

# The effect of education on function and communication skill of nurse with intubated patient in intensive care unit

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## Abstract

**Context:** Communicating with intubated patients is one of the main challenges for nurses.

**Aims:** This study aimed to evaluate the effect of education on function and communication skills of nurses with intubated patients.

**Setting and Design:** This quasi-experimental study with pretest–posttest design was carried out.

**Statistical Analysis Used:** The data analyzed using Mann–Whitney test Wilcoxon, and Spearman's correlation coefficient at significance level less than 0.05 and study power of 80%.

**Material and Methods:** The research instruments were the nurse–patient relationship checklist and communication skill questionnaire.

**Results:** The mean  $\pm$  standard deviation of communication function and verbal and nonverbal skills of nurses showed a significant difference ( $P = 0.039$  and  $P < 0.001$ ).

**Conclusions:** The training of communication skills with intubated patients to the nurses improves their function and communication skills.

**Keywords:** Communication skill, Education, Intensive care unit, Nurse, Patient

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**Received:** 03 February 2019; **Accepted:** 20 October 2019; **Published:** 06 April 2020

## INTRODUCTION

The importance of communication and interactions in nursing has always been considered by nurses and nursing scientists since Florence Nightingale in the 19<sup>th</sup> century to the present. Nurses, as professionals, spend a lot of time with patients and play an important role in the health-care team and respond to the patient's communication needs.<sup>[1]</sup>

Effective communication has been widely considered as a key indicator of patient satisfaction, collaboration, and healing.<sup>[2]</sup> Effective communication with hospitalized patients essentially improves the quality of care.<sup>[3]</sup> Most studies have described that communication of nurses' with patients is poor.<sup>[4]</sup>

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**How to cite this article:** Gorzin K, Sanagoo A, Jouybari L, Pahlavanzadeh B, Jesmi AA. The effect of education on function and communication skill of nurse with intubated patient in intensive care unit. *J Nurs Midwifery Sci* 2020;7:84-7.

Access this article online	
Quick Response Code:	Website: <a href="http://www.jnmsjournal.org">www.jnmsjournal.org</a>
	DOI: 10.4103/JNMS.JNMS_2_19

Patients who admitted to intensive care unit (ICU) have an endotracheal airway; thus, they have not the ability of speaking and communicating;<sup>[5]</sup> this deprivation leads to a severe emotional reaction in these patients, such as fatigability, anxiety, and depression.<sup>[6,7]</sup> These emotional responses are sometimes so severe that the patients relinquish their needs and limit communication to basic issues.<sup>[8]</sup>

Since communication with the patients is a challenge in the ICU, nurses are forced to use various communication methods such as smiley, pointing and facial expressions, eye contact, paper and pencil, drawing, and asking questions with the yes/no answer.<sup>[9,10]</sup> Failure to understanding the patients by the care team will have an adverse effect on nursing care and limit the patient's response. A successful communication can facilitate the recovery of ventilator-dependent patients, vice versa unsuccessful communication can delay patients' recovery.<sup>[11]</sup> Considering the necessity of effective communication of nurses with patients with artificial airway hospitalized in ICU who are not able to communicate directly with nurses due to the limited research in this field and considering the importance of the subject, the present study aims to evaluate the effect of education on the performance and communication skills of nurse with intubated patients in ICU.

## MATERIAL AND METHODS

A quasi-experimental study with pretest–posttest design was conducted in 2017, in three educational centers affiliated to Golestan University of Medical Sciences. The research population comprises all nurses who working in ICUs of five Azar, Sayyad Shirazi, and Amir al-Mu'minin Kurdoki educational centers. Fifty-seven nurses were randomly selected, (19 nurses from each training center). Nurses who had at least bachelor degree and more than 6 months of experiences of working in ICU enrolled and nurses who left the field during the study or were relocated excluded from the study.

Two tools were used: the first tool was a checklist for observing nursing communication with intubated patients. This checklist consisted of 11 items related to the association of a nurse with intubated or patients with tracheostomy (such as “he/she has eye contact while communicating with the patient”) with yes/no answers. The checklist was completed by the researcher in 10 shifts (5 times before the intervention and 5 times after the intervention) in the work shifts. The score range was between 0 and 55. This checklist was driven from the study of Happ *et al.*<sup>[12]</sup>

The second tool was nursing–patient communication skill questionnaire. This questionnaire was adapted from a collaborative study by Hemmati Maslak pak *et al.* The questionnaire comprises 21 questions about the verbal (13 items) and nonverbal (8 items) communication of nurses with patients, completed by nurses before and after intervention. The scoring of verbal communication questions (13 questions) and nonverbal (8 questions) were based on the five-point Likert scale from a rating of one (never) to five (always). The total mean scores of these questions formed the total score of the questionnaire, ranging from 21 to 105. The verbal and nonverbal communication of nurses with patients admitted to intensive care units were classified into three levels: weak (48–21), moderate (76–49), and good (105–77). Credibility and validity of this questionnaire have been confirmed by experts. The correlation coefficient of the questionnaire with Cronbach's alpha was confirmed by 0.96. Cronbach's alpha included each dimension of the questionnaire consisting of verbal skills 0.87 and nonverbal skills 0.92.

