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Address: Mashhad Nursing and Midwifery School, Ebn-e-Sina St., Mashhad, Iran
P.O.Box: 9137913199
Tel.: (098 51) 38591511-294
Fax: (098 51) 38539775
Email: EBCJ@mums.ac.ir

Original Article

Impact of Group Clinical Supervision on Patient Education Process: A Comprehensive Assessment of Patients, Staff, and Organization Dimensions

Afsaneh Jafari Moghadam [1], Fatemeh Heshmati Nabavi [2*], Atefeh Behboudifar [3], Seyed Reza Mazlom [4], Farhad Heydarian [5]

Abstract

Background: The most important barriers to patient education are nurses' poor motivation and training, and poor quality of managerial supervision. Clinical supervision could be a powerful tool for overcoming these barriers. However, the associated patient, staff, and organization-related outcomes still require further research.

Aim: The present study aimed to evaluate the patient-, staff-, and organization-related outcomes of group clinical supervision with the goal of improving patient education.

Method: This quasi-experimental study was conducted on 35 nurses and mothers of 94 children admitted to the surgery and nephrology wards of Dr. Sheikh Hospital, Mashhad, Iran, in 2016. A 3-month clinical supervision program consisting of support, education, feedback, and facilitation stages was implemented with the assistance of education facilitators. The data were collected using the questionnaire of patient's satisfaction with nurses' education, Herzberg's job motivation questionnaire, and the checklists of nurses' education performance and quality of education documentation. Data analysis was performed by Mann-Whitney U test, Fisher's exact test, and independent-t test in SPSS, version 14.

Results: The mean ages of the nurses, patients, and mothers were 30.3±6.7, 5.2±3.8, and 32.2±6.2, respectively. Mann-Whitney U test showed a significant improvement in patients' satisfaction with nurses' education performance (P<0.001) and the mean score of the quality of patient education documentation (P<0.001) after the intervention. Fisher's exact test revealed a statistically significant difference in the education performance levels of the nurses between the two stages (P=0.03). The paired t-test showed no significant change in the motivation score of the nurses after the intervention.

Implications for Practice: Group clinical supervision could improve the quality of education documentation, nurses' education performance, and patients' satisfaction with provided education.

Keywords: Comprehensive evaluation, Group clinical supervision, Patient education

1. MSc in Nursing, Faculty of Nursing and Midwifery, Mashhad University of Medical Sciences, Mashhad, Iran
2. Assistant Professor, Evidence-based Care Research Center, Department of Mental Health and Management, Faculty of Nursing and Midwifery, Mashhad University of Medical Sciences, Mashhad, Iran
3. MSc in Nursing, Internal-surgical Orientation, Faculty of Nursing and Midwifery, Mashhad University of Medical Sciences, Mashhad, Iran
4. Instructor, Department of Internal Surgery, Faculty of Nursing and Midwifery, Mashhad University of Medical Sciences, Mashhad, Iran
5. Pediatrician, Dr. Sheikh Hospital, Mashhad University of Medical Sciences, Mashhad, Iran
* Corresponding author, Email: heshmati.nabavi@gmail.com

Introduction
One of the most important roles of nurses is patient education. Patient education facilitates the reduction of anxiety, costs, and length of hospital stay and improvement of patient's satisfaction with health care when carried out properly (1). Despite many attempts to overcome the barriers to patient education, it still involves many issues, including the patients' dissatisfaction with the provided education, nurses' lack of occupational motivation, and lack of independent organizational budget (2).

In the recent years, researchers have planned, tested, and implemented several interventions based on one-to-one training, group training, use of pamphlets, and clinical supervision with the goal of enhancing nurses' performance in terms of patient education. Based on the studies examining the outcomes of patient education from the patients' perspectives, the aforementioned interventions improve the patients' satisfaction with the education performance of nurses (3). However, since patient education is a multidimensional process, its outcomes at staff and organization levels are also worthy of consideration.

