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PhD Thesis:

Burnout among Romanian healthcare professionals

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Contents

1. Introduction

Burnout is considered a public health issue (Dyrbye in Devi, 2011) partly due to its rising incidence scores but mostly due to its negative impact on the healthcare system. It burdens the healthcare system directly - by decaying employees' health, and indirectly - by the negative consequences it has on healthcare professionals' quality of care. According to a recent prospective study burnout proved to be an independent risk factor for future incidence of coronary heart diseases (Toker, Melamed, Berliner, Zeltser, & Shapira, 2012). Musculoskeletal pain is a highly prevalent medical condition which often results in chronic disability. Prospective studies found that burnout is a predictor for later onset of musculoskeletal pain among apparently healthy employees (Armon, Melamed, Shirom, & Shapira, 2010).

Medical errors are considered the leading cause of death in the United States, with an annually estimated 98,000 patient deaths and one million medical errors (Holden & Karsh, 2007; Kohn, Corrigan, & Donaldson, 2000). Although healthcare professionals report lower medical error rates (Chamberlain, Koniaris, Wu, Thimothy, & Pawlik, 2012), studies have consistently linked healthcare professionals' burnout with suboptimal care (Shanafelt *et al.*, 2010; Shanafelt, Bradley, Wipf, & Back, 2002). Burnt-out healthcare professionals have higher rates of turnover, thus burdening the human resources management. Studies estimate that the cost for replacing a physician is between $150,000 and $300,000, without additional expenses such as promotion (Shi, 2006, in Wallace, Lemaire, & Ghali, 2009).

Burnout captured both researchers' and practitioners' attention for years due to its insidious effects at the individual, organisational and health care system levels. The aim of the present research is to provide a comprehensive investigation of burnout among Romanian healthcare professionals. Thus we have two major aims. First, we propose to study the mechanisms which shape burnout. Second, we will investigate the burnout impact on organisational performance. We will discuss our results in the context of the flawed Romanian healthcare system.

1.1. The Healthcare system in Romania

Romanian healthcare professionals describe a suffering and suffocated health system dominated by a culture of learned helplessness as a constant source of discontent, bitterness, and doubt for themselves and their patients (Spânu, Băban, Bria, & Dumitraşcu, 2012). This is the consequence of nearly 25 years of reform without continuity nor clear objectives, a constant underfinancing of the healthcare sector, poor planning and management of the health workforce, and lately an

immigration epidemic of healthcare professionals (Todorova, Băban, Alexandrova-Karamanova, & Bradley, 2009; Vlădescu, Scîntee, Olsavszky, Allin, & Mladovsky, 2008).

The Romanian healthcare system is one of the most poorly financed in the European Union. Despite a slight increase over the years of the share of gross domestic product being spent on health, Romania has a health expenditure of 353 dollars per capita, compared with a European mean of 2619 (Schafer *et al.*, 2010; Vlădescu *et al.*, 2008). The chronic underfinancing of the system destabilises healthcare professionals' work. Besides inadequate medical equipment and facilities, as no major investments have been made in years, healthcare professionals lack a decent financial remuneration (Vlădescu *et al.*, 2008). Although the average healthcare salary is smaller than the national average, in 2010 a 25% cut was applied to all wages doubled by a freezing of all new hires (Băban *et al.*, 2005; Wismar, Maier, Glinos, Dussault, & Figueras, 2011).

Whilst having one of the lowest densities of healthcare professionals in Europe, with 1.9 physicians and 3.89 nurses per 1000 people, Romania has been adding to the growing outflow of doctors and nurses since joining the European Union in 2007 (World Health Organization, 2009). Although only one third of medical doctors who requested certificates in 2007 actually immigrated, around 3% of all practicing physicians from Romania (1421) left in that year alone (Ognyanova, Maier, Wismar, Girasek, & Busse, 2012; Wismar *et al.*, 2011). A report from 2008 signalled that the immigration from 2007 left entire counties (e.g. Botoşani) without medical doctors from some specialities, like cardiology or endocrinology (Dragomirişteanu, Farcasanu, & Galan, 2008). The outflow of healthcare professionals slightly slowed down the following years but exploded again in 2010 in response to the decreasing economy, with more than 300 certificates being issued per month (Ognyanova *et al.*, 2012). Still, official information on the immigration of healthcare professionals abroad has been scarce and inconsistent, especially among nurses (Vlădescu & Olavsky, 2009).

