

# Analysis of the Current Status and Influencing Factors of “Future Work Self-Clarity” Among Chinese Intern Nurses: A Cross-Sectional Survey

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**Abstract:** *Background:* The shortage of nurses in China is still a serious problem, how to improve the future work self-clarity of nursing students is very important. *Objective:* To evaluate the future work self-clarity among nursing students regarding their future careers and the factors influencing it. *Methods:* A total of 204 undergraduate nursing students from Guangzhou, Guangdong, China, were selected as participants for an online cross-sectional questionnaire survey. *Results:* The scores of the “Future Work Self-Clarity Scale”, Spiritual Climate Scale, and Career Calling Questionnaire for nursing students were  $(18.34 \pm 3.64)$ ,  $(14.43 \pm 3.77)$ ,  $(39.25 \pm 10.45)$ , respectively. Multiple linear regression analysis results indicated that satisfaction with clinical teachers, spiritual climate, and occupational calling were the influencing factors of future work self-clarity for intern nursing students ( $t = -3.230, 2.92, 4.68$ ; all  $P < 0.05$ ). *Conclusion:* The level of future work self-clarity among nursing students requires further improvement. Nursing managers should provide comprehensive attention and encouragement to nursing students to enhance their future work self-clarity and facilitate the construction and development of the nursing team.

**Keywords:** Career adaptability; Nursing students; Self-clarify; Spirituality

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## 1. Introduction

The aging population and the surge in national health demands pose significant challenges to the medical industry. The World Health Organization predicts that by 2030, the world will need to increase 400 million medical workers to meet the medical service requirements of the global population <sup>[1]</sup>. The National Nursing Development Plan (2021–2025) points out that by the end of 2020, the total number of registered nurses in China was over 4.7 million, with 3.34 registered nurses per thousand people, and a national doctor-nurse ratio of 1:1.15. The shortage

of nurses in China is still severe, and there is a large gap between the supply of nursing services and the diverse and differentiated medical needs of the people <sup>[2]</sup>. The study of Wang et al. indicated that the turnover rate of junior nurses (working years < 5 years) was as high as 3.68% because the internship process did not meet their expectations <sup>[3]</sup>.

Improving the professional cognition and clarity of nursing students during the clinical practice stage and increasing their career choice rate are of great significance for expanding the nursing talent reserve and promoting the development of the nursing discipline.

“Future Work Self-Clarity” refers to the clarity of an individual’s self-image cognition in future work, which has been proven to be significantly correlated with many positive traits and positive behavior tendencies of an individual and can predict the initiative of individual career development and the active planning behavior of an individual’s career <sup>[4]</sup>. Individuals with a clear future work self are more aware of or sensitive to the information and feedback related to the work self in the outside world and can receive and understand this information with an open attitude, thus generating more proactive professional and assertive behaviors. The easier it is for an individual to realize or construct a self-image in future work, and the higher the clarity of this self-image, the greater the individual’s “Future Work Self-Clarity” <sup>[5,6]</sup>.

Spiritual climate refers to the atmosphere in which nursing students are respected and encouraged to express their personal views in the workplace. It can not only effectively relieve work pressure and enhance departmental cohesion but also effectively promote the common progress of individuals and teams and contribute to their career success <sup>[7]</sup>. The subtle spiritual climate is like a link connecting individuals and work, forming an invisible organizational culture within the organization. This organizational culture enables individuals to enhance their perception of the meaning and purpose of work through the working process, establish a sense of connection with others, and achieve the integration of self and organization <sup>[8]</sup>.

Career calling refers to a strong passion for a certain field and has the attribute of positive emotions <sup>[9]</sup>. It is a motivating force at work, reflecting the internal motivation of the individual and having an important impact on the individual’s work attitude and behavior <sup>[10]</sup>. Zhang et al. found that career calling could effectively improve the job satisfaction of nursing students, reduce job fatigue and burnout, and play a positive role in maintaining the stability of nursing team members <sup>[11]</sup>.

Currently, research on “Future Work Self-Clarity” in China’s nursing industry is in its infancy, and there are no relevant investigations for nursing students. Nursing students urgently need to establish correct professional values, clear work goals, and work positioning and respond to challenges with a positive attitude. Based on this, this study aims to explore the current status and influencing factors of “Future Work Self-Clarity” among nursing students, providing a reference for the future stability and high quality development of reserve talents in the nursing industry.

