

Factors Related to Nurse's Response Time in Management of Upper GI Bleeding among Chronic Liver Disease Patients

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Abstract

Background: In emergency care, the most important thing to note is the speed of nurses in responding or acting on the first patient who enters the emergency room. This speed is often referred to as response time. Nurse response time is always a measure of the service quality of a hospital or health center. Response times depend on the speed available as well as the quality of assistance to save lives and prevent infirmity. **Objectives:** Patients visiting to the hospital should be treated promptly and that leads to improvement in the quality of services and patient safety. The study aimed to determine the factors related to the response time of nurses in management of upper GI bleeding among chronic liver disease patients at Institute of Liver and Biliary Sciences, New Delhi, India.

Methods: Carrying out the research is from February to March 2022. Analytical survey design with a cross-sectional approach. The research subjects were 20 nurses. measuring tools, namely questionnaires. analysis used bivariate analysis used the Chi-Square Test.

Results: This shows that there is a relationship between education and response time with a value of p-value = .008, knowledge and response time with a value of p-value = .003.

Conclusion: The level of knowledge and clinical experience determines Nurses to make prompt decision and ability to provide assessment and nursing actions. As the Nurses getting higher education levels and experience also increasing, on average they remain engaged in their work for longer time, so they are more productive and nurses have attended more training to improve their skills.

Keywords: Response time; Management of upper GI bleeding; Factors; Emergency room; Nurses.

Introduction

Upper gastrointestinal bleeding (UGIB) is potentially life-threatening abdominal emergency that remains a common cause of hospitalization

and is defined as haemorrhage that involves the mouth to the duodenum proximal to the ligament of treitz(Tielleman et al., 2015)¹.

One of the factors that influence the success

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of medical treatment for emergency patients is the speed of providing adequate assistance to emergency patients. Emergency patient care plays a very important role. As the front door of the hospital, the emergency department must be able to provide fast and precise assistance for patient safety. What is meant by emergency services is a part of medical services needed by a patient immediately to save his life. The health Unit that organizes the emergency services is called by the name of the ER (Maatilu, Vitrise, et al., 2014)².

In emergency management, there is a philosophy, namely Time-Saving it's Live Saving. This means that all actions taken during an emergency must be truly effective and efficient. This reminds us that patients can lose their lives in a matter of minutes. Stopping breathing for 2-3 minutes in humans can result in fatal death (Purba, Dewi E., et al., 2015)³.

In emergency care, the most important thing to pay attention to is the speed of nurses in responding or acting on patients for the first time they enter the emergency room installation room. This speed is often referred to as the response time. The response time of the nurse is always a measure of the quality of service in a hospital.

The response time of health workers concluded that 67.5% of nurses were less responsive to their duties in the emergency field and felt that their burden was heavier than officers in other workrooms/units, 80.0% of nurses were less responsive to their duties because of the facilities and supporting facilities available at the medium category because there are still facilities and equipment whose quantity and quality should not be by standards, 77.5% of nurses are not responsive to emergencies due to the lack of quality service procedure standards. Response time or timeliness given to patients who come to the ER requires standards according to their competence and abilities so that they can guarantee an emergency treatment with a fast response time and proper handling (Naser, Rima W. A. M., et al., 2014)⁴.

In a previous study the response time of nurses in handling emergency patients at the IGD of Prof. Dr. RD Kandou Manado, the results showed that most nurses had a response time of > 5 minutes as many as 17 (56.7%). Statistical analysis showed no association

between education ($p = .0084$), knowledge ($p = 1.000$) with response time nurses (Maatilu, Vitrise, et al., 2014)².

Materials and Methods

Study Design: This research method used quantitative research with an analytic survey design with a cross-sectional approach aimed at Identification of the relationship between age, gender, marital status, education, level of knowledge and working experience in emergency department with response times from nurses in management of upper GI bleeding among chronic liver disease patients.

Setting: This research was conducted at the Institute of Liver and Biliary Sciences, New Delhi, India.

Research Subject: The population in this study were all nurses in the emergency room of Institute of Liver and Biliary Sciences, New Delhi, India. The sampling technique used in this study was to use a total sampling of 20 samples.

Instruments: This research data is primary data which was directly obtained from respondents, data was collected using observation checklist to directly assess how the response time of nurses in management of upper GI bleeding among chronic liver disease patients, as well as a questionnaire given to nurses as respondents, and the questionnaire was filled in by the respondent himself after receiving an explanation from researchers. The instruments used in this research were questionnaires related to age, gender, marital status, education, level of knowledge and working experience in emergency department. Direct observations made by researchers by the help of observation checklist. This checklist consisted of items including: Primary Assessment, Resuscitation and stabilization, History collection and health assessment, Supportive Treatment, and Transfer Out (to GI bleed Ward /Endoscopy Room/ICU). The response time was measured in minutes by the researcher by using observation checklist.

Validity: In order to measure the content validity index, criteria to evaluate the tool 1, 2 were submitted to seven experts from the field of Medical Surgical Nursing and Hepatologists. The experts were requested to review and verify these items for

relevance, representativeness, comprehensiveness, clarity, ambiguity and simplicity. Comments and suggestions were incorporated and suggested modifications for the items were made to prepare the final draft of the tools. CVI index ranged between 0.85 to 0.95.

