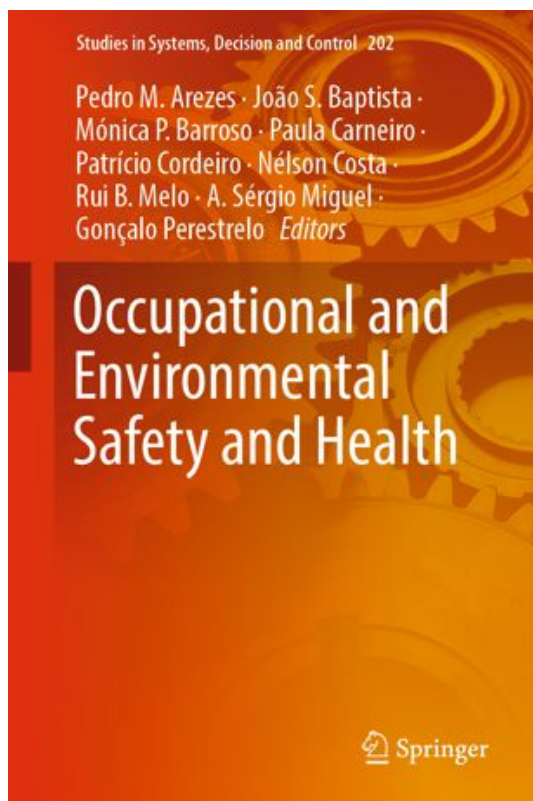


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Stress and work engagement in health professionals

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Abstract. Occupational stress can produce negative consequences on workers' mental and physical health, which affect them and their organization. Work engagement, on the other hand, is linked with positive affective-motivational states of realization related to work, and negatively correlates with fatigue, anxiety, and depression. Thus, this study aimed to analyse the relationships between stress and engagement in health professionals working in a hospital in the North of Portugal. A convenience sample of 221 health professionals participated in this cross-sectional study and answered two instruments to assess stress and engagement at work. Results showed that stress dimensions predicted the three dimensions of engagement. Specifically, health professionals with no intention to change services, those with more stress dealing with clients, and who worked only at the hospital showed higher overall engagement. Conversely, participants who reported more stress in their relationships at work and in leading training activities presented with less work engagement. Therefore, these findings contribute to increase the knowledge of health professional's mental conditions and can be used to implement interventions to mitigate the effects of stress on these professionals and increase their levels of work engagement.

Keywords: Occupational Stress; Work Engagement; Health Professionals

1 Introduction

Stress can be defined as the relationship between the burden felt by the person and the psychophysical responses it elicits [1]. It occurs when environmental demands surpass the person's capacity to adapt, leading to a negative impact on the person's health. Occupational settings, like hospitals, are one context in which long-term stress is likely to occur. Here, stress produces negative consequences on workers' physical and mental health, and in their work satisfaction and engagement, affecting the individual and the organization [2]. Research with health professionals shows a high incidence of occupational stress related to work overload; shift irregularity and night shifts; high

number of patients; ambiguity and role conflict; high responsibility for patients' lives; lack of autonomy; and the need to deal with constant suffering, pain, and death [3,4].

Work engagement is a psychological presence where people are in full contact with their work and with people in their work environment [5]. Engagement is a positive affective-motivational state of realization related to work characterized by the dimensions vigour, dedication, and absorption [6]. Vigour describes people with high levels of energy and resilience, a will to invest effort in work, resistance to fatigue, and persistence when faced with obstacles. Dedication regards displaying high personal involvement with work, feelings of enthusiasm, meaning, pride, inspiration, and challenge. Absorption is a pleasant state of concentration and immersion in work, time flies, and the person has trouble disengaging [6]. Thus, work engagement includes an energetic (vigour), emotional (dedication), and cognitive (absorption) dimension [7].

Engagement at work is a source of personal development positively and significantly associated with psychological empowerment, job and life satisfaction, and negatively correlated with fatigue, anxiety, and depression [8,9]. Some factors that facilitate it are: social support, work performance, personal resources, self-efficacy and self-esteem, positive psychological capital, beliefs, optimism, resilience, resources, and organizational requirements [6,9]. The concept predicts good job performance and customer satisfaction, and resilience and occupational resources can facilitate engagement at work, which can modulate the effects of organizational resources on work performance, well-being, and quality of life [11].

