

Effect of Intervention Guide on Staff Nurses' Role In Patients' Education

Reda Abd El-Fatah Abo Gad* Heba Kamal Obied**

*Assistant professor of Nursing Services Administration, Faculty of Nursing, Tanta University, Egypt

** Lecturer of Nursing Services Administration, Faculty of Nursing, Tanta University, Egypt

Corresponding Author: hebaobied@yahoo.com

Abstract:

Background: Nurses are key responsible for providing patients' teaching and giving information to promote their life quality, and healthcare decisions. This can be constructed through trusting nurses-patients relationships to assess learning needs, so nurses need to be equipped with required skills and knowledge to assume their role in patients' education. **Objective:** This study aimed to identify the effect of an intervention guide on staff nurses' role in patients' education. **Methods:** Quasi-experimental design was used. The subject included 47 staff nurses worked in Medical Hospital at Tanta University Main Hospital. Three tools were used; (I) **Staff Nurses' Patient Education Role Knowledge Test;** (II) **Staff Nurses' Patient Education Role Observational Checklist;** (III) **Staff Nurses' Value and Perceived Barriers to Apply their Patient Educational Role Self-Evaluation Questionnaire.** **Results:** staff nurses' (91.6%, 40.40%, and 53.2%) had low level regarding knowledge, performance and value of their role of patients' education pre-intervention that was improved post-intervention. **Conclusions:** Majority of staff nurses had low knowledge as well as moderate and low-performance skills levels regarding their role in patients' education pre-intervention that improved post-intervention. They viewed that work overload, lack of time, and lack of suitable place were barriers to carry out their patients' educational role. So, providing a supportive environment that promotes patient education, and establishing continuous in-service training programs to enhance nurses' knowledge and skills were recommended.

Key Words: Staff nurses, patients' education, educational role, intervention guide.

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I. Introduction

Recently, healthcare system confronts significant changes that represent great challenges in order to provide a high quality of patient care. Hence, healthcare team has to respond effectively and rapidly to these challenges to maintain their place in the market. Nurses represent the largest portion of the healthcare team, their inputs to reform healthcare systems undeniable (Needleman et al 2002). To fulfill healthcare reform objectives, nurses need to continuously improve and update their practical skills, and information through the involvement in evidence-based education approaches (Sayers, et al., 2011).

Nurses are responsible for providing comprehensive patient care, as well as offering patients' educational activities (Australian Nursing Council, 2005). Nurses' educational role stems from their ability to teach for patients, families, and societies (US Department of Labor – Bureau of Labor Statistics 2004; Koutsopoulou, et al., 2010). Patients' education intended to offer an adequate amount of pertinent clinical data, for rising patients' awareness regarding their health condition and supporting healthy behaviors (Chien, et al., 2001).

Providing planned patients' education activities leads to patient satisfaction, improve their health condition, and lower the demand for further medical needs. Nurses' educational role endorses patients' commitment and healthful habits and increases their self-care ability (Bird and Wallis, 2002). Nurses' educational role mirrors the quality of nursing care provided to patients (Fitzpatrick & Hyde, 2005).

Today's healthcare environment confront many challenges include changes in the nature of hospitalized patients, who are more critically ill; costs reduction strategies; and the need for keeping in touch with rapid advances in medical knowledge and technology. In addition, the ongoing need for nurses' educational role, to assist others to learn, to promote health, and prevent diseases is highlighted (Avsar, & Kasikci, 2011).

The process of patients' education is considered one of the main constituents of nursing care standard (Balcou-Debussche, & Debussche, 2008). Patients' education process comprises need assessment, planning, implementation and evaluation (Seyedin, et al., 2015; Kelo, et al., 2013; Hammond & Niedermann, 2010; Wingard, 2005; Bastable, 2003). The assessment step covers patients' learning prerequisites, learning pattern,

and preparedness to learn. As well as, patients' related information including patients' current knowledge, what they want and need to learn and, what is the preferred learning method (**Hammond & Niedermann, 2010; Bonevski, et al., 2000**). Patient-centered care can be reinforced through the better understanding for patient's needs and its related issues (**Seyedin, et al., 2015; Huang, et al., 2006**).

Establishing the educational plan is the second step. The success of patients' education process depends on a well-designed plan which covers the educational goals and objectives (**Seyedin, et al., 2015; Wingard, 2005**). The subsequent patients' education process step is to apply an individualized teaching plan, which involves interactive learning. Finally, evaluation step that comprises regular reviewing of the patient's learning progress during and after implementing of educational activities (**Hammond & Niedermann, 2010; Marcum, et al., 2002**).

