Original Article

Alexithymia and Its Relationships with Job Burnout, Personality Traits, and shift work among Hospital Nurses: A Cross-Sectional Study

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ABSTRACT

Background: Due to the characteristics of their work, nurses experience high levels of stress and burnout. Alexithymia (defined as the inability to identify and express emotions) and personality traits can be risk factors for burnout. However, there is limited information about the relationships of alexithymia and personality traits with job burnout among Iranian nurses. **Objective:** This study examined the relationships between alexithymia, personality traits, job burnout, and shift work among hospital nurses in Iran. **Methods:** This cross-sectional study was conducted in 2017 on a random sample of 225 nurses recruited from 10 hospitals affiliated to Tabriz University of Medical Sciences, Tabriz, Iran. Data collection instruments were the Toronto Alexithymia Scale, the Maslach Burnout Inventory, the Neuroticism, Extraversion, Openness Five-Factor Inventory, and a demographic questionnaire. Pearson's correlation analysis, independent-samples t-test, one-way analysis of variance, and multiple linear regression analysis were used for data analysis. **Results:** The mean scores of alexithymia and burnout were 56.78 ± 8.64 and 49.78 ± 13.67, respectively, and these two variables were significantly correlated ($r = 0.258$; $P < 0.001$). Alexithymia also had significant relationships with gender ($P = 0.035$), employment status ($P = 0.045$), and personality trait ($P < 0.01$) but had no significant relationship with shift schedule ($P > 0.05$). **Conclusion:** Nurses with higher levels of alexithymia are more at risk for burnout. As alexithymia has significant relationships with gender and employment status, interventions are needed, especially for women, to alleviate their alexithymia and burnout.

KEYWORDS: *Alexithymia, Burnout, Nursing, Personality trait, Shift work*

INTRODUCTION

Nursing is one of the most stressful professions in the world. The most important stressors in nursing are poor payments, staff shortage, heavy workload, poor work environment, and the necessity to deal with patient health.[1] High levels of stress can eventually lead to job dissatisfaction and burnout.[2]

Burnout is "a psychological syndrome of emotional exhaustion, depersonalization, and reduced personal accomplishment, which develops in people who have professional relationships with others."[3] Nurses are more susceptible to job burnout due to their stressful work conditions and poor social support.[4] Burnout can lead to fatigue, frustration, poor professional interest, loss of positive feelings toward clients, and negative self-image.[5] Moreover, it can result in negative workplace behaviors such as absenteeism, sick leaves, premature retirement, alcohol abuse, excessive smoking and coffee intake, and workplace accidents.[6]

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It can also negatively affect the quality of nursing care services and thereby may pose threats to health-care systems.[7]

Alexithymia has been reported to contribute to burnout. By definition, alexithymia is a personality trait characterized by poor ability to identify and express emotions.[8] Individuals with alexithymia cannot properly manage and regulate their emotions and usually express them through destructive nonverbal behaviors such as crying, breaking objects, alcohol consumption, and drug abuse.[9] Alexithymia has direct relationships with depression, anxiety, and somatic diseases.[10] Together with its associated problems, alexithymia can reduce productivity and efficiency among nurses and thereby negatively affect care quality.

Personality traits are another factor affecting burnout.[11,12] The effects of personality traits are more apparent among individuals with alexithymia.

There are limited studies on the relationship between alexithymia and burnout. A study in this area reported that alexithymia has a significant direct relationship with burnout.[13] However, none of the previous studies evaluated the relationships of alexithymia with personality traits and shift work among nurses in Iran. This study was conducted to fill this gap.

Objectives

This study examined the relationships of alexithymia with personality traits, job burnout, and shift work among hospital nurses in Iran.

METHODS

Design and participants

This cross-sectional study was conducted in hospitals affiliated to Tabriz University of Medical Sciences, Tabriz, Iran. Initially, ten hospitals were selected, and a random sample of nurses was selected from each hospital using the list of all nurses in that hospital. The selected hospitals were Imam Reza, Shahid Madani, Razi, Shohada, Sina, Alzahra, Taleghani, Nikoukari, Alavi, and Koodakan Hospitals. The inclusion criteria were an age of 22–50, a clinical work experience of more than 6 months in the study setting, no history of known psychiatric disorders, no history of taking psychiatric medications, and no history of significant life events during the past 6 months (such as road accidents or significant losses). The only exclusion criterion was unwillingness to stay in the study.