Research has shown that some barriers to patient education are related to nursing staff. Accordingly, these barriers include inefficient scheduling, understaffing, wrong workplace habits, denial of responsibility, economic issues, overwork and exhaustion, lack of occupational motivation, and deficiency of knowledge about patient education. However, other barriers originate from the management. These barriers include poor supervision over the education performance of nurses, lack of commitment to the provision of patient education in the clinical setting, and management's disbelief in the necessity of patient education (4, 5).

Therefore, it seems essential to assess patient education programs not only from the patients' point of view, but also from the staff and organization's perspective. Clinical supervision is a professional support and training process in which experienced and knowledgeable staff help nurses improve their performance in a specific area (6). Clinical supervision is also defined as a formal process for achieving a specific set of training, support, and education management objectives for nurses (7, 8). The goal of clinical supervision is to enhance the nurses' performance and quality of care by improving their professional skills and upholding a set of care standards (8).

Based on the studies, individual and group supervision is an important part of nursing, which potentially benefits both nurses and patients (9). Group clinical supervision aims to create an opportunity for nurses to learn new skills, access a wider range of experiences, provide support and feedback to colleagues, and interact with each other with the goal of improving the patient care. This method is also known to be highly efficient in terms of both human resources and financial aspects (10, 12, 13).

Nursing directors can enhance the quality of care, job satisfaction, organizational commitment, and health of nursing staff, improve patient's satisfaction, and reduce job burnout among nurses by the creation of an atmosphere of friendship, support, and proper working relationship (3). In other words, this method improves the professional skills of caregivers not only through an emphasis on legal aspects, directives, and codes of practice, but also by the facilitation of support and learning (13).

Because of methodological constraints, such as small sample size and poor collaboration of clinical environments in management interventions, the studies on clinical supervision have often been in the format of case studies or have focused on the outcomes related to either staff or patients (14). Since the previous studies have identified the nurses' lack of motivation and manager's lack of proper supervision as the most important barriers to patient education, the current study attempted to evaluate the patient-, organization-, and staff-related outcomes of implementing a group clinical supervision program aimed at the improvement of patient education.

Methods
This quasi-experimental study was conducted in 2016 using a one-group pretest-posttest design. The objective of the study was to determine the patient-related outcomes (i.e., patient's satisfaction with the provided education), organization-related outcomes (i.e., education performance of nurses and quality of patient education documentation), and staff-related outcomes (i.e., job motivation of nurses) of a group clinical supervision program targeted toward the improvement of patient education.

The study population corresponded to a group of nurses working in the surgery and nephrology wards of Dr. Sheikh Hospital of Mashhad, Iran, and the mothers whose children were admitted to these wards. The research unit was selected using convenience sampling technique. The sample size was determined by the formula for the comparison of two proportions with 97% confidence interval and 80% test power, based on the results of a study performed by Heshmati Nabavi et al. (2012) (3).

Accordingly, the number of the participating mothers (for the proper evaluation of patient's satisfaction) was calculated as 94 cases per stage (i.e., pre-intervention and post-intervention). Furthermore, 30-35 cases were determined for the participating nurses (for the proper evaluation of education performance) and medical records to be investigated (for the proper evaluation of education documentation).

The inclusion criteria for the nurses were the bachelor's or master's degree in nursing and a minimum of one year of work experience at Dr. Sheikh Hospital. The inclusion criteria for the patients were: 1) age of 1-15 years, 2) admission to Surgery or Nephrology Ward, and 3) presence of the mother for filling out the consent forms in the cases where the child was younger than 12 years old.

On the other hand, the exclusion criteria for the nurses entailed refusal to continue partaking in the research and absence for more than 2 h of the 12-hour program. In addition, the exclusion criteria for the patients were refusal to participate in the research and deterioration of patient's health or death. The data collection instruments were the questionnaire of patient satisfaction with nurses' education, Herzberg's job motivation questionnaire, and the checklists for the observation of education performance and quality of education documentation.

The questionnaire of patient's satisfaction with nurses' education was a 12-item revised version of the questionnaire developed by Heshmati Nabavi et al. (2012). In this instrument, the patients describe their approval of different aspects of education based on a 3-point Likert scale (dissatisfied=1, relatively satisfied=2, and completely satisfied=3). The total score of this instrument ranges within 12-36, with higher scores signifying higher satisfaction with the provided education. The validity of this tool was confirmed through qualitative content validity assessment.