Several causes can undermine nurses execution of their role as patients' educators such as nurses job socialization and their educational competency (**Howard 2001; Devine & Frank 2000**), their practice structure, their role clarity and the acceptance (**Chang & Daly 2001**), and work conditions; particularly the numbers and mix of nurses; where nurses shortage negatively influence their educational role time (**Halse, et al., 2014; Rungapadiachy, et al., 2006; Pearson, 2004; Marcum et al., 2002**);). Another issues that affects the execution of nurses' educational role for patient comprise work overload since nurses have to care for a great numbering of patients than hypothesized, and increased the intricacy of patients' illness or health status, that decrease the amount of time needed to care for each patient as well their education (**Abdi, et al., 2014**). In addition to lack of organizational support, and scarcity of teaching resources hinder nurses' educational role (**Halse, 2014**).

To empower nurses' conducting their educational role effectively, they require strong organizational support through establishing work culture that emphasize the value of patients' education (**Oyetunde & Akinmeye, 2015**). Successful patients' education dictates nurses to manage effectively time, services, instruments, and types of equipment. Nurses also should select a proper place to implement patients' education where interruptions are prevented, well ventilated and lightened, availability of teaching resource, cheerful and protect patient's privacy. Furthermore, to apply patients' education's plan, nurses need to be equipped with adequate knowledge, training and skills (**Lipponen, et al., 2006; Marcum, et al., 2002**).

Skillful nurses' patient educator, need initially to learn how to communicate. Proper communication skills allow nurses to be acquainted with their patients and, eventually, to come upon their health educational needs. Also, effective communication skills allow nurses to be aware of their patients (**Heyner et al., 2004**). For providing adequate information and learning, efficient communication is considered a main influential factor in the success of patient education process (**Kim et al., 2008**).

Communication is a basic constituent in nursing practices including prevention, treatment, rehabilitation, and education. Provide patients with information are of fundamental significance for the hospitalized patient as they are anxious and apprehensive, so they need clear and comprehensive information concerning their care and health status (**Wikström & Svidén, 2011; Strahan & Brown, 2005**). The nurse-patient communication process is an opportunity to provide the patient with needed information to maintain their empowerment, decrease the legal liability resulting from error, improve patients' satisfaction and achieve the expected health outcomes (**Kim et al., 2008**).

The necessity for nurses' education in communication has been worldwide emphasized (**Wikström & Svidén, 2011**). Nationally, the training program is an acknowledged frame that furnishes paths to a broad set of healthcare activities and qualification alternatives as well, reinforces the nurses' participation in health care provision (**Conway and Elwin 2007**). In this regard, individual advice, encouragement, telling or instructing orally and written health information to patients, asking questions can be applied as the most important strategies (**Casey, 2007**). Thus to get efficient patients' education outcomes, the vast focus should be given to teaching nurses about their role in patient education.

1.1 Aim of the study

Identify the effect of an intervention guide on staff nurses' role in patients' education.

1.2 Research hypothesis

An intervention guide is expected to improve staff nurses' knowledge, perception, and performance skills about their role in patients' education.

II. Subjects & Method

SUBJECTS

2.1 Design: A quasi-experimental (One group pre-test post-test) design was used.

2.2 Setting: The study was conducted in Medical Hospital at Tanta University Main Hospital.

2.3 Subject: A representative sample (47) of staff nurses from the total (134) at 95% confidence level and 90 power of the study who works at the previously mentioned setting were selected randomly and were willing to participate in the study.

2.4 Tools: To collect data for this study, three tools were used:

Tool (I): Staff Nurses' Patient Education Role Knowledge Test, developed by the researchers based on **World Health Organization, (2012), Alem, (2004)**, and recent relevant literature (**Seyedin, et al., 2015; Jourdan, 2011**). It consisted of two parts; **Part 1:** personal characteristic encompassed age, level of education, marital status, working hours, years of experience, and previous training. **Part 2:** Staff Nurses' Knowledge regarding patients' education role consisted of patients' education definition (5 items), principles (5 items), process (10 items), methods & materials (10 items), characteristics of nurses as a patients' educator (10 items) and; effective communication (10 items). The test was in form of MCQ and true & false.

