

Professional Identity of Nursing Students in the Post-COVID 19 Epidemic in Wuhan: a Cross-Sectional Study

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Abstract: Objective: To explore the professional identity of nursing students in the post-COVID 19 epidemic. Methods: A total of 281 nursing students were selected for the study, 83.62% of nursing students said they liked the nursing profession more, 95.01% of nursing students were willing to fight on the front line of the anti-epidemic. Among them, male nursing students, those who were involved in student management, organized campus activities scored high in professional identity score, with a statistically significant difference ($p < 0.05$). The nursing students' scores for career self-concept, benefits of staying and risks of leaving, and autonomous career identity of career choice were 21.70 ± 4.27 , 13.11 ± 3.20 , 10.97 ± 2.07 , 6.49 ± 1.28 , and 8.10 ± 1.68 respectively. The image of nursing in the COVID-19 epidemic helps to cultivate nursing students' responsibility, improve their sense of professional identity.

1. Introduction

In December 2019, the Coronavirus disease 2019 (COVID-19) was reported in Wuhan, China. In the COVID-19 epidemic, nurses play a key part in rescue work to fight the deadly disease more than ever. According to the report of the National Health Committee of China, nurses supporting Hubei account for 68% of the front-line medical workforce, reaching 28,600, by March, 2020. During the COVID-19 epidemic outbreak, the image of injuries and wounds of nurses who suffered due to long shifts in the care of patients with COVID-19 were shared on media. Nurses' courage and self-sacrifice exposed to everyone. Public image is closely related to the professional identity of nurses^[1]. Professional identity is an individual's positive affirmative evaluation of the profession he or she is engaged in. Nursing professional identity is a nursing worker's own positive view and emotion towards nursing work, which has an impact on the individual's tendency of occupational behaviors^[2]. Their professional identity are often acquired and enhanced during their nursing education and through their interactions with senior health care providers. Study found 86% of respondents thought the COVID-19 pandemic was elevating the nursing image^[3]. Li et al. also found COVID-2019 pandemic has greatly promote the sense of professional identity among nurses^[4].

As the first wave of COVID-19 was under control, new number of cases decreased, things gradually back to normal. Will nursing students' professional identity still be affected by the image of nursing in combating COVID-19? We hypothesize that in the post stage of COVID-19 pandemic, the professional identity of nursing students could be still affected by the experience of COVID-19, the outbreak could be a continuously positive factor contributing to affirmation of nurses' professional

identity.

2. Methods

2.1 Design

This study used a cross-sectional study among nursing students enrolled in Wuhan city College and Wuhan College of Foreign Languages and Foreign Affairs. An anonymous electronic survey questionnaire was distributed via Wenjuanxing (an online questionnaire system, accessed by www.wjx.cn). 281 nursing students were participated in the study voluntarily.

2.2 Data collection

2.2.1 Demographic variables

The first section of the questionnaire involved questions related to socio-demographic variables designed by the researcher, including participants' gender, educational level, location of the university, place of birth and whether they were only children, as well as their willingness to choose nursing, their views on nursing in the spirit of anti-epidemic, the important role nurses play in anti-epidemic and whether they are willing to ask to fight on the front line if faced with an epidemic.

2.2.2 Nursing students' professional identity questionnaire

This instrument was designed by Hao Yufang^[5] and is widely used in China to measure professional identity among Chinese nursing students with Cronbach's α at 0.827. It is a 17-item measurement with 5 dimensions. Dimension 1 is career self-concept, including items 1, 6, 9, 11, 16 and 17; dimension 2 is benefits of staying in the profession and risks of leaving, including items 5, 8, 10 and 14; dimension 3 is social comparison and self-reflection, including items 7, 13 and 15; dimension 4 is autonomy in career choice, including item 4, 14; dimension 5 social persuasion including item 2 and 3. Each item is scored on a 5-point scale, with "very unlikely" to "very likely" scores ranging from 1 to 5, with higher scores indicating a higher level of professional identity. Entry 12 was reverse scored. The pre-test Cronbach coefficient for this round was 0.896.