The checklist of the quality of education documentation was a 9-item revised version of the checklist developed by Heshmati Nabavi et al. (2012) for this purpose. This instrument quantifies the supervisors' evaluation of education content, patient's medical records, and education documentation forms. The answers of this instrument are scored based on a 3-point Likert scale (less than 30% completed=0, 30-50% completed=1, and completed=2). The total score of this instrument ranges within 9-27, with higher scores reflecting the higher quality of patient education documentation.

The checklist of nurses' education performance was a 14-item instrument derived from the checklist introduced by Heshmati Nabavi et al. (2012). In this instrument, the supervisors' observations of nurses' performance in patient education are quantified based on a 3-point Likert scale (poor performance=0, moderate performance=1, and good performance=2). The total score of this instrument ranges from 14-52 with higher scores indicating the higher performance of nurses in patient education. The total score of nurses' education performance was categorized into three classes of good (66.7-100), moderate (33.4-66.6), and poor (0-33.3).

The preliminary forms and questionnaires were reviewed by 10 faculty members of Mashhad University of Medical Sciences, Mashhad, Iran, and then revised according to their feedbacks. The reliability of the questionnaires was confirmed through the calculation of internal consistency, rendering the Cronbach's alpha coefficient of 0.74. Since the Persian version of Herzberg's motivation-hygiene questionnaire was not available, this questionnaire was translated into Persian using the backward-forward method.

For the psychometric evaluation of the instrument, first, its content validity was subjected to quantitative and qualitative examinations. The quantitative content validity assessment was performed based on the theories of Waltz and Bausell, as well as Polit and Beck. The content validity of the translated form was assessed by ten experts (i.e., seven professors and three nursing directors), who were asked to rate the necessity, relevance, clarity, and simplicity of the questionnaire items.

The items with content validity index of more than 0.79 in the relevance criterion were retained; in

this regard, 4 items were removed. The overall content validity score of the questionnaire was estimated as 0.994. The reliability of the questionnaire was assessed using the test-retest method and Cronbach's alpha coefficient. In the test-retest, ten nurses completed the questionnaire twice with a two-week interval. The correlation coefficient of test-retest was calculated as 87.6. Furthermore, the Cronbach's alpha was estimated at 0.96.

The face validity also underwent quantitative and qualitative assessments. The quantitative validity assessment was performed using the item impact method. To this end, the reviewers were asked to rate the importance of each item in measuring the construct of "job motivation of nurses" based on a 5-point Likert scale (extremely high=5, high=4, moderate=3, low=2, and none=1). The 55 remaining items were modified based on the obtained content validity index. The questionnaire was then finalized according to the obtained content validity ratio and index values.

After obtaining the permission of the Ethics Committee of Mashhad University of Medical Sciences and coordinating with the authorities of the research hospital, the intervention was performed in three stages. At the first stage, three clinical nurses were selected as education facilitators (supervisors) and asked to participate in two 6-hour training sessions. The topics covered in this training were transactional analysis, principles and methods of clinical supervision, techniques of motivation, feedback collection, provision of clinical supervision, and quality of patient education.

At the end of this stage, the supervisory instruments and tools required for the implementation of the program were developed and prepared. The educational contents were selected based on the common diseases in the ward. The related information in nursing books and resources was gathered and compiled under the supervision of nursing professors and turned into educational booklets for nurses and pamphlets for patients. All educational contents provided in the ward were standardized according to coded patient education forms and education documentation procedures.

For each ward, key education notes were identified and compiled based on the codes of practice and common diseases of that ward in coordination with the education supervisor and with the cooperation of several nurses from the relevant wards. At this stage, the pre-intervention examination was performed to measure the initial values of patient's satisfaction with provided education, nurses' education performance, and quality of education documentation.

In the second stage, group clinical supervision was implemented with the help of supervisors and with the aim of improving the nurses' education performance. For each ward (i.e., general medicine, nephrology, and surgery), one education facilitator (supervisor) was selected from the trained clinical nurses based on the knowledge, skills, acceptance, and experience and according to the recommendation of the nursing director, supervisor, and head nurses. The clinical supervision program was implemented in accordance with the specified rules and objectives for three months, four sessions per month (i.e., a total of 12 sessions). During this period, the supervisors monitored the nurses' performance in terms of patient education and attempted to improve their performance by providing support, as well as individual and group feedback in supervision sessions.