The sample size was calculated using the results of a former study which reported that the mean score of alexithymia was 46.84 ± 13.37.[13] Accordingly, with a confidence level of 95%, and using the sample size formula

$$\left(n = \left(Z_{1-\alpha/2}\right)^2 \ S^2 / d^2 = \left(1.96\right)^2 \ 13.37^2 / 1.75^2 = 225\right),$$

a sample of 225 nurses was identified to be needed for the study.

Instruments

Data collection instruments were the Toronto Alexithymia Scale (TAS),[14] the Maslach Burnout Inventory (MBI),[15] the Neuroticism, Extraversion, Openness Five-Factor Inventory (NEO5F), and a demographic questionnaire.

The TAS is a self-report scale with 20 items in three dimensions, namely difficulty identifying feelings, difficulty describing feelings, and externally oriented thinking. Positively worded items are scored from 1 to 5 and negatively worded items (i.e., items 4, 5, 10, 18, and 19) are scored from 5 to 1. The possible total score of the scale can vary in the range of 20–100.[16] We used the Persian version of this scale, the psychometric properties of which were confirmed with a Cronbach's alpha of 0.85 in a former study.[17]

The 22-item MBI assesses burnout in three dimensions, namely emotional exhaustion (i.e., the frequency of emotional stress due to work), depersonalization (i.e., indifference and impersonality toward patients), and lack of personal achievement (i.e., senses of insufficiency, inefficiency, and nonachievement at work). These three dimensions include nine, five, and eight items, respectively. Each item is scored from 0 ("never") to 6 ("everyday"), resulting in a possible total score of 0–132. This scale has acceptable validity for burnout assessment[13] and a Cronbach's alpha of 0.86.[18]

The NEO5F includes sixty items on five personality traits, namely neuroticism, extraversion, openness to experience, agreeableness, and conscientiousness. Each of these traits is assessed with 12 items which are scored on a Likert scale from 0 ("completely disagree") to 4 ("completely agree"), resulting in a total dimensional score of 0–48. A former study reported that the Cronbach's alpha values of the five dimensions of this inventory were 0.75–0.81.[19]

The demographic questionnaire of the study included items on participants' age, gender, marital status, education level, employment status, affiliated hospital ward, doing extra shift, organizational position, and shift schedule (fixed or rotating).

Study instruments were given to participants at the beginning of one of their work shifts, and they were asked to complete it in a private environment and return it back to the researcher at her next referral.

Ethical considerations

The necessary ethical approval for this study was obtained from the Ethics Committee of Tabriz University

of Medical Sciences, Tabriz, Iran (code: IR.TBZMED. REC.1397.017). All the questionnaires were unnamed. The objectives of the study were explained to participants, and they were informed of their rights to voluntarily participate in or withdraw from the study. All participants signed written informed consent for participation.

Data analysis

All data were analyzed through the SPSS software version 10.0 (SPSS Inc., Chicago, IL, USA). Numerical data were described through mean and standard deviation, whereas categorical data were described through absolute and relative frequencies. To calculate the normalized mean, the sum of the scores obtained from each dimension was divided by the number of questions in that dimension. Relationships among the study variables were examined using the Pearson's correlation analysis. Independent-samples *t*-test and one-way analysis of variance were performed to examine the differences in the alexithymia and burnout mean scores in terms of different categories of demographic variables. Moreover, multiple linear regression analysis with backward method was performed to predict the mean score of alexithymia based on personality traits, burnout and its dimensions, and demographic characteristics (including age, gender, education level, employment status, and weekly work hours). All analyses were performed at a significance level of <0.05.

