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Nurses' performance regarding care of upper gastro intestinal bleeding patients undergoing upper endoscopy

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Abstract

Upper gastrointestinal bleeding is four times more frequent than lower gastrointestinal bleeding. It is associated with high morbidity and mortality rate of about 6%-10%. Endoscopy in patients with upper gastrointestinal bleeding is effective in diagnosing and treating most causes. Early endoscopy (within 24 hours of hospital admission) has a greater impact than delayed endoscopy.

The aim of this study: Was to assess nurses' performance regarding care of upper gastro intestinal bleeding patients undergoing upper endoscopy.

Design: Descriptive exploratory research design was used in this study.

Subjects: A Convenience sample of nurses in endoscopy unit. The total number of nurses (60); with various ages, qualifications, years of experience, different level of education who provide direct patient care and willing to participate in the study.

Setting: endoscopy unit at Homeyat Elabassia Hospital.

Data collection tools: three tools were used for data collection (I) Self-Administrated Questionnaire: which included (a) demographic data, (b) Nurses knowledge about upper gastrointestinal bleeding & upper endoscopy. (2) Observational checklist which included (a) pre endoscopic procedure, (b) during endoscopic procedure,(c)post endoscopic procedure and (3) Nurses' attitude questionnaire Scale.

The results: the majority of nurses has unsatisfactory level of knowledge and only about half of nurses had good level of practice regarding care of upper gastro intestinal bleeding patients undergoing upper endoscopy but, the majority of nurses had satisfactory level or positive of attitude regarding care of upper gastrointestinal bleeding patients undergoing upper endoscopy.

Conclusion: there was highly statistically significance between educational levels and total knowledge level. There were statistical significant difference between years of experience in the gastrointestinal endoscopy unit and total practice level.

Recommendation: Provide well organized training program to improve and refresh nurses' knowledge and practice. Provide nursing care standards for patient with upper GIT bleeding undergoing upper gastro intestinal endoscopy which should be written.

Keywords: Nurses' performance, upper gastro intestinal bleeding, upper endoscopy

Introduction

Hematemesis and/or melena are symptoms of upper gastrointestinal bleeding, which is a common medical emergency. Rectal bleeding may be coupled with massive haemorrhage from the upper gastrointestinal system. Patients who report with dizziness, syncope, or hypovolemic shock may have hemodynamic instability. In-hospital mortality remains high despite breakthroughs in therapeutic endoscopy and greater use of acid reducing medications (Stanley & Laine, 2019) [15].

Lower gastrointestinal haemorrhage is four times as common than upper gastrointestinal bleeding. It's linked to a high rate of morbidity and mortality, ranging from 6% to 10%. It usually presents acutely as hematemesis and/or melena in 40% – 50% of cases (if the bleeding site is proximal to the ligament of treats); it may also present chronically as melena in 70% –80% of cases (if the bleeding site is distal to the ligament of treats); or a less common presentation as hematochezia in 10% of cases (in case of fresh Lower Gastrointestinal Bleeding) (Hadayt *et al.*, 2015).

Upper gastrointestinal endoscopy, also known as esophagogastro-duodenoscopy, is an effective modality for determining the underlying pathologies for symptoms of upper gastrointestinal tract disorders, as it allows for a visual assessment of the gastrointestinal tract mucosa

(esophagus, stomach, and duodenum). Assessment of upper gastrointestinal problems that continue despite a suitable trial of medication and are linked with other symptoms or signs suggesting structural illnesses or deformities are standard diagnostic indications (Kithira & Mogal, 2017) [7].

In individuals with upper gastrointestinal bleeding, endoscopy is effective in identifying and treating the majority of causes. Early endoscopy (within 24 hours of hospital admission) has a stronger impact on length of stay and need for blood transfusion than delayed endoscopy. Several studies have shown that hemodynamically stable patients who undergo upper endoscopy for upper gastrointestinal bleeding and are judged to be at low risk for recurrent bleeding can be safely discharged and followed as outpatients (Stanley & Laine 2019) [15].

