

Predictors of burnout among nurses: An interactionist approach

Cristina Queiros¹, Mary Sandra Carlotto², Mariana Kaiseler¹, Sofia Dias¹ and Ana Mónica Pereira¹

¹ Universidade do Porto (Portugal) and ² Pontifícia Universidade Católica do Rio Grande do Sul (Brasil)

Abstract

Background: Nurses' practice involves working in complex organizational settings and facing multiple stressors over time that can lead to burnout. This study aimed to identify predictors of burnout among nurses working in hospitals. **Method:** A sample of 1,157 participants from four hospitals in the city of Porto (Portugal) was investigated (78% women, mean age = 34.7 years) using socio-demographic and work variable questionnaires, the Maslach Burnout Inventory (MBI-HSS), Personal Views Survey (PVS), Job Satisfaction Scale (S20/23), and Survey Work-Home Interaction - NijmeGen (SWING). **Results:** Multiple linear hierarchical regression analyses (stepwise method) showed that gender, age, years of experience at work, working in more than one institution, being involved in management positions, job satisfaction, hardiness, and experience of work-home and home-work interaction, seem to be predictors of burnout among nurses. **Conclusions:** This study adds support to the interactionist approach to burnout. In other words, it is crucial to investigate the relationship between several factors such as socio-demographic, work, and personality factors to understand burnout. Additionally, these findings should be taken into account when designing burnout prevention programs for nurses working in hospitals.

Keywords: Burnout, hardiness personality, job satisfaction, nurses, work-family interaction.

Resumen

Predictores de Burnout en enfermeras: un enfoque interaccionista.

Antecedentes: la práctica de enfermería implica trabajar en organizaciones complejas y enfrentar estresores múltiples que pueden llevar al síndrome de quemarse por el trabajo (burnout). El presente estudio pretende identificar predictores del burnout en enfermeras que trabajan en hospitales.

Método: la muestra estuvo formada por 1.157 profesionales de enfermería trabajadores de cuatro hospitales de Porto (Portugal), siendo 78% mujeres (media de edad= 34,7 años). Se utilizó un cuestionario para recoger variables sociodemográficas y laborales, Maslach Burnout Inventory (MBI-HSS), Personal Views Survey (PVS), Job Satisfaction Scale (S20/23) y Survey Work-Home Interaction - NijmeGen (SWING). **Resultados:** el análisis de regresión lineal jerárquica múltiple (stepwise method) mostró que el género, edad, años de trabajo, trabajar en más de una institución, participar en puestos de dirección, satisfacción laboral, personalidad resistente e interacción trabajo-familia son los principales predictores del burnout entre enfermeras. **Conclusiones:** este estudio apoya el enfoque interaccionista del burnout, siendo importante investigar la relación entre los factores sociodemográficos, laborales y de la personalidad para entender mejor el burnout. Además, estos resultados deben tenerse en cuenta para el diseño de programas de prevención de burnout para las enfermeras que trabajan en hospitales.

Palabras clave: enfermería, interacción trabajo-familia, personalidad resistente, satisfacción laboral, síndrome de quemarse por el trabajo.

Burnout has received extensive attention from researchers over the last 35 years. Additionally, burnout has recently been considered a public health problem (Gil-Monte, 2009). The prevalence of burnout is not only detrimental for the individual worker, but also for the organization, as it reduces productivity and affects the quality of services provided (Schaufeli & Buunk, 2003). When analyzing burnout in human service professions, it has been related mainly to the psychological and emotional demands of the relationships between caregivers and patients (Maslach & Jackson, 1984). Particularly, nurses working in complex organizational settings facing multiple stressors over time can develop burnout. Among the different methodologies used to study burnout, an

interactionist approach has been shown to be the most appropriate perspective to understand factors related to the burnout condition (Burisch, 2002; Ebling & Carlotto, 2012). Additionally, by understanding the factors that influence burnout, one can design efficient practical interventions in the area of Occupational Health Psychology (Briner, 2012). Hence, the current study aims to investigate predictors of burnout among nurses.

