World Journal of Psychiatry and Mental Health Research

Research Article
Published: 25 Sep, 2023

Influencing Factors and Correlation of Nurses' Self-Role Cognition and Professional Identity in China: A Cross-Sectional Survey

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Abstract

Objective: To examine the level of nurses' self-role cognition and professional identity, analyze the influencing factors and explore the correlation between them.

Method: A cross-sectional survey of Chinese nurses using an online questionnaire consisted of the Role Perception Scale and the Nurse Professional Identity Scale.

Result: From March to May 2023, 5,138 effective subjects were included, and the results showed that the role cognition score was (85.22 ± 11.75) and the role ambiguity score was (37.13 ± 5.58). The score of role conflict was (48.08 ± 8.95), and the score of professional identity was (108.03 ± 19.33). Spearman rank correlation analysis showed that there was a positive correlation between nurses' role cognition and professional identity.

Conclusion: The role cognition of nurses is above the medium level, and the role cognition is positively correlated with professional identity. Nursing managers should take targeted measures to improve the role cognition of nurses according to the influencing factors, so as to achieve the purpose of stabilizing the nursing team and improving the quality of nursing service.

Keywords: Nurses; Online survey; Role cognition; Professional identity

Introduction

Role cognition refers to the process in which an individual recognizes the constraints of role playing and psychologically determines the individual's behavioral role before the role is occupied and practiced. It also means that an individual forms corresponding cognition of the role played by himself and other individuals. The degree to which people understand the job duties assigned to them or required of them [1]. It is a comprehensive expression of the specific status of the individual determined by certain social relations, the expectation of the society to the individual and the behavior pattern played by the individual, which needs to be constantly adjusted and improved in the process of practice [2]. Its essence lies not only in knowledge, but also in action. Nurses' professional identity refers to nurses' self-affirmation of the nursing profession, feeling that they are competent in the role practice, and can clearly describe their commitment to the profession and professional ideals [3]. Although many studies have explored the role cognition and professional identity of nurses, there is no research on the correlation between role cognition and professional identity after literature review. In clinical practice, nurses play multiple roles such as caregiver, manager, educator, and planner. They should not only understand the operation of diagnosis and treatment, but also master the skills of nursing operation. Whether an individual can successfully play various roles depends on the degree of cognition of their roles [4]. Some studies have pointed out that the role cognition of nurses affects the role function of specialized nurses, and the role cognition of nurses is highly correlated with the factors such as working hours, educational level, and hospital grade [5]. With the development of society and the improvement of people's living standards, the increasing demand for emergency medical care makes it an important challenge for nursing profession to meet the medical needs required by the profession. This study investigated the role cognition of 5,138 nurses by using the role cognition Scale and the Nurses' professional Identity Scale from March 2023 to May 2023, analyzed the influencing factors of nurses' role cognition, and explored the correlation between role cognition and professional identity, aiming to provide reference for nursing managers to guide nurses' psychological construction and role orientation.

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Received Date: *30 Aug 2023*
Accepted Date: *20 Sep 2023*
Published Date: *25 Sep 2023*

Citation:
Zuo Q, Yan D, Chen L, Gao L, Zhang J. Influencing Factors and Correlation of Nurses' Self-Role Cognition and Professional Identity in China: A Cross-Sectional Survey. World J Psychiatry Ment Health Res. 2023; 6(1): 1034.

Object and Method

Object use the questionnaire Star platform to issue electronic questionnaires

Inclusion criteria: 1. Registered nurse; 2. Nurse in service; 3. Willing to participate in this study.

Method

Questionnaires: The questionnaire included general demographic data, role perception scale and professional identity scale.

1. General demographic information includes age, education, marital status, years of service, title, job title, nursing age, night shift, employment pattern, income, etc.

2. The level of role cognition was measured by the role cognition scale designed by Ma Jianhong et al., which included two dimensions of role ambiguity and role conflict, with a total of 21 items. Among them, role ambiguity includes 8 items and role conflict includes 13 items, and each item adopts Likert level 5 scoring method. In this study, the average score of the items was calculated, with 3 points indicating that the participants held a neutral attitude. With Cronbach's α coefficient of 0.712 and validity of 0.92, this scale has been widely used in researches on role cognition of nurses.

3. The professional identity scale was designed by Liu Ling et al. used to measure the occupational identity, Cronbach's α coefficient was 0.938. The scale contains a total of 30 items, divided into 5 dimensions. Likert 5-level scoring method is adopted, with 1 to 5 points from very inconsistent to very consistent. The total score of the scale is 30 to 150 points, and the higher the score, the better the level of professional identity.