Scoring system: Staff nurses' responses for each question allotted a score one for the correct answer and a score zero for the wrong answer. The total staff nurses' knowledge levels were classified into: good $\geq 75\%$, fair 60%-75% and, poor $<60\%$.

Tool II: Staff Nurses' Patient Education Role Performance Skills Observational Checklist. It was developed by the researchers based on **Alem, (2004); Bayer-Fetzer Group (2003)**, and recent relevant literature (**Center for Health Training Staff, 2003; Kim et al., 2008**) to assess staff nurses' performance skills regarding their role in patients' education. It consisted of two subscales the 1st was **effective communication skills subscale** included; building relationship (3 items), open discussion (3 items), collect data (4 items), understand point of view (3 items), share information (3 items), reach an agreement (4 items), and close the session (4 items). The 2nd **subscale was the practice of patient education session** included; before (8 items), during (11 items) and after conducting session (4 items).

Scoring system: Staff nurses' performance was measured on two points scale, one for done and zero for not doing. Total staff nurses' performance skill level was classified as; high skill level $\geq 75\%$, moderate skill level 60%-75% and, low skill level $<60\%$

Tool III: Staff Nurses' Perception toward Patients' Education Role Self-Evaluation Questionnaire. This tool was modified by researchers based on **Seyedin, et al., (2015); Heli, et al (2015)**. It contained two parts; **Part one** was utilized to assess staff nurses' value regarding patients' education role, it modified by researchers based on **Seyedin, et al., (2015); Heli, et al (2015)** and consisted of five subscales; assessment (7 items), planning (8 items), implementation (3 items), evaluation (5 items), and documentation (12 items). **Part two** guided by **Mersal and Keshk, (2012)** and was employed to assess staff nurses' perceived barriers to apply their patients' education role and scored as yes, no response.

Scoring system: Staff nurses' responses for value regarding patient education role were measured on five points scale ranged from (5) very important to (1) not important. Levels of staff nurses' value on their patients' education role were classified as; high-value level $\geq 75\%$, moderate value level 60%-75% and, low-value level $<60\%$.

III. Method

a. Procedures

Data collection tools were translated into Arabic and presented to a jury of five experts in the area of specialty to check its validity. A pilot study was carried out on five staff nurses (excluded from actual study sample) to test the tools' clarity, visibility, and applicability. The necessary modifications were done based on the results of pilot study and jury. Reliability of the tools (1, 2, and 3) was tested using Cronbach's alpha coefficient its value was 0.88, 0.92 and 0.85 for tool 1, 2, 3, respectively.

2.6 Ethical & administration considerations:

Official permission to conduct the study was obtained from responsible authorities at Tanta University Main Hospital. Staff nurses' informed consent was obtained after explaining the nature and the purpose of the study, confidentiality of their information was maintained and the right to withdraw was assured.

2.7 Fieldwork

- **Data collection:** At the beginning, the researchers had distributed the tools (I&III) and collected it after 30 minutes. Staff nurses' knowledge was tested by tool one, patients' education role performance skills were measured by observational checklist (tool II), while, their perceived patients' education role value and barriers were assessed by tool III. The same questionnaire was administered again to the staff nurses (immediate post-test intervention session).
- An intervention guide session on staff nurses' knowledge and performance skills on patients' education role was developed and implemented by the researchers based on the needs of staff nurses and recent literature review.
- Staff nurses were divided into seven groups. Each group had one session/day for three days. Every session lasted for two hours. The sessions were conducted at their workplace, and then a program (on patients' discharge plan) was implemented by the staff nurses to the patients at the medical hospital's wards and in

the presence of the researchers, to assess their performance of patients' education role during conducting patient education sessions.

Structure of the intervention session

Structure of this intervention guide session was started with the declaration of the instructional objectives based on staff nurses' assessed need.

The objective of intervention sessions was to equip staff nurses with knowledge, perception, and performance skills required to carry out their patients' education role.

The intervention sessions specific objectives included:

- Identify basics of patients' education (definition, aim, principles, steps) and discuss patient education process.
- Use patients' education methods, materials, and approaches, and demonstrate nurses' educator roles, responsibilities, and skills.
- Apply effective communication skills with the patients and,
- Conduct patients' education session.

Selection and organization of the intervention sessions content

After determining the objectives of the intervention session, the content was specifically designed; methods of teaching and evaluation were identified. The content was selected after careful assessment of staff nurses' needs. Simple scientific and professional language was used.

Learning strategies: Appropriate learning strategies were used including group discussion, role-play, and lecture.

