Original Article

Effects of mutual structured feedback on nurses performance

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ABSTRACT

Background and Purpose: Evaluation of performance and feedback is very important in nursing clinical education. The purpose of feedback is to change people's behavior and performance and it is necessary for all providers of health systems to perform it in order to improve performance, increase the quality of services offered to patients and to save resources. the effect of feedback increases when the two-way feedback is performed and the feedback giver receives the feedback too. The aim of this study was assessment of the Effects of Mutual Structured feedback nurses and supervisors on performance evaluation of nurses in Shahid Beheshti Hospital in 2016 Material and Method: this study is an interventional study. Samples of this study included nurses of Shahid Beheshti hospital in Intensive Care Units who randomly divided into two groups (n = 40 per group). Directors and nurses of the intervention group, after receiving the necessary trainings in accordance with the principles of effective feedback, offered the registered strength and weakness points mutually. Job satisfaction and performance evaluation questionnaires were completed in both groups before and after the intervention. Results: Statistically, there was a significant difference in performance evaluation scores in the intervention group compared with the control group (p-value = 0.000). But there was no significant difference in job satisfaction after the intervention. Conclusion: Providing mutual feedback led to nurses' improved performance in the three areas including ethics, values and cultures, knowledge, skills, ability , performance and objective results but it had no impact on job satisfaction.

Keywords: Mutual feedback, nurse, evaluation, performance

Introduction

Formative and summative performance evaluation is vital for both evaluation of the program process and evaluation of the program product [1-3]. In fact, the purpose of formative evaluation is monitoring the learning process during training and giving feedback to people about the successes and failures of learning [4-6]. The result of feedback for learners is reinforcement of successful learning, errors identification and correction of learning errors. [7]. Since clinical performance is considered as a fundamental and important sector in nursing, availability of accurate evaluation tool is of high importance. However, the lack of standard scale is one of the challenges in the field of measurement of performance and qualification [8]. Feedback is one of the most powerful tools that impacts learning in multiple fields of education [9]. The use of feedback, as a technical and practical concept in medical education, means objective, informed and non-judgmental critic of an individual or individuals confined to a specific and timely performance aimed at improving skills directly and confidentially [10-13].

Some study indicates that improved contexts have been associated with better patient consequences. Coaching dialogues had a positive effect on relationship with staff believable advice and the use of feedback and better performance [12, 13]. Sullivan, in a study entitled" Personalized Performance Feedback Reduces Errors "concluded that an effective system such as performance feedback can reduce different models of errors [14]. John Meurer (2012) reported findings of a six-month medical injuries resulting from services provided to patients in order to improve the quality of hospital. The results indicate that in the medical injury prevention, in addition to evaluation, educational training in the form of feedback is also effective to maximize patient safety [15].

Performance management and mutual feedback, between the nurses and their supervisor, is one of important factors that consider future needs of the organization. Therefore, its focus is not only to explore past successes or mistakes of staff, rather it is followed by improved staff performance by an emphasis on organizational goals and mutual expectations of managers and employees. Since the medical staff evaluation and giving feedback is necessary to improve the performance of employees and managers which facilitate mutual feedback of feedback process. However, no study has been done on this subject, we attempted to evaluate and investigate the effect of structured mutual feedback on nurses' performance score in Shahid Beheshti Hospital.

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Material and Method

Participant included nurses in Intensive Care Unit of Shahid Beheshti Hospital, affiliated to Fars Social Security Organization in 2016, with 40 nurses in each group (80 in total). Inclusion criteria in this study were work experience and employment status of at least one year in addition to having consent for participation in the study and providing necessary cooperation. Participants assigned to two intervention and control groups on the basis of random sampling method of permutations with block size equal to 4.

In this study, data collection tools included two separate tools of Performance Evaluation Check List and personnel job satisfaction questionnaire.

The validity of the Performance Evaluation Check List, and personnel job satisfaction questionnaire were measured by opinions of experts and professionals in this field and reliability of the questionnaires and Check List were approved by using test retest reliability method with a correlation coefficient of 0.82 and 0.92 in order.

Initially, evaluation and job satisfaction scores were evaluated in both groups. In the intervention group, the evaluation criteria for each employee evaluated by Check List of personnel performance evaluation in the form of three topics of ethics, values and culture, knowledge, skills , ability and performance .Next m objective results were determined and their factors, manifestations and impact factor provided in the evaluation form mentioned in such a way that the proportion of each of the above criteria in the evaluation was 20, 30, and 50%, respectively, which indicates the importance of each criterion in the evaluation.