Burnout is described as comprising three dimensions: emotional exhaustion, characterized by lack of energy and enthusiasm and depletion of emotional resources; depersonalization, described as negative attitudes toward clients, colleagues, and the organization; and reduced personal accomplishment, manifested as a worker's tendency towards negative self-evaluation, showing dissatisfaction with their own performance at work (Maslach & Jackson, 1981).

Nurses' burnout has received extensive and continuous research attention over the years, and among health care workers, nursing is thought to be the most stressful profession (Carlotto, 2011; Grau-Alberola, Gil-Monte, García-Juevas, & Figueiredo-Ferraz, 2010; Pisanti, van der Doef, Maes, Lazzari, & Bertini, 2011).

Nurses are considered to be particularly susceptible to the danger of burnout, due to the very stressful nature of their work, which has a negative impact on their mental and physical health, efficacy and productivity (Gil-Monte, 2005; Hudek-Knežević, Kalebić, & Krapić, 2011). A nurse's job is predominantly emotional, and this factor is considered as a main stressor, which can result in a direct intention to leave work (Bartram, Casimir, Djurkovic, Leggat, & Stanton, 2012). Previous research has shown that demographic variables and personality characteristics (Ebling & Carlotto, 2012; Maslach, Schaufeli, & Leiter, 2001), combined with work characteristics (Pisanti et al., 2011), job dissatisfaction (Figueiredo-Ferraz, Grau-Alberola, Gil-Monte, & García-Jueas, 2012) and negative work-family interaction (Geurts & Demerouti, 2003; Koekemoer & Mostert, 2006) are related to burnout among nurses. Particularly, in line with findings from previous empirical research, males show higher levels of cynicism than females (Gil-Monte, 2002), single people are more prone to burnout than married people (Maslach et al., 2001). Professionals with low levels of hardiness (Maslach et al., 2001), who are younger (Ilhan, Durukan, Taner, Maral, & Bumin, 2008), and who are more dissatisfied with their work are also more likely to experience burnout (Kalliath & Moris, 2002). Finally, negative work-family interaction correlates with higher levels of exhaustion and depersonalization (Burke & Greenglass, 2001).

In agreement with this idea, Occupational and Health Psychology (OHP) suggested that further research in this area is required, contemplating not only work environment sources of stress and occupational risks to health, but also personality characteristics and work-family interaction (National Institute for Occupational Safety and Health [NIOSH], 2005). Following these suggestions, the current study aims to investigate these variables among nurses working in hospitals. It is believed that findings will not only contribute to further theoretical knowledge in the area of burnout, but will also provide valuable information for applied interventions in this area, aiming to improve the quality of work life, protect and promote safety, health and well-being among nurses.

Method

Participants

This cross-sectional study was conducted in four public hospitals in the district of Porto (Portugal), during 2011. A purposive sample of nurses was recruited. The inclusion criterion was nurses who worked for more than three months in the common services of all four hospitals. Nurses recruited worked in Surgery, Internal Medicine, and Emergency. A total of 1,157 nurses participated in this study (76% of the target population - total nurses in these services in Porto, Portugal), with a response rate of 77%.

The nurses included in the present sample had a mean age of 34.76 years ($SD = 8.67$). Most were female (77.5%), lived with a partner (57.5%), had children (52.9%), and had a second job (58.1%). Most worked 35 hours (54.7%) per week, and the mean time working at the institution was 10.46 years ($SD = 8.2$).

Instruments

Data were collected using a questionnaire specifically designed to investigate some socio-demographic factors (sex, age, marital

status, children), working variables (time working at the institution, other jobs, being in management positions, and employment status), according to the literature. Additionally, the following self-report instruments were used:

Maslach Burnout Inventory - Human Services Survey (MBI-HSS) by Maslach and Jackson (1986), Portuguese version prepared by Carlotto and Câmara (2007). This instrument includes a total of 22 statements assessing the three dimensions of burnout: Emotional exhaustion (9 items), Depersonalization (5 items), and Personal accomplishment (8 items). Each item was rated using a 7-point Likert-type scale ranging from 0 (*never*) to 6 (*every day*). In this study, the average of each dimension was used.