Investigation method: A cross-sectional network survey. First, we uploaded the questionnaire to Wenjuanxing (https://www.wjx.cn/), an online questionnaire system, and Wenjuanxing created a link for it. Then, we posted the questionnaire link on We Chat (https://weixin.qq.com/), a Chinese social media platform. Any nurse interested in the survey could open the link and fill in the questionnaire. The completion of the survey was considered consent to participate. Finally, we exported all the completed questionnaires using Wenjuanxing.

Statistical analysis

Epi Data 3.1 was used to establish the database and double entry was checked. SPSS (Statistical Product and Service Solutions) 19.0 software was used for statistical analysis. Count data were described by frequency and percentage. Data conforming to normal distribution in measurement data were expressed as $x \pm s$, and multiple linear regression analysis was used for multifactor analysis, the test level $\alpha=0.05$.

Result

In this study, a total of 5,368 questionnaires were collected from March to May 2023, and 5,138 were valid, with an effective recovery rate of 95.72%. The majority of the hospitals were tertiary grade A hospitals (59.5%), the participants were mainly female (94.4%), the average age was (33.29 ± 7.17) years old, the marital status was mainly married (73.6%), the first college degree was mainly (47.7%), the highest bachelor degree was mainly (80.5%), and the professional title of nurses was mostly (47.5%). The average nursing age was (10.46 ± 7.47) years. The socio-demographic data are shown in Table 1.

Table 1: Sociodemographic data (n=5138).

Variable	Category	N (%)
Hospital grade	Third Class A	3057 (59.5)
	Third Class B	360 (7.0)
	Tertiary hospital	544 (10.6)
	Second class A	930 (18.1)
	Second class B	80 (1.6)
	Other	167 (3.2)
Gender	Male	286 (5.6)
	Female	4852 (94.4)
Age (years)	<23	131 (2.6)
	23-30	1965 (38.2)
	31-40	2326 (45.3)
	>41	716 (13.9)
Marital status	unmarried	1164 (22.7)
	married	3780 (73.6)
	Other (Divorced/widowed)	194 (3.7)
Department	Internal medicine	749 (14.6)
	Surgical department	1055 (20.5)
	Emergency department	594 (11.6)
	Obstetrics and Gynecology	445 (8.7)
	Pediatrics Department	350 (6.8)
	Intensive care unit	298 (5.8)
	Other	1647 (32.1)
First degree	Technical secondary school	899 (17.5)
	Junior college	2449 (47.7)
	Undergraduate	1776 (34.6)
	Master degree or above	14 (0.3)
Highest degree	Technical secondary school	48 (0.9)
	Junior college	919 (17.9)
	Undergraduate	4136 (80.5)
	Master degree or above	35 (0.7)
Professional title	Nurse	897 (17.5)
	Nurse practitioner	2438 (47.5)
	Supervisor nurse	1524 (29.7)
	Deputy Chief Nurse/Chief nurse	297 (5.4)
position	Nurse	4487 (87.3)
	Nursing Team Leader	178 (3.5)
	Head Nurse/Assistant Head Nurse	384 (7.5)
	Director/Deputy Director of Nursing	15 (0.3)
	Other	74 (1.4)
Nursing age (years)	<3	836 (16.3)
	3-5	676 (13.2)
	6-10	1482 (28.8)
	11-15	1217 (23.7)
	16-20	462 (9.0)
	>21	465 (9.1)
Night shift per month	0-1	1661 (32.3)
	1-5	1404 (27.3)

	6-10	1482 (28.8)
	>10	591 (11.5)
Employment form	on-the-job	2002 (39.0)
	engage	3040 (59.2)
	Other	96 (1.9)
Living style	Live alone	791 (15.4)
	Husband and wife living together	1563 (30.4)
	Living with parents	435 (8.5)
	Live with the kids	367 (7.1)
	Living with parents and kids	1691 (36.9)
	Other	291 (5.7)
Family income per head (m)	1	1430 (278)
	1-3	1021 (19.9)
	3-5	1047 (20.4)
	6-10	1250 (24.3)
	>10	291 (5.7)

Table 2: Scores of each dimension of role cognition.

Dimensionality	Number of items	Average score	Item mean score
Role cognition	21	85.22 ± 11.75	4.06 ± 0.56
Role ambiguity	8	37.13 ± 5.58	4.24 ± 0.29
Role conflict	13	48.08 ± 8.95	3.69 ± 0.64

Table 3: Scores of nurses' professional identity.

