

## Esophagogastroduodenoscopy: Impact of a designed nursing teaching protocol on nurse's performance.

Hanan Abd EL-Razik Abd El-All Mohamad , Zienab Abd El-Lateef Mohamad & Zain El-Abdeen Ahmed sayed

Assistant Lecturer in Adult Nursing Department, Faculty of Nursing, Assiut University.  
Professor Of Medical Surgical Nursing, Faculty Of Nursing, Assiut University.  
Lecturer of Internal Medicine, Faculty of Medicine, Assiut University

### Abstract

**The aims of this study** was to assess knowledge and practice of nursing staff working in the GI endoscopy center, to determine the nursing intervention for patient undergoing upper GI endoscopy, then to design a teaching protocol, lastly to evaluate the effect of implementing the protocol on nurse's knowledge, practices. **Subjects and methods:** A quasi-experimental research design was conducted to meet the aim of the study; the sample included all convenient nursing staff working with patient undergoing upper GI endoscopy (30 nurses). This study conducted at GI endoscopy center at Assiut University Hospital. **Two tools** used for collecting data in the study. **Tool one** is a pre/post nurses' performance assessment sheet. **Tool two** is a designed teaching protocol. **Results** show a good improvement in the knowledge & practice scores after implementing protocol. A positive correlation between nurse's knowledge and practice scores after implementing protocol. **Conclusion of this study illustrated that** the implementing of the designed nursing protocol on nurse's knowledge and practice regarding upper GI endoscopy patients shows a significant improvement in nurses' performance's. **The study recommended that** continued nursing education and in-service training programs in the GI endoscopy center should be organized regularly and the nurses should use pre, post nursing teaching guidelines according to protocol for caring with patient undergoing upper GI endoscopy.

**Key Words:** *Esophagogastroduodenoscopy, designed nursing teaching protocol, nurse's performance, patient's outcome.*

### Introduction

Esophagogastroduodenoscopy (EGD) is a diagnostic and therapeutic procedure that provide good view of the mucosal surfaces of the upper gastrointestinal tract. It is an integral tool in the evaluation and management of many gastrointestinal disorders(Vergis, et al., 2007).

The diagnostic indications for EGD include the following undiagnosed anemia, upper gastrointestinal bleeding as evidenced by hematemesis or melena. Also therapeutic treatment include; (banding/sclerotherapy) of esophageal varices, and taking biopsy from the lesions . (Poley, 2004) (Moreno ,2008).

Nursing care for patient undergoing upper GI endoscopy; the nurse should inform the patient about the procedure, take a formal consent. And she is responsible for any preparation (pre and post procedure ). the nurse be sure from patient fasting at least for 6 hours' before procedure, helps the patient to remove of the dentures prior to oral insertion of the scope, and assure the patient from the potential discomfort after endoscopy procedure (Peter, et al., 2008).

Post-procedural nursing intervention including assessment of mouth or throat or abdominal pain, bleeding from rectum, And assess the level of consciousness, gag reflex return, measuring vital signs, monitoring the patient in the recovery room for 1-2 hours until the effects of the sedatives have worn off, recognize early signs of possible complications, notice symptoms of difficulty swallowing, worsening throat pain, chest pain, fever and chills (Roberta, et al., 2007).

### Subjects and methods

#### I- Technical design

##### Research design:

Quasi experimental research design was utilized to fulfill the aims of this study.

##### Study sample

A convenience sample of all staff nurses working in GI endoscopy center in addition to the nurses of El-Raghy hospital, the total number are (30) nurses.

##### Setting

The study was conducted at the GI endoscopy center Assiut University Hospital.

## Tools

**Tool I: Pre/post test nurses' performance assessment sheet:** This tool consists of three parts:

**Part 1: Socio-demographic data for nurses: to assess the socio-demographic** characteristics of the nurses (e.g. age, sex, marital status, qualification, years of experience) it includes 8 items.