Personal Views Survey (PVS) by Kobasa (1982) was used to assess hardiness personality; the Portuguese version was prepared by Mallar and Capitão (2004). This instrument consists of 50 items measuring the trait of Hardiness. Each item was rated on a 4-point scale, ranging from 0 (*not at all true*) to 3 (*completely true*).

Job Satisfaction Scale (S20/23), originally by Meliá and Peiró (1989) and adapted to Portugal (Pocinho & García, 2008). This instrument consists of 23 items, which were rated on a 7-point scale, ranging from 1 (*extremely dissatisfied*) to 7 (*completely satisfied*).

Survey Work-Home Interaction Nijmegen (SWING) by Geurts, Taris, Kompier, Dikkers, Hoof, and Kinnunen (2005) was used to measure work-home interaction. The questionnaire consists of 22 items divided into four subscales: Negative Work-home Interaction (NWHI; 8 items), Positive Work-home Interaction (PWHI; 5 items), Negative Home-work Interaction (NHWI; 4 items); and Positive Home-work Interaction (PHWI; 5 items). Items were rated on a 4-point frequency scale, ranging from 0 (*never*) to 3 (*always*). In this study, the average of the items for each subscale was used.

Procedure

The study was approved by the research ethics committees at University and by each hospital. Prior to the study, representatives at each hospital informed their colleagues of the objectives and methodology of the study and requested their collaboration. A letter, together with the questionnaire, was sent to all nurses employed in the hospitals that participated in the research. Following this procedure, questionnaires were returned anonymously in drop-off boxes installed in various areas (services) of the hospital in order to guarantee confidentiality. This study was carried out in compliance with the Helsinki Declaration. No financial or material incentives were offered to participants. All eligible participants agreed to participate and fulfilled a consent form.

Data analysis

The statistical program PASW version 17 (SPSS/PASW, Inc., Chicago, IL) was applied to conduct the data analysis. Descriptive statistics were used to calculate frequencies, mean scores, and standard deviations. The strength and direction of relationships among variables were determined using Pearson's parametric correlation coefficient measure. Prior to performing the regression analysis, data were checked for multicollinearity, normality, linearity, homoscedasticity, independence of residuals and outliers. No major violations of the assumptions of the

regression analysis were found. Multiple linear hierarchical regression analyses (stepwise method) were performed, using as dependent variables each burnout dimensions. According to the literature and considering that the current study aims to investigate predictors of burnout among nurses, first we introduced the socio-demographic variables, followed by personality characteristics, and finally, the work variables (job satisfaction and work-family interaction). Selection of the predictor variables was performed with the level of significance $p < .05$. In regression analysis, the power of the obtained significant effects, standardized regression coefficients—which can be considered as effect sizes in terms of standard deviation units—were calculated for each final model, following Field (2009).

Results

Table 1 provides the means, standard deviations, alphas and correlations among the variables. Results showed that the nurses in this study exhibit moderate values in emotional exhaustion, low values in depersonalization, and high values in personal accomplishment, when considering a scale ranging from 0 (*never*) to 6 (*every day*).

The instruments showed acceptable levels of internal consistency, with Cronbach’s alpha ranging from .70 to .93 (Field, 2009). The correlation matrix showed some significant correlations between the variables. The correlations found between the variables varied from low ($r = .059$) to moderate ($r = .531$).

Table 2 shows the results of hierarchical multivariate regression analysis for the variables predicting the three burnout dimensions. The results for emotional exhaustion identified a predictor model composed of the variables NWHI, job satisfaction, hardiness, PWH, and working as a nurse only in one institution. This model explained 44.7% of the variance for this dimension. Thus, higher

levels of NWHI ($\beta = .365$) predicted higher emotional exhaustion at work. Higher levels of hardiness ($\beta = -.203$), job satisfaction ($\beta = -.290$), PWHI ($\beta = -.090$) and working as a nurse only in one institution ($\beta = -.076$), predicted less emotional exhaustion.