Endoscopy's benefits have expanded dramatically as it has evolved from a strictly diagnostic tool to a therapeutic specialism, but so has its potential for injury. Esophageal or stomach perforation, bleeding, over-sedation, and cardiorespiratory events are all major problems. Incomplete operation due to poor patient toleration; abdominal discomfort; belching; and sore throat are minor risks. Infection can also occur as a result of the procedure itself or failure to follow reprocessing and use recommendations for endoscopic instruments and accessories (Thandassery *et al*., 2015) [16].

The importance of trained nurses in upper gastro intestinal endoscopy for the quality and outcome of upper gastrointestinal haemorrhage cannot be overstated. It is critical to equip the endoscopic room with the appropriate instruments and gadgets for inspection of the upper or lower gastro intestinal tract. Helping the patient spritz or gargle with a local anaesthetic and delivering midazolam (Versed) intravenously soon before the scope is introduced are examples of patient preparation (Martha & Manning, 2017) [9].

The nurse must assist the endoscopist and, if necessary, the anaesthetist during the procedure. The nurse must continue with the reprocessing of the endoscopic equipment and devices after the procedure is completed. Because of the ongoing improvement of endoscopic tools and techniques, specialised and dedicated nurses who attend continuing education courses are essential in this profession. Possible issues must be kept in mind so that they can be identified and addressed as soon as possible (Sridhar *et al*., 2018) [14].

Aim of this study

The aim of the study is to assess nurses' performance regarding care of upper gastro intestinal bleeding patients undergoing upper endoscopy through the following:-

1. Assess nurses' knowledge regarding care of upper gastro intestinal bleeding patients undergoing upper endoscopy.
2. Assess nurses' practice regarding care of upper gastro intestinal bleeding patients undergoing upper endoscopy.
3. Assess nurses' attitude regarding care of upper gastro intestinal bleeding patients undergoing upper endoscopy.

Research question

1. What is the nurses' level of knowledge regarding care of upper gastro intestinal bleeding patients undergoing upper endoscopy?
2. What is the nurses' level of practice regarding care of upper gastro intestinal bleeding patients undergoing upper endoscopy?
3. What is the nurses' attitude regarding care of upper gastro intestinal bleeding patients undergoing upper endoscopy?

Subjects and Methods

Technical design

The technical design includes setting, subjects and tools for data collection.

- **Research design**

A descriptive exploratory research was designed. Descriptive design entails a direct examination, analysis, and description of a phenomenon that is as devoid of unexplained presuppositions as possible, with the goal of maximum intuitive presentation. It paints a picture of a scenario, person, or event, or it demonstrates how things are related to one another and how they occur organically. When there isn't enough information on a phenomenon or a problem that hasn't been precisely identified, exploratory design is used. Its goal is not to provide definitive solutions to the research questions, but rather to examine the study issue in various depths (Hunter *et al*., 2019) [5].

Setting

This study was conducted in endoscopy unit at Homeyat Elabassia Hospital. It consists of 2 units; first unit for pre endoscopic preparation and the second unit for endoscopy and post endoscopy care, the first unit containing 20 beds, the second unit containing 15 beds; and the numbers of occupied beds from15-17 beds/ day. Total number of nurses is 56bedside nurses and 4 head nurses.

Subjects

A Convenience sample of nurses in endoscopy unit at the previously mentioned settings. The total number of nurses (60); with various ages, qualifications, years of experience, different level of education who provide direct patient care and willing to participate in the study.

Tools for data collection are

There are three tools were utilized to collect the data during the study period:-

Tool (I): Self-Administrated Questionnaire

Which adapted from Osman (2014) [13]. It is designed in Arabic language to assess the nurse's knowledge in relation to standard nursing care for patients undergoing upper gastro intestinal endoscopy. It included the following parts

Part I concerning with Nurses' demographic data

It includes the following data:- (age, sex, years of experience in endoscopy unit, level of education). It composed of (4) closed ended question.

Part II concerning with Nurses' knowledge about upper gastrointestinal bleeding & upper endoscopy

This part included five sub-sections, as follows: Nurses'

knowledge of the anatomy and function of the gastrointestinal system, which includes 2 multiple choice questions, nurses' knowledge of the causes and predisposing factors of upper gastrointestinal bleeding, which includes 3 multiple choice questions, nurses' knowledge of the symptoms and complications of upper gastrointestinal bleeding, which includes 11 multiple choice questions, nurses' knowledge of the diagnostic procedure needed to monitor the patient with upper gastrointestinal bleeding, which includes 11 multiple choice questions, nurses' knowledge of the diagnostic procedure needed to monitor the patient with upper gastrointestinal bleeding**:** which include 6 multiple choice questions and nurses' knowledge about nursing care of upper gastro intestinal bleeding patients undergoing upper endoscopy: which include 4 multiple choice questions.

