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The effect of preceptorship program on clinical competency and satisfaction in undergraduate operating room students

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Abstract

The Preceptorship program has been created in order to guide students' academic affairs in a targeted way for the growth and prosperity of students in different levels of education. This study aimed to evaluate the effect of preceptorship program on clinical competency and satisfaction in undergraduate operating room students.
The present study was a semi experimental study and the statistical population included all students with operating room internships. The sampling method of research units was simple random. The samples were placed completely random in the intervention and control groups as even and odd. Each group consisted of 15 people. In the intervention group, a preceptorship program was performed for two months. Data collection tool in this study was a three-part questionnaire including demographic characteristics, operating room student satisfaction questionnaire and clinical competency questionnaire for operating room students. Data collected through questionnaires were analyzed using SPSS software version 18. There was no significant difference between before and after the intervention in the control group in terms of satisfaction and clinical competence. However, there is a significant difference between before and after the intervention in the experimental group in this respect. This means that satisfaction and clinical competence in the experimental group after the intervention were greater than before the intervention. Also, there was a significant difference between before and after the intervention in the control and experimental groups in terms of grade point average of students. The preceptorship program improves clinical competency and satisfaction in undergraduate operating room students.

Keywords: Preceptorship program, Clinical competency, Satisfaction, Operating room students.

Introduction

Preceptorship program has been established in order to purposefully guide student's academic affairs to grow and prosper as much as possible through explaining the goals, tasks and specific executive structure in order to prevent academic failure, provide the basis for scientific promotion and solve educational, research, personal, social, emotional and the welfare problems of students at different levels of education. Preceptorship is an often short-term, voluntary and mutually beneficial professional relationship in which an experienced and knowledgeable person supports a less experienced person and leads to his or her professional and personal advancement. It can be said that preceptorship is responsible for the general formation of the medical profession to students (1, 2).

Mentors are good examples and guide for students and in their personal and professional issues, so they should have certain characteristics in this regard. In fact, mentors are responsible for the emotional support of students as well as encouraging and motivating them. In a good mentoring relationship, the mentor must know the learning style and limitations of the person so that he can help according to the person's needs; on the other hand, he must know the student's strengths, weaknesses and abilities and refers to another source anything he sees beyond his control (3). Clinical education is a learning support activity in a clinical environment in which the participation of the instructor and the student is the same and the goal is for the student to achieve the desired educational purposes for clinical care (4) and to create a suitable platform to align student's theoretical knowledge with performing practical skills, diagnosing and treatment of the patients as well as other professional skills (5). Considering that the purpose of providing internship units is to achieve the students to practical skills, if the student works under the supervision of an instructor fluent in clinical skills and familiar with the realities of the clinical environment, he will acquire better skills and more realism (6). One of the requirements for student learning in the clinical environment is to gain clinical experience and practice and repeat the required skills that can be achieved through observation, performance with the instructor and direct performance (7). Clinical education is done in a complex social environment in which the instructor, as a supervisor, is at the top of the pyramid of patients, students and clinical staff (8).

In recent years, much attention has been paid to programs such as preceptorship and mentorship in nursing, as well as other disciplines related to health and hospital (9, 10). Its use as a method to prevent anxiety, confusion, as well as to promote active learning, creates responsibility and self-confidence and increases competence (11). Benefits of using the mentorship plan include increasing the quality of care and reducing costs for institutions (12). This plan also increases critical thinking (13) clinical competence, self-confidence (14) and responsibility in students (15). Therefore, the student will gradually become independent and will develop the student's self-confidence and practical skills (3). It is also said that this program bridges the gap between theory and practice and flourishes critical thinking in students and enriches the ability of words to improve the quality of patient care, self-confidence and independence (16). Clinical mastery or clinical competence in the field of education is the creation and development of skills, knowledge, appropriate attitude and gaining experience to play an effective and successful role in the field of specific job and profession. Clinical competence indicates the ability of students to perform tasks and their understanding and adaptation of learned behaviors to new clinical situations (17).