**Part 2: Nurses knowledge assessment:** to assess nurse's knowledge about care of patient undergoing upper GI endoscopy it consisted of 18 items. Scoring system: each right answer was given one score. The total scores were 48. Those who obtained less than (60%) were considered having unsatisfactory level. Above (60) were considered having satisfactory level.

**Part 3: An observational checklist for the nurses:** To assess the nursing practices and intervention for patient undergoing upper gastrointestinal endoscopy it includes general and specific nursing observation checklist consisted of 67 items. Scoring system: each right answer was given one score. The total scores were 52. Those who obtained less than (60%) were considered having unsatisfactory level of practice. Above (60) were considered having satisfactory level.

### **Tool 2: Designed teaching nursing protocol**

The nursing designed protocol was developed by the researcher based on the needed knowledge and practices that can help nurses in provision of a safe care for patient undergoing upper gastrointestinal endoscopy.

## **II- Operational design**

Procedure: the study was carried out on four phases

### **Phase 1 - Preparatory phase**

The researcher developed the proposed teaching protocol after extensive literature review (nursing textbooks, journals, internet resources, etc.) and assessment of nurse knowledge and practice in this regard, and then the final form of the proposed protocol will be checked by a panel of experts. The implementation of the protocol using teaching aids and media (pictures, handouts) according to schedule based on the contents of protocol.

### **Phase 2- A pilot study :- (exploratory phase)**

Carried out in October (2011) on 10% from the studied samples (5 nurses) working with patient undergoing upper endoscopy to evaluate the clarity and applicability of the study tools.

### **Phase 3 - Implementation phase**

- Data were collected at GI endoscopy center and at Assiut University Hospital during the period from 1 /10 /2011 to 1/9/2012. The tools filled through interviewing.
- The purpose of the study was explained to the nurses prior to answering the questions. The study was carried out at morning, and after noon shifts.

- An official permission to proceed with the proposed study was granted from the head of the Endoscopic gastroenterology center
- Assessment of nurse's knowledge and practice before application of the protocol. Using (tool 1) Also she scheduled with them the teaching sessions for both theory and practice and the nurses were divided into small groups, each group contains 4 to 5 nurses.
- The teaching protocol has been implemented for nurses in terms of sessions and teaching during their official working hours. There were a total of 7 sessions. Number of nurses in each session ranged between 4- 5 nurses. Each nurse obtained a copy of the teaching protocol booklet that included all the training contents Tool (3).

### **Phase 4: Evaluation phase**

The last phase of teaching protocol is the evaluation phase. Immediately after protocol implementation the nurses' knowledge and practices has been evaluated by the researcher through filling the tool (1, 2).

### **Ethical considerations**

Informed consent was obtained from the nurses and patients were informed of the purpose and nature of the study. The investigator emphasized that the participant is voluntary and confidentiality and anonymity of the subjects will be assured through coding all of data and they were given the right to withdraw from the study at any time.

### **Statistical design**

Descriptive statistics were calculated (e.g., frequency, percentage, mean and standard deviation). Testing hypotheses were applied to check the significance of differences between achieved levels (scores or grades) before and after the application of the teaching protocol. Correlation coefficient; A probability level of 0.05 was adopted as a level of significance for testing the research hypothesis.

## Results

Table (1): Socio-demographic characteristics of the studied nurses (n=30).

Characteristics	No	%
<b>Sex:</b>		
Male	0.0	0.0
<b>Female</b>	<b>30</b>	<b>100.0</b>
<b>Age:</b>		
>20 years.	3	10.0
<b>20 – 30 years.</b>	<b>20</b>	<b>66.7</b>
30-40 years.	6	20.0
<40 years.	1	3.3
Mean ± SD	24.7±3.69	
<b>Marital Status:</b>		
Single	15	50.0
Married	15	50.0
<b>Qualifications:</b>		
<b>Diploma of nursing 3 years</b>	<b>20</b>	<b>63.3</b>
Institute of nursing	6	26.7
Baccalaureate of nursing	4	10.0
<b>Experience:</b>		
<b>&lt; 5 year.</b>	<b>13</b>	<b>43.3</b>
5 – 10 year.	9	30.0
<10 year.	8	26.7
Mean ± SD	7.8 ± 2.51	

