Brief Report

The Effectiveness of Doctoral Program in Nursing in Iran Based on the Patrick Model

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Abstract

Background: Doctoral program in nursing aims to train nursing professionals and managers to improve the quality of care and ultimately to promote public health. Some critics believe that in Iran this program mostly focuses on training instructors and researchers and neither improves the function and position of nursing discipline nor meets the needs of the community.

Objectives: The present study aimed to determine the effectiveness of nursing doctoral program based on the Patrick model from the perspective of nursing doctoral students.

Materials and Methods: This cross-sectional study was conducted on 90 nursing students who were conveniently selected from seven nursing schools. A questionnaire designed based on the Patrick model was used. Descriptive statistics, simple and multiple regression analysis were used to analyze the data. Percentage of the effectiveness scores was reported.

Results: The mean score of effectiveness of the nursing doctoral program was 84.76 ± 2.73, which assumed a good level. Multiple regression analysis showed that job status and being native in the field of education explains 11% of the variance in the effectiveness score.

Conclusions: Although the efficacy of nursing doctoral program is good, however, it needs revision to enhance the outcomes of the program in order to meet public needs and to increase learners' satisfaction.

Keywords: Evaluation, Nursing, PhD Program, Education, Patrick Model

1. Background

PhD programs in nursing aim to develop nursing science, and to train professors, instructors, researchers, administrators and policy makers in this field (1, 2). Nursing PhD program in Iran is relatively new (3) and was firstly held at Tabriz University of Medical Sciences based on the North American model in 1994. Subsequently, the program was extended to a number of medical universities (4, 5). However, as other educational programs, a challenging question is how much this program meets the needs of the society (6). A training program is considered valuable when credible evidence confirms its effects at individual and social levels (6, 7). Assessing the effectiveness of educational programs allows not only managers and employers to achieve a clear picture of the program, but also it helps administrators and teachers to understand the pros and cons of the program (7).

Donald Kirkpatrick model is one of the most famous models of assessment of human resource management, which has been used for evaluation of training courses for more than thirty years (7, 8). This model assesses training effectiveness at four levels: reaction, learning, behavior and result (9).

The first level measures the amount of interest, satisfaction and trainees feelings about training. The second level determines the skills and techniques that trainees have learned during an educational program. The third level evaluates how much change has occurred in the trainee's behavior; and the fourth level reflects the outcomes of the program. When, the outcomes are compared with expected results (7), the effectiveness of the program can be judged and decisions about continuing the program can be made (10, 11). A program is considered effective when change in behavior and performance of indi-

viduals at the workplace is observed and their learning is transferred to practice (7, 9).

Educational assessment in Iran is often done at first or second level of this model and reflects the effectiveness of programs. However, at the third and fourth levels, the effectiveness gradually decreases (12). Although the PhD program aimed to provide trained nursing professionals and managers to improve the quality of care and ultimately to promote public health (1, 2, 13), some critics believe that in Iran this program mostly focuses on training instructors and researchers and neither improves the function and position of nursing discipline nor meets the needs of the community.

2. Objectives

The present study aimed to determine the effectiveness of nursing doctoral program based on the Patrick model from nursing PhD student's perspective.

3. Materials and Methods

3.1. Design and Participants

This cross-sectional study was conducted on 90 PhD students, who were conveniently selected from Shiraz, Tehran, Tabriz, Baqiatallah, Iran, and Shahid Beheshti University of Medical Sciences and Social Welfare and Rehabilitation Sciences University. The main inclusion criterion was willingness to participate in the study.

3.2. Instruments

A modified version of the questionnaire developed by Hojjati et al. (12) was used to evaluate the effectiveness of the nursing PhD program. This questionnaire was designed based on Patrick's four level evaluation model. The content validity of the questionnaire was confirmed by ten professors in nursing and human resources management. The questionnaire contained 42 questions in four areas of reaction, learning, performance and result. To evaluate reaction, 17 questions were designed to assess interest, enjoyment and satisfaction level of participants from content, teachers and facilities. A Likert scale ranging from very low (= 1) to very strong (= 5) was used to score the questions. Learning area was assessed by 10 multiple-choice questions based on topics and objectives of the course, designed by the teachers of each subject at Shiraz University. A correct answer was scored one.

Performance area was assessed by 10 questions. These questions were developed based on the content of nursing PhD. A Likert scale ranging from very low (score 1) to the very strong (score 5) was used to score the questions.

Since the results of training can be studied at four levels (avoid cost, savings, strategic benefits and result), in this research students' satisfaction index was used to determine the strategic results. Students' satisfaction assessment of training program is one of the main outputs of the health system (14). Hence, the domain of results was evaluated using 10 questions about students' satisfaction of the training program. These items were also scored using a five point Likert scale ranging from very low (=1) to very strong (= 5).

The total score was calculated by sum of the four areas and to facilitate this, total score and scores in each area was calculated as a percentage. Finally the average scores for measuring effectiveness of the program were ranked at three levels: good (100 - 80), medium (80 - 60) and poor (60 - 40). Cronbach's alpha coefficient was calculated to assess the reliability. Cronbach's alpha of the questionnaire and it's subscales were 78%, 70%, 85%, 73% and 85% respectively.

The questionnaires along with an invitation letter, an informed consent form and a stamped envelope were posted to the participants by mail.

3.3. Ethical Considerations

Informed consent was obtained from all students, who accepted to participate in the study. It was clearly stated that all the questionnaires are anonymous, participation is voluntary, and that the researchers are committed to keep the data confidential.

3.4. Data Analysis

The data analyses were performed using the SPSS software, version 13. In addition to using descriptive statistics such as mean and standard deviation, after verification of normal distribution, demographic characteristics and effectiveness of nursing PhD program (as dependent variable), simple linear regression analysis was performed. All variables with P < 0.25 were then entered into a multiple regression model to control confounding factors and the predictive variables for the effectiveness of the program.

