonomy, lack of job control, insufficient interdisciplinary communication, lack of support from the supervisor, and inadequate leadership seem to be important determinants of higher levels of burnout and a lower job satisfaction in emergency physicians.

Exhaustion of resources can be prevented by reduction of constant exposure to high job demands or in other words by allowing physicians to have enough time for physical and psychological recovery time after confrontation with stressful events as already mentioned in a previous study. Work motivation can be improved by increasing job control over job demands by giving emergency physicians more decision latitude and autonomy, improving good communication and teamwork and adequate social support from the supervisor. In addition, providing an emergency department with good material resources is also important to increase work motivation.

## 9 | STRENGTHS AND LIMITATIONS OF THE STUDY

The response rate and the relatively large, representative sample of emergency physicians are important strengths of this study in comparison to other studies. This study also provides data on the impact



of occupational stress important predictors including personal, job-related, environmental, and organizational variables in the field on outcome of the well-being of the emergency physicians.

The study also has some limitations. There may be a selection bias, because recruitment was done at 2 conferences the responding physicians may be already more engaged to participate in studies than others. As far as the main research questions are concerned, because of the cross-sectional design of the study, it is difficult to define the exact cause-effect association. Frequency of exposure to occupational stress was not measured in real time but retrospectively. Finally, the relatively high impact in various outcomes may also be explained by other predictors, such as personality-related problems or other work-related conditions, than those included in this study. Even with these limitations, the study is original because it identifies important specific predictors of psychological distress, subjective fatigue, job satisfaction, and work-home interference as well as work engagement in emergency physicians. All of these predictors need attention and some of them can be predisposed by structural and management initiatives.

## 10 | CONCLUSION

Work motivation might be improved by increasing job control over job demands by giving emergency physicians more decision latitude and autonomy, improving good communication and teamwork and adequate social support from the supervisor, and providing good material resources. Emergency medicine departments must reduce the constant exposure to high job demands by allowing emergency physicians to have enough time for both physical and mental recovery. Training in dealing with situations that can increase the risk of adverse outcomes can reduce harmful consequences in emergency physicians. Further studies should be undertaken to confirm the results of this study to identify determinants that can be the object of interventions to improve professional well-being outcomes in emergency physicians.

### AUTHOR CONTRIBUTIONS

Francis J. Somville drafted the manuscript, and all authors contributed substantially to its revision. Francis J. Somville takes responsibility for the article as a whole.

### CONFLICTS OF INTEREST

none declared.

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## SUPPORTING INFORMATION

Additional supporting information may be found online in the Supporting Information section at the end of the article.

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