The third stage of the study included the post-intervention evaluation of the result of clinical group supervision program. At this stage, the questionnaire of patients' satisfaction with education was filled out by the mothers of the children who were admitted to the surgery and nephrology wards (consent subjects selected according to inclusion and exclusion criteria). The education performance of the nurses was observed by the researcher and quantified using the checklist of nurses' education performance. Furthermore, the quality of patient education documentation was studied by examining the patients' medical records and the education documentation form. Herzberg's job motivation questionnaire was completed by the participating nurses.

After the data collection stage, the forms were coded and imported into a computer for processing. After checking the accuracy of the imported data, they were analyzed in SPSS, version 16. First, Kolmogorov-Smirnov and Shapiro-Wilk tests were used to check the normality of quantitative variables. Then, descriptive statistics indicators, including central tendency and dispersion (i.e., mean and standard deviation), frequency distribution, and minimum and maximum values, were used to examine the research units in terms of underlying or confounding factors.

In addition, the Mann-Whitney U test was employed to compare the scores obtained for patients' satisfaction with nurses' education and nurses' educational performance. The assessment of the quality of education documentation before and after the clinical supervision program was

accomplished using the Fisher's exact test. Given the normality of job motivation scores, paired t-test was used to compare these scores before and after the intervention. All tests were performed based on 95% confidence interval (5% significance level).

Results

According to the results, the mean age of the participating nurses was 30.3±6.7 years. All participating nurses were female and had a bachelor's degree. About 54% of the nurses were employed as part of national nurse training program. The mean ages of the mothers who participated in the pre- and post-intervention surveys were 31.9±7.3 and 32.0±2.6 years, respectively. The results of the Mann-Whitney U test showed no significant difference between the mean ages of mothers at these two stages (P=0.69).

The mean ages of the hospitalized children at the pre- and post-intervention stages were 5.2±3.8 and 5.6±4.1 years, respectively. The Mann-Whitney U test revealed no significant difference between the mean ages of children at these stages (P=0.67). The demographic characteristics of the children and mothers before and after the intervention were homogeneous (Table 1).

Table 1. Demographic characteristics of participants

Variable			Mean ± SD	Results of Kolmogorov-Smirnov test and Shapiro-Wilk test
Number of children in the child's family		Pre-intervention	2.2 ±0.99	P=0.85
		Post-intervention	2.2 ±0.94	
Child's birth order		Pre-intervention	1.98 ±0.97	P=0.47
		Post-intervention	2.07 ±0.99	
Length of stay (days)		Pre-intervention	4.67 ± 2.97	
		Post-intervention	3.30 ±2.1	
			Frequency(%)	
	Diploma	Pre-intervention	75(84.3)	P=0.14
		Post-intervention	58(86.6)	
	Associate's degree	Pre-intervention	7(7.9)	
		Post-intervention	5(7.5)	
	Bachelor's degree	Pre-intervention	6(6.7)	
		Post-intervention	3(4.5)	
	Master's degree	Pre-intervention	1(1.1)	
		Post-intervention	1(1.5)	
Child's gender	Female	Pre-intervention	35(37.6)	P=0.44
		Post-intervention	22(31.9)	
	Male	Pre-intervention	58(62.4)	
		Post-intervention	47(68.1)	
History of hospitalization	Yes	Pre-intervention	55(59.8)	P=0.48
		Post-intervention	38(54.3)	
	No	Pre-intervention	37(40.2)	
		Post-intervention	32(45.7)	
Child's education level	NA	Pre-intervention	37(39.8)	P=0.97
		Post-intervention	26(37.7)	
	Preschool	Pre-intervention	20(21.5)	
		Post-intervention	14(19.4)	
	Elementary school	Pre-intervention	33(35.5)	
		Post-intervention	27(39.1)	
	Middle school	Pre-intervention	3(3.2)	
		Post-intervention	2(2.9)	
			Mean ± SD	
Nurses' work experience (years)			5.9±6.0	
			Frequency(%)	
Nurses' marital status	Single		12(40.0)	
	Married		18(60.0)	
Nurses' place of work(ward)	Surgery		14(46.0)	
	Nephrology		16(54.0)	