Evaluations of the intervention sessions

- Pre-implementation of the intervention sessions, a pre-test was done for staff nurses to assess their level of knowledge, performance skills, and value of patients' education role (tools I, II & III).
- Immediately after implementation of the intervention sessions, post-test was done for staff nurses to assess their level of knowledge, performance skills and, the value of patients' education role (the tool I, II& III).

2.8 Statistical analysis:

Data were collected and entered into the personal computer. Statistical analysis was done using Microsoft Excel and Statistical Package for Social Sciences (SPSS/version 20) software. Arithmetic mean, the standard deviation was calculated for categorized data number and percent was calculated. For categorized parameters, the chi-square test was used while for numerical data t-test was used to compare two groups while for more than two groups ANOVA test was used. The level of significance was 0.05.

IV. Results

Table (1): Studied staff nurses' characteristics (N =47)

Age	N	%	Marital status	N	%
<25	10	21.3	Single	3	6.4
25-35	10	21.3	Married	44	93.6
>35-45	19	40.4	widow	0	0.0
>45	8	17.0			
			Level of education		
Range	21-58		Secondary diploma	17	36.2
Mean ± SD	35.85±10.89		Health Institute	4	8.5
			Technical	12	25.5
Work hours/day			Bachelor	14	29.8
6-8 hrs	26	55.3			
> 8 hrs	21	44.7			
			Attended training program Last year		
Year of experience					
< 5 years	11	23.4			
5-15 years	7	14.9	Yes	27	57.4
>15 years	29	61.7	No	20	42.6

Table (1) shows staff nurses' characteristics. The highest percent (40.4%) of staff nurses were >35-45 years old. The majority (93.6%) of them were married and more than one-third (36.2%) of them had secondary diploma degree. More than half (55.3% and 57.4%) of staff nurses worked 6-8 hrs per day and attended training programs last year, respectively. Above sixty percent (61%) of them had >15 years of experience.

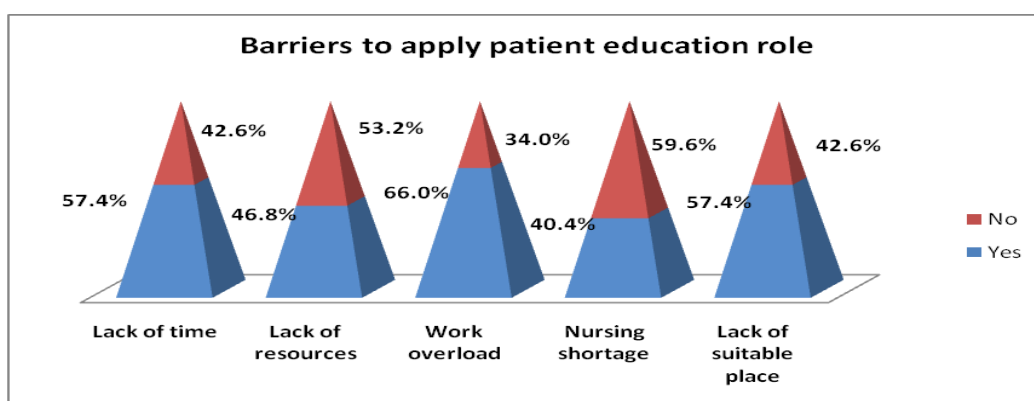


Figure (1) Staff nurses' perceived barriers to apply their patients' education role

Figure (1) Represents staff nurses' perceived barriers to apply their patients' education role. More than half (66%, 57.4%, and 57.4%) of staff nurses viewed that work overload, lack of time, and lack of suitable place were barriers to carry out their role in patients' education, respectively. Considerable percent (46.8% and 40.4%) of them viewed that lack of resources and the nursing shortage were barriers to apply their patient education role, respectively.

