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Discriminating low-, medium- and high-burnout nurses: Role of organisational and patient-related factors

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Abstract

Aim: To discriminate low/medium/high burnout in nurses by work and patient-related indicators and explore what factors characterize these categories best.

Methods: Cross-sectional, online survey with a representative sample of nurses. Measures assessed burnout, intragroup conflict, job insecurity, overt aggression and impact of patient aggression on nurses.

Results: Top nurse managers experienced more burnout than middle managers or staff, middle managers also reported greater burnout than staff. Those who had never suffered aggression experienced greater burnout but less intragroup conflict and job insecurity. Staff differed on job insecurity from top and midlevel managers. The first discriminant function differentiated high burnout from medium and low; this function was characterized by exhaustion, aggression and intragroup conflict. The second function differentiated medium burnout from others; job insecurity, years worked, over aggression and overtime dominated this function.

Conclusions: Burnout affects managers and staff differently; top managers may be more susceptible to burnout than reported before. Low, medium and high burnout groups require tailored interventions because of their different characteristics.

Implications for Nursing Management: In the future, burnout assessment should focus on both organisational and care related factors. Determining levels of burnout will guide managers to improve the right aspects of practice and work environment.

KEYWORDS

aggression, burnout, discriminatory analysis, internal conflict, job insecurity

1 | INTRODUCTION

Burnout in nurses seems a fairly well-studied phenomenon, a PubMed search with mesh words "nurse" and "burnout" returns a total of 4,197 publications (as of 05/03/2019). Despite the plethora of research, there are new papers taking interest in investigating the status of burnout in nursing globally. The problem with many of these studies is that they have remained on the exploratory, correlational level. Even at this stage of understanding, we see descriptive and associative research being repeated in recent studies (García-Sierra,

Fernández-Castro, & Martínez-Zaragoza, 2016; Giorgi et al., 2016; Ilic, Arandjelović, Jovanović, & Nešić, 2017; Pradas-Hernández et al., 2018; Rezaei, Karami Matin, Hajizadeh, Soroush, & Nouri, 2018; Shoorideh, Ashktorab, Yaghmaei, & Alavi Majd, 2015; Zou et al., 2016). As Munhall (2007) pointed out, nursing theories should also follow the four levels of inquiry, and when relation-searching research has accumulated enough evidence about the concepts studied, it is time to focus scientific attention on situation-relating (predictive) or situation-producing (prescriptive) study designs. For nurse managers, the problem of descriptive or factor-relating information is that they do not provide clear orientation as to what action/intervention should be taken.

A variety of studies addressed personality traits as explanatory variables of burnout. Neuroticism, negative self-esteem, negative emotionality and affectivity, sociability and satisfaction with work, quality of life and self-care deficit and being a single parent all showed different levels of success in explaining and predicting burnout (Grigorescu, Cazan, Grigorescu, & Rogozea, 2018; Rizo-Baeza et al., 2018; Rouxel, Michinov, & Dodeler, 2016). However, personality traits display great individual variations. Interventions that will suit all types of nursing staff at various stages of their burnout process is difficult for nurse managers to roll out institutionally. Also, when compared to organisational and work-related characteristics, personality traits appeared to stay significant but weaker predictors of nurse burnout (Hudek-Knezević, Kalebić Maglica, & Krapić, 2011). Workload, departmental stress and satisfaction with the quality of professional life emerged as underlying factors and predictors of job-related burnout (Grigorescu et al., 2018; Rizo-Baeza et al., 2018). Job demands, job control and emotional display rules as well as role conflict were also cited as important determinants of nurse burnout (Hudek-Knezević et al., 2011; Rouxel et al., 2016). More importantly, dynamic changes in the work environment and psychosocial job characteristics significantly impacted and predicted employee burnout (Pisanti et al., 2016). Yet another study found interpersonal relationships and management problems as the strongest predictors of burnout (Sun et al., 2017). Therefore, for the purposes and conceptual clarity of this research, we decided to classify predictors of burnout arising from internal (work-related, such as internal conflict and job insecurity) and external pressures (patient induced outcomes). Patient aggression suffered by nursing staff was viewed as a form of external pressure. Such aggression was identified as a significant predictor of burnout (Gascon et al., 2013). In their study, 11% (n = 1,826) of staff were physically attacked and 34% had been subjected to threats and intimidation at least once in their practice. Physical and verbal aggression were both shown to predict burnout. Verbal aggression had a diverse impact on different nurse groups. As for professional nurses, only job content moderated the negative impact of verbal aggression whereas for associate nurses social and organisational resources moderated the impact (Viotti, Gilardi, Guglielmetti, & Converso, 2015). Greater exposure to patient violence was also observed to be related to cynicism, lower job satisfaction and more emotional exhaustion (Waschgler, Ruiz-Hernández, Llor-Esteban, & García-Izquierdo, 2013). Wolf, Perhats, Delao, and Clark (2017) further reported workplace aggression having a negative effect on the personal lives of nurses and creating a toxic departmental culture. Why studying workplace aggression is still relevant is because de Looff, Nijman, Didden, and Embregts (2018) have recently described staff reporting the highest level of stress management skills showing greater burnout symptoms than those with less stress alleviating internal resources. Others took a different position on the role aggression, Vander Elst et al. (2016) challenged whether aggression was a predictor of burnout. In their research, they found aggressive acts unrelated to burnout. Finally, García-Arroyo and Osca Segovia (2018) rightly argued that burnout should not be viewed as a universal phenomenon impacting everyone equally and that cut-offs should be developed and used to establish the correct diagnosis of burnout.

