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## Original Article

## The effects of emotional labor and competency on job satisfaction in nurses of China: A nationwide cross-sectional survey

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## ABSTRACT

**Objectives:** This study aimed to explore the status of job satisfaction, emotional labour, core competencies and job stress and the associations of emotional labour and core competencies with the job satisfaction of nurses in China.

**Methods:** Data were collected by using a self-designed general information questionnaire, a job satisfaction questionnaire (McCloskey/Mueller Satisfaction Scale), a nurse emotional labour questionnaire, the Competency Inventory for Registered Nurses questionnaire, and a nurse job stressor questionnaire. A total of 13,448 nurses from 92 hospitals across mainland of China were surveyed, and 11,337 respondents (84.3% response rate) completed the questionnaires.

**Results:** The survey results indicated that Chinese nurses had average job satisfaction ( $24.77 \pm 5.23$ ), moderate job stress ( $86.84 \pm 21.12$ ), moderate to high emotional labour experiences ( $55.08 \pm 9.63$ ) and high competency ( $195.77 \pm 37.61$ ). Multiple linear regression indicated that surface acting was negatively correlated with job satisfaction ( $P < 0.01$ ), while deep acting ( $P < 0.01$ ) and nurses' core competence ( $P < 0.01$ ) were positively associated with job satisfaction. Besides, The results also indicated job stress, geographical distribution, hospital category, gender, work shift, only children, parenting status, monthly salary, nursing experience, professional title, hospital area were the influencing factors of job satisfaction ( $P < 0.05$ ).

**Conclusion:** The improvement of the emotional labour and competency of nurses may help enhance their job satisfaction.

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## 1. Introduction

Healthcare workers in hospitals experience high levels of job stress and low job satisfaction [1]. Hospital nurses are at high risk for occupational burnout, reduced job satisfaction and high levels of job stress worldwide, thus leading to poor nursing outcomes [2–4]. Numerous studies have described job stress, satisfaction and burnout among nursing professionals [5–8]. Nantsupawat et al. [4] reported that 28% of nurses in Thailand are dissatisfied with their job. Aiken and colleagues [9] reported that job dissatisfaction among nurses varied from 17% to 60% in nine sample countries. The work environment is an important factor that substantially contributes to nurses' job dissatisfaction [9].

In China, the demand for quality health care service has greatly increased in the last two decades, and hospitals are facing challenges to provide high-quality service in this rapidly changing environment [10]. A limited number of nurse staff against a growing patient population and their needs further poses serious challenges to providing quality healthcare service [11]. Low job satisfaction of nurses has also been reported in China. Lu and colleagues [12] reported that low salary (79.2%) is the major reason for nurse job dissatisfaction. A survey conducted in six hospitals in Harbin, China, showed that nurses were dissatisfied mainly for workload and compensation reasons [13]. Liu and colleagues [14] reported that more than 50% of nurses were dissatisfied with their job in Guangdong Province, China. The results of studies and surveys conducted in China varied widely because of the different sites of selection and the use of various measurement instruments.

The clinical competency of nurses is an important factor affecting job satisfaction. A previous study demonstrated that the

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core competencies of nurses correlated significantly with job satisfaction, stress, burnout and turnover [7]. In addition, emotional labour, which is required in the nursing profession, may also reduce job satisfaction. In the 1980s, Arlie Russell Hochschild introduced the concept of 'emotional labour', referring to the management of a person's inner emotions to meet the requirement of emotional expression of an organisation. The management of personal emotion to fulfil job requirements is essential in the nursing profession. However, to date, only a limited number of studies have related the parameters of nurses' job satisfaction with the status of emotional labour in China.

The present study aimed to explore the status of emotional labour, core competencies, job satisfaction and stress of nurses in tertiary hospitals in mainland of China. In addition, the associations of emotional labour and core competency with job satisfaction were analysed.

## 2. Methods

### 2.1. Study design

The present study was a nationwide, multi-centre, cross-sectional survey. From April 2015 to July 2015, a selected sample population of nurses from 92 hospitals across the mainland of China was surveyed with online questionnaires for general information, job satisfaction, emotional labour, core competency and job stress. For this online survey, unique usernames and passwords were established for each included nurse. The web links were then sent to the charge nurses in the hospitals and then assigned to the individual nurses. The data were collected and analysed for measuring the general status of job satisfaction, stress, emotional labour, competency and the potential interactions between these factors. The ethics committees of all 92 participant hospitals approved the study, and the survey form included a clear statement that the subjects used to provide informed consent for their participation in the survey.