Scoring system for tool I

Regarding scoring system: the self-administrated questionnaire nurses' total score was 26 points. The scoring system was distributed according to the following**:-**Correct answer = 1 degree, Incorrect answer = zero. Nurses' level of knowledge was considered satisfactory if the total score = 75% which equal 19.5 degree or more and unsatisfactory if it less than 75%.

Tool (II): Observational checklist

It was adopted from Osman (2014) [13]. It is conducted by investigator to assess the nursing practice per endoscopy procedure and consists of**:-**

Part I: Pre endoscopic procedure to measure nurses' practice pre endoscopic procedure**.** It contains patient history**,** nurse Preparation**,** patient preparation, equipment preparation (endoscopic preparation, devices& supplies and drugs).

Part II: During endoscopic procedure to measure nurses' practice during endoscopic procedure**.** The investigator observed the nurses' practice (during procedure) and it contains 14 items.

Part III: Post endoscopic procedure to measure nurses' practice post endoscopic procedure**.** The investigator observed the nurses' practice (post procedure): it contains 3 items as following: patient, devices &supplies and drugs.

Scoring system for tool II

Regarding scoring system: the nurses' performance checklist, the total score was 121 points. The score was distribute according to the following, one point was given for done step and zero was given for not done step. The scoring system was as following.

Pre procedure: Total 68 points was distributed as following:

During procedure: It contains (23 points).

Post procedure: Total 30 points was distributed as following:

Practice categories	Percentage
Poor	<60%
Fair	60-75%
Good	>75%

Tool III: Nurses' attitude questionnaire Scale: **(Appendix III)**

This adapted from after reviewing the related literatures. It will be used to assess nurses' (Mohamed, 2016) [10] attitude toward caring of patients undergoing upper gastro intestinal endoscopy. It includes questions related to attitude of nurse providing care in endoscopy unit.

Scoring system for tool III

Regarding scoring system of the nurses' attitude questionnaire tool: it included 20 questions. The agree response was given two grades, sometimes response was given one grade and not agree response was given zero. The total score was 40 grades. The nurse had satisfactory level when total score above 60%, and unsatisfactory level when total score below 60%.

Validity

The adapted tools were revised by a jury of 5 experts: professors of medical surgical nursing from faculty of nursing, Helwan University. Who reviewed the content of the tools for comprehensiveness, accuracy, clarity, relevance and scoring and items recording, minor modification were done.

Reliability

Cronbach's Alpha were used to determine the internal reliability of the adapted tool. Reliability of the tools was tested to determine the extent to which the questionnaire items are related to each other and the result was as the following self-administrated questionnaire (0.827) and nurses' attitude questionnaire scale (0.785). The adapted tool (observational checklist). According to Osman (2014) [13] Cronbach's Alpha result was (0.834). Statistical equation of Cronbach's alpha reliability coefficient normally ranges between 0 and 1; higher values (more than 0.7) denote acceptable reliability.

Ethical considerations

This study was conducted after obtaining an official approval to conduct the proposed study from the Scientific Research Ethics Committee Helwan University. Before signing the informed permission form, subjects were given thorough information regarding the study and their role. Explaining the goal and nature of the study, as well as the opportunity of withdrawing at any moment, were all ethical issues, as was the confidentiality of the information, which would not be accessed by anyone else without the participants' permission taking into consideration ethics, values, culture and beliefs.

Operational Stage

Preparatory phase

It will comprise a review of previous, current, national, and worldwide related literature as well as theoretical understanding of many parts of the study through the use of

books, papers, the internet, periodicals, and magazines to construct data gathering techniques.

Pilot study

The pilot study focusd on 10% of the sample (6 nurses) to see how clear the questions are and how long it takes to complete the study tools. Modifications to the employed tool were made, and then the final form was created. Six nurses were substituted for the nurses in the pilot research.