4. Results

Within six weeks, 81 questionnaires (90%) were returned. The mean age of the participants was 39.83 ± 3.21 and the age range was from 28 to 50. Most of the participants were female (79.01%), and married (53.09%).

The mean overall effectiveness score was 84.76 ± 2.73. Moreover, the mean scores of reaction, learning, performance and result areas were 89 ± 4.02, 88 ± 2.37, 84 ± 1.67 and 78.4 ± 3.40, respectively. According to the students, the program was generally good. Moreover, the

scores of reaction, learning and performance level was at a good level and the score of the result area was at moderate level. The linear regression analysis demonstrated a significant statistical difference between the effectiveness of the program and job status (P < 0.037) and being native (P < 0.043), (Table 1). In the multiple regression analysis, these two variables explained 11% of variance of effectiveness of the PhD program (Table 2).

Table 1. Correlations Between the Effectiveness of Training and Socio-Demographic Characteristics in Nursing Ph.D. Students

Variable	N	Mean $\pm$ SD	P Value
Age group, y			0.621[a]
28 - 33	8	87 $\pm$ 2.47	
34 - 39	33	88 $\pm$ 2.01	
40 - 44	34	87 $\pm$ 1.06	
45 - 50	6	88 $\pm$ 3.87	
Gender			0.843[a]
Female	64	87.91 $\pm$ 4.02	
Male	17	87.21 $\pm$ 3.11	
Marital status			0.992[a]
Single	38	87 $\pm$ 2.14	
Married	43	88 $\pm$ 0.13	
Habitation			0.043[b]
Native	54	89 $\pm$ 3.51	
Non native	27	86 $\pm$ 1.36	
University			0.553[a]
Shiraz	17	87 $\pm$ 1.89	
Tabriz	15	86 $\pm$ 4.21	
Tehran	8	87 $\pm$ 3.61	
Iran	10	89 $\pm$ 1.24	
Baqiatallah	9	85 $\pm$ 4.65	
Shahid Beheshti	10	87 $\pm$ 1.01	
Social welfare	12	89 $\pm$ 1.03	
Employment status			0.037[b]
Science committee	29	87 $\pm$ 1.02	
Board of education	18	87 $\pm$ 3.12	
Supervisor	14	85 $\pm$ 2.11	
Nurse	16	86 $\pm$ 1.36	
Unemployed	4	87 $\pm$ 2.15	

[a] Linear regression test.
[b] P < 0.25.

5. Discussion

In the present study, PhD students evaluated the effectiveness of the nursing PhD program as good.

Some of the earlier studies reported that PhD courses have medium level quality (3, 15, 16). Other studies from Japan and Switzerland also demonstrated that nursing PhD program failed to comply with the needs of nursing students in clinical problem solving and is mainly based on research and this causes dissatisfaction with the educational program (6, 14). One possible reason for this difference could be in the instruments used by different studies. In this study we evaluated the nursing doctoral program using an instrument designed based on the Patrick model. On the other hand, we only assessed the students' perspectives; and they were naturally interested in participating in the PhD program. Nonetheless, although the students mentioned that the program is suitable for nursing PhD and can improve their educational and research skills, however, they evaluated the program as medium quality in the area of results. Perhaps they expected the program to give them capabilities and opportunities to solve the needs of the community in clinical settings. This is also an expectation of the community that the present PhD program cannot provide (17). The current PhD program in Iran cannot improve the students' clinical skills, and therefore the students were not fully satisfied in the area of results or the outcomes of the program. Some of the earlier studies in Iran also reported that the content of the present nursing PhD program is inflexible, and has overlaps (3) and problems in the process of implementation (15). A study by Feizolahzadeh et al. also reported that the nursing PhD program in Iran is ineffective because it is not designed based on the requirements of the clinical settings and the graduates have no clear position in clinical settings (18). Therefore, as Feizolahzadeh et al. (18) suggested, instead of the present program, doctor of nursing practice (DNP) should be designed and be implemented.

The results of the current study are limited because of the sample size. Another limitation is only using students as the study population. Therefore, further studies with larger samples, considering the professors and manager's opinions are suggested.

This study revealed that although the efficacy of nursing PhD program is good, however, it needs revision to enhance the outcomes of the program in order to meet the public needs and to increase learners' satisfaction. This can improve nursing discipline in educational, research and clinical dimensions. The board of nursing and those who are influential in planning and revision of nursing educational programs can use the results of this study to review the program and improve the trend of education.

Table 2. Correlations Between Socio-Demographic Characteristics and the Effectiveness of Training

Variable	Unadjusted			Adjusted	
	B (95%CI)	P Value	R²	B (95%CI)	P Value
Habitation			0.093		
Native	0.02 (- 0.07 to 0.13)	0.046		0.02 (- 0.06 to 0.11)	0.589
Non native	- 0.07 (- 0.21 to 0.01)	0.097		- 0.05 (- 0.17 to 0.03)	0.200
Employment status			0.111		
Faculty members	- 0.03 (- 0.17 to 0.10)	0.049		0.03 (- 0.11 to 0.20)	0.055
Lecturer	- 0.02 (- 0.19 to 0.12)	0.058		0.02 (- 0.12 to 0.21)	0.063
Supervisor	- 0.05 (- 0.32 to 0.07)	0.230		- 0.02 (- 0.26 to 0.13)	0.051
Nurse	- 0.08 (- 0.62 to - 0.03)	0.026		- 0.03 (- 0.23 to 0.07)	0.402
Unemployed	- 0.08 (- 0.27 to 0.02)	0.010		- 0.05 (- 0.23 to 0.07)	0.030

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