### 2.2. Study population and sampling method

According to China's 'Comprehensive Hospital Evaluation Standards and the Implementation Rules', which contains 6 basic standards and 48 core items, hospitals in the country are categorized into 3 Grades and 10 levels. Tertiary hospitals, which require more than 500 beds, provide the highest level of medical and nursing care in China [15]. Nurses working in these hospitals were invited to participate in the survey. The inclusion criteria were as follows: expression of willingness to participate in the survey by the signing of the informed consent at the time of username and password assignment by the charge nurses; and permanent or contract employment with the surveyed hospitals. The exclusion criteria were the following: unavailability on the survey date (e.g. off-duty and leaves due to illness, maternity, personal reasons, training and business trips). Interns and/or nurse students were also excluded. Stratified cluster sampling was adopted to recruit the participants in this survey. According to 2013 statistics from the Ministry of Health of the People's Republic of China, 989 tertiary hospitals were in mainland of China, whereas 438, 317 and 234 were in the eastern, middle and western regions, respectively. In the present study, 10% of the hospitals in each region were randomly selected and invited for participation. In each respondent hospital, 10% of all the nurses were randomly selected from the departments of internal medicine, surgery, obstetrics and gynaecology, paediatrics, ENT, outpatient and emergency and surgical supply, which were the major departments in most of the surveyed hospitals and represented a large number of nurses.

Quality control was performed in two ways. (1) To ensure questionnaire completion, each item was set as a required question, which could not be left unanswered. (2) Each enrolled nurse was assigned a username and a password, which allowed detection of non-responding nurses, who were followed up by their respective centres.

### 2.3. Measurement tools

All the participants received questionnaires, including a self-designed general information questionnaire, the McCloskey/Mueller Satisfaction Scale (MMSS), a nurse emotional labour questionnaire, the Competency Inventory for Registered Nurses (CIRN) and a nurse job stressor questionnaire. The developers permitted usage of all questionnaires in this study.

#### 2.3.1. General information questionnaire

The self-designed general information questionnaire consisted of questions pertaining to age, gender, marital status, education, work experience, employment status, hospital area, professional title.

#### 2.3.2. MMSS

The job satisfaction was measured using the MMSS [16]. This scale is used in determining whether the nurses were satisfied with their profession by assessing 31 items in 8 dimensions, including satisfaction with extrinsic rewards, scheduling, family/work balance, co-workers, interaction, professional opportunities, praise/recognition, and control/responsibility. Responses were rated on a 5-point Likert scale ranging from 'very satisfied' (5 points) to 'very unsatisfied' (1 point). The reported Cronbach's  $\alpha$  coefficients of the total scale were 0.89. The questionnaire was translated and modified to generate a Chinese version by Zheng et al [5]. The cumulative range of variance of the Chinese version of the MMSS for the different items was 0.80–1.0, with an average of 0.94. The reported Cronbach's  $\alpha$  coefficient of the total scale was 0.95; the coefficients for the dimensions were 0.84, 0.89, 0.70, 0.64, 0.70, 0.85, 0.87 and 0.85.

#### 2.3.3. Nurse emotional labour questionnaire

The Chinese version of this questionnaire was developed by Luo and Sun [17] on the basis of the emotional labour scale designed by Grandey [18]. This questionnaire aims to increase the understanding of the emotional status of nurses on task by accessing emotional labour at three dimensions, including surface acting (items 1–7), requirement to express emotions (items 8–11) and deep acting (items 12–14). Surface acting involves 'pretending' to feel one emotion while feeling another, whereas deep acting is comparatively effortless and requires changes in the internal emotions to align these with the expected emotions, thus making the feeling appear genuine. Each item was rated on a 6-item scale ranging from 'extremely disagree' (1 point) to 'extremely agree' (6 point). The cumulative variance of the three dimensions was 62.78%. The Cronbach's  $\alpha$  coefficients of the three dimensions were 0.711, 0.826 and 0.872, and that of the total scale was 0.811, indicating optimal reliability and validity.

