

## Original Article

# Correlation of burnout with social support in hospital nurses

Zhonghua Nie<sup>1</sup>, Yuelong Jin<sup>1</sup>, Lianping He<sup>1</sup>, Yan Chen<sup>1</sup>, Xiaohua Ren<sup>1</sup>, Jiegen Yu<sup>2</sup>, Yingshui Yao<sup>1</sup>

<sup>1</sup>School of Public Health, Wannan Medical College, Wuhu 241002, Anhui, China; <sup>2</sup>School of Humanities and Management Science, Wannan Medical College, Wuhu 241002, Anhui, China

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**Abstract:** Burnout is common in industrial countries. In this study, our aim is to investigate the relationship between burnout and social support (SS) among hospital nurses. A cross-sectional survey was conducted in 7 hospitals from three provinces of China. A total of 1212 registered hospital nurses were included, the respond rate is 94.4% (1144/1212). A self-administered questionnaire consisting of socio-demographic characteristics, burnout and SS was used in this study. A revised version of Maslach Burnout Inventory (MBI) was applied to evaluate the burnout and SS was measured by nine questions. Logistic regression analysis was used to explore the association between burnout and SS after controlling for age, gender, marital status, working years, income, educational level, and profession. According to the results obtained from the study, 66% of the staff suffered from emotional exhaustion (EE) in moderate or severe degree, 65% of them suffered from depersonalization (DP) and 63% feel lower personal achievements (PAs). It means that higher level of EE, DP and lower PAs were considered care providers in the hospital nurse. Further correlation analysis indicated that the score of EE, DP and PAs were negative associated with the score of SS ( $P < 0.05$ ). The univariate analysis and multivariate analysis results also revealed that the SS score negative associated with DP score and positively associated with PAs score after controlling for age, gender, marital status, working years, income, educational level and job title. SS have a significantly influences on depersonalization in hospitals nurse. This study also suggests that we should pay more attention to the relationship between burnout and reduced personal accomplishment in future studies.

**Keywords:** Nurses, social support, burnout

### Introduction

Professional burnout is a psychological construct widely, which was explored as a major health-related concern in the healthcare literature, especially in recent decades. Nowadays, there are no standard definition for burnout, generally speaking, burnout refer to “a syndrome of emotional exhaustion (EE), depersonalization (DP) and reduced personal accomplishments (PAs) that occur among individuals who work with people” [1-3].

Professional burnout was frequently used to describe the experience of healthcare workers dealing with stressful situations. The cause of burnout may be job stress, social support, a lack of resources, a lack of technical ability, high over commitment, high psychological job demands, insufficient training, difficulty in cop-

ing with patient problems, and existing barriers in the organization [4-6]. Researches showed that the middle level of emotional exhaustion and depersonalization, and a high level of personal accomplishments was found in Chinese nurses [1, 7, 8].

In this study, we aimed to investigate the level of professional burnout in hospitals nurse in China and its association with social support.

### Methods

This cross-sectional study was performed based on a convenience sample which consists of 1144 individuals aged between 21 and 58 years. The data were collected by a questionnaire which contained personal information, burnout inventory and social support (SS) scale. A validated version of the revised Maslach

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**Table 1.** General characteristics of respondents