The high rate of immigration burdens an already overwhelmed healthcare workforce. The large inequalities in geographical distribution of healthcare professionals worsened as the majority left from the most deprived areas (Rohova, 2011; Wismar *et al.*, 2011). While 86% of physicians practice in the urban areas, only 14% work in the rural areas providing health care for 47% of the Romanian population (Rohova, 2011). Romanian outflow of healthcare professionals is not a unique case, as other east European countries such as Hungary, Estonia, or Poland, to name a few, face similar patterns. Still, few studies were carried out among South-Eastern European healthcare professionals and almost none among Romanian, in order to better understand the processes which lead to immigration.

The chaos encountered in the Romanian healthcare system management disturbs both the healthcare professionals' work and the quality of care they deliver. The lack of coherent legislative malpractice regulations coupled with unclear and devious procedures both discourages patients to make claims and favours the ignorance of suboptimal care or even of serious medical error practices. Official data from the Superior Medical Ethics Committee shows a declining number in sanctions over the years. While there were 48 physicians (30.5% of the claims received in that year) sanctioned for malpractice in 2009, only 24 (12.37%) were sanctioned in 2012 (Medical College of Physicians, 2012).

1.2. Burnout among healthcare professionals

Healthcare professionals' burnout endangers not only the individual or the organisation, but also the healthcare service recipients. Physicians, residents, and nurses affected by burnout are more prone to substance misuse (Oreskovich *et al.*, 2012; Moustou, Montgomery, & Panagopoulou, 2012), depression (Hakanen & Schaufeli, 2012; Hakanen, Schaufeli, & Ahola, 2008), insomnia (Vela-Bueno *et. al.*, 2008), or alarming high rates of suicidal thoughts (Shanafelt *et al.*, 2011; Van Der Heijden, Dillingh, Bakker, & Prins, 2008).

Hospitals' performance is flawed by burnout as it proved to increase turnover intentions (Leiter & Maslach, 2009), absenteeism (Davey, Cummings, Newburn-Cook, & Lo, 2009), or even early retirement intentions (Linzer, Visser, Oort, Smets, McMurray, & de Haes, 2001).

Burnout affects an estimated one third of physicians, residents, and nurses, with studies reporting higher rates among residents (Panagopoulou, Montgomery, & Benos, 2006). Studies which compared burnout rates among physicians and general population found significantly higher burnout rates among medical professionals, with one in two American physicians having burnout symptoms (Shanafelt *et al.*, 2012). Although burnout affects healthcare professionals regardless of medical specialty, studies report that those working in surgical (Ksiazek, Stefaniak, Stadnyk, & Ksiazek, 2011; Upton *et al.*, 2012), oncology (Dorz, Novara, Sica, & Sanavio, 2003), front line of care access such as family and emergency medicine (Shanafelt *et al.*, 2012; Soler *et al.*, 2008), and obstetrics and gynaecology (Becker, Milad, & Klock, 2006; Martini, Arfken, Churchill, & Balon, 2004) share the highest burnout rates.

1.3. The Job Demands – Resources Model

The Job – Demands Resources Model (JD-R model; Demerouti, Nachreiner, Bakker, & Schaufeli, 2001) is a comprehensive theoretical framework which highlights the role of occupational factors in shaping employees' wellbeing (e.g. burnout, engagement). The model builds on previous ones such as Demand - Control - Support Model (Karasek, 1979; Karasek & Theorell, 1990), Effort - Reward Imbalance Model (Siegrist, 1996) or Conservation of Resources Model (Hobfoll, 1989) but offers a more comprehensive and refined conceptualization of occupational factors (Bakker & Demerouti, 2007; Janssen, Bakker, & De Jonge, 2001).

The central assumption of the JD-R model is that, regardless of the professional role, job characteristics may function either as demands or as resources. Job demands are described as those physical, psychological, social, or organisational aspects which require a sustained effort and have been associated with physical or psychological costs (e.g. burnout). By contrast, job resources represent those physical, psychological, social, or organisational aspects which are functional and facilitate goal attainment.

The second assumption of the model stipulates that job demands and resources trigger two different processes with different outcomes: the energy depletion process and the motivational process, respectively. Chronic job demands (e.g. workload, emotional, etc.) are proximal burnout predictors and distal risk factors for health impairments. Studies confirm that job demands are unique predictors of burnout and indirectly for health complaints (Korunka, Kubicek, Schaufeli, & Hoonakker, 2009), absenteeism (Bakker, Demerouti, de Boer, & Schaufeli, 2003), depression (Hakanen, Schaufeli, & Ahola, 2008), or turnover intentions (Jourdain & Chenevert, 2010).