Dimensionality	Number of items	Average score	Item mean score
Professional identity	30	108.03 ± 19.33	3.0 ± 0.26
Cognitive evaluation	9	30.06 ± 7.58	3.34 ± 0.19
Social support	6	22.46 ± 4.01	3.74 ± 0.26
Social skill	6	21.48 ± 4.10	3.58 ± 0.26
Frustration coping	6	22.81 ± 4.04	3.80 ± 0.06
Self-reflection	3	11.21 ± 2.13	3.74 ± 0.06

The total score of role cognition was (85.22 ± 11.75), which was above the average level. The role ambiguity score (37.13 ± 5.58) and the role conflict score (48.08 ± 8.95) were both above the average level. The role cognition level and scores of each dimension are shown in Table 2.

Professional identity level and scores in each dimension

The results of Table 3 show that the professional identity score of nurses participating in the survey is (108.03 ± 19.33), which belongs to the upper medium level, higher than the research result of Liu Ling et al. (96.83 ± 14.99).

Analysis of influencing factors of role cognition level

With the total score of role cognition as the dependent variable, multiple linear regression analysis was performed including demographic variables such as hospital grade, gender, age, marital status, first degree, highest degree, title, position, number of night shifts per month, employment form, and family per capita income. Table 4 shows that Age (t=9.598, P<0.001,CI: 0.173-0.262), marital status t=5.822, P<0.001, CI: 1.274-2.567), the first degree (t= -6.661, P<0.001, CI: -(1.989-1.085)), professional title t=7.333, P<0.001, CI: 1.163-2.011), nursing age (t=9.888, P<0.001, CI: 0.172-0.258), night shift number per month (t= -7.367, P<0.001, CI: -(1.519-0.880)) were the main influencing factors of nurses' role cognition.

Correlation analysis between role cognition and professional identity

Spearman rank correlation analysis was used to analyze the correlation between nurses' role cognition and professional identity. The results showed that nurses' role cognition and its dimensions were positively correlated with their total score and dimensions of professional identity (P<0.001) See Table 5 for details.

Discussion

Status quo of nurses' role cognition

The results of this study showed that the total score of nurses' role cognition was (85.22 ± 11.75), the score of role ambiguity was (37.13 ± 5.58), and the score of role conflict was (48.08 ± 8.95), indicating that nurses' role cognition was above the average level, and they had a good cognition of their own occupation. The results of this study were higher than the study score of Li Yufeng et al. [6], on community nurses in Urumqi (77.23 ± 13.55), higher than the study score of Liang Chuangxing et al. [7], on emergency nurses (62.55 ± 10.79), but lower than the study result of Xiao Na et al. [8], on pediatric nurses in Hunan province (89.89 ± 7.39). The reasons may be that the working environment of community nurses in Urumqi is relatively difficult, the emergency department environment is complicated, and they need to face many emergencies, which poses great challenges to the working ability of nurses. As for the lower role cognition level than that of pediatric nurses, the analysis may be related to the higher educational background of the subjects studied by Xiao Na et al. [8]. A good role cognition of a nurse should be influenced by two factors, one is the cognitive level of the nurse herself, and the other is the guidance of the manager on the role cognition of the nurse. The cognitive level of the role of nurses depends on the knowledge they have learned, the skills they have mastered, the rich knowledge and professional knowledge, and they will be handy in work practice. Nursing managers guide the role cognition of nurses in a planned way and will help each other when they have difficulties in work, which is conducive to improving nurses' skills and forming a good atmosphere in the department, and more conducive to nurses forming a good professional identity.

Analysis of influencing factors of nurses' role cognition

Table 2 shows age, professional title, marital status, first degree, nursing age, etc. are the main factors affecting the cognitive level of nurses' roles. The role cognition level of nurses increases with the increase of age, professional title and first degree. The role cognition level of married nurses is higher than that of unmarried nurses, which is consistent with the study of Huang Xing et al. [9]. The longer nursing years, the better the role cognition level of nurses, which is different from the highest level of nurses who have been engaged in specialized work for 6 to 10 years in the study of Huang Xing et al. [9]. The reason may be that nurses engaged in specialized work in this study gradually leave the clinic with the increase of age in their career, and the lack of professional sense of accomplishment. Nurses with fewer night shifts per month have higher role cognition, which is consistent with the research results of Liang Chuangxing et al. [7]. The reasons may be that with the increase of age, the professional title has been promoted to a certain level, and the experience is richer, and the business knowledge and nursing process are more familiar. First, nurses with higher education have more professional knowledge in school and deeper understanding of the profession, so they have

Table 4: Multiple linear regression analysis of role cognition influencing factors.

