Establishment of Competency Model for Clinical Teachers of Nursing Students

Shu-Kun YU\textsuperscript{1, a}, Juan TENG\textsuperscript{1, b, *}, and Xin-Yu MA\textsuperscript{2, c}

\textsuperscript{1}Department of nursing, Affiliated Hospital of Beihua University, Jilin, Jilin Province, China
\textsuperscript{2}Nursing faculty of Beihua University, Jilin, Jilin Province, China
\textsuperscript{a}1229551471@qq.com, \textsuperscript{b}1461504434@qq.com, \textsuperscript{c}903117981@qq.com

*Corresponding author

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Abstract. [Objective] Construct a more representative, objective and operable model of competency and quality. Provide basis for the selection, training and assessment of clinical probation teachers. [Method] Make the use of literature search and other methods to sort out the preliminary framework of the model based on the "onion model". Taking advantage of the Delphi expert consultation method, the expert feedback is analyzed hierarchically, and the weights and data statistics are calculated. [Results] This study constructs 4 first-level (primary) indicators (professional practice ability, teaching ability, professionalism, personality. The weight of the 4 indexes are 0.3229, 0.2083, 0.2656, 0.1146; Cronbach's alpha coefficient was 0.94.), 23 second-level indicators, 35 third-level indicators. [Conclusion] The objective model and the comprehensive indexes can evaluate the clinical practice of teachers reasonably. The model also helps the clinical probation selection, training and evaluation of clinical teachers, and it can be more conducive to the optimization of the nursing personnel occupation and professional configuration, which make contributions to the sustainable development of health human resources.

Introduction

Clinical practice is an important process of practice of nursing students on nursing job. It is a way to learn nursing knowledge into a critical period of occupation and occupation quality. Clinical probation teachers are burdened with multiple tasks, such as providing professional knowledge, teaching training skills, and fostering professional integrity. And clinical probation teachers are the torchbearers who help students to combine the theory and clinical practice. The comprehensive quality of the teachers affects the effect of clinical practice of students directly\textsuperscript{[1,2]}. Therefore, it is very important to improve the quality of clinical teaching and establish a teaching team with experienced teachers who are of high level, good quality and strong ability in clinical teaching\textsuperscript{[3]}. With the development of society, the competency model plays an important role in human resource management. It also provides evaluation methods and new perspectives for the ability assessment of clinical practice teachers. Ability and quality (competency) refer to the personal, potential and lasting characteristic which distinguish the excellent and the ordinary\textsuperscript{[4,5]}. Nowadays, most of the research on competency model is on human resource management in China. While, there are few reports about the competency model of nursing probationary teachers. This study is based on the comprehensive quality and behavior characteristics of nursing students' probationary teachers. And we are trying to explore the composition of the ability and quality of Probationary Teachers, so as to construct the competency model of clinical nursing teachers for nursing students (hereinafter referred to as competency model). The competency model can be introduced to the construction of teachers of nursing students in the trainee teachers. With this model, the clinical probation of clinical teachers can be periodically evaluated. The model also helps the clinical probation selection, training and evaluation of clinical teachers, and it can be more conducive to the...
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Materials and Methods

Consulting Object

The expert selection principle should be widely representative and authoritative. Experts criteria: Above technical title of subtropical high, college degree or above, engaged in nursing and related professional, more than ten years work experience of experts; enthusiasm for this research is high, willing to support nursing research, enough the research time for the two surveys continued to participate in this study. According to the purpose of research and the characteristics of Delphy expert consultation method, combining with the actual needs of this research topic, 16 experts were selected for two rounds of expert consultation.

Methods

Initially Construction of Theoretical Framework for Competency Models

Bibliographic Search (Document Retrieval)

Through literature retrieval, related research data of the competency model of nursing students’ clinical probation teachers are achieved, based on the onion model and the theory of ability quality. Data sources include: Pub Med database, Chinese biomedical literature database, Chinese Journal Full-text Database - CNKI, Wanfang full-text database.