Regarding depersonalization, the final model was explained by the variables hardiness personality, NWHI, age, job satisfaction, gender and NWHI, with 24.3% of its total variability explained. Particularly, lower levels of hardiness ($\beta = -.195$), lower levels of NWHI ($\beta = -.164$), being younger ($\beta = -.160$), lower levels of job satisfaction ($\beta = -.145$), and being male ($\beta = -.156$) predicted depersonalization. Higher levels of depersonalization increase as NWHI increases ($\beta = .099$).

Personal accomplishment was predicted by the variables hardiness, NWHI, PWHI, job satisfaction, being involved in management positions, and time of service in the institution. This model explained 18.1% of the variance for this dimension. Higher levels of hardiness ($\beta = .203$), PWHI ($\beta = .126$), job satisfaction ($\beta = .124$), and more years of work experience ($\beta = .062$) predicted higher levels of personal accomplishment. On the other hand, NWHI ($\beta = -.201$) and being involved in management positions ($\beta = -.072$) also predicted personal accomplishment.

Note that, in this sample, job satisfaction and hardiness are individual variables with common predictive value in explaining the variability of burnout in all three dimensions. Overall, results found are between the medium ($R^2 = .105$) and large effect sizes ($R^2 = .447$) as recommended by Field (2009).

Discussion

The current study aimed to identify and understand predictors of burnout among nurses. For this purpose, results will be discussed for each dimension of burnout. Concerning emotional exhaustion, results showed that NWHI has the greatest explanatory power. This

Table 1
Descriptive statistics, Cronbach’s alphas and correlations for all the variables (n= 1,157)

Variable	M	SD	α	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
1. Emotional exhaustion	2.51	1.17	.88	1								
2. Depersonalization	1.19	1.01	.70	.388**	1							
3. Personal accomplishment	4.27	.87	.77	-.201**	-.267**	1						
4. Hardiness personality	1.89	.23	.85	-.418**	-.326**	.310**	1					
5. Job satisfaction	4.13	.92	.93	-.479**	-.269**	.232**	.307**	1				
6. Negative Work-Home Interaction (NWHI)	1.05	.46	.82	.531**	.304**	-.203**	-.352**	-.330**	1			
7. Negative Home-Work Interaction (NHWI)	.57	.43	.77	.244**	.296**	-.269**	-.316**	-.158**	.387**	1		
8. Positive Work-Home Interaction (PWHI)	1.11	.58	.84	-.192**	.009	.150**	.114**	.213**	-.045	.129**	1	
9. Positive Home-Work Interaction (PHWI)	1.26	.62	.82	-.059*	.042	.092**	.042	.130**	.062*	.085**	.506**	1
10. Age	34.76	8.67	-	-.119**	-.202**	.072*	-.002	.059*	-.175**	-.044	.013	-.008
11. Institution years	10.46	8.17	-	.080**	-.154**	.065*	-.014	.036	-.114**	-.025	.001	-.012
12. Sex ^(a)	-	-	-	.042	-.171**	-.028	.041	.037	.013	-.016	.007	.005
13. Marital status ^(b)	-	-	-	-.015	-.60*	.020	-.047	.007	-.028	.011	-.032	.011
14. Have a children ^(c)	-	-	-	.075*	.133**	-.014	.029	-.023	.086**	.008	.029	.005
15. Exclusivity ^(c)	-	-	-	-.035	.077**	-.015	-.016	.000	.077*	.031	-.002	.080**
16. Management positions ^(c)	-	-	-	.006	.025	-.090**	-.037	-.007	.022	-.019	.004	-.003

Note: (a) 0- Man, 1- Female; (b) 0- Married, 1- Not Married; (c) 0- Yes, 1- No

Table 2
Model summary of regression analysis for dimensions of burnout (Stepwise method)

