ESTABLISHING NURSING GUIDELINE FOR NURSES CARING WITH HAEMATEMSIS PATIENTS UNDERGOING UPPER GASTROINTESTINAL ENDOSCOPY

SafiaAbdou Osman[1]; Amira Ahmed Hassanin[2];
HebaAbubakr M.Salama[3]

[1]B.Sc, Mansoura University; [2] Professor of Medical-Surgical Nursing, Faculty of Nursing, Mansoura University; [3]Lecturer of Medical-Surgical Nursing, Faculty of Nursing, Mansoura University.
E-mail of corresponding author: **Safiaabdou@yahoo.com**

Abstract

Background: Haematemesis is one of the most common manifestations of acute upper gastrointestinal bleeding, which is a life-threatening emergency that results in a high morbidity, mortality and treatment cost in worldwide. **This study** aimed to assess the nurses' knowledge and practice about caring for patients with haematemesis undergoing upper gastrointestinal endoscopy and to develop nursing guideline for nurses' caring with haematemesis patients undergoing upper gastrointestinal endoscopy. **Subjects and method:** This study uses the descriptive design. This study examined the haematemesis unit in Mansoura university hospitals and El Mansoura New general hospital. The study sample was all available nurses in the above-mentioned setting 41 nurses (20 nurses from Mansoura university hospital and 21 nurses from El Mansoura New general hospital. The data collected through the following tools: -**Tool I**– Knowledge questionnaire sheet, **Tool II**- Nurses' practice checklist. **Results:** the findings revealed that (53.7 %) of nurses have poor knowledge and the majority of the sample (90.2%) have poor total practice level. There were statistically significance difference between (age) and practice level (pre procedure) (p=.005*). **Conclusions:** The majority of the nurses have poor knowledge and practice level regarding caring haematemesis patients undergoing upper GIT endoscopy. **Recommendations:** Activate continuous training program to refresh and update the nurse knowledge and practice.

Keywords: Endoscopy, Haematemesis, Nursing guidelines

Introduction:

Upper gastrointestinal bleeding (UGIB) is a common medical emergency that carries substantial mortality and has been associated with increasing nonsteroidal anti-inflammatory drug use and the high prevalence of Helicobacter pylori infection in patients with peptic ulcer bleeding. Rapid assessment and resuscitation should precede the diagnostic evaluation in unstable patients with severe bleeding [1].

Annually in the U.S., 100,000 patients experience acute upper GI bleeding, are admitted to hospitals for management. Men are about bleeding twice than females but the death rate is similar in both sexes[2].

Haematemesis is one of the most common manifestations of acute UGI hemorrhage. About 40 – 50% of cases of UGI bleeding are caused by peptic ulcer disease (duodenal, gastric, and marginal). Hematemesis is defined as vomiting of blood either bright - red blood, suggestive of recent and/or continued hemorrhage, or darker, "coffee- ground" liquid, suggestive of older or quiescent bleeding. The source is generally the upper gastrointestinal tract, typically the most common site is above the suspensory muscle of duodenum. Hematemesis is always an important sign[3].

Early upper endoscopy (within 24 hours of presentation) is recommended in

most patients because it confirms the diagnosis and allows for targeted endoscopic treatment, including epinephrine injection, thermo coagulation, application of clips, and banding. According to the American Society for Gastrointestinal Endoscopy 2013, haematemesis patient undergoing upper GIT endoscopy is an acutely ill and require emergent medical and critical nursing care through the whole phases of endoscopy. These phases are; the pre-procedure; (the period prior to beginning of the endoscopy), the procedure phase; (the period from initiation of sedation and analgesia until the completion of the endoscopic intervention) and the post-procedure phase: (the period from the completion of the endoscopic intervention until patient discharge) [4].

Aim of the Study
This study aims to:-
1. Assess the nurses' knowledge and practice about caring for patients with haematemesis undergoing upper gastrointestinal endoscopy.
2. Develop nursing guideline for nurses caring with haematemesis patients undergoing upper gastrointestinal endoscopy.