In summary, nurse burnout is still a critical issue facing nurse managers. Exploratory or associative research studies will not help nurse managers to develop interventions and to improve burnout at the organisational level. Personality traits express great individual variations and had been shown to be weaker predictors than job characteristics. Interpersonal relationships and management issues however have been reported as stronger predictors of burnout and are easier to influence by nurse managers. Since burnout is not universal and there are different stages of burnout, this research investigated the discriminatory power of work-related variables such as appraised job conflict and insecurity as well as patient aggression on low, medium and high burnout cases to understand factors underlying each group and to support nurse managers identifying individualized interventions for these separate clusters. Therefore, the aim of the current research was to discriminate low/medium/high burnout cases by using a set of independent predictors and to explore what factors predict these categories best.

2 | RESEARCH QUESTIONS

The following research questions were investigated in this paper.

- Are there differences on main psychometric measures (burnout, impact of and overt patient aggression, intragroup conflict and job insecurity) by level of education, overtime and perceived aggression?
- Do staff, middle and top nurse managers differ on main measures (burnout, impact of and overt patient aggression, intragroup conflict and job insecurity)?
- What factors will discriminate low-, medium- and high-burnout nurses?

3 | METHODS

A cross-sectional, non-experimental, large-scale survey design was used in this study. Data collection lasted from June 1 until 31 August

2016. Responses were collected by the aid of a Google survey form containing all research instruments detailed below and the demographic assessment developed by the researchers. Demographic items as well as psychometric measures were turned into an electronic survey that was emailed to participants. Participants were approached in one email campaign with two reminders to complete the survey. The survey was open to participants for 3 months. Data collection was anonymized; no email or IP address identification was recorded. However, protection from multiple entries was used by filtering responses from the same email address. Researchers had no control over the response process. The survey form had to be completed in one attempt. Ethical approval for the research had been obtained prior to implementation. By filling out the survey form, subjects consented to the analysis of data entered.

3.1 | Participants

Participants were approached through the Hungarian National Registry for Nurses and Allied Health Professionals. From the pool of all licensed nurses, a nationally representative random sample of 1,500 nurses was generated and contacted by email by Registry staff. Researchers had no direct access to actual participants. The email sent to participants contained a link to the survey asking for their contribution. There were no specific inclusion/exclusion criteria applied for sample selection. A priori minimum sample size estimation indicated a total number of 162 subjects for 3 ANOVA groups (effect size = 0.25; level of significance = 0.05; and power = 0.81) (G*Power, 2017).