## **2. Methods**

### **2.1. Aim**

The aim of this study is to investigate the current status and influencing factors related to nursing students’ “Future Work Self-Clarity”, in order to provide a reference for promoting the stability and high - quality development of reserve talents in the nursing industry in the future.

## 2.2. Design

We designed a cross-sectional survey of the “Future Work Self-Clarity” in Chinese nursing students using a quantitative design, specifically a cross-sectional, descriptive, and correlational study.

## 2.3. Participants

This study was conducted among nursing internship students from 6 nursing schools in Guangzhou, Guangdong, China, from Jan to Jun, 2024.

A total of 220 nursing undergraduates were selected by convenience sampling. Inclusion criteria were:

- (1) Undergraduate students participating in a nursing internship at the hospital;
- (2) Having completed the internship for more than 6 months;
- (3) Voluntarily participating and willing to provide informed consent.

Students who studied elsewhere or were on leave during the survey period were excluded.

## 2.4. Sample size

Statistical sample size estimation was used to calculate the required sample size. This method suggests that the number of respondents should be 5–10 times the number of variables. 10 variables were considered, including gender, place of origin, single-child status, being a student leader/participating in community organizations, participating in career planning courses, liking for nursing work, satisfaction with clinical teachers, experience of medical disturbance, patient death during internship, and current employment environment.

The “Future Work Self-Clarity” Scale, Spiritual Climate Scale, and Occupational Calling Scale were all single-dimension scales. Thus, the required sample size was 130–260 participants. Given that approximately 20% of the questionnaires were likely to be invalid, the sample size was determined to be 220 participants.

## 2.5. Data collection

With the approval of the ethics committee, an online questionnaire survey was conducted with the assistance of the head of nursing teaching in the hospital from Jan to Jun, 2024. The Questionnaire Star software was used to create an electronic questionnaire, and the link and QR code of the questionnaire were sent via WeChat.

Before starting the questionnaire, a brief description of the purpose and significance of the study was provided. All participants provided informed consent by selecting “yes” or “no” before completing the questionnaire. The questionnaire could only be filled out once per IP, and all questions had to be completed as required before submission. After the questionnaires were completed, two people checked the integrity of the questionnaires one by one, and invalid questionnaires were removed.

A total of 220 questionnaires were distributed in this survey, and 204 complete and valid questionnaires were collected, with an effective recovery rate of 92.7%.

## 2.6. Instruments

### 2.6.1. Basic information questionnaire

After reviewing relevant literature, a personal information questionnaire with 10 items was developed, including gender, students’ place of origin, whether they were the only child, serving as a student cadre/participating in community organizations, participating in career planning courses, liking for nursing work, satisfaction with clinical teachers, experience of “medical disturbance” events, patient death during internship, and current

employment environment.

### **2.6.2. “Future Work Self-Clarity” scale**

The “Future Work Self-Clarity” scale was developed by Strauss et al. and then translated into Chinese by Chinese scholar, Guan et al. <sup>[12,13]</sup>.

The scale contains five items such as “I can easily imagine my future working self,” etc. A Likert 5–point scoring method was used, with “strongly disagree” to “strongly agree” scored as 1–5 points. The total score ranged from 5 to 25 points, and the Cronbach’s  $\alpha$  coefficient of the scale was 0.92.

### **2.6.3. Spiritual climate scale**

The spiritual climate scale was developed by Sexton et al. and then translated into Chinese by Chinese scholar, Wu et al. <sup>[14,15]</sup>. The scale contains a total of 4 items such as “In the department, I am encouraged to speak my mind and can listen to each other’s hearts”.

A Likert 5–point scoring method was used, with “strongly disagree” to “strongly agree” scored from 1 to 5 points. The total score ranged from 4 to 20 points, and the higher the total score, the stronger the perception of the spiritual climate scale of the working environment. The Cronbach’s  $\alpha$  coefficient of the scale was 0.84.

### **2.6.4. Career calling questionnaire**

The career calling questionnaire was developed by Dobrow et al. and then translated into Chinese by Chinese scholar, Pei et al. <sup>[16,17]</sup>. The scale contains 12 items such as “I am willing to make some sacrifices for my current job”.