Research Question
This study will answer the following questions:
1. What is the nurses' knowledge level regarding caring of patients with haematemesis undergoing upper gastrointestinal endoscopy?
2. What is the nurses' practice level regarding caring of patients with haematemesis undergoing upper gastrointestinal endoscopy?

Subjects and method
Subjects:
Design: Descriptive design was used in this study.
Setting of the study: This study was conducted in the Haematemesis unit in Mansoura University Hospital and El Mansoura New General Hospital.
Subjects: All available nurses in Haematemesis unit at Mansoura University Hospital were (20) nurses and (21) nurses were in El Mansoura New General Hospital with various ages, qualifications, years of experience, different levels of education.

Tools used in the study:
Two tools were developed by the researcher after reviewing recent related literatures and there tools were used in this study for collection of necessary data and achieving the aim of the study as follows.

Tool I: Knowledge questionnaire sheet:
They are designed in Arabic language after reviewing extensive review of literature in relation to standard nursing care for haematemesis patients undergoing (GIT) endoscopy to assess the nurses' knowledge. It Involves two parts that are the following:-
Part 1: Socio-demographic data as the experiences year and the age in endoscopy unit, level of education.
Part 2: Nurses' knowledge about haematemesis including five sub items as the following;
I. Nurses' knowledge about anatomy and function of gastrointestinal system: which include 2 questions regarding components and functions of digestive system.
II. Nurses' knowledge about causes and predisposing factors for haematemesis: This contains 3 questions related to definition of haematemesis, causes of haematemesis and sites of bleeding.
III. Nurses' knowledge about symptoms and complications of haematemesis: which contains 11 questions regarding accompanying symptoms of haematemesis, complications of haematemesis, definition of shock, signs and symptom of shock, definition of anemia, main symptoms of anemia, nursing care for hematemesis patients, aim of Ryle insertion, solution used in, time to

stop gastric lavage, type of cannula connected to the patient.

IV. Nurses' knowledge about diagnostic procedures for haematemesis patients: which contains six questions about diagnostic procedures for haematemesis patients, definition of endoscopy, indications, contraindications and complications of endoscopy, signs and symptoms that indicate complications of endoscopy.

V. Nurses' knowledge about nursing care for haematemesis patient undergoing upper GIT endoscopy: This contains four questions. It involved the following; Nursing care for patient before endoscopy, Nursing care for patient during endoscopy, Nursing care for patient after endoscopy, and Instructions for patient before discharge from hospital.

Each question had many answers and the nurse should choose the correct one. Each item in the sheet was given a score. One mark was given for correct answer, and a zero for incorrect answer or unknown.

Knowledge scoring system:

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

Tool II: Nurses' practice checklist
It was developed by the investigator after extensive review of related literature and related to the standardized nursing care for patient with haematemesis undergoing upper (GIT) Endoscopy. It was Designed in English language and conducted by the investigator to assess the nursing practice (pre, during and after) endoscopy procedure. Originally, this tool consisted of three subscales:

Part (I): the investigator observed the nurses' practice (pre procedure):
This part contains four sub items as the following:

I: **Patient history**:
II: Nurse Preparations
III. Patient preparation
VI. Equipment preparation
Part II: the investigator observed the nurses' practice (during procedure): This part contains 14 items as hand washing, wear mask ....etc.
Part (III): the investigator observed the nurses' practice (post procedure): This part contains 3 items which cover ages patient, Devices, Supplies and drugs is uses

Scoring system
Regarding scoring system of the nurses practice checklist; the total score was **122** points. The score were distributed according to the following, one point was given for done step, while zero was given when the nurse did not done the step.

Practice categories:
Poor: For those who had a score <60%
Fair: For those who had a score 60 - 75%
Good: For those who had a score >75%

Methods:
1. The study got the formal approval to conduct from the administrative personnel as the ethical committee of Nursing faculty in Mansoura University.
2. The study got the formal approval to conduct from the administrative personnel responsibility in Mansoura university hospitals and El Mansoura new general hospital, depends on the letter from nursing faculty including the title, aim of the study and duration of the study.
3. Tools of data collection were developed by the investigator then tested for content validity by a panel of five experts in the field of medical surgical nursing all were assistant professor of medical surgical nursing at the Faculty of Nursing, Mansoura University reviewed the tools for clarity, relevance's, understanding, applicability and simplicity for implementation and some modification

were applied accordingly. The reliability of the developed tools was estimated using the Cronbach's Alpha test to measure the internal consistency of practice part ($r = 0.72$).