Engaged workers show better physical and psychological health, create their own resources, work with more effort (vigour), are immersed in their activities (dedication), and fully focused on their tasks (absorption) [10]. They are an asset to themselves, colleagues, and organizations, less counter-productive, show better performance and productivity, lower turnover and absenteeism, and are more successful [7].

In sum, work engagement promotes individual and organizational benefits. Thus, this study aims to analyse which stress dimensions predict work engagement.

2 Methods

2.1 Design

Quantitative cross-sectional study, exploratory, descriptive, and correlational.

2.2 Participants

The study included a convenience sample of 221 health professionals (20.4% doctors and 79.6% nurses) working in several medical specialties, from a hospital in the northern region of Portugal. Participants' ages varied between 22 and 65 years old ($M = 37.73$; $SD = 9.15$) and the majority were female (76.6%). Most participants were married (59.7%) with children (62.4%). The vast majority worked full-time exclusively at the hospital (74.2%). Finally, most engaged in some form of physical activity (51.2%), as well as having a hobby (47.5%). All participants were informed about the

nature and objectives of the study and signed informed consent forms to ensure their voluntary participation. The evaluation protocol was delivered to each hospital unit/service. Each participant was instructed to fill out the questionnaires and deliver them to the researcher in a sealed envelope, to ensure participants' anonymity. Thus every procedure followed all ethical principles outlined in the Declaration of Helsinki, and the study was submitted to and approved by the Ethics Committee of the hospital where the data collection took place.

2.3 Measures

The evaluation protocol included a Sociodemographic and Professional Questionnaire and the following instruments of psychological assessment:

Stress in Health Professionals Questionnaire (SHPQ [12]). Evaluates levels and sources of stress at work in six dimensions: working with clients (related to the responsibility of providing services to their clients), work overload (stress of the professionals related to workload and the number of hours of service to be done), career progression and salary (stress of health professionals related with the opportunities of career development and salary received), relationships at work (stress of health professionals related to the work environment as well as the relationships maintained with colleagues and hierarchical superiors), leading training activities (stress of health professionals related to situations where they develop and conduct training activities and make public presentations), and work-home interface (stress of health professionals related to work demands that interfere with family relationships and with the support received from significant others). Higher scores indicate higher perception of stress in each domain, pointing to potential sources of stress at work.

Utrecht work engagement scale (UWES [13]; Portuguese version [14]). Evaluates work engagement in three dimensions: vigour (refers to high levels of energy and mental resilience while working, the willingness to invest effort in one's work, and persistence in the face of difficulties); dedication (refers to being involved and finding meaning in one's work, being challenged, and experiencing a sense of enthusiasm, inspiration, and pride); and absorption (refers to being fully concentrated and engrossed in one's work, whereby time passes quickly and one has difficulties detaching from work). Higher scores in each dimension indicate, respectively, a greater willingness to persevere in the face of obstacles in the workplace, or when confronted with a challenge; that individuals see their work as meaningful and inspiring; and that individuals report being happily engrossed and concentrated while working.

3 Results

Parametric tests were performed after ensuring that all corollaries were met. Confidence intervals were defined at 95%, with an alpha level of .05 as the threshold for significance. Results were obtained through univariate and multivariate analyses of variance, using IBM SPSS (25). Namely, to study the independent effect of stress dimensions on engagement, a hierarchical regression analysis was performed. To do

so, we considered three blocks of variables, entered as follows: step (1) sociodemographic variables; step (2) professional variables; and step (3) stress variables

3.1 Descriptive statistics

Overall, 38.9% of health professionals reported a moderate level of stress and 56.1% described their professional activity as very stressful, as measured by the SHPQ. The stress dimensions that contributed the most to these results were work overload, career progression and salary, dealing with clients, and relationships at work. “Formal” aspects of work (work overload and career progression and salary) seem to produce higher stress in these participants than “relational” aspects of work that appeared as the third and fourth sources of stress (dealing with clients and relationships at work).

Assuming a cut-off point of 4 on the UWES scoring, only 26.9% of participants showed high engagement levels. Specifically, dedication was the highest scored dimension at 55.7%, followed by vigour (42.5%), and absorption (35.7%).