A Likert 5–point scoring method was used, with “strongly disagree” to “strongly agree” scored as 1–5 points. The total score range was 12–60 points, and the higher the score, the higher the career calling level of nursing students. The Cronbach’s  $\alpha$  coefficient of the scale was 0.94.

## **2.7. Data analysis**

The data were analyzed using SPSS 26.0 software (IBM Corp., Armonk, NY, USA). Measurement data were described by mean  $\pm$  standard deviation (SD), and count data were described by frequency and percentage. The t-test or analysis of variance was used to analyze the “Future Work Self-Clarity” of nursing students. Multiple linear regression analysis was used to analyze the multiple factors of “Future Work Self-Clarity” of nursing students. The test level  $\alpha = 0.05$ .

## **2.8. Ethical issues**

Our study meets the requirements of the Declaration of Helsinki for conducting research involving humans. This study was approved by the Institutional Review Board of the Sun Yat-sen University Cancer Center (Approval No.: B2023-658-01) in Dec 26th, 2023.

We began with a detailed description of the study. Participants were informed that they could withdraw from the study at any time, and prior written informed consent was obtained. Then, the survey was conducted anonymously. The students were also clearly informed of the benefits (sharing their valuable opinions with relevant stakeholders) and risks (the investigation would take up some of their time) of participation.

### 3. Results

A total of 220 questionnaires were distributed in this study, and 204 valid questionnaires were recovered, with an effective recovery rate of 92.7%. Of the 204 participants, 39 (19.1%) were male and 165 (80.9%) were female. Among them, 56 (27.5%) were from urban areas, 38 (18.6%) were from counties, and 110 (53.9%) were from rural areas. 35 (17.2%) were the only child in their family, 130 (63.7%) were student leaders or involved in community organizations, 171 (83.8%) had participated in career planning courses, etc. (see **Table 1**).

**Table 1.** Item scores of “Future Work Self-Clarity” in nursing interns (n = 204)

| Variable                                                         | Range of scores | Score       | Score order |
|------------------------------------------------------------------|-----------------|-------------|-------------|
| I have a very clear idea of what I want to be in my future job.  | 1–5             | 3.86 ± 0.88 | 1           |
| I can easily visualise my self-image in my future job.           | 1–5             | 3.76 ± 0.92 | 2           |
| The type of work-related future I want is very clear in my mind. | 1–5             | 3.64 ± 0.98 | 3           |
| This future is easy for me to visualise                          | 1–5             | 3.57 ± 0.89 | 4           |
| The mental image of this future is very clear                    | 1–5             | 3.52 ± 0.87 | 5           |

The results showed that the score of the “Future Work Self-Clarity” scale for nursing students was (18.34 ± 3.64). The score of the spiritual climate scale was (14.43 ± 3.77). The score of the career calling questionnaire was (39.25 ± 10.45).

The scores for individual dimensions are shown in **Table 2**. The results of this study indicated that being a student leader, liking for nursing work, satisfaction with clinical teachers, and the current employment environment were the influencing factors of “Future Work Self-Clarity” for practice nursing students, and the differences were statistically significant ( $P < 0.05$ ) (see **Table 2**).

**Table 2.** Demographic characteristics of nursing interns and their level of “Future Work Self-Clarity” (n = 204)

| Variable                                                        | Grouping  | Total | Score        | t/F   | P     |
|-----------------------------------------------------------------|-----------|-------|--------------|-------|-------|
| Sex                                                             | Male      | 39    | 18.72 ± 4.29 | 0.72  | 0.470 |
|                                                                 | Female    | 165   | 18.25 ± 3.47 |       |       |
| Place of origin                                                 | City      | 56    | 18.73 ± 3.19 | 0.95  | 0.390 |
|                                                                 | County    | 38    | 17.68 ± 3.53 |       |       |
|                                                                 | Rural     | 110   | 18.36 ± 3.88 |       |       |
| Are you an only child                                           | Yes       | 35    | 18.25 ± 2.79 | -0.15 | 0.885 |
|                                                                 | No        | 169   | 18.35 ± 3.79 |       |       |
| Are you a student leader/participate in clubs and organisations | Yes       | 130   | 18.97 ± 3.76 | 3.37  | 0.001 |
|                                                                 | No        | 74    | 17.23 ± 3.13 |       |       |
| Have you participated in a career planning programme            | Yes       | 171   | 18.43 ± 3.72 | 0.79  | 0.429 |
|                                                                 | No        | 33    | 17.88 ± 3.18 |       |       |
| Enjoyment of nursing                                            | Favourite | 62    | 19.73 ± 4.00 | 7.56  | 0.001 |
|                                                                 | Average   | 132   | 17.83 ± 3.36 |       |       |
|                                                                 | Dislike   | 10    | 16.50 ± 2.12 |       |       |

