The Relationship between Core Competence, Job Stressor and Depression in Chinese Specialist Nurses

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Primary research

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Abstract

Background

To this day, the professional training for Specialist Nurse have covered 9 directions in Anhui, China. This paper aims to determine the association of socio-demographic variables, core competence, job stressor and depression in Chinese specialist nurses.

Methods

302 specialist nurses in Anhui province participated in this descriptive correlation study, all data were collected through questionnaire survey including Socio-demographic and Professional Information surveys, Competency Inventory for Registered Nurse, Chinese Nursing Stressor Scale and Self-Rating Depression Scale.

Results

The total score range of core competence was 57–210 (2.53 ± 0.50). The total score of job stressors was 43–123 (88.05 ± 12.69). Specialist nurses had more job stressors than general clinical nurses in dimensions of professional and career issues, workload and time pressure, interpersonal relationships and management issues (P < 0.05), but they had less job stressors than norm in dimension of resource and environmental problems (P < 0.05). The range of total scores in SDS for specialist nurses was 26–95 (47.80 ± 10.59).

Conclusion

There were significant relationships between core competence, job stressor and depression. This finding highlights potential foci in their joint consideration to improve competitiveness of specialist nurses.

Implications for Practice:

The status of the core competence, job stressors and depression of Chinese specialist nurses is presented to the global clinical community. This paper provides intervention direction to increase the core competence of specialist.

Background

In China, specialist nurse is defined as someone who have obtained a specialized post certificate after professional training, they can provide high-quality nursing services to the clients according to their own
judgment in the complex and uncertain nursing situation, the services provided by them are different from general clinical nurses[1]. To this day, the professional training for Specialist Nurse have covered 9 directions in Anhui, China, such as intensive care, blood purification, wound/ostomy, tumor, diabetes, pediatric intensive care, emergency, orthopedics and operating. The main purpose of professional training for specialist nurses is to develop their core competence. The core competence of nurses refers to the organic combination of the three basic attributes: professional knowledge, professional skills and service attitude. It is reflected in the seven dimensions of critical thinking/research aptitude, clinical care, leadership, interpersonal relation, legal/ethical practice, professional development and teaching-coaching [2–4]. In recent years, the research on the core competence of nurses has attracted the attention of researchers in the world, but, it is not systematic and comprehensive to study the core competence of specialist nurses. What are the relevant factors of core competence in specialist nurses?

The negative effects of job stressors on health have been extensively reported[5], and all the reports indicated that increasingly job stressors affect the workforce [6]. Nurses work with sick people, their work includes mental and physical nursing and they always have to face patients, family members, doctors and other health workers. Nursing has been considered as the profession highly susceptible to stress. Nursing stress has been considered as a problem which affects practice [7]. The effect of stress has been considered as an important cause of decreasing health and reduction in the level of efficiency of nursing[8].

Several studies have shown that job stress of nurses was mainly caused by critical condition of patients, high requirements of patients and their families, heavy work burden, insufficient nurses on duty, and conflicts with colleagues, patients and their families and so on[9, 10]. The result of nurses’ job stress was job burnout[11, 12]. Job burnout often manifested as indifference to work, even leaving or changing jobs[13, 14]. The main job stressors of nurses in China can be divided into five aspects as following: (1) professional and career issues, such as the low social status, less opportunities for promotion and further study, frequent night shifts, low salary and welfare, less independence of work, etc.; (2) workload and time pressure: insufficient stuff on duty, heavy workload, too much non-nursing work, etc.; (3) resource and environmental problems: too crowded working environment, insufficient equipment, etc.; (4) patient care and interaction: fear of errors or accidents, unadmitted nursing contributions by patients and family members, bad manners of patients and family members, uncooperative patients, and the implementation of operations that will cause pain to patient, etc.; (5) interpersonal relationships and management issues: less understanding and support from nursing managers, lack understanding and respect from other medical staffs, and conflicts with doctors, etc.. These factors contribute the high working pressure to nurses in China[15].