Characteristics	No	%
<b>Residence</b>		
<b>Urban</b>	<b>21</b>	<b>70.0</b>
Rural	9	30.0
<b>Take training in specially</b>		
Yes	15	50.0
No	<b>19</b>	<b>76.0</b>
<b>Duration of training</b>		
-one week	4	16.0
-one month	2	8.0
-> one month		
<b>Benefits from training courses:</b>		
• Minimal level	<b>18</b>	<b>60.0</b>
• Maximum level	12	40.0

Table (2) : Total and subtotal mean knowledge scores obtained by nurses about upper gastrointestinal endoscopy pre &amp; post designed protocol.

Item	Pre protocol	Post protocol	p-value
Total Knowledge score (Maximum score = 48 )	19.5 ± 4.5	28.1 ± 2.5	P<0.001**
<b>Knowledge score levels:</b>			
Unsatisfactory	10 (33.3%)	5(16.7%)	P<0.001**
Satisfactory	20(66.7%)	25 (83.3%)	

Table (3) : Total practice scores obtained by nurses about upper gastrointestinal endoscopy pre &amp; post- designed protocol .

Item	Pre protocol	Post protocol	p-value
<b>Total practice score “52” Mean ± SD</b>	25.9±4.2	35.3±3.6	P<0.001**
<b>Practice Level:</b>			
Inadequate	23 (76.7%)	9(30.0%)	P<0.001***
Adequate	7 (23.3%)	21(70.0%)	

Table (4) : Relation between knowledge &amp; practice post- designed teaching protocol.

Item	practice		P-value
	Inadequate (n=9)	Adequate (n=21)	
<b>Knowledge level:</b>			
Unsatisfied	4 (44.4%)	1 (4.7%)	P<0.001***
Satisfied	5 (55.5%)	20 (95.2%)	

**Table (5) : Relation between nurse's practice & their training about gastrointestinal endoscopy post designed teaching protocol.**

Training			
Item	No training (n=5)	Training (n=25)	P-value
<b>Practice level:</b>			
Inadequate	3 (60.0%)	2 (8.0%)	P=0.001***
Adequate	2 (40.0%)	23 (92.0%)	

**Table (1):** Shows the characteristics of the studied nurses, the majority of nurses (66.7%) their age ranged from 20-30 years with the mean  $\pm$  SD 24.7 $\pm$ 3.7. All of them were female, (63.3%) of them had diploma of nursing. Also (43.3%) of them had less than 5 years of experience. Also the majority of nurses (70%) wear live in urban. As regard to previously of attended in-service training for the study sample, it was found that half of them (50%) were attending training program about gastrointestinal endoscopy for one week with minimal benefits.

**Table (2) :** Reveals the different between the level of knowledge of nurses' in pre designed teaching protocol and post designed teaching protocol ,There has been an observed unsatisfactory in pre designed nursing protocol and highly satisfactory post designed nursing protocol with highly statistically significant.

**Table (3) :** Demonstrates the difference in nurses' level of performance between pre and post designed teaching protocol. There has highly statistically significant and shows in adequate practice level in pre designed teaching protocol which improved to become satisfactory in post designed teaching protocol.

**Table (4) :** Reveals that there was highly statistically significant relation between nurse's knowledge and their practice post implementing designed nursing protocol P<0.000\*\*\*.

**Table (5) :** Reveals that there was highly statistically significant relation between nurse's practice level and their training post implementing designed nursing teaching protocol P<0.000\*\*\*.

## Discussion

The present study included 30 nurses; their mean age was (24.7 $\pm$ 3.7) years. The majority of the nurses their age ranged from 20-30 years, live in urban, all of them are female, as regard the educational level; the majority of the nurses had diploma of nursing, their experiences less than 5 years. And half of them (50%) were attending training program about gastrointestinal endoscopy for one week with minimal benefits.