**Table 2 (Continued)**

| Variable                                                 | Grouping     | Total | Score        | t/F   | P       |
|----------------------------------------------------------|--------------|-------|--------------|-------|---------|
| Satisfaction with clinical instructors                   | Satisfaction | 157   | 19.19 ± 3.35 | 19.34 | < 0.001 |
|                                                          | Average      | 39    | 16.51 ± 2.08 |       |         |
|                                                          | Dissatisfied | 8     | 10.50 ± 2.33 |       |         |
| Have you ever experienced any “medical malpractice”?     | Yes          | 41    | 19.24 ± 3.84 | 1.79  | 0.074   |
|                                                          | No           | 163   | 18.11 ± 3.56 |       |         |
| Patient death during internship                          | Yes          | 63    | 18.65 ± 3.76 | 0.82  | 0.413   |
|                                                          | No           | 141   | 18.19 ± 3.59 |       |         |
| What do you think of the current employment environment? | Good         | 68    | 19.74 ± 3.59 | 10.05 | < 0.001 |
|                                                          | Average      | 118   | 17.86 ± 3.61 |       |         |
|                                                          | Poor         | 18    | 16.17 ± 1.69 |       |         |

The results of this study also showed that the “Future Work Self-Clarity” scale for nursing students was positively correlated with the spiritual climate scale ( $r = 0.62$ ,  $P < 0.01$ ) and positively correlated with the career calling questionnaire ( $r = 0.65$ ,  $P < 0.01$ ). The spiritual climate scale was positively correlated with the career calling questionnaire ( $r = 0.73$ ,  $P < 0.01$ ).

Taking the “Future Work Self-Clarity” scale for nursing students as the dependent variable, multiple linear regression analysis was conducted with the scores of whether being a student leader, liking for nursing work, satisfaction with clinical teachers, current employment environment, spiritual climate, and career calling as independent variables.

The assignment of independent variables is shown in **Table 3**.

**Table 3.** Assignment of independent variables

| Independent variable                   | Assignment                                                       |
|----------------------------------------|------------------------------------------------------------------|
| Serving as a student leader            | Yes = 1, No = 2                                                  |
| Enjoyment of nursing work              | Favourite = 1, average = 2, dislike = 3                          |
| Satisfaction with clinical instructors | Satisfied = 1, average = 2, dissatisfied = 3                     |
| Employment environment status          | Good environment = 1, fair environment = 2, poor environment = 3 |
| Spiritual climate                      | Substitution of original values                                  |
| Career calling                         | Substitution of original values                                  |

The results showed that satisfaction with clinical teachers, spiritual climate, and career calling were the influencing factors of “Future Work Self-Clarity” for practice nursing students ( $P < 0.05$ ), as shown in **Table 4**.

**Table 4.** Results of multiple-factor analysis of nurse interns’ “Future Work Self-Clarity”

| Variable                               | Regression coefficient | Standard error | Standard regression coefficient | <i>t</i> | <i>P</i> |
|----------------------------------------|------------------------|----------------|---------------------------------|----------|----------|
| Constant                               | 11.91                  | 1.93           | -                               | 6.17     | < 0.001  |
| Whether serving as a student leader    | -0.56                  | 0.40           | -0.07                           | -1.42    | 0.159    |
| Enjoyment of nursing work              | 0.31                   | 0.42           | 0.05                            | 0.72     | 0.467    |
| Satisfaction with clinical instructors | -1.38                  | 0.42           | -0.20                           | -3.30    | 0.001    |
| Employment environment status          | -0.03                  | 0.36           | -0.01                           | -0.09    | 0.930    |
| Spiritual climate                      | 0.22                   | 0.08           | 0.23                            | 2.92     | 0.004    |
| Career calling                         | 0.13                   | 0.03           | 0.39                            | 4.68     | < 0.001  |

Note:  $F = 32.84$ ,  $P < 0.001$ ,  $R^2 = 0.50$ , adjusted  $R^2 = 0.49$

## 4. Discussion

### 4.1. Status of “Future Work Self-Clarity” of practice nursing students

The results of this study show that the score of “Future Work Self-Clarity” for nursing students in practice is ( $18.34 \pm 3.64$ ), which is lower than the survey results of Chinese scholar, Chen et al. on nursing students in vocational colleges, indicating that the overall planning and individual development of nursing students in practice need to be improved<sup>[18]</sup>. Their ability to take career risks in the future is relatively low, and their career goals are not clear.