Available job resources, through their intrinsic motivational role, are proximal antecedents for work engagement. Studies outline that high job resources are distal predictors for organisational commitment (Boyd *et al.*, 2011), job performance (Halbesleben & Wheeler, 2008; Bakker & Ball, 2010), or proactive behaviour (Salanova & Schaufeli, 2008).

The model proposes that, besides the already mentioned effects, there is an interaction effect between job demands and resources: job resources buffer the impact of job demands on job strain. Studies confirm that burnout develops when chronic job demands outnumber the available job resources (Bakker, Demerouti, & Euwema, 2005).

The JD-R model was validated as a theoretical framework for different occupational settings, such as work - home interference (Bakker, Ten Brummelhuis, Prins, & Van der Heijden, 2011), workplace bullying (Van den Broeck, Baillien, & De Witte, 2011) or work-based identity (De Braine & Roodt, 2011), but it was mostly applied to explain burnout. Although no meta-analyses on the JD- R model have been published so far the model received strong support from

longitudinal studies among healthcare (Hakanen, Schaufeli, & Ahola, 2008), academic (Boyd *et al.*, 2011) or telecom professionals (Schaufeli, Bakker, & van Rhenen, 2009). Cross-sectional studies conducted among teachers (Bakker, Hakanen, Demerouti, & Xanthopoulou, 2007), industry employees (Bakker, Demerouti, de Boer, *et al.*, 2003) or healthcare professionals (Bakker, Demerouti, Taris, & Schaufeli, 2003; Xanthopoulou *et al.*, 2007) confirm the predictive role of job demands in burnout development. Diary studies (Xanthopoulou, Bakker, Heuven, Demerouti, & Schaufeli, 2008) or studies with objective measures (Xanthopoulou, Bakker, Demerouti, & Schaufeli, 2009) validate mainly the motivational process of the JD-R model.

2. Objectives

The main objective of the present thesis was to investigate antecedents and consequences of burnout among healthcare professionals. We opted for the JD-R model (Demerouti, Nachreiner, *et al.*, 2001) as our conceptual framing and tested the role of occupational factors in burnout development. Also we investigated the impact of burnout on organisational outcomes.

Objective 1

To analyse the relevant burnout risk factors among healthcare professionals working in European hospitals. We addressed this objective in the first study "*Systematic Review of Burnout Risk Factors among European Healthcare Professionals"*.

Objective 2

To test the factorial validity and invariance of the Maslach Burnout Inventory – General Survey (MGI-GS; Schaufeli, Leiter, Maslach, & Jackson, 1996) among healthcare professionals. This objective was addressed in study 2 "*Maslach Burnout Inventory – General Survey: Factorial Validity and Invariance among Romanian Healthcare Professionals*".

Objective 3

To analyse the role of occupational risk factors in burnout development. This objective was tested in study 3 "*The Mediating Role of Work – Home Interference between Job Demands and Burnout*".

Objective 4

To investigate what are the organisational outcomes of burnout. We addressed this objective in study 4 "*The Mediational Role of Burnout between Job Demands and Two Organisational Outcomes: Turnover Intentions and Suboptimal Care Behaviours*".

3. Study 1. Systematic Review of Burnout Risk Factors among European Healthcare Professionals[1]

Introduction: Healthcare professionals' burnout is a response to the prolonged exposure to occupational stress and affects negatively both the employee and the organisation. The aim of the present review is to discuss the relevant burnout risk factors for European healthcare professionals working in hospitals and clinics.

Method: A systematic search of articles published between January 2000 and December 2011 was conducted in several databases (ISI Web of Knowledge, PsychArticles, SagePub, PubMed and Cochrane database of systematic reviews). After the analysis of the 4343 articles found, 53 met the inclusion criteria and were included in the review.

Results: The analysis of included articles confirmed the main role of occupational and organisational risk factors while pointing out that psychosocial factors have a small yet statistically significant influence on burnout development. Socio-demographic factors, although included in the majority of studies, seem to have little impact on burnout.

Conclusion: The review pointed out that although the healthcare systems across Europe are fundamentally different, healthcare professionals present similar risk factors concerning burnout.

