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## **Surviving chaos : predictors of occupational stress and well-being in emergency nurses**

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## Chapter 6

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### **General discussion.**

## 1. INTRODUCTION

The present thesis concentrates on predictors and outcomes of occupational stress in emergency (ER-) nurses, working in in-hospital emergency wards, ambulance services and fast rescue teams. More specifically, this thesis focuses on the relationships between (1) demographic factors, (2) exposure to traumatic events, (3) job characteristics, (4) organizational variables, (5) coping strategies and (5) goal orientation as potential determinants of (a) job satisfaction, (b) turnover intention, (c) burnout, (d) work engagement, (e) post-traumatic stress symptoms (f) fatigue and (g) other somatic complaints. The first part of this chapter gives an overview of the main results of the different studies, followed by an attempt to integrate all these results from a theoretical and methodological point of view, resulting in a set of practical recommendations and directions for future research.

## 2. SUMMARY OF THE MAIN RESULTS

### Systematic review

The systematic review (*chapter 1*) that is part of this thesis explored the research on burnout in ER-nurses over the last 25 years. A disappointing finding was that the number of studies on burnout in ER-nurses was rather low, that the majority of these studies were not underpinned by a theoretical stress model, and that the sample size was often small. Despite these methodological weaknesses and flaws, the results of the review show a high prevalence of burnout in ER-nurses of 25 % and more. Existing studies also point at the tremendous short and long term consequences of burnout for health professionals, the patients they care for, the health care organization they work in, and the society as a whole.

A first group of determinants for burnout in ER-nurses are the *individual factors*. Concerning demographic characteristics, only age was found to be predictive of burnout but the direction of the relationship was not uniform in the different studies. Personality-characteristics were reported only sparsely as potential determinants of burnout. A higher level of hardiness of the ER-nurse was found to be related to lower levels of emotional exhaustion and depersonalization. Regarding coping strategies, avoidant coping was reported as a determinant of higher levels of emotional exhaustion and depersonalization and of lower levels of personal accomplishment. Finally, in none of the reported studies job attitudes (e.g. goal orientation) were taken into account.

A second group of determinants are the *job related factors*. Repetitive exposure to traumatic events (e.g. suffering, death, mutilation, aggression) in ER-nurses was found to foster the development of burnout. Moreover, ER-nurses reported to have insufficient time to recover emotionally between confrontations with traumatic events. The dimensions of the Job-Demand-Control-Support (JDCS) model (Karasek & Theorell, 1990) were reported as strong determinants of burnout. High job demands, low job control, as well as low social support were found to be related to higher levels of emotional exhaustion and

depersonalization and to more negative feelings of personal accomplishment. Next to job characteristics, the organization of the work environment at the emergency department was found to be related to the development of burnout. Good organizational and interdisciplinary communication and collaboration were reported to be related to lower levels of burnout in ER-nurses. Subsequently, inadequacy of material and staffing resources, or maladaptive work schedules and (night) shift-work were found to be related to higher levels of emotional exhaustion and depersonalization. Next, a more innovative culture on the ward was related to lower levels of emotional exhaustion. Finally, no significant relationships between perceived reward and any dimension of burnout were found in the selected studies.

### **Empirical research conducted for this thesis**

*Chapter 2* reports the results of a cross-sectional study that explored (1) whether ER-nurses differ from a general nursing comparison group in terms of job- and organizational characteristics and (2) to what extent these characteristics predict job satisfaction, turnover intention, work engagement, fatigue and psychosomatic distress. ER-nurses were found to experience higher levels of time pressure and physical demands, lower levels of decision authority, less adequate work procedures and less reward than their peers from a general hospital nursing population. However, ER-nurses also reported more opportunity for skill discretion and better social support by their colleagues. A negative perception of work-time demands was related to higher levels of psychosomatic complaints and more fatigue. A more positive perception of decision authority, skill discretion, adequate work procedures, perceived reward and social support by the supervisor (head nurse) were all strongly related to higher levels of job satisfaction, more work engagement and lower turnover intention in ER-nurses.