3.2 Predicting dedication

The regression model in Table 1 significantly predicts dedication ($F = 8.953$, $p < .001$), explaining 32.6% of the total variance. Specifically, it shows that participants who do not have the intention to change services ($\beta = -.305$) and those reporting more stress related to dealing with clients ($\beta = .230$) showed more dedication to work. Additionally, health professionals reporting more stress with relationships at work ($\beta = -.245$) and in leading training activities ($\beta = -.139$) exhibited less dedication to work.

Table 1. Regression model for predicting dedication (N = 221).

Predictors for Dedication	$R^2(AdjR^2)$	$F(df)$	β	t	p
Step 1	.040(.031)	4.381 (2, 212)			
Age (years)			-.021	-.162	.871
Having children ^a			-.112	-1.646	.101
Step 2	.271(.246)	10.978 (7, 207)			
Contractual status ^b			.023	.343	.732
Place of work ^c			.086	1.427	.155
Changing hospitals ^d			-.094	-1.282	.201
Changing services ^e			-.305	-4.086	<.001
Professional Experience (years)			-.123	-.975	.331
Step 3	.367(.326)	8.953(13, 201)			
SQHP-Dealing with clients			.230	2.972	.003
SQHP-Relationships at work			-.245	-3.153	.002
SQHP-Career progression & salary			-.019	-.230	.818
SQHP-Work overload			-.075	-.894	.372
SQHP-Work-Home interface			-.054	-.656	.512
SQHP-Leading training activities			-.139	-1.993	.048

Note. ^aDichotomous variable: 0 = no, 1 = yes. ^bDichotomous variable: 0 = precarious, 1 = non-precarious. ^cDichotomous variable: 0 = hospital only, 1 = hospital and other. ^dDichotomous variable: 0 = no, 1 = yes. ^eDichotomous variable: 0 = no, 1 = yes.

3.3 Predicting absorption

The regression model in Table 2, testing for the independent effects of stress dimensions on absorption, is significant ($F = 7.081$, $p < .001$), and explained 25.4% of the total variance. Specifically, it shows that participants working only at the hospital ($\beta = .130$) and those with no intentions to change services ($\beta = -.265$) reported more absorption with work. In addition, those who present more absorption with work are health professionals that reported greater stress dealing with clients ($\beta = .207$) and those who reported less stress associated to relationships at work ($\beta = -.294$).

Table 2. Regression model for predicting absorption (N = 221).

Predictors for Absorption	$R^2(AdjR^2)$	$F(df)$	β	t	p
Step 1	.022(.018)	4.818 (1, 213)			
Having children ^a			-.101	-1.523	.129
Step 2	.208(.185)	9.104 (6, 208)			
Contractual status ^b			-.109	1.601	.111
Place of work ^c			.130	2.020	.045
Changing hospitals ^d			-.021	-.272	.786
Changing services ^e			-.265	-3.401	.001
Professional Experience (years)			.020	.307	.759
Step 3	.296(.254)	7.081(12, 202)			
SQHP-Dealing with clients			.207	2.544	.012
SQHP-Relationships at work			-.294	-3.610	<.001
SQHP-Career progression & salary			-.038	-.425	.671
SQHP-Work overload			-.017	-.201	.841
SQHP-Work-Home interface			-.036	-.419	.675
SQHP-Leading training activities			-.074	-1.022	.308

Note. ^aDichotomous variable: 0 = no, 1 = yes. ^bDichotomous variable: 0 = precarious, 1 = non-precarious. ^cDichotomous variable: 0 = hospital only, 1 = hospital and other. ^dDichotomous variable: 0 = no, 1 = yes. ^eDichotomous variable: 0 = no, 1 = yes.

3.4 Predicting Vigour

The regression model shown in Table 3 significantly predicted vigour ($F = 6.573$, $p = p < .001$), explaining 22.3% of the total variance. Specifically, it shows that health professionals with children ($\beta = -.173$) and those with no intention to change services ($\beta = -.244$) report higher levels of vigour. Conversely, health professionals who presented less vigour are those that report higher levels of stress in their relationships at work ($\beta = -.282$) and in leading training activities ($\beta = -.146$).