Keywords: burnout, risk factors, European healthcare professionals, systematic review

[1] Bria, M., Băban, A., & Dumitraşcu, D. L. (2012). Systematic review of burnout risk factors among European healthcare professionals. *Cognition, Brain, Behavior: An Interdisciplinary Journal, 16*, 423-452

4. Study 2. Maslach Burnout Inventory – General Survey: Factorial Validity and Invariance among Romanian Healthcare Professionals

Introduction: The use of translated instruments in different national or professional cultures in the absence of a systematic evaluation of their psychometric properties hampers cross-studies comparisons. This study aimed to test the dimensionality of the MBI-GS on a sample of Romanian healthcare professionals.

Method: Data were collected among 1190 doctors, nurses, residents, and ancillary staff from three county hospitals from Transylvania.

Results: Confirmatory factor analysis was used to test the factorial structure and multi-group analysis of invariance was used to test the model's consistency across organisational position, gender, age and tenure. Although data supported the hypothesized three factors model, significant fit indices improvement was found after removing one item from the cynicism scale. The 15 items model was found to be invariant across professional roles, gender, age and tenure, and all three scales were found to have internal consistencies coefficients above .70.

Conclusion: Our data confirmed the factorial structure of the MBI-GS on a large sample of Romanian healthcare professionals.

Keywords: maslach burnout inventory – general survey, confirmatory factor analysis, multigrup analysis, healthcare professionals

5. Study 3. The Mediating Role of Work – Home Interference between Job Demands and Burnout

Introduction: The present research aims to investigate the mediational role of negative work – home interference between job demands (workload, emotional, and cognitive demands) and burnout among a sample of Romanian healthcare professionals.

Method: Cross-sectional data was collected during April 2012 from a sample of 327 physicians and nurses in one county emergency hospital from Transylvania. Participants filled out 1) the MBI-GS, 2) the Questionnaire on the Experience and Evaluation of Work, and 3) the corresponding negative work – home interference scale from the Survey Work-Home Interaction Nijmegen. All scales had good psychometric properties. Structural equation modeling with Bootstrapping analysis (a 95% bias-corrected confidence interval and 2000 trials) was used to test the hypothesised relations. Multigroup analyses were computed to test if the hypothesised model is invariant across age, medical specialty, and number of children under care.

Results: The model obtained an overall good fit: χ^2 (11) = 47.21, *CFI* = .95, *NFI* = .93, *GFI* = .96, and *RMSEA* = .10. Job demands predict both burnout (β=.59, p < .001) and work – home interference (β=.64, p < .001). Work – home interference partially mediates the job demands - burnout relation. Cognitive demands were found to have a direct positive relation with professional efficacy. Multigroup analyses confirmed that the final model is invariant across age, medical specialty, and number of children under care.

Discussion: Our study brings evidence for the salient role of work – home interference in burnout development among healthcare professionals. Our results have implications in designing interventions focused on both reducing and preventing burnout in Romanian healthcare professionals.

Keywords: burnout, job demands, work – home interference, healthcare professionals

6. Study 4. The Mediating Role of Burnout between Job Demands and Two Organisational Outcomes: Turnover Intentions and Suboptimal Care Behaviours

Introduction: During the last years, the immigration of Romanian healthcare professionals abroad has grown into an epidemic. Still, few studies investigate the antecedents of turnover intentions among Romanian healthcare professionals. Literature has frequently linked both turnover intentions and suboptimal healthcare behaviours with burnout. The present research aims to investigate if burnout mediates the relation between job demands (workload, emotional, and cognitive demands) and two organisational outcomes: turnover intentions and suboptimal care behaviours.

Method: Cross-sectional data was collected during November 2011 and May 2012 from a sample of 461 physicians, residents, and nurses in one county emergency hospital from Transylvania. Participants filled out 1) the MBI-GS, 2) the Questionnaire on the Experience and Evaluation of Work, 3) a self-reported Suboptimal Patient Care Behaviour scale, and 4) a turnover intention index. All scales had good psychometric properties. Structural equation modeling with Bootstrapping analysis (a 95% bias-corrected confidence interval and 4000 trials) was used to test the hypothesized model. Multigroup analyses were computed to test if the hypothesised model is invariant across professional role, age and tenure.

Results: The hypothesised model obtained an overall good fit of the data to the model: χ^2 (15) = 89.05, *CFI* = .92, *NFI* = .91, *GFI* = .95, and *RMSEA* = .10. Job demands predict burnout but not suboptimal care behaviours or turnover intentions. Burnout fully mediates the relation between job demands and both turnover intentions and suboptimal care behaviours. Multigroup analyses confirmed that the model is invariant across professional role, age, and tenure.