The reasons may be as follows:

- (1) Differences in the subjects as the research population is nursing students in the hospital. Nursing clinical practice is a necessary process for them to change their individual roles and complete professional socialization. During the clinical practice process, nursing students continuously improve their clear image of the future nursing work scene, but at the same time, they are also faced with the double pressure of study and work, the relative difference between theory and practice, and the complex and changeable clinical environment. This makes nursing students prone to have negative experiences such as ambiguous orientation and self-denial tendencies, and it is difficult for them to be recognized by clinical workers. There is a large psychological gap between expectation and reality, a lack of confidence in future work, and a reduced “Future Work Self-Clarity”<sup>[19]</sup>;
- (2) Differences in learning styles since the data acquisition time of this study was from September to November 2023. Due to the impact of COVID-19, nursing students mainly used online teaching during their school study, lacking face-to-face communication and interaction with nursing teachers. It is difficult for both sides to receive real and effective teaching feedback. At the same time, online teaching also places higher requirements on the self-management ability of nursing students. Nursing students must have good learning ability and self-control. Otherwise, it is difficult to ensure the online learning effect. However, in real clinical work, patients’ demand for high-quality nursing care and the assessment requirements of clinical practice are increasing, and it is difficult for nursing students to meet these requirements, bear higher learning pressure, and experience deeper frustration, further reducing the level of “Future Work Self-Clarity”.

Among the items of “Future Work Self-Clarity”, the item “I know very well what kind of person I want to be



in the future work” had the highest score ( $3.86 \pm 0.88$ ). The item “The mental image of the future is very clear” had the lowest score ( $3.52 \pm 0.87$ ).

The results reflect that nursing students have positive internal motivation for future career development, with high expectations and strong aspirations, hoping to create better career development prospects and actively realize their self-worth. However, they lack effective means and a correct path to achieve their future career goals, and their individual autonomy needs cannot be met, which leads to or aggravates the fear of failure.

At present, the training of nursing students in teaching hospitals in China mainly focuses on the accumulation of theoretical knowledge, clinical skills training, clinical thinking training, and team cooperation ability training, etc., while there are deficiencies in career planning and employment guidance<sup>[20]</sup>. This suggests that nursing managers should pay more attention to the combination of science and education, the integration of theory and practice, and the integration of production and education in hospital nursing teaching to improve the quality of nursing students’ training.

Nursing educators should help nursing students comprehensively understand clinical work, clarify individual occupational orientations, and enable them to gradually extract a relatively complete future working self from their subconscious, gradually realize their future self - image, and gradually adapt to their roles<sup>[21]</sup>. At the same time, we should actively provide practical and effective career counseling services for nursing students to help them find career goals that match their own values, develop recognition and strong emotions for nursing work, and improve “Future Work Self-Clarity”.

## **4.2. Analysis of influencing factors of “Future Work Self-Clarity” among practical nursing students**

### **4.2.1. The higher the satisfaction with clinical teachers, the higher the “Future Work Self-Clarity” level of nursing students**

Clinical teachers are not only the initiators of clinical practice for nursing students but also the most influential figures during their clinical practice. Excellent clinical teachers can serve as excellent professional examples for nursing students. They can not only demonstrate the skills, qualities, and emotions required for the role of clinical nurses in front of nursing students but also promptly answer their questions, relieve their negative emotions, and offer them care and encouragement, which is highly praised by students<sup>[22]</sup>.

This can more positively and effectively guide students to build a favorable professional self- image and enhance their recognition of nursing work, thereby indirectly or directly enhancing the “Future Work Self-Clarity” of nursing students<sup>[23]</sup>. Chinese scholar, Yang et al. indicated that most nursing practice teachers in China are young and middle-aged backbone nurses, and clinical teaching focuses more on the professional knowledge and skill training of nursing students, generally lacking attention to the practice adaptability of nursing students<sup>[24]</sup>. Good practice adaptability can effectively reduce the stress response during practice, cultivate independent learning motivation, improve nursing professional identity and professional confidence, and increase the likelihood of forming a clear future self for nursing students.