Inductive Entries

The ability and quality items extracted through literature retrieval are collated and summarized, there are professional practice ability, teaching ability, occupation quality, management ability, personality traits in 5 dimensions, professional ability, teaching method, critical thinking, organizational skills, patience and a total of 28 items, 44 items of behavior.

The Process and Result of Delphy Expert Consultation

Questionnaire Formation

The first round of expert consultation questionnaire is formed after the formation of alternative indicators, in order to find out whether the designed table is clear and the construction is reasonable. First, the consultation of 6 experts was conducted, and the deficiencies exposed in the consultation results were revised and supplemented. Combined with the suggestions given by experts, the optional draft index was added and revised according to the statistical analysis. The first round of expert consultation questionnaire was finished. The questionnaire introduces research background, purpose, methods and contents of this research to the experts, the questionnaire consists of two parts: the first part is the questionnaire, and the second part is the general information, familiarity on the issue and judgment of the experts.

Screening Criteria of Evaluation Index

This study conducted two rounds of expert consultation Delphy. The score is calculated the total recognition rate (experts believe that the "most important" and "important" constitute the sum ratio), mean standard deviation and coefficient of variation, mainly by the boundary value method screening evaluation index, according to the importance of each index. The calculation method of the total recognition rate and the mean: "boundary value = mean - standard deviation", the score higher than the boundary value are selected. Calculation method of variation coefficient boundary value: "value = mean + standard deviation", the score lower than the boundary value are selected. In order to prevent important indicators from being eliminated, only indicators that do not meet the requirements of the above three indicators will be eliminated. For one or two indicators of substandard requirements, the task force will be chosen after discussion according to the principles of comprehensiveness,
scientificity and feasibility. In addition, the task force gives full consideration to the amendments and changes made by the experts.

Results

First Round of Expert Consultation

Consulting method: this topic has 5 first grade indexes, 28 secondary indicators, three-level index 44 items, each topic is divided into the most important, important, general, unimportant, and least important, according to its significance. According to the Likert scoring method, gives the corresponding scores of 5, 4, 3, 2, 1. Experts are requested to determine the importance of each indicator in order to understand the experts' recommendations on the composition of the evaluation indicators system.

The first round of expert consultation issued 16 questionnaires, 16 copies were recycled, 16 copies were all valid, and the effective recovery rate was 100%.

Based on considering the expert advice, combined with the results of statistical analysis, through group discussion, the various indicators of the first round of consultation questionnaire or the revision, the second round of consultation questionnaire was formed (5 primary indexes, 24 secondary indicators, 37 third-level indicators). The second round of consultation started.

Table 1. Boundary value of the first round of expert consultation screening index.

|                          | Mean   | Standard Deviation | Boundary value |
|--------------------------|--------|--------------------|----------------|
| Total approval rate      | 75.49  | 15.40              | 60.09          |
| Arithmetic mean          | 3.93   | 0.32               | 3.61           |
| Coefficient of variation | 17.04  | 4.23               | 21.27          |

Second Round of Expert Consultation

Consultation Method

Similar with the first round, the second round of consultation method is still in the first round of experts consultation. Consultation form main indicators listed in the project is an expert in the first round of consultation results summary, experts are requested to assign important values to each indicator according to the overall views of the first round. According to the actual situation of the research, the second round of consultation has increased the use of the optimal sequence diagram to determine the weight of the first-grade index.

The Results of Expert Consultation

In the second round of expert consultation, 16 questionnaires were issued, 16 were recovered, 16 were all valid, and the effective recovery rate was 100%. On the basis of fully considering the expert opinion, combined with the results of statistical analysis, through group discussion and the opinions of the experts. The final model consists of 4 primary indexes, 23 secondary indexes and 35 third-level indicators.