*Chapter 3* describes the results of a cross-sectional study in ER-nurses that examined (1) the frequency of exposure to and the nature of traumatic events, (2) the prevalence of symptoms of post-traumatic stress disorder (PTSD), anxiety, depression, somatic complaints and fatigue at a (sub-)clinical level, and (3) to what extent the frequency of exposure to traumatic events, coping and social support contribute to the explanation of PTSD-symptoms, psychological distress, somatic complaints, fatigue and sleep disturbances. ER-nurses were found to be confronted frequently with work related traumatic events. Death and serious injury of children and adolescents and the handling of victims of car crashes were reported as the most traumatizing events. Almost a third of the respondents met sub-clinical levels of anxiety, depression and somatic complaints and 8.5% met clinical levels of PTSD. Frequency of exposure to traumatic events was related to PTSD-symptoms, psychological distress, somatic complaints and sleep problems. Levels of fatigue in ER-nurses were high but were however not directly related to the frequency of exposure to traumatic events. Emotional coping was related to an increase in all outcome variables. Avoidant coping was related to more somatic complaints. Problem focused coping was related to a decrease in psychological distress and perceived fatigue. Social support from the supervisor

(head nurse) was related to lower levels of PTSD, psychological distress, perceived fatigue and somatic complaints. Social support from colleagues was found to be related to lower levels of fatigue.

*Chapter 4* is the report of a longitudinal study in ER-nurses, with a baseline measurement and one follow-up measurement 18 months later, that examined the influence of changes over time in work and organizational characteristics on job satisfaction, work engagement, emotional exhaustion, turnover intention and psychosomatic distress. The turnover rate in ER-nurses over a period of 18 months was almost 20% (range 5% - 36%). Important changes over time, in a positive as well as in a negative direction, were found in both predictors and outcomes. Better perceived job demands over time was predictive of more job satisfaction and lower levels of emotional exhaustion. A rise in job control was related to higher job satisfaction and more work engagement. More positively perceived social support over time was predictive for higher job satisfaction and lower levels of emotional exhaustion. Additionally, a more positive perception of social harassment was related to lower levels of emotional exhaustion and psychosomatic distress. Better perception of work procedures was related to lower turnover intention. Better availability of material resources was predictive of less psychosomatic distress. Finally, more positively perceived reward was related to higher work engagement.

*Chapter 5* describes the results of a cross-sectional study that explored to what extent the 4-dimensional model of goal orientation (Vandewalle, 1997; Baranik, Barron, & Finney, 2007) added additional variance to the explanation of burnout and work engagement in ER-nurses, after controlling for demographics, job characteristics and organizational variables. Female gender was found to be related to lower levels of burnout and higher levels of work engagement. Job characteristics were strong determinants of the two outcome variables. A more positive perception of job control and social support was found to be related to higher levels work engagement. The perception of job demands and job control was negatively related to burnout. Goal orientation explained a significant additional part of variance of both outcome variables, above job characteristics and organizational variables. Mastery-approach goal orientation was strongly related to an increase in work engagement and a decrease in burnout. Performance-avoidance goal orientation was strongly related to a decrease in work engagement and to an increase in burnout. Performance-approach and mastery-avoidance goal orientation showed no significant relationships with the two outcomes.

### **3. BRINGING IT ALL TOGETHER: CONSISTENCIES AND INCONSISTENCIES**

The results of the cross-sectional study (*chapter 2*) reveal that ER-nurses experience higher levels of job demands and lower levels of job control than their colleagues in other nursing wards. ER-nurses also reported however higher levels of skill discretion and social support than the nursing reference group. As described in the systematic review (*chapter 1*), emergency departments are indeed stressful, hectic and unpredictable work environments and have a high time pace. Besides, ER-nurses are confronted

frequently with traumatic events. These are important stressors resulting in higher levels of psychological distress and somatic complaints. Almost one third of the ER-nurses report subclinical levels of anxiety, depression and somatic complaints and 8.5% met clinical levels of PTSD-symptoms (*chapter 3*). The abovementioned findings support the idea that every nursing specialty has its own specific set of stressors, related to the specific content of the job (Browning, Ryan, Thomas, Greenberg, & Rolniak, 2007). This emphasizes the need to explore the relationships between these specific stressors and potential stress-health outcomes, in order to prevent negative consequences and promote occupational well-being. However, working in emergency departments also seems to be challenging for the health professionals and requires more advanced nursing skills (*chapter 2*). Emergency departments might therefore be good work environments for ER-nurses with a mastery approach goal orientation, who strive to develop skills and competencies and who like to be triggered by new challenges and innovative approaches.