These are on line with (Yerly, 2011). That state the in service training in nursing is seen as a necessary component to help professional nurse to keep up to date on the most recent developments in nursing and

to be able to manage the demands of nursing practice. In addition (Tokars and Ali, 2010) stated that education program and training courses are two components of staff development.

In the present study, the results revealed that the nurses' staff had poor level of knowledge before implementing of the designed teaching protocol. This reflects from the researcher opinion the lack of scientific preparation in this specialized center. This might be related to the fact that providing care to the patient undergoing upper gastrointestinal endoscopy needs special skills, knowledge and nursing specialty or may be attributed to insufficient courses related to endoscopic procedure included in their undergraduate curriculum of nursing education with lack of continuous education and in-service training program.

The results in the present study revealed that, a great improvement in knowledge score levels after implementing of the of the designed teaching protocol this improvement might be related to the fact that about half of nurses were > 30 years this age might have good readiness for learning new things, they might have more responsibilities toward the young nurses so more capacity of learning.

These results are in agreement with those of Prochaska and Velicer (2012) who noted that nurse's knowledge and practice improved immediately after receiving to the training program. Scores were higher among younger and newly graduated also medial age of staff that has more-experience. Also this agree with the study of (Tina et al., 2001) with revealed that a low level of knowledge in the initial baseline data knowledge assessment for the nurses, which was also reflected in practice of the nurse pre program intervention. And after teaching, a significant improvement was seen in both following knowledge and practice.

After implementation of the teaching protocol, nurses' knowledge score levels regarding caring of patient undergoing upper GIT endoscopy were significantly improved. This improvement might be related to the fact that half of nurses were in young age and single i.e. they might have less responsibilities and more capacity of learning. These results are in agreement with those of (Meyer and

**Elliott 2000**) who noted that nurse's knowledge scores were higher among younger and newly graduated nurses who are attending a training nursing program.

**Morse (2010)** added that, will be usefully for the nurses continuing education courses because it helps advance both their knowledge and skills. Continuing education helps that nurses are kept up to date with new knowledge, skills and information.

The present study revealed improvement in the practice score levels obtained by nurses' post designed teaching protocol. This has been concluded by the presence of significant differences between results of pre and immediate post designed teaching protocol. This finding indicated that skills can be easily improved, especially if linked with their relevant scientific base of knowledge.

**Mansour (2012)** agree with our study and mentioned that, continuing education is required to maintain competence in practice. Education may take the form of on the-job training, programs, workshops or conferences that education has a significant impact on the knowledge and competencies of the nurse.

Moreover **Abd-Alla (2010)** documented that the in service training has a beneficial effect in improving the nurse's knowledge and skills. They also recommended that educational programs should be organized according to the needs of nurses with continuous evaluation.

Also **Friese, et al., (2012)** reported that, continuing education must result in practice change to be effective. Integration of knowledge occurs when information is combined with performance.

The results of the present study are disagree with the results of **Endevelt , (2009)** which indicated that the younger nurses are more knowledgeable than old ones. This may be due to the designed teaching protocol make refreshment in their knowledge and skills which gained over the time. Therefore clinical experiences depending on level of study curriculums' in service education this helps the nursing care providers' maintenance and increases their competence in specific areas of practice. It enhances their attitude, skills and knowledge, in relation to specific aspects of their role in the work setting.

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**Friese, et al., (2012)** reported that, continuing education must result in practice change to be effective. Integration of knowledge occurs when information is combined with performance.

Also the present study shows that, there was no significant relation between nurse's practice level and their years of experience post implementing designed nursing protocol.

This may be related to the majority of studied nurses weren't properly prepared prior to their working and/or dealing with such patient undergoing upper GI endoscopy and really they got their experience while being there, working and managing the patients in the real life situations

The result in the present study showed no significant relation between the experiences and level of practice observed during the post protocol implementation. I could refer that the nurses included in the study were exposed to a training cross' to care for such a group of patient but they have not available resources or may refer to work overload and refer that the nurses included in the study are not a ware of their clinical experience mistakes.

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