2.3 Data analysis

SPSS 20.0 statistical software was used to analysis the data. Mean and standard deviation were used to analysis continuous variables, frequency and composition ratio were used to analysis categorical variables. t-test and ANOVA were used to describe and analysis the differences in professional identity among nursing students with different characteristics. All p-values were calculated as two-tailed and all statistical tests used a significance level of 0.05.

3. Findings of the study

3.1 General information and scores of participants' professional identity by different demographic characteristics

The general information of the participants is shown in Table 1. A comparison of the professional identity scores of students with different demographic characteristics revealed that students who were female, had managed students, had been involved in clubs, had organized activities and recognized the spirit of resistance to the epidemic had high professional identity scores, with differences being

statistically significant ($p < 0.05$).

Table 1: Demographic information and differences in professional identity scores of nursing students (n=281)

Item	Option	Number of people (%)	Mean \pm SD	t/F	P
Gender	Male	29 (10.32%)	66.06 \pm 11.04	-3.487	.001
	Female	252 (89.68%)	58.94 \pm 10.35		
Place of birth	Rural	217 (77.22%)	60.00 \pm 9.78	.953	.341
	Urban	64 (22.78%)	58.56 \pm 13.13		
Only child or not	Yes	94 (33.45%)	59.68 \pm 11.72	.005	.996
	No	187 (66.54%)	59.67 \pm 10.07		
Social practice	Yes	165 (58.71%)	60.27 \pm 11.08	1.122	.263
	No	116 (41.28%)	58.82 \pm 9.93		
Manage students or not	Yes	52 (18.50%)	62.28 \pm 11.50	1.973	.049
	No	229 (81.49%)	59.08 \pm 10.35		
Have organized activities	Yes	37 (13.16%)	64.21 \pm 12.57	2.822	.005
	No	244 (86.83%)	58.98 \pm 10.15		
nursing spirit of the fight against the epidemic	More like nursing	235 (83.62%)	61.29 \pm 10.36	19.870	.000
	Unlike nursing	4 (1.41%)	34.75 \pm 13.02		
	No effect	42 (14.95%)	55.92 \pm 8.38		
Willingness to fight on the front line	Yes	267(95.01%)	60.01 \pm 9.69	2.317	.031
	No	14 (4.98%)	57.60 \pm 3.93		

3.2 The scores of professional identity in the post-COVID 19 epidemic

Table 2: Nursing students' professional identity in the Post-COVID 19 epidemic

Item	Mean \pm SD	Disagree (%)	Neutral (%)	Agree (%)
F1: Professional self-concept	21.70 \pm 4.27			
1. I am happy to be a nurse	3.82 \pm 0.77	3.37	8.58	88.05
6. I would not change my current career direction	3.76 \pm 0.89	7.49	17.83	74.68
9. I prepared to be active in this direction	3.72 \pm 0.90	6.27	19.33	74.31
11. I am proud to be in the field of nursing	3.84 \pm 0.96	2.62	12.58	84.79
16. I enjoy working as a nurse	3.45 \pm 0.86	6.74	22.81	70.35
17. I am certain that I can be successful in my nursing career	3.72 \pm 0.86	7.12	39.81	53.07
F2: Benefits of retention and risks of leaving	13.11 \pm 3.20			
5. I am currently reluctant to change careers	3.78 \pm 0.91	16.11	25.58	68.32
8. Nursing allows me to develop my personal abilities and strengths	3.72 \pm 0.90	8.62	21.95	69.44
10. leaving my nursing career would cause me some emotional trauma	3.04 \pm 1.06	13.48	17.45	69.09
14. nursing allows me to use my creativity	3.54 \pm 0.97	11.99	19.44	68.58
F3: Social comparison and self-reflection	10.97 \pm 2.07			
7. I often explore my future career development	3.94 \pm 0.72	4.87	17.08	78.05
13. I have tried to learn about various career fields in order to become more committed to my career	3.60 \pm 0.81	6.74	24.57	68.69
15. When choosing a job, it is necessary to consider the influence of external circumstances	3.78 \pm 0.86	1.12	24.46	74.42
F4: Autonomy in career choice	6.49 \pm 1.28			
4. I would choose a job that I like	3.88 \pm 0.87	4.12	28.46	67.42
12. My perceptions of careers are entirely external and I do not consider them seriously	2.70 \pm 0.93	45.69	37.08	17.23
F5: Social persuasion	8.10 \pm 1.68			
2. I would like to learn about success stories in the nursing field	4.06 \pm 0.78	9.36	9.7	80.94
3. I would like to talk to people who have worked in the nursing field before me	4.04 \pm 0.92	6.37	29.59	63.05
Total score	62.84 \pm 8.96			