#### 2.3.4. CIRN

Nurses' core competencies, which comprise an issue of care quality and ensuring competence in terms of ability and actual performance, are legal and ethical obligations to individual healthcare recipients and payers. CIRN was developed by Liu et al [19] as an objective tool for measuring the competencies of registered nurses in the different areas of clinical practice. The questionnaire consists of 55 items (i.e. competencies) divided into 7

dimensions, clinical care (10 items), leadership (9 items), interpersonal relationships (8 items), legal/ethical practice (8 items), professional development (6 items), training/consultation (6 items) and critical thinking/research ability (8 items). Each item was rated on a 4-point scale ranging from 'no competency' (0 point) to 'high competency' (4 point). Overall competency was evaluated at three levels: a total score <110 denoted low competency, 110–165 signified moderate competency and 165–220 demonstrated high competency. The reported Cronbach's  $\alpha$  coefficient of the total scale was 0.893. The reported coefficients of the seven dimensions ranged from 0.79 to 0.86, whereas the validity was measured as  $r = 0.44$  ( $P < 0.05$ ).

### 2.3.5. Nurse job stressor questionnaire

The nurse job stressor questionnaire was developed in Chinese by Li and Liu [8] on the basis of the nursing stress scale developed by Wheeler and Riding [20]. The questionnaire consists of five dimensions, namely, professional and work issues (items 1–7), work load and time allocation issues (items 8–12), working condition and resource issues (items 13–15), issues in patient care (items 16–26) and issues in personal relations and management (items 27–35). Each item was rated on a 4-point scale representing 'no pressure' (1 point) to 'high pressure' (4 point). The total stress scale was evaluated at three levels: 35–75 as light stress, 76–105 as moderate stress and 106–140 as high stress. The reported Cronbach's  $\alpha$  coefficients of the questionnaire were 0.98 for the total stressor scale, 0.95 for professional and work issues, 0.83 for work load and time allocation issues, 0.92 for working condition and resource issues, 0.94 for issues in patient care and 0.90 for issues in personal relations and management. This questionnaire is commonly used to measure the job stressors of clinical nurses in China.

### 2.4. Statistical analysis

Statistical analysis was performed using the software SPSS 18.0 (IBM, Chicago, IL, United States). Descriptive statistics were used to present the measurement status of job satisfaction, stress, emotional labour, competency and the general status of the surveyed nurses. Continuous variables were expressed as *Mean*  $\pm$  *SD*. Categorical variables were expressed as numbers and percentages. The comparison of classification variables was measured using the *t*-test and ANOVA, and the comparison of continuous variables was measured using Pearson's correlation. Multiple linear regression was used to examine the relationship of job satisfaction with

emotional labour and core competency. The statistical significance was set at  $P < 0.05$ . In addition, job stress and the general characteristics of the participants were regarded as risk-adjusting variables in the multiple linear regression.

### 3. Results

A total of 13,448 nurses in 92 hospitals were invited to participate in this survey. Among them, 11,337 respondents (84.3% response rate) completed the questionnaires. The geographical distribution of the surveyed hospitals is illustrated in Table 1.

Table 2 shows that 47.44% nurses were from east China, while 32.04% came from central China and 20.53% came from west China. The nurses were working mostly in comprehensive hospitals (94.30%) and general wards (68.71%). The survey results indicated that most of the nurses (96.44%) were female and held at least a bachelor's degree (66.34%). A total of 54.45% of the nurses were 20–29 years old, while 31.13% were aged 30–39. In total, 63.68% of the nurses had been working for less than 10 years, and 76.49% were nurses or nurse practitioners. Most of the nurses (64.45%) were contract employees, and 69.04% worked in shifts. Most of these nurses were married (63.79%), and most weren't an only children (68.73%). Approximately half of the nurses (52.06%) had children, and only 27.64% of the nurses earned more than ¥6000 per month. In terms of job satisfaction, significant statistical differences were found among the participating nurses ( $P < 0.001$ ).

The job satisfaction survey (Table 3) results demonstrated an average job satisfaction among the nurses ( $24.77 \pm 5.23$ ), with the least satisfaction on income and benefits ( $2.65 \pm 0.92$ ) and balance between work and family ( $2.83 \pm 0.99$ ).