In order to raise awareness among staff and directors of the wards, educational workshops in relation to providing constructive feedback were held for directors and nurses working in intensive care units.

Each director was obliged, at the beginning of the training courses, in addition to having meetings with nurses, to explain evaluation criteria. Clear, measurable, attainable objectives relevant to the jobs along with organizational goals were considered which could be scheduled. So, at the end of the meeting, staffs were clearly aware of the tasks that were supposed to do and knew how to do them during the period and they were aware of the supervisor's expectations. Supervisor and staff agreed in writing to these tasks.

Then, the ward director, in order to determine the quality and the amount of effort of staffs during the evaluation period, in addition to continuous and accurate monitoring of the behavior and performance of staffs and providing feedback and hints to them, all events were recorded as appropriate.

At this point, the supervisor attempted to perform evaluations according to information obtained during the evaluation and comparison of performance standards as well as consulting with people who were somehow in connection with staffs during their working.

Then, each supervisor, while holding a meeting with staffs, individually investigated and discussed their performance during the course.

Because of different methods of providing feedback according to cultural conditions prevailing in the Shahid Beheshti hospital and given the first feedback approach used to reform and improve the performance of personnel, Sandwich Feedback method was used to avoid the challenges associated with negative feedback method. The ward's matron and supervisors began giving feedback on the basis of objective data and detailed records of direct observation of past performance of personnel. First, the strengths and competencies of nurses as a powerful stimulant was discussed and positive feedback of the person's behavior were reflected. Then, their weakness points or points that needed to be promoted and the distance between observed performance standards were identified and discussed. Personnel were encouraged to attempt to elicit feedback and provide solutions to the raised problems. At the end of the session, the individuals' strengths points were considered and subordinate staffs performance evaluation forms were completed and related results announced to them. If necessary, according to the staffs' explanation, the evaluation score was adjusted and the necessary tips and job guidelines were given by supervisor to staffs. Obtained scores per person was a number between 0 and 100, respectively. In order to solve problems, scheduling was performed. Finally, a practical plan was developed with the participation of the parties to achieve a common goal. Re-evaluation of personnel, by considering the weaknesses of previous evaluation and assessment of progress, was conducted by the supervisor of the related ward one month after the feedback intervention.

In this study, in the qualitative part about bilateral nature of mutual structured feedback, strengths and weaknesses of staffs were investigated from the perspectives of nurses and obtained results were analyzed.

In the control group, evaluation scores were informed in general terms without details and without giving and receiving of feedback.

Finally, amount of job satisfaction and evaluation of both groups were measured and the results of conducted surveys were compared before and after the feedback intervention. Analysis of the obtained results was conducted by statistical tests of Paired T-test, Independent T and chi-square using SPSS 23.0 statistical software.

Results

40 nurses of intensive care unit of Shiraz Shahid Beheshti hospital were examined in this study. They were holder of, at least, B.S degree in nursing who were working in intensive care unit. Number of women and men in both groups (experimental and control) were similar. The age of the participants ranged from 26 to 47. They were married with an average clinical work experience of 10 years and average wok experience of 4 years in the current ward.

Independent t-test was used to verify both groups, control and experimental, had necessary homogeneity before inclusion of intervention structured feedback. The results showed that given no significant difference between mean scores of two groups, it can be said that necessary homogeneity did not exist between the two groups (p-value= 0.101).

There was no significant difference between variables of sex and performance evaluation score using independent t-test (p-value =0.750). Moreover, no significant difference was observed between variables of education and performance evaluation score using independent t-test (p-value=0.903). Also there was no significant difference between nurses' performance evaluation based on marital status. According to the correlation coefficient value, there was no significant relationship between the variable of age of nurses and dependent variable of performance evaluation. (p=0.150, r=0.238). In addition, with respect to correlation coefficient, there was no significant

relationship between variable of nurses' job experience and dependent variable of nurses' performance evaluation (P=0.183, r=0.227).

Paired-t-test was used to investigate the hypothesis that mutual structured feedback leads to the promotion of ethics, values and culture of the nurses. Test results showed that statistically there was a significant difference between the scores before and after evaluation of nurses in the field of ethics, values and culture in the experimental group (with inclusion of the variable of mutual structured feedback intervention) (p = 0.001). However, given no statistical significant difference between the mean value before and after the intervention in control group (without inclusion of the variable of mutual structured feedback intervention) (p = 0.309), it can be said that the variable of mutual structured feedback intervention significantly led to improved feedback and improved ethics, values and culture of nurses in the experimental group.