Table 1: Participants' characteristics and their total mean scores of burnout and alexithymia

Characteristics	n (%)	Burnout, mean ± SD	P-value	Alexithymia, mean ± SD	P-value
Gender					
Male	86 (36.6)	50.11 ± 11.7	0.042[a]	52.67 ± 8.45	0.035[a]
Female	149 (63.4)	49.67 ± 14.2		54.35 ± 8.65	
Age (years)					
20-29	121 (51.5)	48.95 ± 14.6	0.470[b]	56.55 ± 8.93	0.575[b]
30-39	88 (37.4)	51.25 ± 11.8		56.57 ± 8.75	
≥40	26 (11.1)	50.19 ± 12.1		58.46 ± 6.8	
Marriage status					
Single	92 (39.1)	49.96 ± 15.2	0.990[a]	57.42 ± 9.61	0.375[a]
Married	143 (60.1)	49.94 ± 12.0		111.66 ± 7.9	
Educational level					
Associate	12 (5.1)	56.32 ± 9.41	0.036[b]	55.54 ± 11.8	0.835[b]
Bachelor's	198 (84.3)	49.30 ± 13.5		56.90 ± 8.42	
Master's or PhD	25 (10.6)	47.41 ± 11.7		56.36 ± 9.02	
Employment status					
Permanent	69 (29.4)	52.27 ± 13.7	0.013[b]	57.62 ± 7.93	0.045[b]
Conditional	76 (32.3)	48.76 ± 11.4		55.1 ± 7.94	
Contractual	20 (8.5)	56.45 ± 17.8		60.8 ± 1059	
Experience (years)					
1-10	165 (70.2)	46.93 ± 12.0	0.712[a]	56.56 ± 8.8	0.578[a]
≥11	70 (29.8)	51.33 ± 9/7		57.25 ± 9.00	
Affiliated ward					
Critical care unit	101 (43)	51.16 ± 12.7	0.0212[b]	57.04 ± 7.33	0.189[b]
Emergency room	26 (11)	46.03 ± 14.0		55.88 ± 8.07	
General ward	108 (46)	49.75 ± 13.6		56.73 ± 9.9	
Official position					
Nurse manager	24 (10.66)	53.20 ± 9.93	0.270[a]	58.20 ± 8.87	0.392[a]
Staff nurse	201 (89.34)	49.58 ± 13.6		56.61 ± 8.62	
Work hours per week					
44	112 (47.7)	49.56 ± 13.9	0.669[a]	56.04 ± 8.3	0.218[a]
≥45	123 (52.3)	50.3 ± 12/8		57.43 ± 8.92	
Doing extra shift					
Yes	213 (90.6)	56.22 ± 15.6	0.002[a]	56.57 ± 8.4	0.369[a]
No	22 (9.4)	49.3 ± 18.26		58.72 ± 10.7	
Shift schedule					
Fixed	107 (45.5)	44.38 ± 14.5	0.044[a]	56.92 ± 8.18	0.805[a]
Rotating	128 (54.5)	50.46 ± 12.2		56.64 ± 9.05	

[a]The results of independent-samples *t*-test, [b]The results of the one-way analysis of variance. SD: Standard deviation

RESULTS

In total, 225 nurses participated in the present study. The means of their age and work experience were 31.23 ± 6.77 and 7.2 ± 6.48 years, respectively. As Table 1 shows, most of them were female (63.4%), younger than 39 years (88.9%), and married (61%). A majority of the participants had a work experience of <10 years (71%), held bachelor's degree (84.3%), did rotating shifts (54.4%), and had extra shifts (90.6%).

The mean scores of alexithymia and burnout were 56.78 ± 8.64 and 49.78 ± 13.67, respectively [Table 2]. The highest mean scores of burnout dimensions were related to the externally oriented thinking (3.28 out of 5) and the depersonalization (3.42 out of 6) dimensions.

The highest dimensional mean score in the personality trait inventory was also related to the conscientiousness dimension (2.3 out of 4).

The total score of alexithymia had significant positive correlations with the scores of job burnout and its emotional exhaustion and depersonalization dimensions ($P < 0.001$). Moreover, the total score of alexithymia had significant direct correlations with the neuroticism and the openness to experience personality traits and significant indirect correlations with the agreeableness, extroversion, and consciousness personality traits ($P < 0.05$) [Table 3].