The survey results (Table 4) indicated moderate to high emotional labour experiences ( $55.08 \pm 9.63$ ). The deep acting dimension scored ( $4.95 \pm 0.81$ ), the requirement to express emotions dimension scored ( $3.91 \pm 1.02$ ) and the surface acting dimension scored ( $3.52 \pm 0.92$ ).

The deep acting instrument appeared to be more significant than surface acting and requirement to express emotions.

Most of the nurses (81.13%) surveyed had high competency. Approximately a fifth of the surveyed nurses (17.91%), corresponding to 2009 subjects, had moderate competency and only 107 nurses (0.95%) exhibited low potency. Moreover, the score of the job stressor questionnaire was ( $86.84 \pm 21.12$ ), which indicated moderate stress levels among the surveyed nurses (Table 4).

Tables 5 and 7 indicate the relationships of nurse job satisfaction with emotional labour, CIRN and job stress. The results indicated a

**Table 1**  
Geographical distribution of surveyed hospitals ( $n = 92$ ).

Province/City	Number of tertiary hospitals	Number of sampled tertiary hospitals	Province	Number of tertiary hospitals	Number of sampled tertiary hospitals
Beijing	37	5	Jiangxi	42	4
Tianjin	22	3	Henan	46	4
Hebei	37	4	Hubei	49	3
Liaoning	50	5	Hunan	31	3
Shanghai	29	1	Inner Mongolia	16	2
Jiangsu	51	4	Chongqing	15	3
Zhejiang	52	5	Guangxi	41	2
Fujian	27	3	Sichuan	53	5
Shandong	46	4	Guizhou	24	2
Guangdong	78	7	Yunnan	9	1
Hainan	9	1	Shaanxi	31	3
Shanxi	33	2	Gansu	18	1
Jilin	25	3	Qinghai	9	1
Heilongjiang	61	5	Ningxia	3	2
Anhui	30	3	Xinjiang	13	1

Note : The sampled hospitals were randomly selected from tertiary hospitals of each province in the mainland of China. Total number of tertiary hospitals = 987; Total number of sampled tertiary hospitals = 92.

