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Structure and psychometric properties of the maslach burnout inventory in croatian nurses

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ABSTRACT

Introduction: The role of nurses in healthcare is of great importance for the well-being of patients. Nurses are exposed to daily stress in the workplace due to the lack of staff, irregular working hours, and lack of support from the management. Such conditions greatly affect the emotional and psychological health of nurses. This study aims to explore the factor structure of the Maslach Burnout Inventory (MBI) on the Croatian sample of nurses.

Methods: A cross-sectional study on the sample of 119 nurses, using the MBI scale to assess burn-out in nurses.

Results: The reliability of individual subscales expressed by Cronbach's alpha coefficients showed that all three scales meet the criterion of internal consistency of 0.832. The obtained coefficients of internal consistency are 0.860 for the dimension of emotional exhaustion, 0.809 for the dimension of depersonalization, and 0.791 for the dimension of personal accomplishment.

Conclusion: According to this research and comparative research results, we can conclude that MBI 22 can be applied as a valid and reliable burn-out assessment indicator among nursing staff.

Keywords: Burn-out, nursing, stress, Maslach burnout inventory scale

INTRODUCTION

The clinical term "burn-out" was first used by Herbert Freudenberger in 1974. He describes the physical, mental, emotional state, and exhaustion that is often the result of a combination of very high expectations and on-going stress (1). The nursing profession is considered very sensitive to combustion due to the work overload, inter-professional conflicts, increased complexity of tasks, patient requirements, and having to deal with poor prognosis patients. This research tries to confirm that age, duration of the total period of care, sense of general well-being, adaptability, and emotional maturity have a significant association with a burn-out in the nurses' workplace (2).

The role of nurses in healthcare is of great importance for the well-being of patients. Nurses are exposed to daily stress in the workplace due to the lack of staff, irregular working hours, and lack of support from management (3). Such conditions greatly affect the emotional and psychological health of nurses (4). Research shows that stress and burn-out in the workplace have consequences, such as depression, anxiety, insomnia, reduced efficiency, and a higher likelihood of mistakes (5). Nurses' satisfaction and compassion are related to emotional well-being, increased empathy for their patients, and a lower risk of burn-out in the workplace (6). The three-factor structure of the Maslach burnout inventory (MBI) has been shown to be invariant across occupations and national contexts (7-9). It did not overcome one important psychometric shortcoming of the original version of the MBI, namely, that the items in each subscale are all framed in the same direction (10). The research using the MBI shows that nurses working in surgical wards feel more tired, depersonalized, and less fulfilled than their colleagues working in other wards. Such results are related to the fact that nurses in surgical wards are mostly in closer contact with their patients (11). This study aims to explore the factor structure of the MBI on the Croatian sample of nurses. The exploratory survey used in this study assessed nurses' perceptions of the work burn-out.

METHODS

This cross-sectional study included 119 nurses, whose mean age was 35.18 years, who participated in the study. The respondents were nurses who, alongside their work, were also part-time students of the 2nd and 3rd years of the professional study of nursing at the Faculty of Health Studies, University of Rijeka. The study included 135 nurses. 119 of them completed the questionnaire, which is a response rate of 88.14%. The research was carried out over 2 months, and all ethical aspects were met.

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Measures

The MBI (12) was used to collect data in this study. The Croatian version of the scale we used is derived from a direct translation of the original (13). Since the original version of the questionnaire in Croatian was used, translation was not required. Each of the 22 items on the scale represents a work-related feeling in the theoretical framework of the three components of burn-out: (1) Emotional exhaustion (EE), (2) depersonalization, and (3) personal accomplishment. Participants responded to a 7-point Likert scale ranging from 0 "never" to 6 "every day" on how often they experienced certain feelings about their job. The MBI displays three separate scores, one for each of the three subscales. Burn-out is experienced when at least two of the three dimensions yield high scores.

Demographics

The demographics that were recorded included gender and age.

Statistical Analysis

The raw data were compiled and analyzed using the statistical package SPSS 19. An analysis of the scale's psychometric properties, including reliability (Cronbach's α) and factor analysis, was conducted. Furthermore, the results were examined as a function of gender and age. The results are presented in light of the psychometric properties of Maslach's original US sample, and the recent study conducted by Domović using a sample of Croatian teachers (12,13).