4. A pilot study was carried out on 10% (2 nurses from Mansoura University Hospital and 2 nurses from El Mansoura New General Hospital) who were selected randomly from 45 nurses; those nurses were then excluded from the study. The purpose of the pilot study was to ascertain the clarity and applicability of the tool. Based on the findings of the pilot study, modifications were made to make the tool more applicable to nurses.

Ethical consideration:

All relevant ethical issues were taken into consideration to involve the following: The research was approved before starting with the program, the study aim was clarified to each nurse and an oral approval for participation in the study was obtained from each one of them, ensuring the collected data have the confidentiality and secrecy of the nurse during study. Voluntary participation as they have an opportunity to refuse the participation, and there are information that could be used for the purposes of the research only.

Handling and analysis of data:

• By using SPSS, data was analyzed and qualitative data was given as the percentage and the number. There is the differentiation between two groups that was achieved by the test of Chi-Square. Pearson's correlation coefficient was used to test correlation between variables.

• $P < 0.05$ was considered to be statistically significant.

Results

Table (1): This table shows the socio-demographic characteristics of the studied sample as there were above half of them (51.2%)were in the El Mansoura New General Hospital,

Regarding to age, less than two thirds of them (61.0%) were in age group 20 to less than 30 years. According to nurses experience in the endoscopy unit there were above two thirds of them (68.3%) that had experience less than 5 years. As regarding to educational level, there were less than half of them (48.8%) had nursing school.

Table (1): Socio-demographic data of the study subjects **(n =41)**

Item	No	%
Hospitals		
Mansoura University	20	48.8
El Mansoura New General	21	51.2
Age		
20-<30y	25	61.0
30-<40y	10	24.4
40y and more	6	14.6
Experience in endoscopy		
<5 y	28	68.3
>5y	13	31.7
Level of Education		
Nursing school	20	48.8
Technical institute of nursing	10	24.4
Bachelor's degree	11	26.8

Figure (1): This figure illustrates that there were above half (53.7 %) of studied nurses have poor knowledge level and only (7.3%) had good knowledge level.
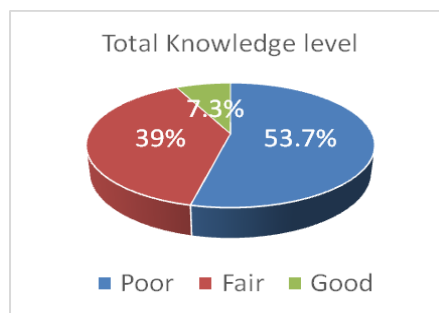

Figure (1): Nurse's total knowledge level (n =41)

Table (2): It is noticed from the table that was statistically significant difference between level of education and the total knowledge level (p=012*). While there were no statistically significant differences between age, experience in endoscopy unit and the total knowledge level.

Table (2): The relation between socio-demographic data and total knowledge level of nurse's (n =41)

Items	Total Knowledge level							
	Poor		Fair		Good		Chi-square	p-value
Socio-demographic data	No	%	No	%	No	%		
Age								
20-<29 y	14	63.6	10	62.5	1	33.3	3.479	.481
30-<39 y	5	22.7	3	18.8	2	66.7		
40y and more	3	13.6	3	18.8	0	0		
Experience in endoscopy								
<5 y	15	68.2	12	75.0	1	33.3	2.026	.363
>5 y	7	31.8	4	25.0	2	66.7		
Level of Education								
Nursing school	14	63.6	6	37.5	0	0		
Technical institute of nursing	6	27.3	4	25.0	0	0	12.931	.012*
Bachelor's degree	2	9.1	6	37.5	3	100.0		

*p- value <0.05

Table (3): This table reveals that the mostly of the nurses had poor practice pre, during and post procedure (87.8%, 82.9% and 85.4% respectively) and the majority of them (90.2%) had poor total practice level.