Table (2): Levels of staff nurses' knowledge about their patients' education role pre and post educational intervention guide

Staff nurses' knowledge domains	Pre-intervention (n= 47)			Post-intervention (n=47)			X ² p-value
	Good	Fair	Poor	Good	Fair	Poor	
Definition of concept	2(4.2)	3 (6.4)	42(89.4)	40(85.1)	5(10.6)	2(4.3)	72.7 0.0001*
Principles of patient education	1(2.1)	3 (6.4)	43(91.5)	44(93.6)	3(6.4)	0(0.0)	84.1 0.0001*
Patient education process	3(6.4)	2(4.2)	42(89.4)	44(93.6)	3(6.4)	0(0.0)	82.9 0.0001*
Method and materials of patient education	2(4.3)	1 (2.1)	44(93.6)	42(89.4)	4(8.5)	1(2.1)	79.2 0.0001*
Characteristic of the nurse as an educator	1(2.1)	2 (4.3)	44(93.6)	45(95.8)	2(4.2)	0(0.0)	89.8 0.0001*
Nurses' effective communication	1(2.1)	1 (2.1)	45(95.8)	45(95.8)	2(4.2)	0(0.0)	80.5 0.0001*
Total knowledge score	2(4.2)	2(4.2)	43(91.6)	44(93.6)	(3)6.4	0(0.0)	81.5 0.0001*

* Significant at 0.05 level

Table (2) illustrates levels of staff nurses' knowledge about their patients' education role pre and post educational intervention. The majority (91.6%) of staff nurses had poor level regarding total knowledge about their patients' education role pre-intervention this result improved post-intervention to be the majority (93.1%) of them had good knowledge level with a statistically significant difference in all items of staff nurses' knowledge pre and post-intervention (p =0.0001). Pre-intervention, the majority (95.8%, 93.6%, 93.6%, and 91.5%) of staff nurses had poor knowledge level regarding effective communication, characteristics of nurses as an educator, methods and materials, and principles of patients' education, respectively. Post-intervention, the majority (95.8%, 95.8%, 93.6%, and 93.6%) of them had good knowledge level regarding effective communication, characteristics of nurses as an educator, patient education process, and principles of patients' education, respectively.

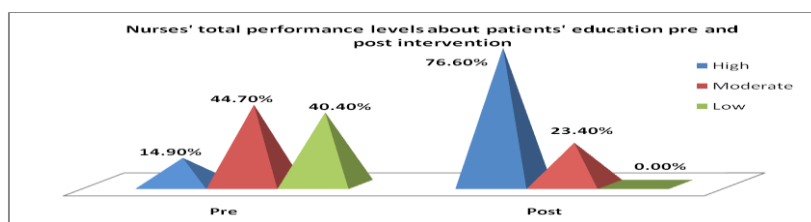


Figure (2): Staff nurses' total performance skills levels in patients' education role pre and post-intervention guide

Figure (2) illustrates staff nurses' total performance skills levels in patients' education role pre and post-intervention guide. Pre-intervention, more than forty percent (44.7% and 40.4%) of staff nurses had moderate and low-performance levels regarding patients' education role, respectively. While post-intervention, high percent (76.6%) of them had high-performance level regarding patients' education role.

Table (3): Staff nurses' performance skills during patients' education session pre and post-intervention guide

Nurses' performance during patients' education session	Pre- intervention (n= 47)			Post- intervention (n=47)			X2 p-value
	High	Moderate	Low	High	Moderate	Low	
	No.(%)	No. (%)	No. (%)	No. (%)	No. (%)	No.(%)	
A) Communication skills	6 (12.8)	19(40.4)	22(46.8)	40 (85.1)	7 (14.9)	0 (0.0)	52.67 0.0001*
• Build relation							
• Open discussion	5 (10.6)	23(48.9)	19(40.4)	35 (74.5)	9 (19.1)	3 (6.4)	46.8 0.0001*
• Collect data	8 (17.0)	20(42.6)	19(40.4)	38 (80.9)	8 (17.0)	1 (2.1)	48.9 0.0001*
• Understand point of view	9 (19.1)	18(38.3)	20(42.6)	33 (70.2)	12(25.5)	2 (4.3)	29.64 0.00037*
• Share information	6 (12.8)	23(48.9)	18(38.3)	32 (68.1)	15 (31.9)	0 (0.0)	37.47 0.0001*
• Reach an agreement	6 (12.8)	20(42.5)	21(44.7)	39 (83.0)	8 (17.0)	0 (0.0)	42 0.001*
• Close the session	8 (17.0)	16(34.0)	23(48.9)	40 (85.1)	7 (14.9)	0 (0.0)	47.86 0.0001*
Total Communication Skills	7 (14.8)	20(42.6)	20(42.6)	39 (93.6)	8 (6.4)	0 (0.0)	45.7 0.0001*
B) The practice of patient education session	6 (12.8)	20(42.5)	21(44.7)	36 (76.6)	10(21.3)	1 (2.1)	42.94 0.0001*
• Preparation before session							
• Nurses educational role during the session	7 (14.9)	21 (44.7)	19(40.4)	37(78.7)	10(21.3)	0 (0.0)	43.36 0.0001*
• After session	6 (12.8)	18 (38.3)	23(48.9)	39 (83.0)	7 (14.9)	1 (2.1)	49.8 0.0001*
Total of the practice of patient education session skills	5 (10.6)	20 (42.6)	22(46.8)	35 (74.5)	12 (25.5)	0 (0.0)	46.5 0.0001*