Clinical competence is a complex and ambiguous concept that has been considered and discussed in recent years from different dimensions and perspectives. Some researchers believe that newly graduated nurses are not prepared to enter the workplace (18) and the lack of clinical skills will have dire consequences for clients (19). In studies conducted in different

countries, problems such as lack of appreciation of clinical education, lack of availability of clinical instructors, lack of proper coordination between clinical education of colleges and facilities, and lack of permanent availability of instructor to meet educational needs has been observed (20). Despite these problems and based on the literature, it can be concluded that the existing clinical education does not give to the student a necessary ability to achieve clinical competence and skills, so that in a study, 73% of nursing students described as bad and very bad for clinical education (21). In addition to the above problems, today the nursing profession is facing a crisis of shortage of skilled personnel, which according to estimates will reach a shortage of 285,000 skilled nurses by 2020 (22). The shortage of nursing professors for various economic and educational reasons is another problem that this profession suffers from (23). For example, the economic downturn in the United States affected the ability to hire and acquire a nursing professor (due to budget constraints) (24). In 2015, Mirbagher Ajorpaz conducted a combined study entitled "The effect of mentorship program implementation on clinical competence of undergraduate operating room students" and concluded that the use of mentorship method can improve the knowledge and skills of operating room students. The results of this study help planners and faculty members in the field of operating room to encourage and expand new and practical methods of clinical education in line with their mission and strategic goals.

The quality of clinical education provided to nursing students can affect student's satisfaction from the education provided in various aspects and affect the provision of medical services in the long time. It has been emphasized on the effectiveness of similar methods such as clinical education partner who use the nursing staff in the education of students on student's clinical skills and thus increase their satisfaction score (25). Due to the importance of this matter, this study was aimed to evaluate the effect of preceptorship program on clinical competency and satisfaction in undergraduate operating room students.

Methods

Participants

After obtaining license and a code of ethics (IR.MEDSAB.REC.1397.007) from the competent authorities, the study began with obtaining informed consent from the project participants and informing them about the objectives of the project and the confidentiality of the information. The present study is a semi-experimental study and the statistical population included all students with operating room internships. The samples were placed completely random in the intervention and control groups as even and odd. Each group consisted of 15 people. In this method, based on the list of names, the division was done in such a way that according to the list of internship groups, the even numbers of this list were in the control group and the odd numbers were in the experimental group. Some of the criteria for inclusion in this study were: interest in the study, bachelor's degree in operating room and students of Torbat Heydariyeh University of Medical Sciences. Exclusion criteria included dissatisfaction with cooperation with the research for any reason, passing any training course related to the objectives of the study, age over 24 and under 18 years. First, with the help of the educational supervisor of the hospital, clinical experts working in the operating room department were selected among the operating room experts. These people are the preceptor (guide). At this stage, the goals and training program of the student internship were set for the preceptor and the student, then explanatory sessions were held for them separately. In the experimental group, a preceptorship program was performed for two months using experienced personnel. The control group also underwent a two-month internship with a faculty member instructor without a preceptor, as usual. After spending two months in the implementation of the preceptor program by the expert staff, the questionnaires were provided

to the students and finally the information obtained from the questionnaires was analyzed.

Data collection tools

Data collection tool in this study was a three-part questionnaire including: 1) demographic characteristics, 2) operating room student satisfaction questionnaire which consisted of 20 items and was scored on a five-point Likert scale (from very low to very high) and 3) clinical competency questionnaire for operating room students, which had 40 items and in 6 field of basic knowledge and skills, leadership, interaction with colleagues, skills, empathy and professional development with a five-point Likert scale (always, often, sometimes, rarely and never), so that each item had a value between one and five. In a study using Cronbach's alpha, Jafar Jalal et al. (26) reported an (a = 0.93) for the reliability of the questionnaire of student's satisfaction from clinical education. In another research, clinical competence questionnaire in the psychometric scale section, the results of face validity, content (in the relevant dimension 0.95), structure (confirmatory and exploratory factor analysis) and reliability of the total clinical competence scale were 0.86, which showed that the six-factor competence scale Perceived in the operating room, in the localization stage in the country, it has appropriate validity and reliability. In this study, questionnaires were sent to the operating room professors and then their opinions were taken into account.

Statistical analysis

Data collected through questionnaires were analyzed using SPSS software version 18. In the first part, frequency distribution, mean and standard deviation tables were used to describe the demographic characteristics of each of the studied groups. Shapiro-Wilk test used to check the normality of data distribution. Paired t-test was used in order to compare the scores obtained before and after the intervention within the groups, and independent t-test was used to compare the scores between the two groups.

Results

The results of this study showed that the two groups were not significantly different in terms of demographic variables (Table 1). Also, according to the table below and based on Mann-Whitney test, both groups are homogeneous in terms of age and there is no significant difference between the two groups (P> 0.05).

According to the Table 2 and based on paired t-test and Wilcoxon test, considering that the level of significance of the test is more than 0.05, there is no significant difference between before and after the intervention in the control group in terms of satisfaction and clinical competence (P> 0.05). On the other hand, there is a significant difference between before and after the intervention in the experimental group in this respect (P <0.05). As can be seen in Table 2, the mean after the intervention for the two variables satisfaction and clinical competence in the experimental group is greater than the mean before the intervention for this group. Also, according to Table 2 and based on paired t-test, there is a significant difference between before and after the intervention in the control and experimental groups in terms of grade point average of students (P <0.05).