Variable	EE (n)			DP (n)			Pas (n)		
	High	Moderate	Low	High	Moderate	Low	High	Moderate	Low
<b>Gender</b>									
Male	11 (0.022)	5 (0.019)	9 (0.024)	14 (0.031)	4 (0.014)	7 (0.018)	8 (0.042)	4 (0.017)	13 (0.019)
Female	496 (0.978)	255 (0.981)	368 (0.976)	442 (0.969)	291 (0.986)	386 (0.982)	181 (0.958)	234 (0.983)	704 (0.981)
<b>Monthly income</b>									
<1500	115 (0.227)	61 (0.235)	92 (0.244)	120 (0.263)	66 (0.224)	82 (0.209)	56 (0.296)	61 (0.256)	151 (0.210)
1501-	276 (0.544)	162 (0.623)	222 (0.589)	244 (0.535)	173 (0.586)	243 (0.618)	107 (0.566)	138 (0.580)	415 (0.580)
>3000	116 (0.229)	37 (0.142)	63 (0.167)	92 (0.202)	56 (0.190)	68 (0.173)	26 (0.138)	39 (0.164)	151 (0.210)
<b>Marital status</b>									
Single/widow	240 (0.473)	115 (0.442)	174 (0.462)	236 (0.518)	129 (0.437)	164 (0.417)	88 (0.466)	108 (0.454)	333 (0.464)
Married	267 (0.527)	145 (0.558)	203 (0.538)	220 (0.482)	166 (0.563)	229 (0.583)	101 (0.534)	130 (0.546)	384 (0.536)
<b>Age (years)</b>									
<30	309 (0.609)	181 (0.696)	230 (0.610)	302 (0.662)	185 (0.627)	233 (0.593)	109 (0.577)	151 (0.635)	460 (0.642)
30-	149 (0.294)	59 (0.227)	88 (0.233)	118 (0.259)	75 (0.254)	103 (0.262)	51 (0.270)	56 (0.235)	189 (0.264)
>40	49 (0.097)	20 (0.077)	59 (0.157)	36 (0.079)	35 (0.119)	57 (0.145)	29 (0.153)	31 (0.130)	68 (0.094)
<b>Working years</b>									
<5	229 (0.452)	129 (0.496)	161 (0.427)	233 (0.511)	130 (0.441)	156 (0.397)	89 (0.471)	108 (0.454)	322 (0.449)
5-	166 (0.328)	87 (0.335)	120 (0.318)	128 (0.281)	88 (0.298)	123 (0.313)	42 (0.222)	70 (0.294)	227 (0.317)
>15	112 (0.220)	44 (0.169)	96 (0.255)	95 (0.208)	77 (0.261)	114 (0.290)	58 (0.307)	60 (0.252)	168 (0.234)
<b>Educational level</b>									
High school or lower	83 (0.164)	41 (0.158)	63 (0.167)	64 (0.140)	51 (0.173)	72 (0.183)	30 (0.159)	41 (0.172)	116 (0.413)
College	331 (0.653)	175 (0.673)	240 (0.637)	307 (0.673)	182 (0.617)	257 (0.654)	124 (0.656)	151 (0.634)	35 (0.124)
University or above	93 (0.183)	44 (0.169)	74 (0.196)	85 (0.186)	62 (0.210)	64 (0.163)	35 (0.185)	46 (0.194)	130 (0.463)
<b>Title</b>									
Nurses	256 (0.505)	153 (0.588)	204 (0.541)	261 (0.572)	151 (0.512)	201 (0.511)	108 (0.571)	129 (0.542)	376 (0.524)
Senior nurse	161 (0.318)	68 (0.262)	94 (0.249)	132 (0.289)	84 (0.285)	107 (0.272)	42 (0.222)	62 (0.261)	219 (0.305)
Nurse-in-charge or above	90 (0.177)	39 (0.150)	79 (0.210)	63 (0.138)	60 (0.203)	85 (0.216)	39 (0.206)	47 (0.197)	122 (0.171)

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**Table 2.** Correlation between score of SS and burnout (please show the real number as well)

Item	Score of social support	
	<i>r</i>	<i>P</i>
EE	-0.113	0.000
DP	-0.142	0.000
PAs	-0.304	0.000

Burnout Inventory (MBI) was applied to evaluate professional burnout in subjects. Schaufeli study shows that in published studies of occupational burnout, more than 90% of the papers or research reports using the MBI as a measuring instrument [9]. The MBI first translated into Chinese by Pro. Peng Meici from Hong Kong Polytechnic University. the homogeneous reliability was 0.73 to 0.86 [10]. The MBI consists of three subscales which were EE, DP and PAs, respectively. EE subscale includes 9 items, DP subscale includes 5 items and PAs subscale includes 8 items, each item based on a 7-point rating ranging from 0 (never) to 6 (every day). The score of less than 18 represents low, 19 to 26 means moderate, and more than 27 represents high EE. In DP subscale, the score of less than 5 represents low, 6 to 9 means moderate, and more than 10 represents high. What's more, in PAs subscale, the score of more than 40 means low, 34 to 39 represents moderate, and less than 33 means high. For the EE and DP subscales, higher scores represent of higher levels of professional burnout; but for the PAs subscale, higher scores means lower levels of professional burnout. In this study, we scored the EE, DP and PAs, then calculate total score of EE, DP and PAs.