The professional nature, special environment and complex interpersonal relationship of nursing work can cause great pressure on nurses and affect their physical and mental health directly. The incidence of depression is higher in nurses than the general population, 49.7% of nurses have different levels of depression, job stressors such as unrecognized work by the patients and their families, heavy workload
and frequent shifts have been reported to associate with the depression of nurses[16]. However, little is known about how job stressors affect depressions of specialist nurses in China.

As such, the core competence, job stressors and depression of specialist nurses might differ from general clinical nurses in China. Therefore, firstly, we investigated the status of the core competence, job stressors and depression of Chinese specialist nurses. Secondly, we explored the relationship between socio-demographic variables, job stressor, core competence and depression in Chinese specialist nurses.

**Methods**

**Participants**

This research was approved by the Institutional Review Board of Xs University. 302 specialist nurses from hospitals in Anhui (China) were enrolled in this study and completed the questionnaire. The inclusion criterion: having a specialized post certificate after professional training; working in hospital as a nurse; willing to participate in and complete the tests. Totally, 93.0% participants were female with mean age of 30.06 years (SD =2.87). Most participants were married (86.1%), and had children (77.2%).

**Procedure**

Firstly, researchers explained the purpose of this study to the participants. After obtaining informed consent, questionnaires were distributed to them while assuring them that their responses were anonymous, voluntary and confidential. And researchers collected all questionnaires when they were finished. A total of 320 were invited to this survey between June 2017 and June 2018, 18 invalid data had been excluded. Finally, 302 specialist nurses were enrolled successfully. The overall response rate was 94.4%.

**Measures**

**Socio-demographic and professional information**

Personal details were obtained about age, sex, marital status, got any kids, educational level, job status (work experience, job title, position, level, employment form, specialist direction, hospital category).

**Competency Inventory for Registered Nurse (CIRN)**

CIRN is comprised 7 dimensions (critical thinking/research aptitude, clinical care, leadership, interpersonal relation, legal/ethical practice, professional development and teaching–coaching). Each item is rated on a 5-point Likert-type scale, higher scores indicate stronger competency. In this 55-item scale, Cronbach’s $\alpha$ coefficient is 0.91[2].

**Chinese Nursing Stressor Scale (CNSS)**
CNSS is a 35-item measure of 5 dimensions: (1) professional and career issues (1-7); (2) workload and time pressure (8-12); (3) resource and environmental problems (13-15); (4) patient care and interaction (16-26); (5) interpersonal relationships and management issues (27-35). Each item is rated on a 4-point Likert-type scale, higher scores indicate more stress. The coefficient is 0.94 for the general scale[17].

Self-rating Depression Scale (SDS)

SDS(Wang,1999) consists of 20 items selected by the factor analysis. It has been translated into a wide variety of languages and its validity and reliability across cultures have been thoroughly assessed. Respondents described how frequently they experienced each symptom on a 4-point scale: ‘little of the time’, ‘some of the time’, ‘good part of the time’, or ‘most of the time’. The severity of depression equals the total score/80. <0.5 indicates no depression; 0.5-.59 indicates slight to mild depression; 0.6-.69 indicates moderate depression; >0.7 indicates severe depression. The Chinese version of the SDS has high validity and reliability[18].

Data analysis

Data were analyzed with SPSS Version 24.0 statistical software. Descriptive analyses were carried out to examine socio-demographic variables, core competence, job stressors and depression. Descriptive statistics were analyzed by one sample t-test; the values between groups were analyzed by independent sample t-test or ANOVO. Pearson correlation coefficients were computed to examine the relationship of core competence, job stressors and depression. A p-value of less than 0.05 was considered statistically significant. All p-values were two-tailed.

Results

Core competence, job stressors and depression of specialist nurses

The core competence of specialist nurses was presented in Table1, the total score range was 57-210 with 139.17±27.44, and the mean score of each item was 2.53±0.50).

The total score of job stressors was 43-123 with 88.05±12.69). Specialist nurses had more job stressors than general clinical nurses in dimensions of professional and career issues, workload and time pressure, interpersonal relationships and management issues(P<0.05), but they had less job stressors than norm in dimension of resource and environmental problems(P<0.05)[19], see Table2.