The total mean scores of job burnout were significantly different among the participants with different age groups, education levels, employment status, doing extra shifts, and shift schedules [$P < 0.05$; Table 1]. The total mean scores of alexithymia were also significantly different among participants with different genders and employment status [$P < 0.05$; Table 1]. However, the differences of alexithymia and its dimensions scores were statistically insignificant for participants with different shift schedules [$P < 0.05$; Table 1].

Preliminary analysis revealed no violation of the assumptions of normality, linearity, and multicollinearity. The results of regression analysis showed that job burnout and its emotional exhaustion and depersonalization dimensions as well as the neuroticism, extraversion, openness to experience, agreeableness, and conscientiousness personality traits were significant predictors of alexithymia, accounting for 70% of its total variance ($P = 0.001$). The highest beta value was related to the agreeableness personality trait [beta = 0.621; $P = 0.001$; Table 4].

Table 2: The mean scores of alexithymia, burnout, their dimensions, and personality traits

Variables	Mean ± SD	Normalized mean score
Alexithymia		
Difficulty identifying feelings	16.48 ± 5.16	2.35
Difficulty describing feelings	13.97 ± 2.52	2.79
Externally oriented thinking	26.31 ± 4.10	3.28
Total	56.78 ± 8.64	2.83
Burnout		
Emotional exhaustion	14.11 ± 8.54	1.56
Depersonalization	5.48 ± 4.72	3.42
Personal accomplishment	27.39 ± 7.13	2.35
Total	49.78 ± 13.67	2.26
Personality traits		
Neuroticism	22.73 ± 6.14	1.89
Extroversion	26.44 ± 5.05	2.20
Openness to experience	24.65 ± 4.86	2.05
Agreeableness	25.15 ± 5.07	2.09
Conscientiousness	27.64 ± 4.77	2.30

SD: Standard deviation

Table 3. Pearson's correlation coefficients of the correlations of alexithymia and its dimensions with burnout, its dimensions, and personality traits

Variable	Alexithymia			
	Difficulty identifying feelings	Difficulty describing feelings	Externally oriented thinking	Total
Burnout				
Emotional exhaustion	0.375[a]	0.135[b]	0.091[c]	0.220[a]
Depersonalization	0.367[a]	0.281[a]	0.087[c]	0.260[a]
Personal accomplishment	0.166[b]	0.014[c]	0.244[a]	0.021[c]
Total	0.318[a]	0.196[b]	0.022[c]	0.258[a]
Personality traits				
Neuroticism	0.431[a]	0.258[a]	0.119[c]	0.389[a]
Extroversion	−0.026[c]	−0.312[a]	−0.361[a]	−0.278[a]
Openness to experience	0.119	0.268[a]	0.331[a]	0.306[a]
Agreeableness	−0.261[a]	−0.197[a]	−0.204[b]	−0.257[a]
Conscientiousness	−0.007[c]	−0.228[a]	−0.301[a]	−0.201[b]

[a]Statistically significant at a $P<0.001$, [b]Statistically significant at a $P<0.01$, [c]Statistically significant at a $P<0.05$

Table 4: The results of regression analysis for the prediction of alexithymia

Variable	Unstandardized coefficients		Standardized coefficients	*t*-value	*P*-value
	B	SE	Beta		
Burnout					
Emotional exhaustion	0.040	0.235	0.039	0.169	< 0.001
Depersonalization	0.417	0.231	0.228	10.80	< 0.001
Personal accomplishment	0.061	0.198	0.050	0.306	0.753
Total	0.041	0.197	0.063	0.206	< 0.001
R^2, Adjusted R^2, F			0.14, 0.086, 4.158		
Personality traits					
Neuroticism	0.385	0.093	0.274	40.12	< 0.001
Extroversion	0.268	0.124	0.157	20.15	< 0.001
Openness to experience	0.181	0.123	0.102	10.47	< 0.001
Agreeableness	0.257	0.135	0.151	10.90	< 0.001
Conscientiousness	−0.069	0.143	−0.038	−0.48	< 0.001
R^2, Adjusted R^2, F			0.247, 0.220, 9.250		

[a]The effects of age, gender, and educational level have been adjusted. SE: Standard error

DISCUSSION

Study findings revealed a positive relationship between burnout and alexithymia so that those with more severe alexithymia had higher levels of job burnout. Alexithymia is associated with life dissatisfaction[20] and low perceived social support.[21] Lack of perceived support at workplace can also negatively affect work environment and thereby may end in job burnout.