* *Significant at 0.05 level*

Table (3) represents staff nurses' performance skills during patients' education session pre and post-intervention guide. Pre-intervention, above two fifths (42.6%, 46.8%) of the staff nurses had a low level of total communication and practice of patient education session skills, that changed post-intervention to be high level (93.6% and 74.5%) respectively. Regarding to communication skills during patients' education session, above two fifths (48.9%, 46.8%, 44.7%, and 42.6%) of staff nurses had low level in close the session, build relation, reach an agreement, and understand point of view pre-intervention, that changed post-intervention to be high level (85.1%, 85.1%, 83% and 70.2%), respectively. According to practical skills of pt education session, above two fifths (48.9% and 44.7%) of staff nurses had low level regarding their practice after the session, and preparation before the session that improved after the intervention to be high level (83% and 76.6%), respectively. The table revealed a statistically significant difference in all items of staff nurses' practical skills pre and post-intervention (p= 0.0001).

Table (4): Staff nurses' self-evaluation perceived value levels of patients' education role in patients' education process pre and post- intervention guide

Nurses' value related to steps of patient education process	Pre- intervention (n= 47)			Post- intervention (n=47)			X ² p-value
	High	Moderate	Low	High	Moderate	Low	
	No. (%)	No. (%)	No. (%)	No. (%)	No. (%)	No.(%)	
Primary assessment	5 (10.6)	12 (25.5)	30(63.8)	44(93.6)	3(6.4)	0(0.0)	66.4 0.0001*
Planning phase	6(12.8)	15(31.9)	26(55.3)	43(91.5)	3(6.4)	1(2.1)	75.8 0.0001*
Implementation phase	8(17.0)	16(34.0)	23(48.9)	44(93.6)	3(6.4)	0(0.0)	71.2 0.0001*
Final assessment	6(12.8)	16(34.0)	25(53.2)	45(95.7)	2(4.3)	0(0.0)	78.9 0.001*
Documentation phase	8(17.0)	15(31.9)	24(51.1)	44(93.6)	3(6.4)	0(0.0)	72.6 0.0001*
Total value level	7(14.9)	15(31.9)	25(53.2)	44(93.6)	3(6.4)	0(0.0)	59.84

0.0001*

* *Significant at 0.05 level*

Table (4) illustrates staff nurses' self-evaluation perceived value levels of patients' education role in patients' education process pre and post-intervention guide. There were statistically significant differences in all staff nurses' self-evaluation levels regarding the value of patients' education role pre and post-intervention session (p value= 0.001). Pre-intervention as a total, more than half (53.2%) of staff nurses had low level regarding the value of their role of patients' education. Specifically, pre-intervention around half (63.8%, 55.3%, 53.2%, 51.1%, 48.9%) of staff nurses had low-value level regarding primary assessment, planning, final assessment, documentation, and implementation phases, respectively. But post-intervention, the majority (95.7%, 93.6%, 93.6%, 93.6% and 91.5%) of them had high-value level regarding implementation, primary assessment, final assessment, documentation, and planning phases, respectively.

Table (5): Correlation between staff nurses' knowledge and their performance skills and perceived value levels regarding patients' education role post-intervention guide

Nurses' knowledge			Nurses' knowledge levels			Total
Nurses' performance and value			Good	Fair	Poor	
Nurses' performance	High	No.(%)	36 (81.8)	0 (0.0)	0 (0.0)	36 (76.6)
	Moderate	No.(%)	8 (18.2)	3 (100)	0 (0.0)	11 (23.4)
	Low	No.(%)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)
X^2 (p)			10.48 (0.010*)			
Nurses' perceived value	High	No.(%)	41 (93.2)	3 (100)	0 (0.0)	44 (93.6)
	Moderate	No.(%)	3 (6.8)	0 (0.0)	0 (0.0)	3 (6.4)
	Low	No.(%)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)
X^2 (p)			0.218 (0.817)			

* *Significant at 0.05 level*

There was a statistically significant positive correlation between staff nurses' knowledge and their performance levels regarding patients' education role post-intervention session ($p=0.010$) as evidenced **in the table, 5**.