	R ²	R ² Adjusted	R change	B	SE	β	t
Dependent variable: Emotional exhaustion							
Negative Work-Home Interaction (NWHI)	.282	.281	.282	.938	.063	.365**	14.788
Job satisfaction	.400	.395	.114	-.371	.032	-.290**	-11.706
Hardiness personality	.431	.431	.036	-1.016	.123	-.203**	-8.261
Positive Work-Home Interaction (PWHI)	.440	.438	.008	-.182	.046	-.090**	-3.947
Exclusivity ^(a)	.447	.443	.006	-.180	.053	-.076**	-3.405
Model F							178.885**
Dependent variable: Depersonalization							
Hardiness personality	.112	.111	.112	-.857	.129	-.195**	-6.641
Negative Home-Work Interaction (NHWI)	.152	.152	.040	.395	.070	.164**	5.667
Age	.187	.187	.035	-.019	.003	-.160**	-6.001
Job satisfaction	.213	.213	.026	-.163	.032	-.145**	-5.093
Sex ^(b)	.237	.236	.023	-.384	.064	-.156**	-5.960
Negative Work-Home Interaction (NWHI)	.243	.243	.007	.223	.069	.099*	3.214
Model F							59.522**
Dependent variable: Personal accomplishment							
Hardiness personality	.105	.105	.105	.752	.111	.203**	6.761
Negative Home-Work Interaction (NHWI)	.136	.136	.031	-.408	.059	-.201**	-6.888
Positive Work-Home Interaction (PWHI)	.158	.157	.021	.188	.042	.126**	4.458
Job satisfaction	.171	.171	.014	.118	.028	.124**	4.245
Management positions ^(a)	.177	.177	.006	-.222	.084	-.072**	-2.652
Job experience	.181	.181	.004	.007	.003	.062*	2.288
Model F							40.849**

Note: ** p<.01; * p<.05; (a) 0-Yes, 1- No; (b) 0- Man, 1- Female

finding is in line with Geurts and Demerouti's (2003) suggestion that the interaction between work and home should be considered as an important antecedent of burnout. This finding may also be supported by recent changes occurring at the workplace across different professions, including the health sector, due to economic trends. These changes require workers to be more dedicated (e.g., work longer hours) and have multiple jobs, increasing overall workload. This idea is supported by our findings, as the nurses in this study who had more than one job seem to experience higher levels of emotional exhaustion than those who worked exclusively at one institution. As suggested by Bacharach, Bamberger, and Conley (1991), work-family conflict occurs when the demands of working life are incompatible with the demands of family life. In the current study, it seems that this work overload leads to the interference of work with the family and increases emotional exhaustion. Similar results were found in the studies of Brauchli, Bauer and Hämmig (2011), and Mostert (2011). As explained by the last author, this finding can be due to workers making an additional effort to face daily demands, without having an opportunity to recover. Thus, consistent experience is likely to cause an accumulative process that develops over time, resulting in burnout. In our study, PWHI showed a negative relationship with emotional exhaustion, becoming a protective factor. When individuals are able to maintain their investment in effort within acceptable limits, using opportunities for control and support, energy resources can be replaced rather than depleted (Mostert, 2011). In our study, emotional exhaustion was also predicted by hardiness, as shown previously in other studies of nurses (Garrosa,

Rainho, Moreno-Jiménez, & Monteiro, 2010; Simoni & Paterson, 1997). Similarly, this burnout dimension was also predicted in our study by job satisfaction, as previously found by Figueiredo-Ferraz et al. (2012) in a sample of nurses. These findings are similar to previous studies (e.g., Ebling & Carlotto, 2012; Gil-Monte, 2005) conducted in the work setting, and add support to the idea that job satisfaction is an important protector of burnout.