The results of regression analysis indicated that job burnout and its emotional exhaustion and depersonalization dimensions were among the significant predictors of alexithymia. A former study also reported the same finding.[22] Alexithymia is a risk factor for many psychiatric disorders because those with alexithymia are under higher levels of physical and emotional stress.[23] Individuals with alexithymia have limited ability to establish healthy interpersonal relationships at workplace.[24] Conversely, those who feel that they receive greater support from their colleagues and supervisors are more resistant to job burnout.[25]

Our findings also showed that female nurses were more at risk for alexithymia and burnout than their male counterparts. This finding is consistent with the findings of a former study on Chinese adolescents.[26] An explanation for this finding may be the greater independence of male nurses compared with female nurses. These findings denote gender differences respecting vulnerability to alexithymia and burnout.

In the present study, the total score of burnout among nurses working in rotating shifts was significantly higher than that of nurses working in fixed shifts. The significant relationship of shift schedule with burnout can be attributed to the fact that nurses with rotating shifts have a higher workload and thus experience higher levels of job burnout.[27] In addition, our findings showed that lower education level and employment status were associated with higher levels of burnout. These findings are in line with the findings of a former study.[28] An explanation for these findings is that nurses with better employment status may have fewer concerns about the loss of jobs and hence feel lower levels of job burnout. Moreover, those with higher education level probably have more ability in properly expressing their emotions and feel lower levels of emotional exhaustion.[29]

Study findings also showed an indirect relationship between alexithymia and extroversion. A former study also reported the same finding and concluded that extroversion can be a protective factor against alexithymia.[30] Moreover, those with extroversion personality trait are less vulnerable to alexithymia probably due to the fact that they are more likely to experience positive emotions, are kinder and more sociable,[31] and hence, have more ability to express their emotions.

In line with the findings of an earlier study,[32] our findings indicated that alexithymia had significant relationships with personality traits. According to the results of regression analysis, higher levels of burnout and neuroticism were associated with higher levels of alexithymia. Neurotic individuals are more reactive to stressors and are more likely to experience embarrassment, irritating thoughts, depression, and low self-esteem.[33] They cannot properly express their emotions and hence are at risk for burnout. Therefore, they may benefit from individualized strategies such as cognitive behavioral therapy and relaxation techniques which can decrease their negative emotional responses as well as from work-oriented interventions (such as role-playing) which improve their attitudes and communication skills.[34]

Our findings also showed that both alexithymia and personality traits were associated with burnout. This is in agreement with the findings of a former study which showed the significant relationship of burnout with alexithymia and personality traits among physicians and proposed alexithymia as an independent risk factor for burnout.[35] Another study also showed that the level of burnout may vary according to personality traits.[36]

Due to the cross-sectional design of the study, the identified causal relationships are not very reliable and require further investigation. Moreover, although the sample of the study was representative of nurses in public hospitals in Tabriz, Iran, findings may not be generalizable to all nurses in Iran and also to nurses in private hospitals. Data collection through the self-report method might have resulted in recall bias. Future studies are recommended to use other data collection methods (such as interview) to collect more in-depth data. Despite these limitations, this study provides some evidence about the relationships of alexithymia, job burnout, personality traits, and shift schedule.

Conclusion

This study concludes that nurses with more severe alexithymia are more at risk for job burnout. Moreover, female nurses and those with lower employment status and educational levels are at risk for alexithymia and job burnout. Therefore, developing nurses' communication skills and their ability to express their emotions may help prevent or alleviate job burnout among them. Nursing managers and policymakers can develop and use educational and intervention programs to increase the quality of work-life among nurses to reduce alexithymia and subsequent burnout.

Conflicts of interest

There are no conflicts of interest.

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