### Measurement of Family and friend SS

SS was measured by nine questions as following: (1) How many people in your leader try their best to help you, to make your job easier? (2) How many people in your colleague try their best to help you, to make your job easier? (3) How many people in your spouses, relatives and friends try their best to help you, to make your job easier? (4) In your leader, how many people you can talk easily with them? (5) In your colleague, how many people you can talk easily with them? (6) In your spouses, relatives and friends, how many people you can talk easily with them? (7) In your leader, how many people are willing to listen to your personal prob-

lems? (8) In your colleague, how many people are willing to listen to your personal problems? (9) In your spouses, relatives and friends, how many people are willing to listen to your personal problems? Questions were rated on a 5-point Likert scale, ranging from 1 (no) to 5 (many). Participants without spouse or children rated as 0 (not available) in questions regarding to spouse or children support respectively. In this study, SS was represented as the total of these nine questions. The total scores of 0-35 indicated low social support; 35-45 indicated high social support [11].

### Data analysis

Data were analyzed with SPSS 12.0, and Pearson analysis and Bivariate or Multivariate analysis were used in the study. Since 100 subjects information of social support was missed, Pearson's partial correlation was used to explore an association between SS and professional burnout. only 1044 subjects is included when compare the relationship among SS (high levels or low level) and gender, monthly income, marital status, educational level, profession, working years and professional burnout. The statistical tests of Pearson correlation was used to analyze the data ( $P < 0.05$  was considered significant).

### Results

The general characteristics of respondents are summarized in **Table 1**. The majority of the respondents are female (97.8%). More than half of the respondents's monthly income are 1500-3000 RMB (57.7%). Most of the respondents was younger than 30 years (62.9%). nearly 45.4% of the subjects had less than 5 working years. 53.8% and 65.2% respondents were married and graduated from a college. More than half of the participants have a profession of nurse.

In EE subscale, 44% of respondents have a higher emotional exhaustion, 22.7% of respondents in a moderate emotional exhaustion. Results of the DP subscale revealed 39.9% of respondents are "High" and 25.8% of respondents are "Moderate". Notably, 62.7% of respondents are low level on the PAs subscale.

**Table 2** shows the correlation between burnout and SS after adjusting to income, gender, mari-

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**Table 3.** Association between SS (high vs. low) and income, gender, marital status, working years, educational level, profession and burnout (n = 1044)

Variable	Bivariate analysis			Multivariate analysis		
	Crude OR (95% CI)		P	Adjusted OR (95% CI)		P
<b>EE</b>						
Low	1.016	0.714, 1.445	0.931	1.033	0.728, 1.467	0.855
Moderate	1.028	0.728, 1.454	0.876	1.047	0.741, 1.479	0.794
High	1.0			1.0		
<b>DP</b>						
Low	1.809	1.267, 2.584	0.001	1.828	1.281, 2.608	0.001
Moderate	1.563	1.111, 2.200	0.010	1.597	1.135, 2.247	0.007
High	1.0			1.0		
<b>PAs</b>						
Low	0.306	0.211, 0.444	0.000	0.307	0.212, 0.444	0.000
Moderate	0.838	0.545, 1.303	0.427	0.850	0.550, 1.313	0.463
High	1.0			1.0		
<b>Gender</b>						
Male	1.416	0.581, 3.453	0.450			
Female	1.0					
<b>Income (¥)</b>						
<1500	0.533	0.330, 0.862	0.021			
1501-3000	0.855	0.595, 1.228	0.404			
>3000	1.0					
<b>Marital status</b>						
Single/widow	0.932	0.630, 1.378	0.723			
Married	1.0					
<b>Age (years)</b>						
<30	0.936	0.465, 1.884	0.853			
30-40	0.974	0.572, 1.658	0.922			
>40	1.0					
<b>Working years</b>						
<5	1.433	0.698, 2.944	0.327			
5-15	1.302	0.730, 2.324	0.371			
>15	1.0					
<b>Educational level</b>						
High school or lower	0.719	0.448, 1.151	0.147			
College	0.746	0.519, 1.073	0.078			
University or above	1.0					
<b>Job title</b>						
Nurses	2.061	1.032, 4.114	0.040			
Senior nurse	1.003	0.590, 1.705	0.990			
Nurse-in-charge or above	1.0					