3.2 | Instruments

Burnout was measured by the Maslach Burnout Inventory (MBI) (Maslach & Jackson, 1986). The scale is comprised of 22 items, each may be rated on a 0-6-point Likert response. Zero score means "never felt it", 6 means "I feel this everyday". The full instrument assesses emotional exhaustion, depersonalization and personal efficacy. Range of scores is between 0 and 132, higher scores mean greater burnout. The MBI has established international validity; local validation was done by Ádám and Mészáros (2012). Reliability measured by Cronbach's alpha was 0.90 in this research.

Additionally, the Pines and Aronson (1983) scale was also applied to measure burnout. The measure has 21 items rated by a 1–7 Likert scale. Score 1 on the scale means "never", 7 means "always". Range of scores is between 21 and 147, higher scores point to greater burnout. Using a special formula, scores may be converted to categorize respondents into groups of "constant euphoria", "good at it", "needs to change" and requires intervention'. Local validation of the scale was achieved in previous use (Irinyi & Németh, 2011, 2012; Kovács, 2006). Reliability in this study was 0.89.

Job insecurity was assessed by an instrument developed and validated locally (Németh, Lampek, Domján, & Betlehem, 2013). The Job Insecurity Scale (JIS) is comprised of six items measuring internal and external factors of work-related insecurity. The instrument is rated on a 5-point Likert scale; 1 = no impact and 5 = very high impact. Sample items include "Losing my colleagues" or "Salary decrease". Scale range is 6–30; greater total scores indicate more insecurity towards the position. Cronbach's alpha was 0.75 in the current investigation.

Overt (patient) aggression was evaluated by the Overt Aggression Scale (OAS) developed by Yudofsky, Silver, Jackson, Endicott, and Williams (1986). This is a 10-item instrument measuring verbal and physical threats against staff. Sample items include "the patient raised his voice" or "the patient grabbed my clothes". The instrument is rated on a 4-point Likert scale where 1 means "never happened" and 4 means "happened more than 20 times". Scale range is 10–40; higher scores mean more experience of aggressive behaviours. Reliability was 0.88 in this research.

The impact of patient aggression was measured by the Impact of Patient Aggression on Careers Scale (IMPACS) developed by Needham et al. (2005). This is a 10-item instrument being rated on a 5-point Likert scale (1 = never; 5 = almost all the time). Sample items include "I do not feel safe at work" or "I feel anger towards my workplace". Range of scores is between 10 and 50; greater scores indicate more impact. The scale demonstrated a reliability of 0.87 in this study.

Finally, intragroup conflict was evaluated by the Intragroup Conflict Scale (ICS) developed by Jehn (1995). This instruments measures work-related conflict by eight items on a 5-point Likert scale. Sample items include "How much tension do you see within your team?" or "How frequent are emotional conflicts in your team?". Item rating is as follows: 1 = absolutely not, 5 = all the time. Score range is 8–40; greater scores indicate more conflict. Reliability of 0.93 has been achieved in this paper.

3.3 | Statistical analysis

Descriptive statistics were used to describe sample characteristics and main measures. To assess normality, one-sample Kolmogorov–Smirnov test was used. Due to non-normal data distributions, primarily nonparametric tests were used; however, where parametric tests yielded identical outcomes, parametric results have been reported. Reliability was assessed by determining Cronbach's alpha coefficient. To explore group differences, independent sample *t* tests and one-way ANOVA were employed. To define discriminant groups using the MBI scale, 10th, 40-60th and 90th percentiles had been determined. Cases below the 10th percentile were considered very low burnout, cases between the 40–60th percentiles were thought to have average burnout, and cases above the 90th percentile were viewed as very high burnout. Direct discriminant analysis was used to predict group membership. Level of significance was set at 5%, and one-tailed tests were performed where applicable. To run the analyses, SPSS Windows version 20.0 was applied.