The dimensions of the JDCS-model (Karasek & Theorell, 1990) explained the biggest part of variance for the different outcomes in the cross-sectional studies at baseline (*chapter 2*) and follow-up (*chapter 5*). Also changes over time in the JDCS-variables were found to be strongly predictive for stress health outcomes (*chapter 4*). A positive perception of job demands was found to be related to lower levels of fatigue and psychosomatic distress and burnout (*chapter 2 and 5*) in ER-nurses. A more positive perception over time for this variable was predictive of more job satisfaction and lower levels of emotional exhaustion (*chapter 4*). Adequate levels of job control, in terms of skill discretion and decision authority, were found to be related to higher job satisfaction, more work engagement, lower turnover intention and less burnout (*chapter 2 and 5*). The results of the longitudinal study confirmed this relationship for job satisfaction and work engagement (*chapter 4*). This is also in line with previous research in ER-nurses (*chapter 1*) and in other professional populations (Van der Doef & Maes, 1999; Hausser, Mojzisch, Niesel, & Schulz-Hardt, 2010). Social support on the work floor (as a general measure), was related to higher levels of work engagement and less burnout (*chapter 5*). A more positive perception over time of social support was related to more job satisfaction and lower levels of emotional exhaustion in ER-nurses (*chapter 4*). More specific, adequate social support by the supervisor (head nurse) was found to be related to higher levels of work engagement and less psychosomatic distress (*chapter 2*). Moreover, support by the supervisor seems to act as a buffer against the consequences of exposure to traumatic events, resulting in lower levels of post-traumatic stress symptoms, psychological distress and somatic complaints (*chapter 3*). These findings emphasize the need of supportive high-quality nursing leadership in emergency departments. Adequate social support from colleagues was found to be related to higher job satisfaction (*chapter 2*) and to lower levels of fatigue (*chapter 3*). This finding calls for continuous investment in a good team spirit and group cohesion in

emergency departments. The results of the systematic review (*chapter 1*) confirm the findings concerning both social support from the supervisor and colleagues.

In an attempt to explain more variance in the relationships between potential stressors and the different occupational well-being outcomes in ER-nurses, the cross-sectional (*chapter 2*) as well as the longitudinal study (*chapter 4*) of this thesis included organizational characteristics as predictors, derived from the Tripod Accident Causation Model (Wagenaar et al, 1990, Wagenaar et al, 1994). The cross-sectional study showed that a positive perception of reward was related to more job satisfaction, more work engagement and less turnover intention and that a positive perception of the quality of work procedures was related to more work engagement and lower levels of fatigue (*chapter 2*). In the longitudinal study (*chapter 4*) only the positive relationship between reward and work engagement over time remained significant. Positive evolutions over time of the perception of work agreements and material resources were also found to be longitudinal predictors of turnover intention and material resources respectively. The difference between the results of the cross-sectional and longitudinal study might be due to the fact (1) that JDCS-variables already accounted for a large part of variance in job satisfaction, work engagement and emotional exhaustion at follow-up, (2) that organizational variables, especially in a hectic and constantly changing emergency work environment, might only have short term effects on ER-nurses because of legal demands (e.g. personnel shortage, problems with work procedures and lack of material resources have to be solved in a very short time because of the governmental quality regulations) in contrast to the rather stable governmental reward system (a fixed scale fee system) and (3) that almost 20% of the (dissatisfied?) respondents left the participating emergency departments between the baseline and follow up measurement.