The range of total scores in SDS for specialist nurses was 26-95 with 47.80±10.59). Of all participants, 182 (60.3%) were below the cut-off for depression, 82 (27.2%) were slight to mild depression, 30 (9.9%) were moderate depression and 8 (2.6%) were severe depression.

Demographics characteristics and core competence, job stressors, depression
Differences in core competence and job stressors by demographics characteristics were presented in Table3-4. Specialist nurses get kids, having long work experience, working in primary position and level 4 had stronger core competence ($P<0.05$). Participants whose specialist was intensive care had more job stressors than other directions ($P<0.05$). Participants working as ordinary nurses ($49.00±10.74$) had more severe depression than primary nurses ($46.55±10.31$) and head nurses ($47.80±10.59$) ($F=3.118$, $P=0.046$).

**Correlations between job stressors, core competence and depression**

The correlations were presented in Table 5, it can be seen that significant positive relationships were found between job stressors (total score, professional and career issues, workload and time pressure, patient care and interaction, interpersonal relationships and management issues) and core competence (legal/ethical practice). Job stressors (total score, patient care and interaction, interpersonal relationships and management issues) and core competence (professional development) were positively related to depression. Negative relationships were found between job stressors (interpersonal relationships and management issues) and core competence (clinical care, leadership); Job stressors (patient care and interaction) was negatively related to core competence(teaching-coaching); There were also significant negative correlations between core competence (total score, critical thinking/research aptitude, clinical care, leadership, interpersonal relation, legal/ethical practice, teaching–coaching).

**Discussion**

The total score of our participants’ core competence is lower than registered nurses’ in Grade A hospitals of Anhui province ($P<0.05$)[20]. It means that even specialist nurses have accepted professional training, their core competence still lower than those from high grade hospitals, this maybe because specialist nurses in our study come from different level hospitals, the basis competence of them is not uniform. It suggests that much more attention should be paid on a series of follow-up training for core competence, especially focus on weak links in critical thinking/research aptitude and clinical care.

Specialist nurses getting kids, having long work experience, working in primary position and at level 4 have stronger core competence, which may because being a mother in a family or being a backbone in a hospital will keep improving core competence to be qualified the role.

The results of our study revealed that there are negative relationships between core competence and job stressors, we can improve their core competence in clinical care and leadership by reducing the job stressors from interpersonal relationships and management issues. We can also improve their core competence in teaching-coaching by reducing the job stressors from patient care and interaction.

Job stressors of participants have more job stressors in dimensions of professional and career issues, workload and time pressure, interpersonal relationships and management issues than general clinical nurses, but they have less job stressors in dimension of resource and environmental problems [19]. This could be because hospitals, where their coming from, set high expectations for specialist nurses, provide
resources and environment for their needing, and expect the higher standard of work from them. Sometimes too much attention from workmates will also bring them more stressors.

Specialist nurses of intensive care have more job stressors than others. ICU is a department for the treatment of severe patients. High-intensity work and completely closed environment make the psychological pressure of ICU nurses significantly higher than that of ordinary ward nurses[21].

Job stressors were positively relevant to core competence in the dimension of legal/ethical practice. It is very interesting that the result was not consistent with our original assumption. Perhaps it reflects specialist nurses in high stress situation will be more gingerliness, they are very scared to make a mistake, so they have high score in legal/ethical practice.

The average score in SDS for specialist nurses was higher than the general population[22], which is in accordance with most previous research results[16, 23]. Mental state of nurses is poor, especially in specialist nurses, this point was confirmed by our result: 39.9% participants were in depression. We also found that participants working as ordinary nurses had more severe depression than others, it reflects a possible situation in which work is heavy, and they have to charge the department's chores at the same time. Daily repetitive and tedious overload makes nurses physically and mentally tired. Because most of them have not received the corresponding psychological training, when they meet the setbacks form work and life, they are often not good at using psychological knowledge for self-psychological adjustment, then they will be depression, in accordance with previous study[24].

The depression is negatively relevant to core competence, and it is also positively relevant to job stressors, that means we can decreasing their depression by enhancing core competence and decreasing job stressors of specialist nurses.