**Table 2**  
Job satisfaction scores of nurses with different characteristics ( $n = 11,337$ ).

Variables	$n$ (%)	Score (Mean $\pm$ SD)	$t$ or $F$	$P$
<b>Geographical distribution</b>				
Eastern region	5378 (47.44)	24.76 $\pm$ 5.32	24.55	<0.001
Central region	3632 (32.04)	25.14 $\pm$ 5.28		
Western region	2327 (20.53)	24.17 $\pm$ 4.86		
<b>Hospital category</b>				
Comprehensive	10692 (94.30)	24.68 $\pm$ 5.20	-6.65	<0.001
Specialized	645 (5.70)	26.14 $\pm$ 5.43		
<b>Gender</b>				
Male	404 (3.56)	23.26 $\pm$ 5.01	-5.90	<0.001
Female	10933 (96.44)	24.82 $\pm$ 5.23		
<b>Age (years)</b>				
20–29	6173 (54.45)	24.56 $\pm$ 5.24	45.04	<0.001
30–39	3530 (31.13)	24.61 $\pm$ 5.18		
$\geq 40$	1624 (14.32)	25.90 $\pm$ 5.13		
<b>Nursing experience (years)</b>				
0–4	3849 (33.95)	24.51 $\pm$ 5.19	27.46	<0.001
5–9	3370 (29.73)	24.57 $\pm$ 5.31		
10–19	2444 (21.55)	24.71 $\pm$ 5.13		
$\geq 20$	1674 (14.77)	25.82 $\pm$ 5.16		
<b>Education</b>				
College degree	3816 (33.66)	24.80 $\pm$ 5.22	0.48	0.634
Bachelor's degree or higher	7521 (66.34)	24.75 $\pm$ 5.23		
<b>Professional title</b>				
Nurse	3720 (32.81)	24.64 $\pm$ 5.20	50.01	<0.001
Primary nurse	4952 (43.68)	24.40 $\pm$ 5.28		
Nurse-in-charge and above	2665 (23.51)	25.63 $\pm$ 5.07		
<b>Hospital area</b>				
General ward	7790 (68.71)	24.92 $\pm$ 5.32	15.19	<0.001
Critical care ward	1190 (10.50)	23.84 $\pm$ 5.08		
Outpatient or emergency department	1462 (12.90)	24.65 $\pm$ 5.07		
Operation room	895 (7.89)	24.85 $\pm$ 4.72		
<b>Employment</b>				
Permanent	4030 (35.55)	25.18 $\pm$ 5.31	6.28	<0.001
Contract	7307 (64.45)	24.53 $\pm$ 5.17		
<b>Position</b>				
Nurse	9820 (86.62)	24.58 $\pm$ 5.21	-9.58	<0.001
Head nurse or superintendent	1517 (13.38)	25.96 $\pm$ 5.19		
<b>Work shift</b>				
Working in shifts	7827 (69.04)	24.27 $\pm$ 5.24	-15.24	<0.001
Daytime	3510 (30.96)	25.87 $\pm$ 5.04		
<b>Marital status</b>				
Single	3998 (35.27)	24.47 $\pm$ 5.19	10.40	<0.001
Married	7232 (63.79)	24.93 $\pm$ 5.25		
Others	107 (0.94)	24.61 $\pm$ 4.60		
<b>Only child</b>				
Yes	3545 (31.27)	25.27 $\pm$ 5.36	6.87	<0.001
No	7792 (68.73)	24.54 $\pm$ 5.15		
<b>Parenting status</b>				
With child	5902 (52.06)	25.03 $\pm$ 5.22	5.58	<0.001
No child	5435 (47.94)	24.48 $\pm$ 5.22		
<b>Monthly salary (Yuan)</b>				
< 4000	3378 (29.80)	23.87 $\pm$ 5.05	101.14	<0.001
4000–6000	4825 (42.56)	24.78 $\pm$ 5.14		
>6000	3134 (27.64)	25.70 $\pm$ 5.38		

**Table 3**  
Survey results of MMSS questionnaire ( $n = 11,337$ ).

Items	Score (Mean $\pm$ SD)
Dimension IV: Co-workers	3.68 $\pm$ 0.68
Dimension VII: Praise/recognition	3.62 $\pm$ 0.66
Dimension VIII: Control/responsibility	3.24 $\pm$ 0.71
Dimension VI: Professional opportunities	3.09 $\pm$ 0.77
Dimension II: Scheduling	3.00 $\pm$ 0.86
Dimension V: Interaction	3.00 $\pm$ 0.81
Dimension III: Family/work balance	2.83 $\pm$ 0.99
Dimension I: Satisfaction with extrinsic rewards	2.65 $\pm$ 0.92
Total	24.77 $\pm$ 5.23

Note:MMSS:the McCloskey/Mueller Satisfaction Scale.

**Table 4**  
Survey results of emotional labour, CIRN and job stressor questionnaires ( $n = 11,337$ ).

Items	Score (Mean $\pm$ SD)
<b>Emotional labour</b>	
Surface acting	3.52 $\pm$ 0.92
Requirement to express emotions	3.91 $\pm$ 1.02
Deep acting	4.95 $\pm$ 0.81
Total score	55.08 $\pm$ 9.63
<b>CIRN score</b>	195.77 $\pm$ 37.61
<b>Job stress score</b>	86.84 $\pm$ 21.12

Note:CIRN:the Competency Inventory for Registered Nurses.

**Table 5**  
Correlation of nurse job satisfaction with emotional labour, CIRN and job stress ( $n = 11,337$ ).

Item	Job satisfaction	
	<i>r</i>	<i>P</i>
<b>Emotional labour dimensions</b>		
Surface acting	−0.317	<0.001
Requirement to express emotions	−0.106	<0.001
Deep acting	0.175	<0.001
<b>CIRN</b>	0.414	<0.001
<b>Job stress</b>	−0.690	<0.001

Note: CIRN: the Competency Inventory for Registered Nurses.