Table 2. Boundary value of the second round of expert consultation screening index.

|                          | Mean   | Standard Deviation | Boundary value |
|--------------------------|--------|--------------------|----------------|
| Total approval rate      | 81.53  | 11.68              | 69.85          |
| Arithmetic mean          | 3.98   | 0.24               | 3.74           |
| Coefficient of variation | 15.13  | 3.33               | 18.46          |
Preliminary Construction of Competency Model

Based on the theory of "quality onion model", this study preliminarily constructed the ability quality model of 4 dimensions, 23 items and 35 behavioral characteristics: Professional practice ability (professional ability, professional growth ability, medical security awareness and communication ability); Teaching ability (teaching method, teaching skill, language expression, teaching attitude, self-reflection ability, organization ability and overall ability); Professionalism (loyalty and dedication, leading by example, judgmental thinking, sense of responsibility, prudent spirit, service awareness, cooperative consciousness, executive force); Personal traits (self-regulation, care, love, sincerity).

The Reliability and Validity Test

The internal consistency of the expert opinion after the second round of consultation is 0.94, indicating that the research system is very good. The questionnaire was first constructed by six experts. The results show that the CVI coefficient > 0.7, which indicates that the content validity is appropriate to reflect the core competence of teachers.

Determination of index weight at all levels

The primary index weight was established by using the optimal sequence diagram method. In this study, \( T = (4 \times (4-1)) \times 16 / 2 = 96 \). Professional competence: \( (8.5 + 8.5 + 14) / 96 = 0.3229 \), teaching ability: \( (6.5 + 8.5 + 5) / 96 = 0.2083 \), professional quality: \( (6.5 + 6.5 + 9.5) / 96 = 0.2656 \), personality traits: \( (4 + 3.5 + 3.5) / 96 = 0.1146 \).

| Name of Index              | weight coefficient |
|----------------------------|--------------------|
| Professional practice ability | 0.3229             |
| Teaching ability            | 0.2083             |
| Professional accomplishment | 0.2656             |
| Personality traits          | 0.1146             |

Discussion

In our country, clinical nursing teachers have dual identities of nursing practitioners and clinical teachers. They also undertake the dual pressures of work and teaching. The nursing department of the hospital is responsible for all clinical probation of nursing. The nursing department selects excellent nurses as clinical trainee teachers based on the recommendation of the head nurse and the nursing staff's business ability. The nursing department selects excellent nurses as clinical trainee teachers based on the recommendation of the head nurse and the nursing staff's business ability. The lack of unified standards and the imperfect evaluation system cannot ensure the high quality of nursing clinical teaching tasks.

With the development of the nursing profession, increasing nursing higher education and popularization of enrollment make the amount of the nursing students increase exponentially, which leads to the shortage of clinical teaching teachers. It also reduces the clinical teachers' selection criteria, clinical teaching ability of teachers.

This topic, the construction of the competency model of research ability, has changed the previous experience mode, which has brought the evaluation of nursing clinical trainee teachers to a more scientific and prudent level. It provides an important basis for teachers' employment, selection, training, assessment and promotion. What’s more, it gives a guidance on the career development of teachers from a quantitative perspective.
Summary

Based on the theory of "quality onion model", this paper constructs a competency model of 4 dimensions, 23 items and 35 behavioral characteristics. It provides a scientific method and view of thinking for the selection, assessment and training of probationary teachers. Competency model is useful and practical. Because of the limited conference, it is very difficult to construct a model under actual conditions. There are still a lot of problems on the model, which gives much more space for further study.

References

[1] Liu Shuli, Zhang Juxia, Dong Panpan. Clinical teaching needs and practice investigation and analysis of the status quo of [J]. Occupation Health Education, 2017 nursing students, (07): 124-125.

[2] Yang Ying, Xiong Liping. The clinical nursing teachers self management status and influence factors analysis of [J]. (a), Contemporary Nurse 2017, (02): 177-180.

[3] Fang Xiuxin, Xu Hongmei, Liu Huaxia, et al. Construction of the evaluation system of professional quality of clinical nursing teachers [J] Journal of Nursing Science, 2009,24 (2): 5-7.

[4] Chen Rui. Study on the construction of competency model of "dual qualified" teachers [D]. University of South China, 2014.

[5] Bian Bian. Preliminary construction of competency model for clinical nursing teachers [D]. Zhejiang University, 2011.