RESULTS

The demographic data show that 119 respondents participated in the survey, of which 78 respondents were female (65%), while 41 respondents were male (34.2%), with an average age of 35.18 years. The exploratory factor analysis was used to determine the factorial structure of the MBI for the Croatian sample of nurses. The Kaiser-Meier-Olkin (KMO) measure was used to test the adequacy of the sample. The value of > 0.6 for KMO was considered good (14). Factor loadings of > 0.71 were considered excellent, of 0.45 as fair. The application of the factorial analysis was considered appropriate with the index KMO = 0.780, and Bartlett's Test of Sphericity was significant ($\chi2$ = 966.542, df = 595, p < 0.000) (Table 1). The principal components analysis with oblimin rotation was conducted to determine three significant factors explaining 46.86% of the variance. The eigenvalues of first three factors were 5.48, 2.99, and 1.85, as shown in the Scree plot (Figure 1). The factor loadings are similar to the Croatian teacher sample (13) and the loading of item six that loads onto the third component (PA dimension) in both samples. Furthermore, with the exception of items 20 and 21, with the loading of the first component (EE dimension), the remaining items 19 and 22 are with the loading below 0.40. The reliability individual subscales expressed by Cronbach's alpha coefficients show that all the three scales meet the criterion of internal consistency of 0.832. The obtained coefficients of internal consistency are 0.860 for the dimension of EE, 0.809 for the dimension of depersonalization and 0.791 for the dimension of personal accomplishment (Table 2).

The scale demonstrates adequate reliability with a Cronbach's alpha coefficient for the three factors (Table 2).

The data from descriptive statistics contain answers to the questions of the original questionnaire. The obtained results show that some nurses feel more exhausted at work (M = 3.47, SD = 1.483; p <0.05), while other nurses feel exhausted at the end of the day (M = 3.31, SD = 1.656; p <0.05). The nurses state that they can understand how their patients feel (M = 4.29, SD = 1.404; p <0.05). The results show that most nurses do not treat patients as if they were "things," but they treat them fairly and with respect (M = 1.84, SD = 1.228; p <0.05), and that nurses deal very effectively with the problems of their users (M = 4.10, SD = 1.543; p <0.05). Nearly half of the nurses feel burned out at work (M = 2.98, SD = 1.605; p <0.05) but also feel their work positively affects other people's lives (M = 4.29, SD = 1.475; p < 0.05). The nurses feel that they have not become callous while doing their job (M = 1.67, SD = 1.290; p <0.05), but most of them report a lack of energy (M = 2.07, SD = 1.247; p < 0.05). More than half of the nurses feel frustrated at their work (M = 3.81, SD = 1.612; p <0.05); they state that they care about what happens to some of their users (M = 3.88, SD = 1.563; p < 0.05), also stating that working with people is extremely stressful (M = 3.83, SD = 1.508; p < 0.05). The majority of nurses report that they can easily create a relaxed environment when in contact with their users (M = 4.11, SD = 1.567; p < 0.05). Most nurses feel that they have achieved

TABLE 1. Kaiser-Meier-Olkin and Bartlett's test.

Kaiser-Meier-Olkin and Bartlett's test	
Kaiser-Meyer-Olkin measure of sampling adequacy	0.780
Bartlett's Test of Sphericity	
Approx. Chi-square	966.542
Df	231
Sig.	0.000

TABLE 2. Reliability test of the three factors.

Scale/Sub-scale	Cronbach's Alpha	No. of Items
Total scale	0.832	20
Emotional exhaustion	0.860	8
Depersonalization	0.809	6
Personal accomplishment	0.791	6
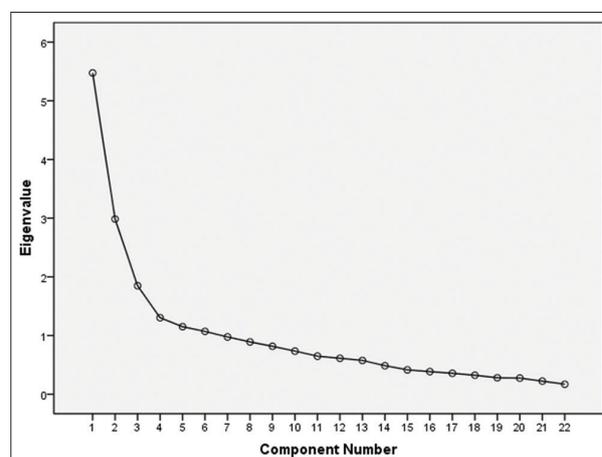
FIGURE 1. Scree plot of principal components in Maslach Burnout Inventory.