negative correlation of job satisfaction with surface acting ( $\beta = -0.06$ ,  $P < 0.001$ ) and with job stress ( $\beta = -0.58$ ,  $P < 0.001$ ). The results also showed that job satisfaction was positively related to deep acting ( $\beta = 0.05$ ,  $P < 0.001$ ) and CIRN ( $\beta = 0.23$ ,  $P < 0.001$ ). Furthermore, although the requirement to express emotions seemed to be negatively correlated with job satisfaction ( $r = -0.106$ ,  $P < 0.001$ ) (Table 5), no statistical significance was found in the multiple linear regression ( $t = 1.780$ ,  $P = 0.075$ ). Besides, The results also indicated job stress, nurses from western region, specialized hospitals, female, daytime shift, nurses who were only children, who have child, higher salary, nursing experience (5–19 years), primary nurses, working in critical care wards were the influencing factors of job satisfaction ( $P < 0.05$ ) (see Table 6).

#### 4. Discussion

The present cross-sectional survey aimed to explore the status of nurses' emotional labour, core competencies, job satisfaction and stress and the interacting relationships between these factors in tertiary hospitals located in mainland of China.

The findings demonstrated that the Chinese nurses had average job satisfaction and notably experienced stress that was directly related to working and professional issues. Specifically, low income, heavy work load, opportunities for interaction and experiences of night shifts were the key factors leading to job dissatisfaction in Chinese nurses. Similar findings have been reported in various countries. In Saudi Arabia, nearly 50% of nurses were found to be overworked and unsatisfied with their limited incomes. An Italian report revealed an association of work–family conflict with job satisfaction [21]. A Swedish study agreed with these works and reported that nurse assistants with positive and caring work climates and attitudes towards their leaders experienced enhanced job satisfaction while receiving institutional and environmental support [22].

**Table 6**  
Assignment method of independent variables.

Independent variable	Assignment method
Geographical distribution	Eastern region = 0, 0; Central region = 1, 0; Western region = 0, 1
Hospital category	Comprehensive = 0, Specialized = 1
Gender	Male = 0, Female = 1
Age (years)	20–29 = 0,0; 30–39 = 1,0; $\geq 40 = 0,1$
Nursing experience (years)	0–4 = 0,0,0; 5–9 = 1,0,0; 10–19 = 0,1,0; $\geq 20 = 0,0,1$
Professional title	Nurse = 0,0; Primary nurse = 1,0; Nurse-in-charge and above = 0,1
Hospital area	General ward = 0, 0, 0; Critical care ward = 1, 0, 0; Outpatient or emergency department = 0, 1, 0; Operation room = 0, 0, 1
Employment	Permanent = 0, Contract = 1
Position	Nurse = 0, Head nurse or superintendent = 1
Work shift	Working in shifts = 0, Daytime = 1
Marital status	Single = 0,0; Married = 1,0; Others = 0,1
Only child	Yes = 0, No = 1
Parenting status	With child = 0, No child = 1
Monthly salary (Yuan)	<4000 = 0,0; 4000–6000 = 1,0; >6000 = 0,1

**Table 7**  
Multiple linear regression of factors of job satisfaction ( $n = 11, 337$ ).

Variable	<i>B</i>	<i>SE</i>	$\beta$	<i>t</i>	<i>P</i>
<b>Constant</b>	28.95	0.57	–	51.18	<0.001
<b>Surface acting</b>	−0.36	0.04	−0.06	−9.09	<0.001
<b>Deep acting</b>	0.29	0.04	0.05	6.80	<0.001
<b>CIRN</b>	0.25	0.01	0.23	32.25	<0.001
<b>Job stress</b>	−0.99	0.01	−0.58	−80.70	<0.001
<b>Geographical distribution</b>					
Western region	−0.18	0.09	−0.01	−1.98	0.048
<b>Hospital category</b>					
Specialized	0.70	0.14	0.03	4.85	<0.001
<b>Gender</b>					
Female	0.59	0.18	0.02	3.22	0.001
<b>Nursing experience (years)</b>					
5–9	−0.34	0.10	−0.03	−3.31	0.001
10–19	−0.47	0.13	−0.04	−3.50	<0.001
<b>Professional title</b>					
primary nurse	−0.30	0.09	−0.03	−3.24	0.001
<b>Hospital area</b>					
Critical care ward	−0.52	0.11	−0.03	−4.69	<0.001
<b>Work shift</b>					
Daytime	0.58	0.08	0.05	6.81	<0.001
<b>Only child</b>					
No	−0.29	0.07	−0.03	−4.01	<0.001
<b>Parenting status</b>					
No child	−0.21	0.09	−0.02	−2.31	0.021
<b>Monthly salary(yuan)</b>					
4000–6000	0.43	0.08	0.04	5.25	<0.001
>6000	0.83	0.09	0.07	8.85	<0.001

Note:  $R^2 = 0.55$ ,  $F = 659.89$ ,  $P < 0.001$ . CIRN: the Competency Inventory for Registered Nurses.