Table 1: The mean score of nurses' performance evaluation in the field of ethics, values and culture before and after the intervention in both experimental and control groups

The area of ethics	Number of samples	Before intervention		After intervention		T (Paired Test)	p-value
		Mean	SD	Mean	SD		
Experimental	40	19.30	1.19	19.88	0 .40	-3.44	0.001
Control	40	19.56	1.523	19.34	1.28	1.03	0.309

To investigate the hypothesis that the mutual structured feedback leads to increased knowledge, skills and the ability of nurses, paired-t-test results showed the significant difference between the mean score before and after nurses' evaluation in the field of knowledge, skills and abilities in the experimental group (with inclusion of the variable of mutual structured feedback intervention) (p = 0.000). However, given no statistical significant difference was seen between the mean value before and after the intervention in control group (without inclusion of the variable of mutual structured feedback intervention). (p = 0.359), it can be said that the variable of mutual structured feedback intervention significantly led to improved feedback and improved knowledge, skills and ability of nurses in the experimental group.

Table 2: The mean score of nurses' performance evaluation in the field of knowledge and skills before and after the intervention in both experimental and control groups

Knowledge and skills	Number of samples	Before intervention		After intervention		T (Paired Test)	p-value
		Mean	SD	Mean	SD		
Experimental	40	26.81	1.99	29.28	1.09	- 8.94	0.000
Control	40	28.45	3.49	27.90	1.82	0.928	0.359

To investigate the hypothesis that the mutual structured feedback leads to increased performance and objective results of nurses, paired-t-test performed again. The results showed the significant difference between the mean score before and after nurses' evaluation in the field of performance and objective results in the experimental group (with inclusion of the variable of mutual structured feedback intervention) (p = 0.000). However, given no statistical significant difference was seen between the mean value before and after the intervention in control group (without inclusion of the variable of mutual structured feedback intervention). (p = 871), it can be said that the variable of mutual structured feedback intervention significantly led to improved performance and objective results in the experimental group.

Table 3: The mean score of nurses' performance evaluation in the field of performance and objective results before and after the intervention in both experimental and control groups

Performance and objective results	Number of samples	Before intervention		After intervention		T (Paired Test)	p-value
		Mean	SD	Mean	SD		
Experimental	40	46.73	2.38	4 9. 34	0. 983	- 10 .38	0.000
Control	40	48.15	8.03	48. 35	1. 91	- 0.163	0.871

To investigate the hypothesis that the mutual structured feedback leads to increased job satisfaction, paired-t-test was performed. The results showed the significant difference between the mean score before and after nurses' evaluation in the experimental group (with inclusion of the variable of mutual structured feedback intervention) (p = 0.367) and control group (without inclusion of intervention variable) (p=0.728). However, given no statistical significant difference between the mean value before and after the intervention in control group (p = 0.359), it can be said that the variable of mutual structured feedback intervention did not significantly led to improved job satisfaction within nurses.

Table 4: The mean score of nurses' performance evaluation in the field of job satisfaction before and after the intervention in both experimental and control groups

The area of job satisfaction	number of samples	Before intervention		After intervention		T (Paired Test)	p-value
		Mean	SD	Mean	SD		
Experimental	40		10.15		0 .983	- 10 .38	0.00 0
Control	40		11.36		1. 91	-0. 163	0. 871

In the qualitative part of study, regarding bilateral form of mutual structured feedback, strengths and weaknesses of directors from the perspectives of nurses investigated and its content analysis results are as follows.

Table 5: Evaluation of strengths and weaknesses of directors from the perspective of nurses

Strengths	Weaknesses
Fair performance evaluation	Uncertainty of the exact evaluation criteria
The power of fostering human resources	Lack of adequate practical and pragmatic capabilities of directors
Improving the ability of directors in case of providing constructive feedback	Mismatch between evaluation score and performance
Existence of positive personal traits	Lack of sufficient qualified management in some of the directors
Effective communication skills	Inadequate attention to other nonworking aspects of nurses
Efficient use of resources	Failure to measure scientific capabilities of nurses

Discussion

The present study conducted with the aim of investigating the impact of mutual structured feedback on improving nurses' personalized performance and job satisfaction in intensive care units of Shiraz Shahid Beheshti hospital. The study participants, nurses working in ICU, were studied in two stages of before the intervention (mutual structured feedback) and after the intervention (mutual structured feedback) in two control and experimental groups. The personalized performance evaluation of both groups was measured before and after intervention of mutual structured feedback and the obtained results confirmed the results of previous studies.