4 | RESULTS

A total of 1,201 responses were collected resulting in a response rate of 80%. The final sample was primarily made up of female subjects (92.5%, *n* = 1,111), over half (62.8%, *n* = 754) had a significant

TABLE 1 Descriptive statistics: main psychometric measures

	N	Minimum	Maximum	Mean	SD
Burnout (MBI)	1,201	7.00	132.00	87.34	22.02
ICS (Intragroup Conflict Scale)	1,201	8.00	32.00	21.21	6.05
IMPACS	1,148	10.00	45.00	18.86	7.95
Job insecurity	1,201	6.00	30.00	15.18	5.05
OAS (Overt aggression)	1,201	10.00	37.00	13.87	4.30
PA (Pines-Aronson Scale)	1,201	27.00	147.00	105.23	25.32

other/co-habited with someone and 34.9% (n = 419) had one type of a graduate nursing degree. The average age of the sample was 43.16 (*SD* 9.28) years; they worked in health care for an average of 22.09 (*SD* 10.92) years and worked an average of 19.01 (*SD* 27.24) hours overtime per months. Of the final sample, 76.8% (n = 922) were regular staff, 20.9% (n = 251) held middle manager positions, and only 2.3% (n = 28) were top nurse managers in their organisations.

Table 1 displays descriptive statistics for main psychometric measures. Kolmogorov–Smirnov tests showed all measures significant thus non-normally distributed (Z_{MBI} = 1.79, p = 0.003; Z_{PA} = 3.06, p < 0.01; Z_{ICS} = 2.09, p < 0.01; Z_{OAS} = 6.45, p < 0.01; Z_{IMPACS} = 4.48, p < 0.01; Z_{JOB_INSEC} = 2.24, p < 0.01). Burnout (MBI) was 21 points above the scale's midpoint (66 vs. 87 points) indicating scores skewed to the right. While above average, this sample did not report extreme levels of burnout. When the Pines–Aronson (PA) scale is considered, the scale's midpoint is 63 points. However, subjects reported a 105-point average score on this instrument, which is strongly skewed to the right. By the PA measure, subjects expressed much greater levels of burnout. On the job insecurity scale, subjects scored on average higher than the scale's midpoint (12 vs. 15 points) showing about average work-related insecurity. Intragroup conflict was also elevated in this sample (21 vs. 16 [the scale midpoint]). Level of overt aggression (OAS) was slightly below the scale midpoint (15.0) which indicated that nurses did not experience a lot of work associated aggressive episodes (13.8 vs. 15.0). Finally, in line with aggression scores above, the impact of aggression followed a similar distribution, showing below average results (18.9 vs. 20 [scale's midpoint]).

Table 2 displays a set of independent sample t test results for the difference in main measures across nursing degree, overtime and (patient) aggression experience. Those with a graduate nursing degree had higher levels of burnout than those without, had more intragroup conflict but experienced less aggression and impact of aggression and felt less insecure about their jobs. As for overtime, clearly, more overtime was linked to worse outcomes on all dimensions; those with more overtime reported greater levels of burnout, aggression and impact of aggression as well as more intragroup conflict and job insecurity. When we looked at the impact of aggression those who were unexposed to patient aggression showed greater burnout but less intragroup conflict and job insecurity.

Table 3 shows the post hoc multiple one-way ANOVA comparisons across 3 job categories for the main measures of interest. All univariate F tests have been significant for the six measures (F_{MBI} = 10.10 p < 0.001; F_{PA} = 10.05 p < 0.001; F_{IMPACS} = 9.76 p < 0.001; $F_{CONFLICT}$ = 3.34 p = 0.036; F_{JOBINS} = 11.54 p < 0.001; $F_{AGGRESS}$ = 4.14 p = 0.016). Based on results, top nurse managers experienced more burnout than middle managers or staff, and middle managers also reported greater burnout than staff. In terms of intragroup conflict, staff reported more conflict than middle managers; however, there were no other group differences identified. As for job insecurity, staff reported the highest levels being significantly different from both middle and top managers, there was no difference between managers. Patient aggression was highest for middle managers being different from staff, no difference between the two manager positions found. Impact of aggression followed suit, middle managers being highest.