Field work

An approval was obtained from a scientific ethical committee of the faculty of nursing at Helwan University. Prior to data collection, each participant gave written and oral informed consent after being briefed about the study's goals. Prior to any data collection, the purpose of the study was simply stated to the nurses who agreed to participate.

Results

Table 1: Demographic characteristics of the studied nurses (n=60).

Demographic characteristics		No	%
Age	20≤35	37	61.7
	35≤50	18	30.0
	50≤60	5	8.3
Sex	Male	30	50.0
	Female	30	50.0
Years of Experience in the Gastrointestinal Endoscopy Unit	1≤10	32	53.3
	10≤20	23	38.4
	20≤30	5	8.3
Educational level	Nursing Diploma	32	53.3
	Technical Nursing Institute	16	26.7
	Bachelor of Nursing	10	16.7
	Postgraduate Studies	2	3.3

Table 2: Total knowledge level. (n=60)

Items	Unsatisfactory		Satisfactory	
	N	%	N	%
Total knowledge level	52	86.7	8	13.3

Table 3: The nurses' total practice level (n=60)

Items	Poor		Fair		Good	
	N	%	N	%	N	%
Practice level pre procedure	14	23.3	17	28.4	29	48.3
Practice level during procedure	2	3.3	18	30.0	40	66.7
Practice level post procedure	12	20.0	18	30.0	30	50.0
Total Practice level	**11**	**18.3**	**17**	**28.4**	**32**	**53.3**

Table 4: Relation between demographic characteristics and knowledge levels. (n=60)

Demographic characteristics	Total knowledge level				Chi square	P value
	Satisfactory (N=8)		Unsatisfactory (N=52)			
	N	%	N	%		
Age						
20≤35	6	75.0	31	59.6	1.112	0.573
35≤50	2	25.0	16	30.9		
50≤60	0	0.0	5	9.6		
Sex						
Male	3	37.5	27	51.9	0.577	0.353
Female	5	62.5	25	48.1		
Years of Experience in the Gastrointestinal Endoscopy Unit						
1≤10	4	50.0	28	53.9	1.116	0.572
10≤20	4	50.0	19	36.5		
20≤30	0	0.0	5	9.6		
Educational level						
Nursing Diploma	0	0.0	32	61.5	20.733	0.000**
Technical Nursing Institute	3	37.5	13	25.0		
Bachelor of Nursing	3	37.5	7	13.5		
Postgraduate Studies	2	25.0	0	0.0		

**A statistical significant difference ($P \leq 0.01$)

Table 5: Relation between demographic characteristics and total practice level. (n=60)

Demographic characteristics	Total practice level						Chi square	P value
	Poor (N=11)		Fair (N=17)		Good (N=32)			
	N	%	N	%	N	%		
Age							3.913	0.418
20≤35	7	63.6	13	76.5	17	53.1		
35≤50	4	36.4	3	17.6	11	34.4		
50≤60	0	0.0	1	5.9	4	12.5		
Sex							1.377	0.502
Male	7	63.6	9	52.9	14	34.8		
Female	4	36.4	8	47.1	18	65.2		
Years of Experience in the Gastrointestinal Endoscopy Unit							5.176	0.029*
1≤10	8	72.7	11	64.7	13	40.6		
10≤20	3	24.3	5	29.4	15	46.9		
20≤30	0	0.0	1	5.9	4	12.5		
Educational level							6.094	0.413
Nursing Diploma	7	63.6	11	64.7	14	34.8		
Technical Nursing Institute	1	9.1	3	17.6	12	37.5		
Bachelor of Nursing	3	24.3	2	11.7	5	15.6		
Postgraduate Studies	0	0.0	1	5.9	1	3.1		

* A statistical significant difference $P \leq 0.05$

Table 6: Relation between total nurses' knowledge, practice, their attitude (n= 60)

Variables	Total Knowledge		Total practice		Total attitude	
	r	P	r	P	r	P
Total Knowledge	-	-	0.163	0.213	0.131	0.319
Total practice	0.163	0.213	-	-	0.128	0.330
Total attitude	0.131	0.319	0.128	0.330	-	-