The Mann-Whitney U test demonstrated a significant difference (P<0.001) in the mean scores of patient's satisfaction with education between the pre-intervention (28.7±21.1) and post-intervention stages (49.0±29.8). However, this test showed no significant difference (P=0.08) between the mean score of nurses' education performance at the pre- (83.6±13.4) and post-intervention stages (89.5±9.7).

The results revealed that most of the nurses had a good education performance in both pre- (80.0%) and post-intervention (96.7%) stages. Based on the results of the Mann-Whitney U test, a significant difference (P=0.03) was observed between the frequency of nurses' education performance levels at two stages (Table 2). Furthermore, the results of the Fisher's exact test showed a significant difference (P<0.001) between the mean scores of the quality of patient education documentation before (80.03±9.2) and after the intervention (91.95±8.7).

The mean job motivation scores at the pre- and post-intervention stages were, respectively, 3.08±0.92 and 3.34±0.88, which were not significantly different according to the result of the paired t-test (P=0.21). In addition to the overall score of job motivation, the scores of its 12 components were also compared. The results of this comparison showed no significant difference (P<0.05) in any of these components between the pre- and post-intervention scores (Table 3).

Table 2. Mean and standard deviation of study variables at pre- and post-intervention stages

Dimension	Variable	Stage	n	Mean± SD	Min	Max	P-value
Patient	Satisfaction with nurses' education performance	Pre-intervention	94	28.7±21.1	0	83.3	P^*=<0.001
		Post-intervention	74	49.0±27.8	0	100.0	
Organization	Nurses' education performance	Pre-intervention	94	83.6±13.4	54.5	100	P^*=0.08
		Post-intervention	74	89.5±9.7	65.9	100	
Staff	Overall job motivation	Pre-intervention	37	41.6±18.4	3.2	77.8	P^{**}=0.21
		Post-intervention	39	46.8±	16.6	84	

P^*= Mann-Whitney U test
P^{**}= t-test

Table 3. Frequency distribution of nurses over the quality of patient education documentation at pre- and post-intervention stages

Variable		Stage				Total
		Pre-intervention		Post-intervention		
		n	%	n	%	
Quality of patient education documentation	Medium	2	5.4	0	0.0	2
	Good	35	94.6	29	100	64
	Total	39	100.0	29	100.0	66
Result of Fisher's exact test		P=0.30				X^2=1.6

Discussion

Our examination of the patient-related outcomes of implementing group clinical supervision for patient education showed an improvement in the mean patient's satisfaction level after the implementation of this program. Likewise, in a study conducted by Kolivand et al. (2015), the improvement of patient education quality was reported to enhance patient's satisfaction (15). Heshmati Nabavi et al. (2012) also found that the implementation of clinical supervision for patient education process improves the patient's satisfaction with nurses' education performance (3).

It seems that clinical group supervision as a method and model can play an effective role in promoting the quality of patient education by facilitating the development of education skills in nurses. Consequently, group clinical supervision increases the nurses' responsiveness to the

patient's educational needs, which in turn improves patient's satisfaction. It can be stated that with the realization of the objective of clinical supervision (i.e., professional development of nurses), the patients start to receive improved care services, and therefore express higher satisfaction.