Our final analysis included a direct discriminant analysis approach. Based on the 10th, 40-60th and 90th percentiles on the MBI scale, three groups have been created: low, medium and high burnout. Those with a score <56 were categorized as low, those between 83–95 points as medium and those with a score >115 as high burnout. Box's M test was used to evaluate equality of covariance matrices. The test was significant (204.71; p < 0.001), indicating variability. While the violation of the equality assumption can cause misclassification of data, according to Polit (1996), when the sample size is large and groups are relatively equivalent, homogeneity is fairly robust. Of the two discriminant functions derived, the first was significant (Wilks' lambda = 0.286, p < 0.001), thus the set of 8 predictors can be used to discriminate nurses of low/medium/high burnout. The canonical correlation (correlation between predictors and the dependent variable) was 0.84. The squared canonical correlation (0.70) indicates the amount of variance accounted for by the predictors, that is, the current set explained 70% of the variance in group membership, leaving 30% open to unobserved/unmeasured variables. The model successfully classified 81.7% of all cases. Table 4 shows results of the structure matrix (discriminant loadings on the functions). Function 1 was characterized by PA, IMPACS and ICS, function 2 by job insecurity, years in health care, OAS, overtime and, to a lesser extent, ability to discuss problems with a psychologist. Examination of group centroids revealed that function 1 discriminated high burnout cases from medium and low burnout whereas function 2 discriminated medium level burnout from low and high.

TABLE 2 Descriptives and independent sample *t* tests

	Graduate degree	*N*	Mean	*SD*	*t*	Sig.	Overtime	*N*	Mean	*SD*	*t*	Sig.	Ever suffered aggression	*N*	Mean	*SD*	*t*	Sig.
Maslach Burnout Inventory (MBI)	No	782	86.02	22.16	−2.87	0.00	No	317	85.70	21.97	−4.43	0.00	No	53	94.11	23.99	2.29	0.02
	Yes	419	89.80	21.56			Yes	875	92.00	21.57			Yes	1.148	87.03	21.89		
Pines-Aronson Scale (PA)	No	782	103.65	25.86	−3.04	0.00	No	317	103.65	25.52	−3.77	0.00	No	53	112.98	27.26	2.28	0.02
	Yes	419	108.19	24.02			Yes	875	109.69	24.06			Yes	1.148	104.87	25.18		
Impact of Patient Aggression on Careers Scale (IMPACS)	No	746	18.94	8.08	0.45	0.65	No	296	16.67	7.33	−5.78	0.00	No	53	0.00	0.00	NA	NA
	Yes	402	18.72	7.71			Yes	845	19.60	8.02			Yes	1.148	18.86	7.95		
Intragroup Conflict Scale (ICS)	No	782	20.92	6.21	−2.35	0.02	No	317	19.75	6.29	−4.93	0.00	No	53	18.42	6.46	−3.23	0.00
	Yes	419	21.75	5.71			Yes	875	21.75	5.86			Yes	1.148	21.34	6.00		
Job insecurity	No	782	15.79	5.17	6.00	0.00	No	317	14.16	4.97	−4.23	0.00	No	53	14.40	4.63	−1.26	0.21
	Yes	419	14.04	4.61			Yes	875	15.54	5.03			Yes	1.148	15.22	5.07		
Overt Aggression Scale (OAS)	No	782	14.14	4.43	3.03	0.00	No	317	12.32	2.83	−9.42	0.00	No	53	10.00[a]	0.00	−31.79	0.00
	Yes	419	13.37	4.01			Yes	875	14.41	4.55			Yes	1.148	14.05	4.31		

[a]Subjects were asked to enter 1 for each scale item if "no" experience with aggression.