Table 3. Regression model for predicting vigour (N = 221)

Predictors for Absorption	$R^2(AdjR^2)$	$F(df)$	β	t	p
Step 1	.036(.031)	7.850 (1, 213)			
Having children ^a			-.173	-2.555	.011
Step 2	.157(.137)	7.798 (5, 209)			
Contractual status ^b			.034	.490	.625
Place of work ^c			.100	1.549	.123
Changing hospitals ^d			-.037	-.471	.638
Changing services ^e			-.244	-3.080	.002
Step 3	.263(.223)	6.573(11, 203)			
SQHP-Dealing with clients			.023	.276	.783
SQHP-Relationships at work			-.282	-3.398	.001
SQHP-Career progression & salary			.093	1.041	.299
SQHP-Work overload			-.040	-.450	.653
SQHP-Work-Home interface			-.035	-.397	.692
SQHP-Leading training activities			-.146	-1.961	.051

Note. ^aDichotomous variable: 0 = no, 1 = yes. ^bDichotomous variable: 0 = precarious, 1 = non-precarious. ^cDichotomous variable: 0 = hospital only, 1 = hospital and other. ^dDichotomous variable: 0 = no, 1 = yes. ^eDichotomous variable: 0 = no, 1 = yes.

4 Discussion

More engaged employees tend to have high energy levels, strongly identify with their occupational activities [10], and are more protected against the negative effects of occupational stress. It is thus crucial to better understand which stress domains can predict work engagement through dedication, absorption, and vigour.

Results showed that dedication was significantly predicted by stress, with professionals who report lower stress levels showing more dedication. The main predictors of dedication were intention to change services, dealing with clients, relationships at work, and leading training activities. Thus, participants who do not intend to change services, deal more with clients, have less stress in work relationships, and do not lead training activities show greater dedication and engagement at work. Absorption was also predicted by stress, with higher levels of stress associated with less absorption. Specifically, participants with no intention of changing services and those who report less stressful relations at work exhibit higher absorption and thus, more engagement at work. Finally, regarding vigour, having children and having no intention to change services predicted higher levels of vigour, whereas higher levels of stress in relationships at work and in leading training activities predicted lower levels of vigour.

These results agree with studies that point to social support, work performance, personal resources, self-efficacy and self-esteem, positive psychological capital, beliefs, optimism, resilience, resources, and organizational requirements as variables

that contribute to work engagement [7,10]. Specifically, we found that higher levels of stress predict less engagement at work. Stress is strongly influenced by the majority of these factors, allowing us to posit that those with resources to deal with stress will exhibit higher work engagement, including dedication, absorption, and vigour.

Within this framework, it is crucial to ensure that health professionals attain high levels of work engagement in order to guarantee their quality of life at work and at home and, concomitantly, to protect them against the harmful effects of stress on their health, professional practice, and on the organizational system. Moreover, highly engaged professionals also benefit the organization, mainly by being more productive and keeping their clients satisfied [7,10]. Keeping in mind the life and death nature of their work, it is our opinion that it is vital that stress levels are low to ensure professionals' high engagement and the high quality of the health care provided.

To target the variables that predict work engagement, management and government should cooperate with multidisciplinary teams to implement interventions aimed at these variables. Good practices are specific to each context [7,15], but strategies to improve engagement include greater socialization and better evaluation of employees, establishing a psychological contract during staff selection, and increasing labour resources [7]. The most effective strategies are inherent to the organization. Consequently, it is the healthcare organization that must adapt and ensure it has strategies in place to promote its workers' health. Although some individual characteristics can help protect against stress, most strategies are the responsibility of the organization, as is evidenced by our results pertaining to, for example, stress in relationships at work: although it is possible to target this individually, by teaching strategies to manage stress, it appears more effective to attempt to change the overall work environment. Given the apparent protective quality of working with patients, which predicted both absorption and dedication, hospitals should ensure a balanced distribution of patients, guaranteeing that all health professionals have the opportunity of working with them and thus benefit from their protective quality.

Conversely, professionals with more stress in their relationships at work and who lead training activities showed less engagement. Thus, psychologists should be available to intervene, focusing on healthy work environments. Finally, they could implement training sessions to help health professionals with public presentations and to teach leadership skills invaluable to all sectors of their lives. Thus, health professionals would increase their engagement and concomitantly decrease stress levels.

In sum, health professionals' work engagement is influenced by stress. Therefore, hospitals should implement interventions that target occupational stress variables with an impact on the three domains of engagement – dedication, absorption, and vigour.

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