The present study revealed moderate to high emotional labour experiences among the surveyed nurses. According to Gabriel et al. [23], emotional labour should be considered a dynamic integration of three components, namely, emotional requirements, emotion regulation and emotion performance. The nursing profession requires substantial emotional labour [24,25] due to the 1) social representation of nurses and 2) constant management and suppression of real feelings. Nurses play different emotional roles in their profession, including the expression of commitment, support and emotional care for their patients. In addition, nurses sympathize with patients and their relatives. The emotional dissonance between real and displayed emotions may negatively influence other aspects of the nurses' well-being and cause alienation, cynicism, depression and moral distress [26]. Moreover, our survey demonstrated that surface and deep acting were negatively and positively correlated, respectively, with job satisfaction. Emotional labour may affect the performance of nurses and manifest through poor commitment, low job satisfaction, negative performance and high attrition rates [27]. Therefore, emotional labour might



positively and negatively affect the well-being of nurses. Through an evaluation of employees in China, Wang and co-workers [28] concluded that genuine emotion expression promoted job engagement and ethical leadership controlled the association of pretension with job engagement. The findings of this study agreed with those of the current work. Hence, to increase job satisfaction, nurses' deep acting of their emotions should be improved and surface acting should be managed appropriately. These findings suggested that proper control of emotions by nurses would enhance job satisfaction. Nursing courses and professional training programs should increase focus on the following to deal with the emotional labour of the nursing profession more efficiently than before, as demonstrated by studies that have addressed the promotion of critical thinking [29]; ethical codes of clinical and nursing practice, decision making and health care [30]; project management techniques based on real work situations [31] and focus on team work and seeking cooperation and support from peers and other professionals [32].

The present study demonstrated that most of the Chinese nurses were highly competent, regardless of CIRN dimension. The trend in nursing education in the mainland of China has changed in recent years; most of the nurses surveyed in the present work hold at least a bachelor's degree (66.34%), whereas a previous survey reported only 20% [6]. Consequently, the core competencies of the nurses increased with regard to all of the dimensions examined. The results indicated a positive correlation of the CIRN scores with job satisfaction. These findings indicated that core competency could improve job satisfaction. Therefore, hospitals should provide higher education programs, specific skill training, and leadership and professional development programs to staff nurses to enhance their core competencies. A previous work proposed that nurses, supervisors and educators should collaboratively assess practical models that improve job satisfaction to reduce occupational burnout [33].

The present study had certain limitations. Firstly, the study used cross-sectional surveys and self-report questionnaires, which have inherent shortcomings. For example, competency level was measured using CIRN, which is commonly adopted for such measurements, but no clear validation parameters were set to verify the reported competency levels of the nurses. Secondly, the fundamental causes underlying the identified correlation between emotional labour and job stress need to be further assessed at the psychological level.

## 5. Conclusion

The present survey demonstrated that Chinese nurses were generally under moderate to high job pressure and emotional labour experiences. Most of the surveyed nursing professionals were highly competent and showed average job satisfaction. The results also indicated that an excess of surface acting and job stress may decrease job satisfaction, whereas increasing the frequency of deep acting and competency may increase job satisfaction among Chinese nurses. Hence, an improvement of emotional labour and an increase in competency may lead to an increase in overall job satisfaction. According to the aforementioned findings, Chinese nurses should be encouraged to limit surface acting and alternatively embrace deep acting and improve competency to potentially increase job satisfaction.

## Conflict of interest

None declared

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## Appendix A. Supplementary data

Supplementary data related to this article can be found at <https://doi.org/10.1016/j.ijnss.2018.08.001>.

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