5 | DISCUSSION

The primary aim of this research was to discriminate low/medium/high burnout cases categorized on the MBI measure. In terms of the level of burnout assessed in this research was not significantly different from earlier reports. This sample showed elevated levels of burnout but was much closer to the normal distribution on the MBI measure. As for the PA measure of burnout, scores were significantly skewed to the right confirming greater levels of physical and emotional exhaustion. Physical overload measured as overtime clearly distinguished respondents on all measures; those with less overtime reported lower levels of burnout, intragroup conflict, job insecurity and perceived aggression. These results are not different from other investigators' observations (Grigorescu et al., 2018; Hudek-Knezević et al., 2011; Pisanti et al., 2016; Rizo-Baeza et al., 2018). Therefore, one conclusion of this paper is that current organisation of health and nursing care around the traditional, rigid shift system as well as nurse staffing ratios should be revisited to reduce work overload on nurses. However, important to note that in our discriminant analysis overtime discriminated medium burnout from high and low cases, but the latter two groups were not characterized by the problem of overtime. Therefore, it appears that overtime impacts medium burnout nurses the most. Also note that overtime was however the fourth in line of all discriminatory variables for medium burnout cases; job insecurity achieved the greatest load on the discriminant function for medium burnout. That is, minimizing the impact of overtime without addressing job insecurity for this group will not actually lead to improved burnout.

As for patient-related aggression, 95.6% (n = 1,148) of the total sample said they had been subjected to various levels of violent acts. The outcome is significantly worse than reported by Gascon et al. (2013). Remarkably, those who reported no aggression scored significantly worse on the burnout measure but better on intragroup conflict and job insecurity. Unlike Vander Elst et al. (2016), who claimed the null hypothesis be valid, we supported the relationship between aggression and burnout. However, why aggression in this research was inversely related to burnout is up to speculation at this point. Recall that in the study of de Looff et al. (2018) staff with the highest level of stress management skills showed greater burnout symptoms. We can only recommend future research to further investigate these controversial outcomes to clarify the path by which aggression mediates burnout of nurses.

ANOVA results also revealed that different nurse categories (staff, middle and top management) should not be lumped together when it comes to burnout. Both middle and top nurse managers experienced more burnout than staff when the MBI was considered. As for emotional or physical exhaustion (measured by PA), staff showed less burnout than middle and top managers again. Results highlight that no nurse group is immune to burnout and that the higher we went in the organisation the greater the level of burnout had been. We argue that burnout may be specific to the organisation. Further, nurse managers are also at risk. Therefore, it is not only nursing staff who are in need of burnout management programs.

TABLE 3 Post hoc multiple comparisons

Dependent variable	Mean difference (I-J)	*SE*	Sig.
Tukey HSD			
Overt Aggression Scale (OAS)			
Staff			
Middle manager	−6.06017[a]	1.56	0.00
Top manager	−10.67570[a]	4.19	0.03
Middle manager			
Staff	6.06017[a]	1.56	0.00
Top manager	−4.6155	4.35	0.54
Top manager			
Staff	10.67570[a]	4.19	0.03
Middle manager	4.6155	4.35	0.54
Pines-Aronson Scale			
Staff			
Middle manager	−7.49628[a]	1.79	0.00
Top manager	−9.2663[a]	4.82	0.13
Middle manager			
Staff	7.49628[a]	1.79	0.00
Top manager	−1.7701	5.01	0.93
Top manager			
Staff	9.2663[a]	4.82	0.13
Middle manager	1.7701	5.01	0.93
Impact of Patient Aggression on Careers Scale			
Staff			
Middle manager	2.53941[a]	0.58	0.00
Top manager	1.0060	1.54	0.79
Middle manager			
Staff	−2.53941[a]	0.58	0.00
Top manager	−1.5335	1.60	0.60
Top manager			
Staff	−1.0060	1.54	0.79
Middle manager	1.5335	1.60	0.60
Intragroup Conflict Scale			
Staff			
Middle manager	−1.03796[a]	0.43	0.04
Top manager	−1.2880	1.16	0.51
Middle manager			
Staff	1.03796[a]	0.43	0.04
Top manager	−0.2500	1.20	0.98
Top manager			
Staff	1.2880	1.16	0.51
Top manager	0.2500	1.20	0.98
Job insecurity			
Staff			
Middle manager	1.39489[a]	0.36	0.00
Top manager	2.97087[a]	0.96	0.01
Middle manager			
Staff	−1.39489[a]	0.36	0.00
Top manager	1.5760	1.00	0.26
Top manager			
Staff	−2.97087[a]	0.96	0.01
Middle manager	−1.5760	1.00	0.26
Overt Aggression Scale			
Staff			
Middle manager	0.87167[a]	0.31	0.01
Top manager	0.4915	0.82	0.82
Middle manager			
Staff	−0.87167[a]	0.31	0.01
Top manager	−0.3802	0.85	0.90
Top manager			
Staff	−0.4915	0.82	0.82
Middle manager	0.3802	0.85	0.90

[a]The mean difference is significant at the 0.05 level.