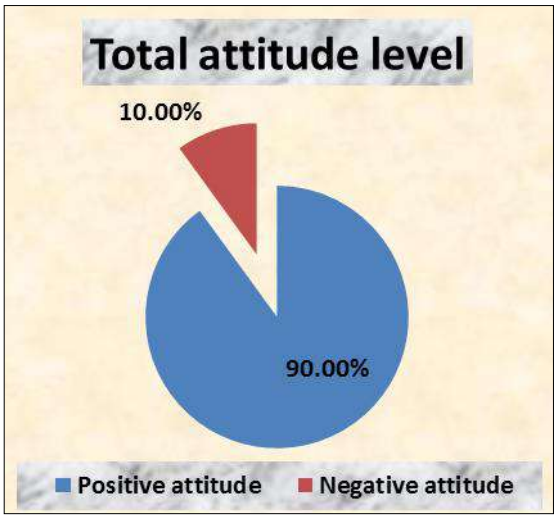

Fig 1: Nurses' total attitude level, (n=60).

Discussion

Regarding age, the recent survey found that just around a third of them were between the ages of 20 and 35. These findings, as described by the investigator's experience, may be attributable to the fact that the majority of nurses providing direct patient care in the nursing field are young, whereas senior nurses in the higher age category do administrative roles. El-Sheikh, & Abed elsatar, (2013) [3] found similar results in their study titled "The effect of implementing a control action plan for infection prevention at endoscopy unit." According to the report, just around a third of nurses are under the age of 30.

As regards to gender, the current study revealed that half of them were male and half of them were female. These findings explained by the investigator 's experience may be due to studying of nursing in Egyptian universities hasn't been exclusive for females only. These findings are disagreed with Hussien, Abd Elrhaman and Mohamed, (2020) [6], their study titled" Nurses' Performance Regarding Caring for Patients with Esophageal Variceal Bleeding". Reported that 72.5% of the nurses under study were females.

As regards to nurses years of experience in the gastrointestinal endoscopy unit there were more than half of nurses had experience 1≤10 years. These findings explained by the investigator's experience may be due to fresh graduated nurses have the latest information and skills rather than old graduate nurses. These findings are disagreed with Osman, (2014) [13], his study titled" Establishing Nursing Guidline for Nurse Caring with Hematemesis Patient Undergoing Upper Gastrointestinal Endoscopy ". Reported that above two thirds of them had experience 1-5 years.

As regards the educational level of the nurses surveyed, the findings revealed that more than half of them had a nursing diploma. These findings, indicated by the investigator's experience, may be related to the fact that the bulk of employed staff nurses are from Cairo's directorate of health affairs' nursing teaching schools. These findings are disagreed with Abdullah, Mohamed and Ismail (2014) his study titled" Nurses Knowledge and Practice about Administration of Medications via Nasogastric Tube among Critically Ill Patients". Reported that majority of the study subjects were having bachelor degree.

Concerning to nurses' total knowledge about care for upper gastrointestinal bleeding patients undergoing upper G.I.T endoscopy results indicated that, the majority of nurses had a satisfactory level of knowledge. These findings explained by the investigator's experience may be due to more than

half of them had nursing diploma and lack of training providing by hospital. These findings are similar to Osman, (2014) [13], his study titled" Establishing Nursing Guideline for Nurse Caring with Hematemesis Patient Undergoing Upper Gastrointestinal Endoscopy". Reported that above half of nurses had poor knowledge level. These findings explained by the investigator's experience may be due to large number of patients, limited time and limited supplies.

As regards nurses' practice pre endoscopic procedure the current study revealed that about quarter of studied nurses had poor pre endoscopic procedure Practice level. These findings are not similar to Amer, Taha, & Zaton, (2015) [2] her study titled" Nurses' Knowledge and Practice Regarding Gastrointestinal Endoscopy and Suggested Nursing Guidelines). Who revealed that the majority of nurses in their study had unsatisfactory level of practice before endoscopic procedure.

As regards nurses' practice during endoscopic procedure the current study revealed that more than halfhad good Practice level during procedure. These findings are not similar to Amer, Taha and Zaton, (2015) [2] her study titled" Nurses' Knowledge and Practice Regarding Gastrointestinal Endoscopy and Suggested Nursing Guidelines). Who revealed that the majority of nurses in their study had unsatisfactory level of practice during endoscopic procedure.