Discussion: Our study highlights that healthcare professionals' turnover intentions and suboptimal care behaviours are shaped by burnout rather than by occupational factors. Our results have implications in designing interventions focused on reducing turnover intentions and suboptimal care behaviours among Romanian healthcare professionals.

Keywords: burnout, the job demands – resources model, turnover intentions, suboptimal care behaviours

7. Concluding discussion

7.1. Introduction

The main objective of our research was to investigate the antecedents and negative outcomes of burnout among healthcare professionals. In line with the JD-R model (for a detailed description please refer to subchapter 1.3), we tested and confirmed the energy depletion process. We also evaluated the negative impact of burnout on hospitals' performance through two indicators: turnover intentions and suboptimal care behaviours. Our research is based on three premises.

First, occupational factors have the leading role in shaping burnout development. Second, we analysed burnout among healthcare professionals working in the same occupational setting, meaning hospitals. Third, the frequent legislative changes of the Romanian healthcare system shape burnout indirectly by continually changing healthcare professionals' work settings.

The final discussion is organised in three separate subsections. First we summarise the aims and main results of each of our studies. Then we highlight the main contributions our studies have for burnout research and healthcare professional practices in hospital settings. The last section discusses the limits of our work and the implications of our findings for future research.

7.2. Main findings

We conducted one theoretical and three empirical studies to better understand the specific burnout antecedents and outcomes among healthcare professionals. The aim of the theoretical study was to systematically review burnout risk factors among European healthcare professionals working in hospitals. Our review identified 53 studies focused on burnout risk factors among European healthcare professionals. Still, the vast majority were descriptive and opted for a cross-sectional design with only three longitudinal studies. Maslach Burnout Inventory was the option of the majority of researchers for measuring burnout as only three studies operationalized burnout differently. Healthcare professionals working in hospitals across South - Eastern European countries shared the highest burnout scores although most of the studies were carried out in North – Western countries (18 versus 25 studies). We found across the studies that risk factors clustered in four main categories: socio-demographic, psychosocial, occupational, and organisational. Occupational risk factors were by far the most studied (35 studies), with the majority investigating the role of perceived workload and emotional demands.

Our second study aimed to test the factorial validity and invariance of the MBI-GS among a heterogeneous sample of 1190 healthcare professionals. Confirmatory factor analysis was used to test the factorial structure and multigroup analyses of invariance were used to test the model's

consistency across organisational position, gender, age, and tenure. Although data supported the hypothesized three factors model, significant fit indices improvement was found after removing one item from the cynicism scale. The 15 items model was found to be invariant across professional role, gender, age, and tenure. Thus our data confirmed the factorial structure of the MBI-GS on a large sample of Romanian healthcare professionals.

The aim of the third study was to test the role of specific occupational risk factors in burnout development. We investigated the role of perceived workload, emotional, and cognitive demands and if the negative WHI mediates the relation between those job demands and burnout. Our results confirmed workload and emotional demands as salient burnout risk factors. We found interesting results regarding cognitive demands, as they proved to be both a risk and a protective burnout factor. While increasing healthcare professionals' exhaustion, cognitive demands boosted professional efficacy. The main finding of our third study was that negative WHI partially mediates the job demands – burnout relation.

Our forth study aimed to test the mediational role of burnout between job demands and two organisational outcomes: turnover intentions and perceived suboptimal care behaviours. Job demands predict burnout but not suboptimal care behaviours or turnover intentions. Results confirmed that burnout fully mediates the relation between job demands and both turnover intentions and suboptimal care behaviours. Also, it confirmed the results found in study three concerning the role of cognitive demands as both a protective and a risk factor for burnout. Multigroup analyses indicated that the model is invariant across professional role, age, and tenure.

7.3. Contributions to the burnout literature

Burnout captured researchers' attention due to its insidious individual and organisational effects. Comprehensive understandings of the mechanisms which both lead to burnout and to its negative outcomes are extremely important for researchers and practitioners.

Our studies have two major contributions. First, it offers a comprehensive conceptualisation of burnout among hospital healthcare professionals and investigates not only its antecedents but also two major consequences. Second, our results are drawn from heterogeneous samples of physicians, residents, and nurses. We tested models that proved consistent amid the three medical categories mentioned above. The majority of burnout studies reporting similar results – although the samples used were either nurses or doctors.

Our studies add theoretical, methodological and empirical value on the existing burnout literature which we will be highlighted below.