Finally, discriminating nurses based on their burnout stage (score) appeared a valid approach (82% correctly classified). High burnout cases were characterized by emotional and physical exhaustion, by the impact of patient aggression, and to a lesser extent, by intragroup conflict. Medium burnout cases were primarily described by job insecurity and the length of employment. Overtime and able to discuss issues with a team psychologist came in last. These outcomes confirm that there are no universal interventions to reduce burnout available to address all nurses in an organisation and that interventions that are tailored to stages of burnout may achieve best results.

6 | LIMITATIONS

Authors acknowledge the limitations posed by the online survey technique and having less control over the quality of the response process. Some results may also be specific to the Hungarian health system where the study was implemented. Future research should verify whether outcomes of this paper hold in different nursing cultures and hospital systems.

7 | IMPLICATIONS FOR MANAGERS

The study highlighted that burnout is not a universal phenomenon. Nurse managers are advised to use a standardized burnout measure (such as the MBI) to assess level of burnout in their staff and identify low, medium and high burnout cases. A key conclusion of this paper was that nurses at different stages of burnout are characterized by diverse traits. Therefore, a "one size fits all" approach to burnout management will not

TABLE 4 Structure matrix and group centroids

	Function		Functions at group centroids		
				Function	
	1	2		1	2
Pines-Aronson Scale	**0.978**[a]	0.15			
Impact of Patient Aggression on Careers Scale	**−0.440**[a]	0.31	Low	−2.083	−0.102
Intragroup Conflict Scale	**−0.262**[a]	0.17	Medium	0.478	**0.167**[b]
Job insecurity	−0.21	**0.786**[a]	High	**2.133**[b]	−0.250
Years worked in health care	0.04	**−0.335**[a]			
Overt Aggression Scale	−0.21	**0.266**[a]			
Overtime	−0.07	**−0.128**[a]			
Able to discuss burnout with psychologist	0.01	**−0.081**[a]			

[a]Largest absolute correlation between each variable and any discriminant function.
[b]Largest unstandardized canonical discriminant functions evaluated at group means.

be effective for all nurses. Whereas nurses with high burnout will need support to respond better to stress, intragroup conflict and patient aggression, nurses with medium burnout will require attention to job insecurity, overtime and, to a lesser extent, overt aggression. To resolve intragroup conflict, team psychologists may be invited to make a proper assessment and suggest techniques by which a group can evolve. In order to minimize the impact of patient aggression on staff, they should have institutional access to violence prevention and management trainings which instruct nurses to respond preparedly to physical and verbal hostility. Authors acknowledge that increasing staffing shortages make it difficult to reduce work overload, however, those with less overtime reported lower levels of burnout, intragroup conflict, job insecurity and perceived aggression. Therefore, nurse managers should continue their efforts to secure appropriate staff levels, find room for flexible working hours and invite staff nurses to suggest department specific ways by which the best organisation of nursing care is achievable.

As for nurse managers, results indicated that top and middle managers experienced significantly more burnout than staff did. Nurse managers are often more concerned about the needs of their employees than themselves. However, our findings indicate that nurse managers are also in need of attention and support when stress and burnout are considered. If available, nurse managers should be able to consult with personal coaches, stress management trainers or with other experts who can help relieve pressures leading to early burnout. The unwanted departure of experienced nurse managers can be a significant loss to all health care systems.

8 | CONCLUSIONS

Burnout affects managers and staff differently; top managers may be more susceptible to burnout than reported before. Low, medium and high burnout groups require tailored interventions because of their different characteristics.

ETHICAL APPROVAL

Ethical approval for the research had been obtained prior to implementation. This study has been approved by the Review Board of the Faculty of Health of University of Pécs, Hungary, KUTATÁSI ENGEDÉLY-12/2016.

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