The nursing students' score in five dimension of professional identity is shown in table 2. The five dimensions are nursing professional self-concept, benefits of retention and risks of leaving, social comparison and self-reflection, autonomy of career choice, and social persuasion.

4. Discussion

The results of this study show that only 10.32% of the participants were male, the professional identity score between male and female nursing students has statistic difference, male nursing students has higher professional identity scores in the post-COVID 19 epidemic. 77.22% of the participants were from rural area, the mean scores of professional identity of nursing students from rural area was higher than the students from urban area, but there was no statistic difference. The students with social practice or not, was the only child of their family or not has no statistical significance in professional identity. The students had an experience of manage students and had organized activities had the higher score of professional identity in the post-COVID 19 epidemic. 95.01% nursing students willing to fight on the front line had a higher score of professional identity, which has a statistical significance. Hao Yufang[3] also showed that nursing students' professional identity was low, with a decline in senior nursing students' professional identity, averaging 58.50 ± 9.16 . However, after the COVID 19 epidemic, the average score of professional identity was 62.84 ± 8.96 . 83.62% of students said they liked the nursing profession better after having the experience of COVID 19, 95.01% of the nursing students were willing to fight on the front line in the future.

The study also shown 88.05% of nursing students were happy to be a nurse, 74.68% of nursing students would not change their current career direction and prepared to be active in the nurse profession, but only 53.07% of the participants were certain they can be successful in their nursing career. Whether learners present learned behaviors is influenced by three types of reinforcement, namely direct reinforcement, alternative reinforcement and self-reinforcement. Of these, alternative reinforcement refers to the positive effect gained from seeing others demonstrate exemplary behaviors and thus matching the behaviors. The high risk of infection for nurses during the anti-epidemic process, the difficulty of their work, the shortage of pre-existing supplies and the uncertainty of the treatment plan put great pressure on the nurses. However, the nurses showed immense courage, wisdom and commitment, scrambling to complete the rescue and treatment tasks, winning the respect of the people and being recognized by the whole country, setting a good example for the students, which could thus help nursing students to form alternative reinforcement. This study showed 68.32 to 69.09% of nursing students had known the benefits of staying and risks of leaving in the post-COVID 19 epidemic. 74.42% of nursing students thought it was necessary to consider the influence of external circumstance. Alternative reinforcement experiences are behavioral experiences gained by observing role models or the behaviors of others. For nursing students, lacking direct career experience, their career self-efficacy is heavily influenced by alternative experiences. When individuals observe people similar to themselves in terms of ability, age and status succeeding in a career activity, this can effectively increase the individual's self-efficacy for that career activity. 80.94% of nursing students shown they would like to learn about success stories in the nursing field. In the battle of COVID 19, nurse sacrifice their lives and family time to help the people in need, showing the nursing profession's capacity, ability and position. The image of nursing is related to professional identity of nurse^[6]. Our study found the positive image of nurse set in the COVID 19 rescue work had a continues effect to nursing students.

Therefore, when implementing nursing education to develop nursing students' professional identity, nursing educators can encourage students to actively participate in student management and club activities, and provide students with opportunities to engage in various social practice activities, so that they can better understand the professional identity. Also, experience of combating COVID 19 epidemic promote nursing students' professional identity even in the later stage of the epidemic.

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