Based on the study of Hemmati *et al.*,<sup>[13]</sup> standard deviation (SD) was considered 7.5; the required sample number was obtained from the following equation. Standard error was considered 2.

$$\alpha = 0.05 \quad (Z-1/-\alpha/2) = 1.96 \quad S = 7.5 \quad d = 2 \\ N = Z^2 \times S^2/d^2 = 54.$$

With considering 10% attrition rate, the final sample size was 57. The communicative skill questionnaire was completed by the samples. Then, each participant was observed by the researcher five times using the communication function checklist while performing one of the main care processes. After that, intervention includes focused education workshops on verbal and nonverbal communication with patients who have artificial airway conducted. Teaching comprised ask-and-answer method, expression of successful and unsuccessful communication experiences with patients with artificial airway, using body postures in communication, eye contact. The trainings were provided by the research team for each educational centers individually and lasted 4 months. Two weeks after the intervention, the nurses filled the communication skill questionnaire, and each nurse was observed five times using the communication check checklist during performing the care processes.

Data were analyzed using SPSS software version 16 (IBM, Armonk, NY, USA). Regarding to the non normal distribution of data and the significance level less than

0.05 and study power of 80%. The Mann–Whitney test Wilcoxon, and Spearman’s correlation coefficient were used for data analysis.

The study was approved by the Research Deputy and Research Ethics Committee of Golestan University of Medical Sciences (Ethics Code: ir.goums.rec. 1396.36).

## RESULTS

The present study was conducted on 57 (19 nurses for each center) nurses working in ICU with the aim of evaluating the effect of training of communication skills on care of patients with artificial airway hospitalized in ICU. Most respondents (91.2%) were female. 94.7% were bachelor of nursing. The mean and SD of age and work experience of nurses were  $31.66 \pm 5.5$  and  $7.13 \pm 1.5$ , respectively, with a working experience of  $4.75 \pm 4.43$  years.

The mean score of nurses’ communication performance before intervention was 23.79 with a standard deviation of 4.19 and the mean score of nurses’ communication performance after the training was 24.26 with a standard deviation of 3.9. The Mann–Whitney test showed that posttest score is significantly higher ( $P = 0.039$ ). In other words, training has been effective on communication function of nurses.

There was a significant difference ( $P < 0.001$ ) between mean scores of verbal skills before and after education. The same significant difference ( $P < 0.001$ ) was observed between the mean nonverbal skills of nurses before and after training (34.86) and after education (35.67).

## DISCUSSION

Behalf of communicational skills of nurses showed that there was a significant difference between the mean scores of total communication skills before and after training [Table 1]. In the present study, among the communication skills after the test, the highest average was related to verbal skills. There was also a statistically significant difference between the scores of verbal communication skills before and after the intervention. Most studies on nurse communication skills such as El-Soussi *et al.*, Happ *et al.*, and Wojnicki-Johansson

have evaluated only nurse–patient interactions, and only a quasi-experimental study from Sadeghi Shermeh *et al.* (2013) investigated the effect of solution-oriented communication techniques on nurses’ communication skills.<sup>[14-17]</sup> Johnson *et al.*’s (2006) study on communicative problems during mechanical ventilation in the ICU showed that most nurses stated that they had a good relationship with ventilated patients, while six patients did not agree and did not understand the needs and requests of the patients. More than half of the patients had a positive evaluation of nurses’ communication with them and nurses were able to communicate with patients. The findings of the study also indicated the need for verbal communication education.<sup>[14]</sup> In the present study, the evaluation of communicational performance of nurses in ICUs with patients with artificial airway through observation showed moderate performance and short-term education can improve their communication behaviors.

In a study by Nishizawa *et al.* aimed to assessing nonverbal communication skills in nursing students and nurses, participants were divided into two groups of students and nurses and interacted with patients for 5 min. Ninety percent of the students were in a standing position during interaction and had less eye contact with the nurses working group. Also, the use of upper limbs and hand movements in the students group was lower than the employed nurses group. The authors emphasized the use of educational approaches to improve nonverbal skills.<sup>[18]</sup> Findings of the present study showed that education has been effective in improving nonverbal skills.

## CONCLUSION

The main emphasis of the present study was on the nurses’ communication performance regarding patients with artificial airways; obviously, this skill is also affected by general communication skills. Therefore, it seems that in addition to the specialized skills of communicating with patients, it is also necessary to enhance the social communication skills of nurses.

### Conflicts of interest

There are no conflicts of interest.

### Authors’ contribution

Khadijeh Gorzin: Idea generation, data collection, data interpretation, manuscript writing design, Akram Sanagoo: Idea generation, Supervision on data collection, data interpretation, manuscript developing, Leila Jouybari: Idea generation, data interpretation, Supervision on data collection, manuscript writing, Bagher Pahlavanzadeh:

**Table 1: Mean and standard deviation score of training on communication skills of nurses before and after intervention**

Stage	Mean±SD	Middle (Q25-Q75)	P
Pretest	90.94±7.58	92 (84.75-97.25)	0.001
Posttest	92.96±8.58	96 (86-98.25)	

SD: Standard deviation

data analysis, data interpretation, manuscript developing, Ali Asghar Jesmi: data interpretation, manuscript writing, manuscript developing.

### Financial support and sponsorship

Nil.

### Acknowledgments

We thank all nurses who participate in this study. This research approved by the Research and Technology Deputy of Golestan University of Medical Sciences, Golestan, Iran.

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