important things at their job (M = 3.08, SD = 1.482; $p < 0.05$), they also feel that users blame them for some of their problems (M = 3.35, SD = 1.603; $p < 0.05$) (Table 3). Using cutoff scores for the means, respondents are classified as high, moderate or low burn-out cases on the respective subscales. High mean scores on the EE and DP subscales correspond to a higher degree of experienced burn-out, while a low mean score on the PA subscale corresponds to a higher degree of burn-out (Table 4).

DISCUSSION

In line with the research goal, we determined the high reliability of the MBI scale of all the three subscales and their components. Comparative studies also show high reliability and validity of the scale. A survey conducted in Croatia on a sample of teacher's shows that the three scales satisfy the Nunnally and Bernstein criteria of internal consistency of 0.70. The obtained coefficients of internal consistency are 0.88 for EE, 0.82 for the DP, and 0.77 for PA [13]. Research conducted in Italy also shows the high reliability of the scale, Cronbach's EE = 0.88, PA = 0.83 [15]. The results of a survey conducted in Serbia on anesthetic nurses show sufficient overall reliability, Cronbach's = 0.72 [16]. According to the research conducted in Greece, this scale shows satisfactory reliability coefficients for all the three dimensions of the Maslach's burn-out framework. The EE dimension gave the strongest internal consistency as predicted in the original test manual and compared to other similar studies [17,18]. That research showed a problem with item 12. [19] and with item 16 of the MBI [17], while in this research, the problem is with item 19. (0.305) and item 22. (0.310). The reliability of the overall scale result is acceptable, namely, 0.70 or higher [20]. The results of this study confirm the findings of other studies, namely the fact that many nurses feel they will burn out at work, corroborate previous studies by stating that nurses are sensitive to burnout at work [21-23]. Further research is needed, considering these results.

CONCLUSION

The psychometric assessment of the MBI translation into Croatian is an important step toward developing a psychometrically healthy measure of professional burn-out that can be adapted to specific characteristics of the Croatian socio-cultural context. According to this research and comparative research results, we conclude that MBI 22 can be applied as a valid and reliable burn-out assessment indicator among the nursing staff. It can also assist health managers and managers in general in assessing burn-out conditions and designing interventions to prevent and reduce burn-out in nurses.

Limitation

This study has a limitation in terms of the generality of the results because it was based on a small sample of nurses. Therefore, the results are not representative for the whole of Croatia. In any case, further research carried out on a larger sample is needed.

CONFLICT OF INTEREST

None.

TABLE 3. Descriptive statistics data

#	n	Minimum	Maximum	Mean	Std. Deviation
Item 1	119	1	6	3.47	1.483
Item 2	119	1	6	3.31	1.656
Item 3	119	1	6	2.64	1.466
Item 4	119	1	6	4.29	1.404
Item5	119	1	6	1.84	1.228
Item 6	119	1	6	1.92	1.239
Item 7	119	1	6	4.10	1.543
Item 8	119	1	6	2.98	1.605
Item 9	119	1	6	4.29	1.475
Item 10	119	1	6	1.67	1.290
Item 11	119	1	6	1.96	1.380
Item 12	119	1	6	2.07	1.247
Item 13	119	1	6	3.81	1.612
Item 14	119	1	6	1.82	1.455
Item 15	119	1	6	3.88	1.563
Item 16	119	1	6	3.29	1.508
Item 17	119	1	6	4.11	1.567
Item 18	119	1	6	2.93	1.609
Item 19	119	1	6	3.08	1.482
Item 20	119	1	6	1.76	1.267
Item 21	119	1	6	2.87	1.629
Item 22	119	1	6	3.35	1.603

TABLE 4. Mean values for the three subscales of the Maslach Burnout Inventory.

Subscale	Mean	Range	Std. Dev.
Emotional exhaustion	24.08	8–44	8.78
Depersonalization	23.96	10–36	6.18
Personal accomplishment	10.96	6–32	5.50

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