Table (6): Relation between staff nurses' knowledge, performance skills and perceived value of patients' education role and their age, experience, and attended training course post-intervention guide

Staff nurses' characteristics		Staff nurses' patients' education role					
		Knowledge		Performance		Perceived value	
		Mean \pm	S.D.	Mean \pm	S.D.	Mean \pm	S.D.
Age (years)	<25	85.80 \pm	5.12	75.83 \pm	8.34	84.42 \pm	6.27
	25-35	86.60 \pm	5.08	78.69 \pm	4.24	85.48 \pm	7.77
	35-45	85.79 \pm	6.49	80.94 \pm	4.59	86.93 \pm	6.75
	>45	85.25 \pm	6.92	81.34 \pm	11.56	89.85 \pm	7.87
ANOVA (p)		0.079 (0.971)		3.269 (0.0397*)		4.210 (0.0318*)	
Nurses Experience	<5	84.55 \pm	5.30	77.57 \pm	6.98	82.81 \pm	8.10
	5-15	86.00 \pm	6.73	79.76 \pm	5.43	85.71 \pm	6.31
	>15	86.34 \pm	5.95	81.99 \pm	7.53	86.93 \pm	6.99
ANOVA (p)		0.370 (0.693)		3.65 (0.043*)		3.85 (0.040*)	
Training	No	85.41 \pm	6.12	76.58 \pm	5.96	83.66 \pm	5.83
	Yes	86.50 \pm	5.54	81.95 \pm	7.96	89.40 \pm	7.29
ANOVA (p)		0.396 (0.532)		3.756 (0.041*)		8.986 (0.004*)	

* *Significant at 0.05 level*

As showed in the table (6), there was a statistically significant relation between staff nurses' age, experience and the attendance of training courses and their performance, as well as, their perceived value of patients' education role.

V. Discussion

Staff nurses' perceived barriers to apply their patients' education role

Our study revealed that more than half of staff nurses viewed that work overload, lack of time, and lack of suitable place were barriers to carry out their patients' education role. As well, considerable percent of the participated staff nurses viewed that lack of resources and nursing shortage were barriers to apply their patients' education role. This may be due to the nursing shortage caused inappropriate nurse-patient ratio and increase nurses' workload. In addition, patients' education is considered informal and reaction based activity according to the patient condition, therefore staff nurses provide less attention and put patient education at low priority. These results were confirmed by **Livne et al (2017)** who found that patients' education climate including

workload, policies, and guidelines about patient education, and the rank of patients' education in priority setting can influence the quality of patient education.

Also, **Oyetunde and Akinmeyer (2015)** and **Park (2005)** found that nurses were well oriented about the importance of their role in patients' education, while, they fail to implement it. They reported that time restriction was the biggest constraint to carry out patients' education role. Furthermore, **Garshasbi (2016) and Farahani (2013)** stated that nurses declared the necessity of patients' education, however, in practice they do not implement it usually as a result of the shortage of nursing staff, lack of time, lack of priority for patients' education, and insufficient specific references, lack of financial motivation for teaching, the increased number of patients and nurses exhaustion.

Staff nurses' knowledge regarding patients' education role

The present study revealed that majority of staff nurses had poor level regarding total knowledge regarding their role of patients' education pre-intervention that improved post-intervention. This can be justified as Tanta University Hospitals face many challenges including the restricted budget that lead to limited resources and human resources shortage especially nurses. Also, more than two-fifths of staff nurses did not receive any training program last year. These results go in the same line with **Livne et al (2017) and Park (2005)** found that although nurses supposed patients' education as an essential element of their professional practice, they could not provide it appropriately as a result of insufficient professional knowledge, skills, or their belief that patient education was not their responsibility. In addition, **Farahani (2013)** revealed that lack of information about educational techniques and lack of recognition of patients' educational needs decreased the quality of patient education. While these results contradicted by **Oyetunde and Akinmeyer (2015)** who declared that the University College Hospital's nurses had good knowledge levels regarding patients' education.