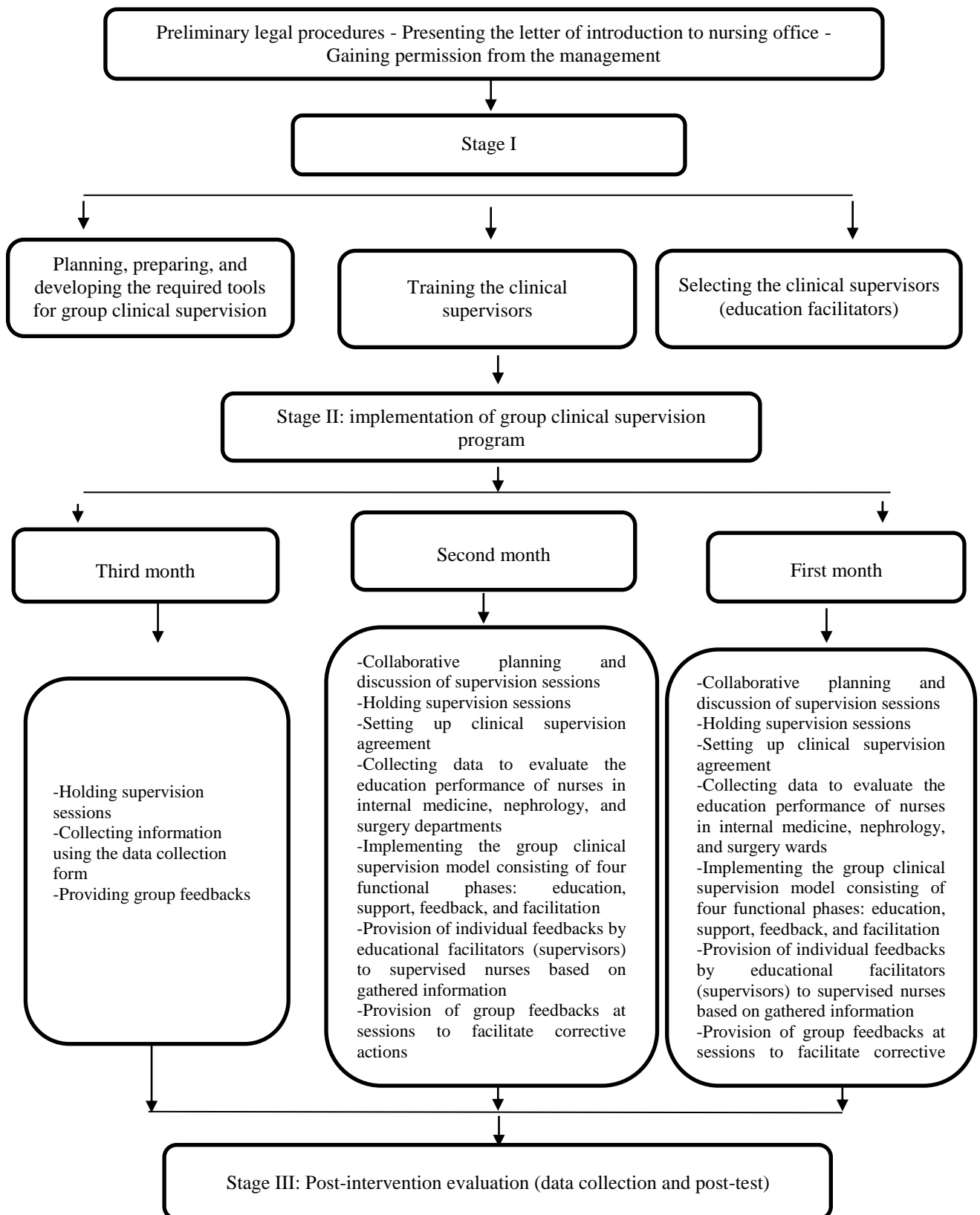The investigation of the organization-related outcomes of implementing group clinical supervision

Figure 1. Process of implementing a group clinical supervision program

for patient education showed that this supervision can improve the education performance levels of nurses. Previous studies have reported the poor education performance of nurses in the absence of group supervision (15, 16). In a study performed by Ghamari Zareh et al. (2008), the nurses showed a poor education performance, but a strong therapeutic performance, and patients expressed relative satisfaction with the provided care (16).

In another study carried out by Khalifezadeh et al. (2001), it was found that the implementation of a clinical education program based on the clinical supervision model can indeed improve the interpersonal, professional, and communication skills of nursing students, and needs to be more widely used in clinical nursing education (17). In the present study, the intervention included the use of clinical supervision model with clinical supervisors taking educational, supportive, and legal roles as an applied supervision approach to improve the clinical processes and the effectiveness of patient education.