Nevertheless, JDCS- and organizational variables are important predictors of stress-health outcomes in ER-nurses. Moreover, important changes over time in predictors and outcomes were found. This provides opportunities to intervene in the predictors in order to improve both work conditions and outcomes. The findings of the different empirical studies in ER-nurses in this thesis are also in line with the Job-Demand Resources model (Bakker & Demerouti, 2007) that distinguishes between two important processes: a motivational process that is based on available resources, in terms of job control, social support, reward and an energy depletion process that is caused by high demands or exposure to traumatic events. Depletion of resources can be prevented by means of avoiding continuous exposure to demands or traumatic events and allowing for sufficient time for both physical and emotional recovery. Resources can be built up or increased by giving more autonomy over the individual practice of the ER-nurse, providing high quality supportive leadership, creating a good team spirit, providing clear multidisciplinary work procedures, and invest in adequate levels of appreciation and a well-balanced salary.

Age and gender were found to be related to turnover intention in the cross-sectional study (*chapter 2*). Gender was also cross-sectionally related to work engagement and burnout (*chapter 5*) and fatigue (*chapter 3*). However, these findings were not confirmed in the longitudinal study (*chapter 4*). A possible explanation for this is selective attrition over the measurement moments.

Finally the results of the study on goal orientation (*chapter 5*) did not confirm the 2x2 goal orientation model. Mastery approach was positively and strongly related to higher levels of work engagement and lower levels of burnout while performance avoidance showed an opposite relationship. This is in line with previous research, that shows that mastery approach is related to positive thinking and well-being (Coats, Janoff-Bulman, & Alpert, 1996; Schaufeli & Bakker, 2004) while performance avoidance is related to feelings of anxiety and failure (Urdu, Ryan, Anderman, & Gheen, 2002). No relationship was found between performance approach and mastery avoidance on the one hand and work engagement and burnout on the other hand. The use of general outcome measures (burnout and work engagement) might have led to the fact that positive and negative effects of these types of goal orientation have canceled each other out. In any case, future studies are necessary to further explore the validity of the 2x2 orientation model.

#### **4. THEORETICAL CONSIDERATIONS**

As expected, based on previous research, the JDCS-variables explained significant parts of the variance in the different outcome measures of occupational well-being in ER-nurses. The studies in this thesis show however that the addition of other potential variables (e.g. organizational variables, exposure to traumatic events, goal orientation), can improve the understanding of the development of occupational stress in this group of health care professionals. Organizational variables, as derived from the Tripod Accident Causation model, showed to be predictive of several outcome variables (*chapter 2 and 4*). The organization of the work environment and the (in)availability of certain resources seem to have an influence on the way ER-nurses are able to deal with the stressors in the content of their work. For example, adequate staffing, clear work procedures and sufficient material resources can partly solve the problem of high work demands. The frequency of exposure to occupation-related traumatic events and the coping strategy used to manage these experiences also showed to have important consequences for the well-being of ER-nurses. This finding emphasizes the need to take into account the exposure of the ER-nurse to a broad set of stressors, as well as the individual appraisal and coping of these experiences. Moreover, social support (a JDCS-variable) was found to have a buffering effect on the negative consequence of these traumatic events. Finally, goal orientation explained additional variance in work engagement and burnout, over and above personal, work( JDCS) and organizational variables. The orientation of a person to achieve job related goals can be seen as an underlying mental process that gives meaning (or 'color') to certain stimuli and stressors, in terms of challenge or threat.

## **5. STRENGTHS AND LIMITATIONS**

An important strength of this thesis on occupational stress and well-being in emergency nurses is that all of the studies are underpinned by a broad set of robust scientific stress models, i.e. the JDCS-model, the Tripod Accident Causation Model, the PTSD development model and the Goal Orientation model. Even more important, the studies go beyond the classic unilateral approach of job-content related factors (JDCS-variables) as predictors of occupational stress. Furthermore the studies are based on a relatively large sample of ER-nurses compared to other studies and managed to have a quite high response rate. Moreover, all of these studies started from an interactional/transactional view on occupational well-being, taking into account the exposure to environmental stimuli as well as the individual information processing of these experiences, in terms of appraisal and coping, resulting in a set of occupational well-being consequences. The study on exposure to traumatic events in ER-nurses is innovative because it reveals that a considerable number of ER-nurses exceeds (sub)clinical levels of psychological and somatic complaints. And finally, the study in chapter 5 demonstrated that goal orientation explains a significant part of additional variance in burnout and work engagement, after controlling for personal characteristics, job characteristics and organizational variables.