Our study finding revealed that pre-intervention majority of staff nurses' had low knowledge level regarding effective communication and characteristics of nurses as an educator that improved post-intervention. Nurses as patients' educator entail not only scientific knowledge but furthermore effective communication, intellectual and technical skills. This necessitates continuous designing and implementing of in-service training programs that constitute an additional burden on university hospitals that suffer from limited budgets. This result is in accordance with **Che et al (2016), and Svavarsdóttir et al (2015), Friberg et al (2012)** pointed out that lack of nurses' knowledge and skills regarding communication inhibit nurses' engagement in patients' education. Also, **Oliveira et al (2016)** found that mastering communication skills contributed to real access to information with education in health as the main strategy of action.

The current study results revealed that majority of staff nurses' knowledge levels about patients' education process, methods and materials, was improved post than the pre-intervention guide. Patients' education skills can be taught and learned like other nursing skills. To improve nurses' patients' education skills, they should be keeping in touch with more educational opportunities based on a patient-centered approach. This result was in confirmed by **Lamiani and Furey (2008)**, who showed that after a 2-day workshop on patients' education, based on a patient-centered approach, nurses' knowledge and sense of preparedness was improved.

Staff Nurses' Performance Skills in Patients' Education Role

The findings of the present study showed that pre-intervention majority of staff nurses had moderate and low total performance skills' levels regarding patients' education role. While post intervention high percent of them had high-performance level regarding patients' education. This can be justified as those nurses were lacking knowledge, skills, and support, but, when they got access to the desired knowledge and environmental support they became self-confident and carry out patient education competently. These results were confirmed by **Edwardson (2007), Weech (2003) and Deccache at al (2001)** they found that nurses' performance of patient education was not satisfactory for patients where patients did not receive enough information about their health status and it was informal and on ad hoc basis. Also, **Dimitriadou (2008)** revealed the majority of the patients reported that their educational needs were not covered. But, this result contradicted by **Oyetunde and Akinmeyer (2015)** who acknowledged that the University College Hospital nurses could not practice patients' education effectively.

The current study findings showed that pre-intervention, above two-fifths of the staff nurses, had a low level of total communication and practice of patients' education session skills which significantly changed post-intervention to be high level. This result may be due to the effect of the intervention guide since the majority of those staff nurses had good knowledge level regarding effective communication. **McKenzie et al. (2005)** mentioned that effective patients' education depends on a good understanding of communication principles, process, and elements. Since principles and guidelines for using effective communication techniques can reinforce all caring relationships established within the health professional. This results in agreement with **Trepanier, (2017)** who illustrated that the implementation of a communication-training program showed a statistically significant effect on the nurses' communication skills level.

Staff Nurses' Value Regarding Their Patients' Education Role

Present study results illustrated that pre-intervention more than half of the studied staff nurses had low-value level regarding patients' education role that improved post-intervention. This can be justified as lack of management recognition of nurses' educational role for the patient, thus they did not pay attention to assessing nurses' skills and support them frequently. Our findings were congruent with **Oyetunde and Akinmeye (2015)** who stated that their studied nurses had good knowledge and positive attitude towards their patients' education role. Also, **Trepanier, (2017)** found that the developed effective communication skills program provides valuable evidence for improving nurses' perception of their communication skills.

Pre-intervention around half of the study nurses had low-value level regarding primary assessment, planning, final assessment, documentation, and implementation phases that improved post-intervention. This may be due to nurses' lack of information and skills regarding patients' education process that can be viewed as a considerable percentage of them did not receive adequate training program that required refining their actual performance. In the same line **Seyedin et al (2015), Wingard (2005) and Bergh et al (2012)** they found that their studied nurses had the highest level regarding planning and the lowest was regarding the evaluation of patients' education.

There was a significant correlation between nurses' age, experience and attendance training courses and their performance as well as their perceived value of patients' education role. This can be interpreted as when nurses grow older they gain more clinical experience that reinforces their role in patients' education. These results were confirmed by **Dimitriadou (2008)** who found that age and educational experiences affect positively nurses' acceptance of their patients' education role.

VI. Conclusion And Recommendations

Patients' education is a crucial element of nurses' role that has a significant influence on the overall patient health. Majority of medical hospital nurses had moderate and low knowledge as well as performance levels regarding their role in patient education pre-intervention that improved post-intervention. Medical hospital nurses viewed that work overload, lack of time, and lack of suitable place were barriers to carry out their patients' education role. So, we recommend that patient education need to obtain the uppermost priority in undergraduate nursing curriculums. Provide a supportive environment that promotes patient education. Establish continuous in-service training programs to enhance nurses' knowledge and skills.

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Conflicts Of Interest Disclosure

The authors declare that there was no conflict of interest.

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