**Conclusions**

This study shows the relevance of socio-demographic variables, core competence, job stressor and depression in Chinese specialist nurses. Every variable is relevant, their joint consideration is important to reach a better explanation.

**Limitations**

The study is limited by its descriptive nature and a convenience sample. While the sample from Anhui province is reflective of the wider population of China, findings cannot be generalized. Furthermore, the cross-sectional nature of this study limits the ability to understand change over time.

**Declarations**

*Ethics approval and consent to participate*
This study received Institutional Review Board approval of Anhui Medical University\No:20180067\.

**Consent for publication**

Not applicable.

**Availability of data and material**

The raw data required to reproduce these findings cannot be shared at this time as the data also forms part of an ongoing study.

**Competing interests**

We declare that we do not have any commercial or associative interest that represents a conflict of interest in connection with the work submitted.

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**Authors’ contributions**

Dan Su designed the study, collected the samples and wrote the manuscript.

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Tables

Table 1 Core competence of specialist nurses (N = 302)

| score                  | mean score  |
|-----------------------|-------------|
|ore                    | 139.17±27.44| 2.53±0.50  |
|thinking/Research aptitude | 18.30±4.35  | 2.29±0.54  |
|care                   | 23.41±5.39  | 2.34±0.54  |
|hip                    | 23.94±5.18  | 2.66±0.58  |
|sonal relation         | 21.12±4.16  | 2.64±0.52  |
|hical practice         | 20.35±2.87  | 2.54±0.36  |
|onal development       | 15.64±4.48  | 2.61±0.75  |
|croaching              | 15.12±3.76  | 2.52±0.63  |

Table2 Different job stressors between specialist nurses and general clinical nurses(Gu et al., 2019)

| score                  | mean score  | norm       | t       | P   |
|-----------------------|-------------|------------|---------|-----|
| ional issues          | 21.07±3.63  | 3.01±0.52  | 2.94±0.72| 2.350 0.019 |
| ional and sure        | 17.09±2.62  | 3.42±0.52  | 3.26±0.87| 5.211 0.000 |
| ional and mental s    | 8.57±2.19   | 2.86±0.73  | 2.96±1.01| -2.430 0.016 |
| care                  | 30.40±5.60  | 2.76±0.51  | 2.78±0.64| -0.574 0.567 |
| ection sonal hips     | 21.50±5.23  | 2.39±0.58  | 2.24±0.73| 4.443 0.000 |

Table 3 Differences in core competence by demographics characteristics (N = 302)
| Demographics       | N(%)      | Total score | F   | P   |
|--------------------|-----------|-------------|-----|-----|
| Got any kids?      |           |             | 5.203 | 0.023 |
| Yes                | 223(77.2) | 141.11±26.17 |     |     |
| No                 | 69(22.8)  | 132.59±30.66 |     |     |
| Work experience    |           |             | 2.823 | 0.025 |
| 1-4years           | 9(3.0)    | 126.86±24.33 |     |     |
| 5-9years           | 200(66.2) | 136.66±28.05 |     |     |
| 10-14years         | 79(26.2)  | 144.13±22.82 |     |     |
| 15-19years         | 11(3.6)   | 152.57±36.31 |     |     |
| ≥20years           | 3(1.0)    | 163.38±27.44 |     |     |
| Position           |           |             | 5.644 | 0.004 |
| Ordinary nurse     | 173(57.3) | 134.68±29.30 |     |     |
| Primary nurse      | 110(36.4) | 145.55±23.79 |     |     |
| Head nurse         | 19(6.3)   | 143.01±22.49 |     |     |
| Level              |           |             | 4.986 | 0.001 |
| N1                 | 5(1.7)    | 134.46±18.94 |     |     |
| N2                 | 69(22.8)  | 132.90±26.52 |     |     |
| N3                 | 171(56.6) | 137.72±27.72 |     |     |
| N4                 | 55(18.2)  | 152.75±24.43 |     |     |
| N5                 | 2(0.7)    | 117.50±17.68 |     |     |