Variable	b value	b value Standard error	t	P	95% CI	
					Lower	Upper
Hospital grade	0.037	0.11	0.337	0.736	-0.179	0.253
Gender	1.358	0.715	1.9	0.057	0.043	2.76
Age	0.218	0.023	9.598	<0.001	0.173	0.262
Marital status	1.921	0.33	5.822	<0.001	1.274	2.567
First degree	-1.537	0.231	-6.661	<0.001	-1.989	-1.085
Highest degree	-0.18	0.378	-0.478	0.633	-0.92	0.56
Professional title	1.587	0.216	7.333	<0.001	1.163	2.011
position	0.123	0.241	0.51	0.61	-0.349	0.595
Nursing age	0.215	0.022	9.888	<0.001	0.172	0.258
Night shift	-1.2	0.163	-7.367	<0.001	-1.519	-0.88
Employment form	-0.579	0.317	-1.826	0.068	-1.201	0.043
Family income per head (m)	0.77	0.124	0.086	<0.001	0.527	1.013

Table 5: Correlation analysis of role cognition and professional identity.

Item	Role cognition		Role ambiguity		Role conflict	
	r	P	r	P	r	P
Professional identity	0.549	<0.001	0.378	<0.001	0.505	<0.001
Cognitive evaluation	0.504	<0.001	0.366	<0.001	0.459	<0.001
Social suppor	0.473	<0.001	0.295	<0.001	0.449	<0.001
Social skill	0.471	<0.001	0.368	<0.001	0.41	<0.001
Frustration coping	0.498	<0.001	0.324	<0.001	0.464	<0.001
Self-reflection	0.456	<0.001	0.281	<0.001	0.435	<0.001

a better understanding of the role; For married nurses, having the support and affirmation of the other half may be an important reason for their high level of role cognition. With years of hard work in nursing positions, nurses have more opportunities to participate in department management, nursing student teaching, nursing scientific research, etc. In addition, they can properly handle various relationships in daily nursing work, such as nurse-patient disputes, work pressure, etc. When they are affirmed by patients, they get more satisfaction, have a deeper understanding of nursing profession, and have more recognition of their own profession. So, the character recognition level is better.

Correlation analysis between nurses' role cognition and professional identity

The results of this study showed that nurses' role cognition was positively correlated with professional identity (P<0.001), and all dimensions of role cognition were positively correlated with all dimensions of professional identity. Nursing is built on daily practice, adapting the actions of nurses to further increase the level of role perception by changing the work environment to improve the relationship between colleagues [10]. Good role cognition can promote nurses to pay more attention to their own work and patients' medical experience in daily work, so as to get patients' affirmation and cooperation, which is conducive to nurses to form a better professional identity. Nurses, the largest and often most trusted health workforce in the health workforce, are excellent advocates for promoting self-care and healthy approaches. As a coordinator, nurses play an important role throughout the health care system. Role recognition appears to be key to building professional identity [11]. Studies have shown that the role orientation of prison nurses is related to the development of professional identity [12]. The higher the level of role cognition, the better qualified for daily nursing work. Nurses play a bridging role between different levels of health care, between different specialties, and between patients and families, and therefore need training, guidance, and support to increase their knowledge in order to perform their duties [13]. Studies have shown that in the field of geriatric nursing, nurses' professional identity can promote role recognition and further improve the status of nurses in the hearts of patients [14]. Studies have shown that nursing home nurses who have better relationships with care managers and feel appreciated for the work they do tend to report higher job satisfaction. Therefore, nursing managers should pay more attention to the professional environment of nurses and increase the caring behavior of nursing leaders to improve job satisfaction, so as to give nurses more professional identity [15,16].

Studies have shown that factors such as inadequate staffing, lack of equal pay, lack of hazard pay, lack of adequate backup, lack of adequate rest time, inability to take sick leave, and inability to refuse overtime contribute to the current shortage of nurses. In addition, nursing work pressure is high, the income is relatively low, and the social recognition is not high, resulting in a low level of professional identity of nurses. Therefore, nurses need the support of patients, families, administrators, and the healthcare system to further enhance professional identity in order to continue to do this great work [17]. In the fierce competition in the workplace, it is urgent to strengthen the training of employees' vocational consciousness and vocational skills.

In summary, the cognitive level of nurses' role is above the medium level, and the cognitive level of nurses' role is positively correlated with

their professional identity. Nursing managers should pay attention to factors influencing nurses' role cognition, cultivate nurses' correct professional attitude, help nurses form good professional cognition, encourage nurses to conduct self-management, create opportunities for nurses' career growth and development, and stabilize nursing team and improve nursing service quality.

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