A comparison was carried out on the mean score of personalized performance evaluation of nurses in the realm of ethics, values and cultures before and after the intervention in both experimental and control groups. Results showed a significant influence of mutual structured feedback variable on increasing and promotion of ethics, values and culture in nurses of experimental group. In line with this hypothesis, however, there is a little literature on this subject; Dehghani and Colleagues in his study on evaluation of compliance with standards of professional ethics in nursing performance acknowledged that the participation of nurses (mutual feedback) is effective in increased observation of professional behaviors [16].

The obtained results by using paired-t- test showed a difference between the mean score before and after the personalized performance evaluation of nurses in the field of knowledge, skills and abilities in the experimental group (with inclusion of mutual structured feedback variable). So it can be said that intervention of mutual structured feedback significantly led to increased and improved knowledge, skills and abilities of nurses in the experimental group. This result confirms the previous studies. In this regard, Pourfarzad et al. (2012) investigated the effect of feedback value on drug awareness of university students before and after the intervention. Mean scores of knowledge in the experimental group was more than that of control group before and after intervention. They also estimated medication errors score in experimental group was less than that of control group as in other studies [13, 17]. Day Tina investigated the performance feedback on the knowledge and skill of tracheal suctioning. This investigation showed that feedback led to the increased knowledge and skills of staffs [18]. Moreover, Sullivan Kevin used a personalized performance feedback and reported an 83% reduction in narcotic prescription errors in a NICU [14].

Nurses' mean score difference before and after personalized performance evaluation of nurses in the field of performance and objective results was statistically significant in the experimental group (without inclusion of the variable of mutual structured feedback). In this regard, Rosenthal Daniel conducted a study entitled" the impact of training and performance feedback on of staffs of intensive care units regarding care of catheter associated urinary tract patients". In this study, performance feedback of the rates of urinary tract infections in patients was associated with a significant decrease. This indicated that there was a significant relationship between training and performance feedback in objective results and reduction of the rate of urinary tract infections [19]. The results, in the field of performance and objective results, showed a significant difference between the mean score before and after the personalized performance evaluation of nurses in the experimental group (without inclusion of the variable of mutual structured feedback). It can be stated that the intervention of mutual structured feedback significantly enhanced and increased performance and objective results in the experimental group. This result is confirmed by Khodayaran study on investigation of intervention effect on clinical competencies of nurses [13].

Considering no significant mean difference before and after intervention in both control and experimental groups in terms of job satisfaction, it can be stated that the independent variable of mutual structured feedback could not significantly increase job satisfaction among nurses. This is because job satisfaction is influenced by various factors such as the nature of the job, payment rate, possibility of career advancement and job promotion while manipulation of these factors by the researcher is not possible. In this regard, in Purpora study revealed that the nurses' satisfaction fostering by supportive relationships among nurse staff could positively impact patient care [20]. Also, in qualitative study on bilateral relationship of mutual structured feedback, strengths and weaknesses of directors from the perspectives of nurses was investigated and its content analysis are as follows. Regarding the strengths of directors, positive personal traits, good communication, effective negotiation and organization commitment are among the most important listed items that is also mentioned in the Karami study [21]. Regarding the weaknesses of directors from the viewpoints of nurses, the lack of exact criteria evaluation, mismatch between evaluation score and performance, inadequate attention to other nonworking aspects of nurses are noted while the strategies to deal with them are proposed in the Rahimi et al study and other field of study such as medical education [22, 23].

An investigation of the satisfaction of managers and staffs in the form of interviews after feedback session shows that this method provided desired satisfaction for both groups. The present study, using previous studies, is conducted to investigate the effect of mutual structured Feedback on personalized performance evaluation of nurses in hospital. According to dominant culture of health system and medical education in our country, this study has many applications in the areas of management, education and research.

The results of this research have added, the growing body of knowledge influences the performance of practitioner nurses using mutual structured Feedback. Nursing managers are seeking to encourage other nurse to correct their performance, and provide chances for formal feedback exchange between professional and staff nurses.

Suggestions for further study:

According to the obtained results, further studies are suggested for investigation of the impact of this management program on other variables such as patient's satisfaction, productivity and quality of care, as well as its use in other parts of hospital and even non-health sectors.

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Competing interests:

The authors declare that there is no conflict of interests.

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