The dimension of depersonalization for the nurses in our study was mainly explained by the individual characteristic of hardiness. This finding is not in line with previous suggestions that factors related to work are the main predictors of depersonalization (Maslach et al., 2001). However, the low explanatory power of hardiness in our study is consistent with other findings that investigated the relationship between hardiness and burnout (Ghorpade, Lackritz, & Singh, 2011). Hence, our findings add support to the argument that hardiness seems to be a protective factor for burnout. Additionally, results showed that male nurses, younger nurses, and nurses that are less satisfied with their work have higher levels of depersonalization. These findings are similar to those found previously in the occupational setting (e.g., Houkes, Winants, Twellaar, & Veronk, 2011; Maslach & Jackson, 1984; Patrick & Lavery, 2007). It is believed that the gender differences found in this study may be associated with the different social roles of males and females in the workplace (Aryee, 1993). Additionally, the findings suggest that more care should be taken with younger nurses, particularly, applied interventions should be designed aiming to teach efficient coping strategies to this population, thus decreasing the experience of stress in their relationship with patients.

NWHI and NHWI were predictors of depersonalization, and these results support previous findings of Peeters, Montgomery, Bakker, and Schaufeli (2005), suggesting that job demands and home demands have a direct effect on burnout. Our findings indicate that the nurses in the current study experienced not only demands in the work domain, but also at home. Because in hospitals, nurses' timetables include occasionally working overtime, this result is not surprising and it is disruptive for home/family life. Accordingly, Patrick and Lavery (2007) suggested that nurses' schedules should attempt to synchronize life and family commitments with regular work patterns, which is difficult to conciliate. Additionally, the authors added that nurses' jobs also enclose pressured or unexpected overtime required in the profession, hence adding to the existing worker demands.

Concerning personal accomplishment, the results show that hardiness has the greatest explanatory power of all variables analyzed in our study. According to Maddi (2006), hardiness appears as a combination of interrelated cognitive/emotional attitudes and interaction approaches (action patterns) combined to provide the motivation and strategies for turning developmental and imposed stresses from potential threats into growth opportunities. Hence, this trait, together with the job satisfaction, increases the feeling that work is a source of fulfillment. Additionally, results showed that increased time on the job predicted personal accomplishment. This finding may be explained by the fact that nurses with more experience on the job may experience higher confidence about their tasks, and may have developed relationships at work that are more meaningful to them. In coherence with this idea, Patrick and Lavery (2007) suggested that nurses who work longer on the job are likely to have previously experienced most work scenarios. Therefore, they understand and manage problems or potential ambiguous work situations with higher confidence and certainty. Additionally, our findings suggest that nurses with management position experience had lower personal accomplishment. This result

can be explained by the fact that nursing is mainly characterized by the provision of care to patients. Therefore, management tasks are likely to decrease this contact with patients, and consequently, to decrease nurses' personal accomplishment regarding their job. Additionally, personal accomplishment was also predicted by the NFWI and PWFI. These findings suggest that the work-family variable can be a protector or a potential threat in predicting personal accomplishment among nurses.

One of the strengths of the present study is that the data of the nurses was collected only in hospitals, reducing possible bias associated with data collection in other health care services and/or health centers. Additionally, this study utilized a strong theoretical basis, using reliable and valid instruments to collect data. Regarding sample size, it was sufficient to provide power for a significant effect size in the statistical analyses. Finally, the effect sizes found fit those recommended by Cohen (1988).

The results of this study should be considered in the light of some limitations, such as the cross-sectional design. Another limitation of the study is the utilization of self-reported measures, which may increase the possibility of response bias.

Overall, this study contributes to the development of theoretical knowledge in the area of burnout among nurses. Furthermore, the findings have important implications for occupational psychology, applied practitioners, and administrative managers working in the hospital context. Particularly, the results should be used to shed light on possible applied interventions among nurses, such as increasing hardiness levels. Additionally, our findings suggest that another action recommended for nurses is to conduct training programs aimed to develop emotional regulation skills and learning techniques to cope with the emotional demands of work and family (Yanchus, Ebby, Lance, & Drollinger, 2010). At the organizational level, interventions should consider factors related to job satisfaction and the chance to improve salaries, hence allowing nurses to work exclusively in a single job.

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