Table (3): The nurse's total practice level (n =41)

Items	Poor		Fair		Good	
	No	%	No	%	No	%
practice level (Pre procedure)	36	87.8	3	7.3	2	4.9
practice level (During procedure)	34	82.9	7	17.1	0	0
practice level (Post procedure)	35	85.4	4	9.8	2	4.9
Total practice level	37	90.2	3	7.3	1	2.4

Table (4): This table shows there was statistically significant difference between the age and the total practice level (p=.008*) as well as education level (p=.017*), while there were no s significant difference between experience in endoscopy and total practice level.

Table (4): The relation between socio-demographic data and total practice level (n =41)

Items Socio-demographic data	Total practice level						Chi-square	p-value
	poor		Fair		Good			
	No	%	No	%	No	%		
age								
20-<29y	25	61	0	0	0	0		
30-<39y	6	14.6	3	7.3	1	2.5	13.741	.008*
40y and more	6	14.6	0	0	0	0		
Experience in endoscopy								
<5y	26	63.5	2	4.8	0	0	2.224	.329
>5y	11	26.9	1	2.4	1	2.4		
Level of Education Nursing school	20	48.7	0	0	0	0		
Technical institute of nursing	10	24.5	0	0	0	0	12.088	.017*
Bachelor's degree	7	17.1	3	7.3	1	2.4		

*p-value<0.05

Table (5): This table shows there was no statistically significance difference between practice level (pre, during and post) and knowledge level.

Table (5): The relation between practice level (pre, during and post procedure) and knowledge level (n =41)

Items Practice level	Knowledge level						Chi-square	p-value
	Poor		Fair		Good			
	No	%	No	%	No	%		
Pre procedure								
Poor	21	51.2	13	31.7	2	4.8		
Fair	1	2.4	2	4.8	0	0	7.530	.110
good	0	0	1	2.4	1	2.4		
During procedure								
Poor	19	46.3	14	34.1	1	2.4		
Fair	3	7.3	2	4.9	2	4.9	5.631	.060
Good	22	53.7	16	39.0	3	7.3		
Post procedure								
Poor	20	48.8	14	34.1	1	2.4		
Fair	2	4.8	1	2.4	1	2.4	9.075	.059
Good	0	0	1	2.4	1	2.4		

Table (6): This table reveals that was no significant correlation between total practice and total knowledge level.

Table (6): The correlation between total practice level and total knowledge level (n =41)

Items	Total knowledge level
Total practice level Pearson Correlation Sig. (2-tailed) N	 .226 .155 41

Discussion

Haematemesisis simply defined as "vomiting blood". It is caused by bleeding from part of the upper portion of the gastrointestinal tract. Thus, hematemesis is a medical emergency that needs immediate treatment [5].

The discussion of the finding will cover six main areas: **The first part** will be concerned with representation of socio-demographic data of study sample as (age, experience in endoscopy and level of education).**The second part** will deal with assessing the level of knowledge for nurses regarding to haematemesis patient. **The third part** concerned with relation between socio-demographic and knowledge level .**The forth part** concerned with nurses total practice level. **The fifth part** concerned with concerned with relation between socio-demographic and practice level. Finally **the sixth part** concerned with the correlation between total practice level and total knowledge level.

Part I: socio-demographic data of the studied subjects:

Considering to the socio-demographic the features of the sample, there were less than two third of them their age from 20 to less than 30 year. This results in agreement with the findings by **Salman&Hassan (2017)**[6]who stated that one third of the participant in the same age. Also agree with *El-Sheikh and Abed elsatar (2011)*[7] who reported that two third of nurses were less than 30 years old. In addition, *Ali and Taha (2014*[8] reported

in their study which carried out in Zagazig University that the mean age of nurses in their study was at 29.5± 5.76.

This may be due to the majority of nurses work power providing direct care for the patient in nursing field in our study are young females while higher age category senior nurses perform administrative role.

Regarding to nurses experience in the endoscopy unit there were above two thirds had experience less than 5 years. In the same line **Salman&Hassan(2017)**[6]who stated that one third of study sample had experience 1-5 years. Same finding by *Gijare (2012)*[9] who reported that above half of them were having less than one-year experience. Also disagree with *Mohammed (2011)*[10] who had above half from the study group had experience more than 5 years. This might be because recently graduated nurses have the latest information and skills rather than old graduated nurses.