We suggest that while maintaining high-quality nursing teaching, clinical nursing teachers can actively communicate with nursing colleges and universities, focus on the future development of nursing students, and provide more information and guidance related to the comprehensive ability cultivation and career growth of nursing students according to their own conditions. For the questions raised by nursing students, they should give positive and comprehensive positive feedback to help them get out of the confusion during the internship, quickly adapt to



the clinical environment, grasp the future development direction, and improve their “Future Work Self-Clarity”.

#### **4.2.2. The higher the perception of the spiritual climate by nursing students, the higher the level of “Future Work Self-Clarity”**

The spiritual climate of the working environment reflects the spiritual and cultural atmosphere created by the collective staff in the common working environment<sup>[25]</sup>. The results of this study showed that nursing students with a higher perception of the spiritual climate had a higher “Future Work Self-Clarity”. A good spiritual climate provides a supportive working atmosphere for practical nursing students, which can meet their emotional trust needs, allowing them to obtain good emotional support and emotional catharsis in clinical work, further enhancing the cohesion and good-will among groups, and effectively reducing the pressure of role transformation for practical nursing students. This helps nursing students improve their “Future Work Self-Clarity”<sup>[26]</sup>. Cruz et al. showed that the higher the nurses’ perception of the spiritual climate, the higher their recognition of the nursing profession, the stronger their dedication to the nursing profession, and the easier it is to achieve their career goals<sup>[27]</sup>.

Nursing managers should pay more attention to the pressure and obstacles faced by nursing students during the internship, provide them with more opportunities for experience exchange and emotional sharing, and make them feel the importance of the department. For the reasonable and innovative suggestions put forward by nursing students, the department should actively adopt and implement them, give full play to their subjective initiative and creativity at work, create a positive and harmonious spiritual climate in the workplace, and promote the improvement of “Future Work Self-Clarity”.

#### **4.2.3. The higher the career calling level of nursing students, the higher the level of “Future Work Self-Clarity”**

Career calling is a positive, internal, and deep-level psychological structure, and individuals with a high-level career calling tend to show sufficient career preparation, a good career attitude, and high-quality career outcomes<sup>[28]</sup>. Nursing students with a stronger career calling will regard the nursing career as an indispensable part of their lives, arouse strong enthusiasm for work during the clinical work process, truly experience the sense of mission and satisfaction brought by their profession, and pursue excellence to realize their professional value<sup>[29]</sup>.

A study by Xie et al. has shown that career calling can significantly improve an individual’s internal motivation<sup>[30]</sup>. The higher the career calling level of nursing students, the stronger their internal driving force, the clearer their goals and implementation plans for the nursing work they are engaged in, and the higher their level of “Future Work Self-Clarity”. This suggests that nursing managers should strengthen the regular evaluation of the career calling of nursing students, accurately identify low-career calling groups, and take various targeted measures in a timely manner. They should carry out nursing career calling education, correct the professional cognition of nursing students, strengthen the sense of the nursing professional mission, stimulate self-work shaping, cultivate and improve the career calling level of nursing students, and promote the improvement of “Future Work Self-Clarity”.

### **4.3. Limitations**

This study had certain limitations in terms of using convenience sampling and collecting online questionnaires, which led to difficulties in quality control. Additionally, representativeness may be affected as the sample was only from one province in China. Subsequent studies should use multi-center and large-sample-size methods to improve reliability.

## 5. Conclusions

The level of “Future Work Self-Clarity” of nursing students needs to be further improved. Satisfaction with clinical teachers, spiritual climate, and career calling were the influencing factors of “Future Work Self-Clarity” among practical nursing students. It is recommended that nursing managers should pay more attention to and encourage nursing students, improve the comprehensive ability of the hospital’s nursing education teaching team, create a positive and harmonious spiritual climate in the workplace, and carry out nursing career calling education, so as to comprehensively improve the “Future Work Self-Clarity” level of nursing students. It is suggested that researchers can include multi-center research objects and use longitudinal and qualitative research methods to further explore the “Future Work Self-Clarity” of nursing students in the future and formulate targeted interventions to help the growth of new nursing students.

## Disclosure statement

The authors declare no conflict of interest.

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