7.3.1. Theoretical contributions

Our systematic review adds to the theoretical burnout literature a comprehensive analysis of the burnout antecedents that healthcare professionals working in European hospitals are confronted with. Our results proved that there is a gap in the burnout literature with the majority of researches agglomerated in North – Western countries while less among South – Eastern countries. Our study point out that amid the fundamentally differences between the European healthcare systems, burnout among healthcare professionals is shaped mostly by the same occupational stressors. Still, in a context of major restructurings that South – Eastern European countries faced in the last twenty years, occupational factors that fuels burnout might have different nuances.

7.3.2. Methodological contributions

Our work has three major methodological contributions. First, as recommended by the test's author prof. Maslach (personal communication, "Meet the experts" section at the European Health Psychology Conference, Crete, 26th of September, 2011) we tested a version of MBI that is not very often used among healthcare professionals. Our results prove that the questionnaire maintains the dimensionality originally proposed. The validation study justifies the use of MBI-GS among Romanian healthcare professionals across future studies.

Second, it tested and confirmed the three factors structure of MBI-GS among a heterogeneous sample of healthcare professionals. Previous validation studies on healthcare professionals addressed mostly nursing personnel (e.g. Qiao & Schaufeli, 2011; Leiter & Schaufeli, 1996) while our results are drawn from a heterogeneous sample of physicians, residents, nurses, and ancillary staff.

Third, our results brought evidence that the translated version of MBI-GS is not sensitive to gender, age, or tenure differences thus being a robust burnout instrument.

7.3.3. Empirical contributions

First, our study brings evidence for the role of specific occupational stressors in burnout. Besides confirming the role of perceived workload and emotional demands, our work brings evidence for the role of cognitive demands. As mentioned previously in subchapter 5.1.1.3, cognitive demands have been tested in relation to other variables, such as engagement and work-home interference (Bakker, Demerouti, & Euwema, 2005; Bakker *et al.*, 2011), but rarely in relation with burnout or among healthcare professionals. Two of our studies pointed out that a cognitively charged work might have both exhaustion and professionally fulfilling effects.

Second, we challenge previous researches which found turnover intentions to be an output of the motivational process of the JD-R model (e.g. Schaufeli & Bakker, 2004) and bring evidence that turnover intentions are the result of the energetic process. Our study indicates that healthcare professionals' turnover intentions are a burnout output. Moreover, our results indicate that job demands predict turnover intentions only in the presence of burnout. We showed that burnout impacts negatively on hospitals' performance, directly influencing the suboptimal care behaviours and turnover intentions.

Third, we highlight that there are two mechanisms through which the occupational context impacts on healthcare professionals' wellbeing. First, we confirmed the direct path from job demands to burnout and second, pointed out the impact job demands may have on burnout by negatively influencing the personal life.

Fourth, we consistently found no association between self-reported quantitative demands and burnout. Self-reported number of attended patients and of worked hours have not been associated with any of the burnout dimensions, results which highlight the role of perceived job demands in burnout development.

7.4. Limitations and Directions for Future Research

Our researches bring valuable information by confirming the energy depletion process stipulated by the JD-R model in a healthcare system flawed by inconsistent management. Qualitative studies brought in attention the brutal influence of the chaotic healthcare sector management on healthcare professionals' work and wellbeing (Spânu *et. al.*, 2012). The study aimed to investigate the sources of work strain and stress, and the way in which they are experienced by the Romanian healthcare professionals. The thematic analysis revealed that one of the major sources of occupational stress is the governance and health system management. Our research hypotheses were drawn from the burnout literature without focusing on the particularities of the Romanian context. Thus future studies might capture the specific mechanisms which link the healthcare system management with medical professionals' wellbeing.

Second, studies pointed out that burnout increases in times of restructuring (Burke & Greenglass, 2001). Longitudinal studies might bring valuable information by showing how burnout is influenced by the socio-political changes. As mentioned in the introductory chapter, immigration intentions of Romanian healthcare professionals exploded in 2010 in response to the political and economic turbulences, but data on healthcare professionals' wellbeing is lacking.

Third, although our results suggest causality relations between the studied variables, longitudinal studies would bring more firm arguments than our cross-sectional results. We intended

to develop a longitudinal study for study 3 and 4, but we could not complete them due to the very low response rate at time 2.

Fourth, our results are based on self-reported data thus future studies might consider a more objective measure of the tested variables. We found no significant association between quantitative measures of workload and burnout dimensions. We measured the quantitative demands by two self-reported items: the number of daily patients under care and the weekly work hours. An objective measure rather than a subjective estimation might bring different results.

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