tal status, working years, educational level and profession. Score of three subscale had a significant negative correlation with score of SS (P<0.05).

The univariate analysis of social support-related factors and burnout is shown in **Table 3**. The

prevalence of high SS increased significantly with decreasing DP score, and the opposite PAs score. However, there is no statistical significance between the different EE scale score levels and social support. ORs (95% CIs) for high SS from the low to moderate DP scores were 1.809 (1.267, 2.584), 1.563 (1.111, 2.200),

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and 1.0 (Ref) for the high level of DP group. The low level of Pas is closely related to high SS. Low income level of the nurse and those with low job title have a higher rate of social support, but gender, marital status, age, working years and educational level did not have a significant association with social support.

The multivariate analysis results revealed that the prevalence of high SS increased significantly with decreasing DP score and increasing PAs score after controlling for gender, income, gender, marital status, age, working years, educational level, and job title. Compared with low DP score levels, the ORs for low and moderate were 1.828 (1.281, 2.608) and 1.597 (1.135, 2.247). Furthermore, we also compared with high PAs score levels, the ORs for low and moderate were 0.307 (0.212, 0.444) and 0.850 (0.550, 1.313).

### Discussion and conclusion

In this study, 66% of the staff suffered from moderate to severe EE, 65% suffered from moderate to severe DP and 63% had low personal achievements. It showed that nurses at a high level of burnout in china [1, 12-14]. The score of DP and PAs had a significant negative correlation with score of social support, also the prevalence of high SS increased significantly with decreasing DP score and increasing PAs score after controlling for income, gender, marital status, working years, educational level, and job title. The results of our study suggested that we can increasing better social support is good way to reduce the burnout of nurse, which is consistent with previous study, high levels of perceived SS are associated with low levels of perceived burnout [15-17]. Thus, we should explore what kind of SS (support from supervisors and friends or family members, reassurance of worth, opportunity for nurturing, organizational support, and so on) is more important to reduce burnout. We should take measures enhance social support and improve work condition for nurses, to avoiding those who unable to tolerate burnout likely resign or possibly even change professions.

Low income level of the nurse and those with low job title have a higher rate of social support, it may be due to recently graduated from school and lack of working experience and need more social support. In fact, this study

found that the most obvious point is that the relationship between social support and DP subscale. It showed that increasing social support can reduce the DP of nurses. The results suggested social support can significantly improve the attitude of nurses to work and the patients, so that they have more passion at work [18]. Results also showed that between social support and PAs negatively correlated, which means an increase in social support can improve nurse personal accomplishment [19]. We should pay more attention to the burnout in DP and PAs scale in future study.

The results in the present study showed no significant association between SS and EE. However, there have been studies indicate that there is an association between social support and EE [20]. The reason may be due to a part of SS data of our research missing. There was no significant association between SS and the level of education, marital status, age and working years in the present study.

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### Disclosure of conflict of interest

None.

**Address correspondence to:** Jiegen Yu, School of Humanities and Management Science, Wannan Medical College, No. 22 Road Wenchangxi, Yijiang District, Wuhu 241002, Anhui, China. E-mail: whyujg@163.com; Yingshui Yao, School of Public Health, Wannan Medical College, No. 22 Road Wenchangxi, Yijiang District, Wuhu 241002, Anhui, China. E-mail: yingshuiyao@163.com

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