As regards nurses' practice post endoscopic procedure the current study revealed revealed that half of studied nurses had good post procedure Practice level. These findings are not similar to Amer, Taha and Zaton, (2015) [2] her study titled" Nurses' Knowledge and Practice Regarding Gastrointestinal Endoscopy and Suggested Nursing Guidelines). Who revealed that the majority of nurses in their study had unsatisfactory level of practice during endoscopic procedure.

As regards nurses' total practice level the current study revealed that about half of studied nurses had good total practice level. These findings explained by the investigator's experience may be due to the years of experience in endoscopy unit. These findings are not similar to Moqbel, etal., (2015), his study titled" Effectiveness of Planned Health Education Program on Nurses' Knowledge and Practice for Preventing Infection in Gastrointestinal Endoscopy Units at Major Hospitals In Yemen". who demonstrated that minority of nurses had satisfactory level of practices in caring with upper gastrointestinal bleeding patient

Concerning to nurses' attitude regarding care of upper gastro intestinal bleeding patients undergoing upper endoscopy. Results indicated that the majority of nurses had satisfactory level or positive of attitude regarding care of upper gastrointestinal bleeding patients undergoing upper endoscopy. These findings are similar to Hussien, Abd Elrhaman and Mohamed (2020) [6], their study titled" Nurses' Performance Regarding Caring for Patients with Esophageal Variceal Bleeding". Reported that approximately two thirds of the nurses under study had positive attitude regarding care of patients with esophageal variceal bleeding.

The findings of the current study demonstrated that, there were highly statistically significance between educational level, and the total knowledge level. These findings are not supported by Amer, Taha and Zaton, (2015) [2] his study titled" Nurses' Knowledge and Practice Regarding Gastrointestinal Endoscopy and Suggested Nursing Guidelines). Who revealed that there were no relation between the nurses' level of knowledge and their level of education.

Regarding relation between demographic characteristics and total practice level the current study demonstrated that, there were statistical significant difference between years of experience in the gastrointestinal endoscopy unit and total practice level and there were no statistically significance between educational level and total practice level between nurses' level of practice and their level of education, These findings are not supported by Mohammed, (2016) [10] his study titled "Assessment of Nurse's Performance in Gastrointestinal Endoscopy Unit". Who conducted a study showed that there is a significant relation between nurses' level of practice and their level of education and no statistically significance between between years of experience in the gastrointestinal endoscopy unit and total practice level.

Regarding relation between total knowledge level, total practice level and total attitude level the current study demonstrated that, there were no statistically significance between total knowledge level, total practice level and total attitude level. These findings are supported by Hussien, Abd Elrhaman and Mohamed, (2020) [6], their study titled" Nurses' Performance Regarding Caring for Patients with Esophageal Variceal Bleeding". Who conducted that there were no statistical significant relation between the nurses' knowledge and attitude. not supported by Majeski, Lynch and Drust, (2009) [8], their study titled "Esophageal Perforation during Esophagogastroduodenoscopy". Who conducted that there was a statistical significant relation between nurses' knowledge and their practice.

Conclusion

Based on the results of the present study, the following can be concluded

The majority of nurses has unsatisfactory level of knowledge and only about half of nurses had good level of practice regarding care of upper gastro intestinal bleeding patients undergoing upper endoscopy but, the majority of nurses had satisfactory level or positive of attitude regarding care of upper gastrointestinal bleeding patients undergoing upper endoscopy. Also, there was highly statistically significance between educational levels and total knowledge level. There were statistical significant difference between years of experience in the gastrointestinal endoscopy unit and total practice level.

Recommendations

Based upon findings of the current study, the following recommendations were suggested:

- Provide well organized training program to improve and refresh nurses' knowledge and practice regarding care Of upper gastro intestinal bleeding patients undergoing upper endoscopy.
- Provide nursing care standards for patient with upper GIT bleeding undergoing upper gastro intestinal endoscopy which should be written.
- Activate continuous monitoring and assessment of nurses' knowledge and practice by supervisors

regarding care Of upper gastro intestinal bleeding patients undergoing upper endoscopy.
- Procedure book should be available in endoscopy unit as a reference for all nurses.

Recommendations for furthers researches
- Replication of the study on other sample selected from different hospitals in Egypt to generalize the study findings.

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