A limitation of this thesis is that only a part of the stressor sets (JDCS & Tripod) was assessed by means of a longitudinal design that included only one follow-up measurement point (*chapter 2 and 4*). The other studies on exposure to traumatic events and on goal orientation in ER-nurses had a cross-sectional design. This implies that one has to be cautious to draw conclusions regarding causality. Future longitudinal studies have to confirm the results. Furthermore, institutional characteristics such as size and location (rural, urban) of the included hospitals were not included, and should be taken into account in future research. Another limitation is that all the studies were conducted in one country, thereby not taking into account cultural or contextual factors. Future cross-national studies are therefore necessary. Finally the significant but unavoidable drop-out in the longitudinal study of almost 20%, caused by the high turnover rate in the period between the baseline and the follow up measurement, has to be kept in mind for generalization of the results. Despite these limitations, the studies of this thesis are innovative because of the model based research approach and the broad set of individual factors and job related stressors that are included. Moreover, these results provide tools and handles to promote well-being for ER-nurses on the work floor.

## **6. PRACTICAL CONSIDERATIONS**

The results of the studies in this thesis, taking into account the methodological considerations described above, show that ER-nurses are confronted with a broad set of occupational stressors, resulting in a decrease in occupational well-being, job satisfaction and work engagement, and a rise in turnover intention, psychosomatic distress, fatigue and burnout. These findings are indeed important to retain the

present workforce, to attract future employees and to prevent loss of human capital. Health care managers and nursing supervisors (head nurses) should be triggered to set up work-related interventions at lowering job demands, increasing job control, building a good team spirit, investing in adequate peer social support, providing clear and uniform work procedures, facilitating innovative ideas of the team members and striving for a well-balanced commitment related reward system. Subsequently, hospital management should train and educate their team supervisors in the use of participative empathic transformational leadership techniques that encourage and facilitate innovative approaches. The results of the different studies also underpin the idea of regularly screening nurses in (emergency) wards on the perception of job characteristics, organizational variables and confrontation with traumatic events. Moreover, emergency departments as an entity should also be screened on the adequacy of available resources. Subsequently, ER-nurses need to be coached on a regular basis in order to give them maximum opportunities to achieve their professional goals and fully realize their capacities and skills.

## **7. FUTURE DIRECTIONS**

The studies included in this thesis expand the scientific knowledge on the development of occupational stress or well-being in ER-nurses. Although a substantial part of the variance of the different outcomes was explained, a significant part of the variance still remains unaccounted for and research should explore other potential determinants. Future studies on stress-health outcomes in ER-nurses should e.g. take into account personality traits such as neuroticism, conscientiousness, extraversion, openness to experience, flexibility, indulgence and perfectionism as predictors of occupational well-being. A better understanding of the influence of these personality traits on the performance and health of ER-nurses at the work floor could improve leadership and management techniques. Also the role of self-care of the ER-nurse in terms of lifestyle, unhealthy coping strategies, guarding your limits and dealing with sick leave as mediator of occupational well-being should be investigated. Specific attention could also be given to the work-life balance, conflicting demands and emotional support at home of the ER-nurse. Because of the continuous shift work (including night shifts) and the hectic high paced work conditions on emergency departments, the work-home interface might be another interesting dimension to explore. Next, more research has to be conducted to refine the relationship of goal orientation on the one hand and occupational health outcomes and nurse retention on the other hand. Finally there is a strong need to conduct more longitudinal research on the relations between occupational stress predictors and outcomes in ER-nurses.

Secondly, research should be set up to measure the effectiveness of targeted organizational and behavioral interventions (1) to improve the conditions in the emergency department in terms of job content and work organization, (2) to create a good (interdisciplinary) team spirit and group cohesion as a source of social support, (3) to improve mental resilience and hardiness in order to help ER-nurses to manage their hectic and unpredictable work conditions, (4) to promote the use adaptive coping

mechanisms, (5) to support and provide counseling for ER-personnel that is confronted with traumatic events, (6) to train nursing supervisors in the use of transformational supportive leadership and (7) to create a challenging work environment with emphasis on innovation and skill discretion.

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