Discussion

The aim of this study was to investigate the effect of the preceptorship program on clinical competence and satisfaction of Torbat Heydariyeh operating room undergraduate students in 2018. In the intervention group, a preceptorship program was performed for two months using experienced personnel. The control group also underwent a two-month internship with a faculty member instructor without a preceptor. After spending two months the information obtained from the questionnaires was analyzed.

Table 1. Comparison of demographic variables between experimental and control groups

Variable		Intervention N (%)	Control N (%)	Total N (%)	Fisher's exact test Significance level
Gender	Male	5 (33.3)	4 (26.7)	9 (30.0)	1
	Female	10 (66.7)	11 (73.3)	21 (70.0)	
Marital status	Single	13 (86.7)	10 (66.7)	23 (76.7)	0.39
	Married	2 (13.3)	5 (33.3)	7 (23.3)	
Lodging	Native	3 (20.0)	5 (33.3)	8 (26.7)	0.68
	Non-native	12 (80.0)	10 (66.7)	22 (73.3)	
Employment status	Employed	4 (26.7)	3 (20)	7 (23.3)	1
	Unemployed	11 (73.3)	12 (80.0)	23 (76.7)	
Semester	6	7 (46.7)	7 (46.7)	14 (46.7)	1
	8	8 (53.3)	8 (53.3)	16 (53.3)	
		Mean ± SD			
Age (year)		23±1.2	22.7±0.8	-	0.9

Table 2. Satisfaction, clinical competence and grade point average of students before and after the intervention

Group	Variable	Before Mean ± SD	After Mean ± SD	Test result: Test statistics	Test result: Significance level
Control	**Satisfaction**	64.9±19.9	61.2±16.1	t= 1.23	0.24
	Clinical competence	134.7±28.5	136.1±24.04	Z= -1.4	0.168
	Grade point average	17.6±1.2	16.9±1.04	t= 2.65	0.019
Intervention	**Satisfaction**	57.8±10.1	73.9±6.5	-8.1	<0.0001
	Clinical competence	132.2±22.4	145.5±17.9	-5.43	<0.0001
	Grade point average	17.3±1.2	16.8±1.02	4.14	0.001

Results of this study show that demographic variables were similar between the intervention and control groups. In addition, there was no significant difference between before and after the intervention in the control group in terms of satisfaction and clinical competence. However, there is a significant difference between before and after the intervention in the experimental group in this respect. This means that for this group, satisfaction and clinical competence in the experimental group after the intervention was greater than before the intervention. Also, there was a significant difference between before and after the intervention in the control and experimental groups in terms of grade point average of students.

In a study on increasing student satisfaction that used nursing students and professors as mentors, Löfmark et al. (27) concluded that the level of satisfaction of trainees trained by nursing professors was higher than trainees trained by students. The difference between the mentor's

experience and its transfer to the trainee has been implicated. The process of knowledge and experience transfer is a function of the level of communication between the mentor and the intern, which is itself a function of the age difference between the two groups. In a study on the use of mentorship in nursing education, Sandvik et al. (28) showed that the educational satisfaction score of nursing students using mentorship method was higher than the usual method of clinical education. In another study, Duteau (29) recommended preceptorship as an appropriate method in nursing education. The results of these studies are consistent with the present study. Warren and Denham (30) recommend that nursing schools hold the formal first-instructor training courses and retraining courses for more experienced people.

Rahnavard et al. (31) showed the positive effect of the preceptorship program on improving student's communication skills. Nohi et al. (32) in a quasi-experimental study found that the implementation of the mentorship project was effective on the satisfaction of nursing trainee students. In a descriptive-correlational and cross-sectional study, Mohammadi (33) concluded that student's self-assessment to clinical competence can provide valuable and complementary information in the evaluation of medical students. Heydari et al. (34) also reported that the preceptorship program improves the clinical skills of nursing students. The results of another study in this field showed that the use of mentorship method can improve the knowledge and skills of operating room students (35). The results of these studies are in line with our study. Careful selection of people interested in practical and clinical education, reviewing and meeting educational needs, holding coordination meetings between instructors and faculty members, and providing guidance and clinical lesson plans can be effective in promoting clinical education and student satisfaction (26).

Conclusion

Based on the results of the present study, preceptorship program improves clinical competency and satisfaction in undergraduate operating room students. Therefore, it is recommended that both hospitals and educational centers plan and try to implement this educational model. Also, the results of this study reveal the need for cooperation and collaboration between faculty members and clinical service providers.

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