As regard to educational level there were less than half of them had nursing school. On the other hand the study of *Moqbel et al. (2015)* [11] presented that the high number of nurses graduated from nursing institute was working in endoscopy unit. The researcher believed it is possible that the low number of university nurses led to the use of professional nurses from nursing schools and nursing graduates in endoscopic units. This might be because college graduated nurses in Mansoura University Hospital

are responsible for critical tasks such as intensive care unit more than ordinary ward as haematemesis unit .

Part II: assessing the total level of nurse's knowledge regarding to haematemesis patient:

According to the nurses total knowledge level regarding anatomy and function of GIT, haematemesis symptoms and complication of haematemesis and diagnostic investigation for haematemesis patients there were above half of nurses have poor total knowledge. In the same line *Mohamad et al. (2014)*[12] who found that the staff have low knowledge level. while this result disagree with *Majeski et al. (2009)*[11] who stated that the professional nurses of endoscopic should achieved the observation of the nurse to the conscious level to reach the sedation and the observation of the symptoms and the signs of the dangers that combined with GI endoscopy including abnormal reaction. That result may due to most of study sample have diploma school which they didn't study haematemesis and upper git disease in full view so that they didn't have sufficient information regarding to disease and there were no enough educational courses to supple them with knowledge.

Above half of nurses had incomplete information about nursing instructions for patient after upper GIT endoscopy. This result in agreement with *Amer et al. (2015)*[4]who found that most of nurses had unsatisfactory practice level considering discharge instructions.

Part III: relation between socio-demographic and total knowledge level:

Regarding to the relation between socio-demographic data and total knowledge of nurses. There was significant difference between education level and the total knowledge level, while there was no significant difference between age an experience in endoscopy unit and the total knowledge level. This

result agrees with study of *Gamal et al. (2005)*[13]and *Mohammed (2011)*[10] they reported that no statistically significant relation between nurse's scores for knowledge, with their years of experience.

Part IV: The nurse's total practice level:

According to the nurses total practice level the result reveals that the mostly of nurses had poor practice pre, during and post procedure and the majority of them had poor total practice level. This results in agreement with *Mohamad et al. (2014)*[14]who reported that most of study sample had poor practice level. In our point of view, all nursing staff providing care are encountered with the same circumstances such as large numbers of patients with shortage of staff, limited time, and lack of needed supplies regardless to their personal characteristics.

Part V: The relation between socio-demographic and practice level:

The result illustrated that there were significance difference between age and practice (pre procedure) .While there was no statistically significant difference between experiences in endoscopy, level of education and practice level (pre procedure). This result disagree with *Amer et al. (2015)*[4]who declared that there was no statistical significance differences between nurses' age and practice, While there were statistically significant difference between years of experience and practice (pre procedure) .

The relation between socio-demographic data and practice level (during), the result represents that there was no statistically significant difference between practice level (during procedure) and age, experience in endoscopy and level of education. In the same line *Abd EL-Hakeim (2005)*[15] who stated that, there was no statistically significant difference between level of education and experience practice level (during procedure).

Regarding to the relation between socio-demographic data and practice level (post procedure), the result reveals that there was significant difference between practice level and the age and (post procedure), while there was no significant difference between practice level (post procedure) and experience in endoscopy and level of education. This result supported with *Abd EL-Hakeim (2005)*[15]There was no statistic significant difference between practice level (post procedure) and experience in endoscopy and level of education. This may be duo to our study reveal that the most of study sample who had poor practice were younger age which didn't work more time in the haematemesis unit so that they had less experience than older nurses.

There were no statistically significant difference between practice level and experience in endoscopy, level of education this may be due to most of the studied nurses had nursing diploma, and most of them had experience less 5 years.

Part VI: correlation between total practice level and total knowledge level.

According to the correlation between total practice level and total knowledge level, it reveals that was no significant correlation between total practice level and total knowledge level. These agree with *Amer et al. (2015)*[4] who noted that there was no significant correlation between the overall nurses' practice and the overall knowledge.