Table 4 Differences in job stressors by demographics characteristics (N = 302)

| Demographics             | N(%)   | Total score  | F    | P    |
|--------------------------|--------|--------------|------|------|
| Specialist               |        |              | 4.213 | 0.000 |
| Intensive care           | 39(12.9)| 92.50±11.28  |     |     |
| Blood purification       | 31(10.3)| 91.73±12.11  |     |     |
| Wound/Ostomy             | 33(10.9)| 88.15±10.44  |     |     |
| Tumor                    | 35(11.6)| 88.05±12.69  |     |     |
| Diabetes                 | 35(11.6)| 87.83±12.18  |     |     |
| Pediatric Intensive care | 27(8.9) | 87.07±11.89  |     |     |
| Emergency                | 31(10.3)| 86.05±11.53  |     |     |
| Orthopedics              | 40(13.2)| 85.96±12.73  |     |     |
| Operating                | 31(10.3)| 75.58±14.52  |     |     |

Table 5 Correlations (r) between Job Stressor, Core Competence, and Depression (N = 302).
| Measures | 1      | 2      | 3      | 4      | 5      | 6      | 7      | 8      | 9      | 10     | 11     | 12     | 13     | 14     | 15     |
|----------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| Job Stressor |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |
| JS1      | .75**  | (.74)  |        |        |        |        |        |        |        |        |        |        |        |        |        |
| JS2      | .73**  | .53**  | (.79)  |        |        |        |        |        |        |        |        |        |        |        |        |
| JS3      | .59**  | .33**  | .43**  | (.72)  |        |        |        |        |        |        |        |        |        |        |        |
| JS4      | .85**  | .46**  | .46**  | .38**  | (.72)  |        |        |        |        |        |        |        |        |        |        |
| JS5      | .69**  | .43**  | .37**  | .31**  | .55**  | (.86)  |        |        |        |        |        |        |        |        |        |
| Core     | -.07   | -.05   | .04    | -.03   | -.10   | -.10   | (.96)  |        |        |        |        |        |        |        |        |
| Core Competence |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |
| CC1      | -.05   | -.08   | .04    | -.01   | -.05   | -.04   | .89**  | (.85)  |        |        |        |        |        |        |        |        |
| CC2      | -.09   | -.09   | .00    | -.04   | -.10   | -.12*  | .91**  | .83**  | (.89)  |        |        |        |        |        |        |        |
| CC3      | -.07   | -.03   | .05    | -.03   | -.11   | -.12*  | .87**  | .73**  | .71**  | (.79)  |        |        |        |        |        |        |
| CC4      | -.07   | -.02   | .04    | -.05   | -.10   | -.11   | -.90** | .75**  | .82**  | .77**  | (.85)  |        |        |        |        |        |
| CC5      | .30**  | .22**  | .21**  | .09    | .26**  | .27**  | -.07   | .04    | -.09   | -.09   | -.07   | (.82)  |        |        |        |        |
| CC6      | -.00   | -.01   | .01    | -.02   | -.02   | .75**  | .62**  | .61**  | .61**  | .61**  | .05    | (.76)  |        |        |        |        |
| CC7      | -.08   | -.04   | .03    | -.02   | -.13*  | -.09   | .86**  | .78**  | .77**  | .69**  | .74**  | .06    | .56**  | (.76)  |        |        |
| Depression | .17**  | .11    | .08    | .06    | .16**  | .20**  | -.22** | -.18** | -.24** | -.17** | -.26** | -.24** | -.14** | -.1**5 | .75**  |

Note: JS1= Professional and career issues; JS2= Workload and time pressure; JS3= Resource and environmental problems; JS4= Patient care and interaction; JS5= Interpersonal relationships and management issues; CC1= Critical thinking/Research aptitude; CC2= Clinical care; CC3= Leadership; CC4= Interpersonal relation; CC5= Legal/ethical practice; CC6= Professional development; CC7= Teaching-coaching.

1–6, job stressor and its dimensions; 7–14, Core Competence and its dimensions; 15, depression. Reliability coefficients (Cronbach’s α) in parentheses along main diagonal. Analyses based on n =302. * p<.05; ** p<.01.