During the intervention, the clinical supervisor of each ward monitored the education performance of the nurses in that ward, educated these nurses about the principles and proper methods of patient education, simultaneously observed the performance of the nurses, and offered individual and group feedbacks when necessary. The findings of this research indicated that the regular implementation of patient education, observation, and feedback through the course of such an intervention improved the education performance of the nurses from a medium level to a satisfactory level.

Regarding the staff-related outcome (i.e., job motivation), the results showed no significant change in the job motivation score of the nurses during this study. This lack of significant change can be interpreted in two ways. First, it can be attributed to the short length of group supervision program. In the majority of the previous studies, clinical supervision program had a duration of six months to one year, and the motivation-related results seem to be attributable to the long period during which group discussion and clinical supervision sessions were held. In addition, the managers' attitude toward nursing staff and especially novice nurses during the implementation of clinical supervision program can affect their motivation and job satisfaction level.

Therefore, as suggested by Fakhar (2012), the long-term clinical supervision, when combined with the supportive attitude of managers, seems to have a positive impact on the patient's satisfaction level (18). It is also worth noting that various people have different levels of motivation, and even the motivation of a person may vary with the place of employment (19).

It is also worth mentioning that hygienic factors do not lead to job dissatisfaction as much as salary; however, the lack or deficiency of these two factors will certainly cause some levels of dissatisfaction.

For example, in a study conducted by Asl et al. (2010), examining the relationship of Herzberg's hygienic-motivation factors with job satisfaction among the staff of Yasouj teaching hospitals, a significant relationship was reported between salary and the hygienic factors affecting the staff performance, and also between the income status and the hygienic factors and staff performance (20).

Nasiripour (2013) also reported that salary is more effective on staff performance than other factors, such as supervision (21). Ventsson (2004) identified the salary as one of the most effective factors in improving the employee's satisfaction and performance. Considering that the present study coincided with the implementation of a function-based payment plan, the staff were generally dissatisfied with the salaries, and this may have affected their performance.

The staff described the function-based payment as injustice and one of the most important factors that adversely affect their motivation and performance. They believed that managers should stop this injustice or at least limit their psychological effects in order to minimize their technical implications. In view of these remarks, it can be concluded that the implementation of a fairer or better-coordinated system of payment and benefits in the organization will lead to higher job satisfaction.

Another finding of this study was the improvement of the quality of patient education documentation after the execution of the group clinical supervision model. Vanaki et al. (2012) revealed the high frequency of the incomplete documentation of drug and dietary education in nursing reports (22). Other studies have also pointed to the incomplete documentation of patient education due to the lack of standard forms for this purpose (23).

This is while the documentation of patient education is one of the primary tools of nursing care supervision, which should be carried out in a standard way at all stages of patient education, including need assessment, content preparation, implementation, and evaluation, from the moment of admission to the time of discharge.

The correct documentation of patient education can assist the organization in accurate annual reporting, planning, and assessment and in processes, such as accreditation. The observed improvement in patient education documentation in this study can be partly attributed to the use of a standard patient education form designed by the Mashhad University of Medical Sciences. Another reason for this improvement could be the individual and group feedbacks provided to the nurses and their analysis during the supervision sessions.

One of the limitations of this study was the lack of any measure to consider the potential impacts of mental and psychological conditions of the mothers of the hospitalized children during the completion of the questionnaire. There was also no mechanism to control the effects of the psychological state of the nurses and their occupational problems when they were completing the Herzberg's motivation-hygiene questionnaire.

It should be also noted that the post-intervention stage of this study coincided with the implementation of function-based payment plan at Sheikh Hospital, which had caused general dissatisfaction among the nurses. Since the mechanism and amount of payment is a significant determinant of staff motivation, this coincidence may have affected the results of our study in ways that could not be controlled by the researchers.

Implications for Practice
This study examined the patient-, nursing staff- and organization-related outcomes of implementing a clinical supervision program. The findings of this study can be utilized by nursing directors to plan a group clinical supervision program with a professional development and support approach in order to improve the quality of patient education, patient's satisfaction, and nurses' occupational motivation.

Acknowledgments

Conflicts of Interest
The authors declare no conflicts of interest.

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