Conclusion:
This study concluded the following:

The majority of the nurse's knowledge and practice regarding to caring haematemesis patients undergoing upper GIT endoscopy are poor. There for establishing nursing guidelines are very important to improve the nurse's knowledge and practice.

Recommendation:
The results of the study led to the following recommendation:

- Periodic nursing education for nurses caring with haematemesis patients undergoing upper GIT endoscopy should be available in the haematemesis unit and replication of study on a large probability sample is very important.
- Annually monitoring of the nurse's knowledge and practice by nursing audits and supervisor to evaluate them.
- Activate continuous training program to refresh and update the nurse knowledge and practice.

References:
1. Wilkins, T., Khan, N., Nabh, A. &Schade, R. R. 2012. Diagnosis and management of upper gastrointestinal bleeding. American family physician.
2. Jairath, V. &Desborough, M. J. R. 2015. Modern-day management of upper gastrointestinal haemorrhage. Transfusion Medicine, 25: (6), 351-357.
3. Kovacs, T. O. G. & Jensen, D. M. 2010. Hematemesis. Practical Gastroenterology and Hepatology: Esophagus and Stomach. Wiley-Blackwell. 212-216.
4. Amer, W. M., Taha, N. M. &Zaton, H. K. 2015. Nurses Knowledge and Practice Regarding Gastrointestinal Endoscopy and Suggested Nursing Guidelines. Afro-Egyptian Journal of Infectious and Endemic Diseases.
5. Teoh, A. Y. B. & Lau, J. Y. W. 2012. Hematemesis and Melena. Textbook of Clinical Gastroenterology and Hepatology. Wiley-Blackwell. 126-131.
6. Salman, S. S. & Hassan, D. H. B. 2017. Effectiveness of an Instructional Program on Nurses' Knowledge concerning Preparation of Patients for Gastro-colonoscopy in AlHussein

Teaching Hospital at Al- Nasiriyah City. IOSR Journal of Nursing and Health Science, 06: (03), 102-109.

7. El-Sheikh, A. A. & Abed elsatar, O. A. 2011. The effect of implementing a control action plan for infection prevention at endoscopy unit. Egyptian Journal of Nursing, 1: (3), 64-84.

8. Ali, Z. H. &Taha, N. M. 2014. Effect of Infection Control Training Program on Nurse's Performance and Microbial Results on GIT Endoscop .Zagazig Nursing Journal, 10: (2), 163-180.

9. Gijare, M. 2012. Effectiveness of teaching on infection control practices among health care professionals. Sinhgad e Journal of Nursing, 2: (2), 5-9.

10. Mohammed, G. T. 2011. Infection control: Effect of a designed teaching protocol on Nurse's knowledge and practice regarding to hematemesis Patients, Master Degree in Adult Nursing, Faculty of Nursing in Assiut University. 13-14,79.

11. Moqbel, A. A., Shebl, A. M. &Soliman, H. M. 2015. Effectiveness of Planned Health Education Program on Nurses' Knowledge and Practice for Preventing Infection in Gastrointestinal Endoscopy Units at Major Hospitals in Yemen.

12. Mohamad, H. A., Mohamad, Z. & Sayed, Z. 2014.

13. Esophagogastroduodenoscopy Impact of a designed nursing teaching protocol on nurse's performance and patient's outcome. Journal of American Science, 10.

14. Gamal, L., Mohamed, K., Mohamed, R. &Shawer, O. 2005. Establishing standards for prevention of nosocomial infection in the recovery rooms and surgical ward at EL-Minia University hospital. For doctoral degree in critical care nursing, faculty of nursing Assiut University.

15. Mohamad, S. M. A. A. S. & Mohamad, Z. 2014. The Use of Expressive Arts Therapy in Understanding Psychological Issues of Juvenile Delinquency. Asian Social Science, 10

16. Abd EL-Hakeim, E. 2005. Suggested Nursing Guideline for OesophagealVarices Patients Undergoing Endoscopy. Aster Degree in Nursing Science, Ain Shams University, 44, 76-77,130-135.