Reliability: In order to establish the reliability of Observation checklist, inter-rater reliability was calculated. Observation of nurses' response time was simultaneously done by the investigator and emergency room sister in-charge of PSRI Hospital on the nursing teams attending to three chronic liver patients visiting emergency room with upper GI bleeding. The inter-rater reliability of Observation Checklist was found to be 1.

Pilot study: The pilot study was applied on three nurses (10%) of the study sample to test the applicability of tools, arrangement of items, and to estimate the time needed for each tool and for testing the feasibility of research process.

Data Analysis: All collected data were organized, categorized, tabulated, entered, and analyzed by using computer SPSS, (Statistical Package for Social Sciences), soft-ware program version 20. In this study, researchers used the following analysis: **Univariate Analysis:** Descriptive analysis was used to determine the distribution and percentage of each variable. **Bivariate Analysis:** To see the relationships between independent and dependent variables using statistic Chi-Square, with a significance value of p-value < .05 means that if p-value < .05.

Ethical Consideration: An official permission was obtained from the Institutional Ethics Committee, Institute of Liver and Biliary Sciences before conducting the study. The clinical trial, NCT05207410, was registered with ClinicalTrials.gov, and the protocol receives the ethical approval from the Institutional Review Board Services (IRB): F15(2/2.25)/2017/HO(M)/ILBS, College of Nursing Ethics Committee, Institute of Liver and Biliary Sciences, New Delhi. Additional written consent was obtained from the nurses and they were assured that the information would be used for research purpose only (confidential).

Results

The research was conducted in the emergency room of Institute of Liver and Biliary Sciences, New Delhi, India Year 2022, these results were obtained through the distribution of questionnaires to the respondents, a nurse who works in the emergency room.

Univariate Analysis: Age, gender, marital status, education, level of knowledge working experience in emergency department, and Response Time

Based on the research results, it can be seen that the characteristics of the respondents according to the age, gender, marital status, education, level of knowledge, working experience in emergency department, and Response Time can be seen in the table 1:

Table 1. Distribution of Nurses by the age, gender, marital status, education, working experience in emergency department, and Response Time in the Emergency Room.

Characteristic of Nurses	Frequency (f)	Percentage (%)
Age in years		
<30	01	05
31-40	10	50
41-50	09	45
Total	20	100
Gender		
Male	14	70
Female	06	30
Total	20	100
Marital Status		
Single	02	10
Married	18	90
Total	20	100
Education		
Diploma in General Nursing and Midwifery	13	65
Bachelor of Science in Nursing	07	35
Total	20	100
Level of knowledge		
Good	14	70

Continue.....

Less	06	30
Total	20	100
Working Experience in Emergency Room		
3 months - 1 years	01	05
>1 years	19	95
Total	20	100
Response Time		
<5 minutes	16	80
>5 minutes	04	20
Total	20	100

Sources: Primary Data of Questionnaire, 2022.

The table 1 shows that 1 (5.0%) nurse were less than 30 years, 10 (50.0%) were in the age group of 31-40 years and the remaining 9 (45.0%) nurses were in the age group of 41-50 years. Fourteen (70.0%) nurses were males, the remaining six (30.0%) were females. Most of the nurses i.e., 18 (90.0%) were married and 2 (10.0%) were single marital status.

The table 1 shows that the education level of Emergency Room nurses are Diploma in General Nursing and Midwifery, namely as many as 13 (65.0%), and Bachelor of Science in Nursing are 07 (35.0%).

The table 1 shows that the respondents have a good level of knowledge, namely 04 (20.0%). And those who have less knowledge are 16 (80.0%). In providing emergency service assistance, officers must have 3 elements of readiness, including the readiness

of knowledge and skills because they are closely related to direct rescue efforts for patients (Maatilu, Vitrise, et al., 2014)².

The table 1 shows that the working experience in the Emergency Room is more than 1 years, namely as many as 19 people (95.0%). Meanwhile, those who were less than 3 months - 1 years old were also 1 people (05.0%).

The table 1 shows that most of the nurses in the Emergency Room have a response time of more than 5 minutes, with as many as 4 (20.0%) respondents. And those who have a response time <5 minutes are 16 (80.0%). This illustrates that the response time of nurses in the Emergency Room of Institute of Liver and Biliary Nurses is a little slow, which is more than 5 minutes. Response time (response time) of nurses in the management of emergency patients that is prolonged can reduce patient rescue efforts. Wilde, 2012 has proven the importance of response time even in patients other than those with heart disease. The response time mechanism, in addition to determining the extent of damage to internal organs, can also reduce the burden of financing¹¹.

Bivariate Analysis: Analysis of the relationship between nurse age, gender, marital status, education, level of knowledge, working experience in emergency department, and Response Time of nurses in management of upper GI bleeding among chronic liver disease patients in Emergency Room can be illustrated in the following table 2:

Table 2. The Relationship between Nurse age, gender, marital status, education, level of knowledge, working experience in emergency department, and Response Time of nurses in management of upper GI bleeding among chronic liver disease patients in Emergency Room.

Variables	Response Time				p-value
	> 5 Minutes		< 5 Minutes		
	Frequency (f)	Percentage (%)	Frequency (f)	Percentage (%)	
Age in years					
<30	01	05	00	00	.168
31-40	00	00	10	50	
41-50	03	15	06	30	
Gender					
Male	02	10	12	60	.090
Female	02	10	04	20	

Continue.....

Marital Status					
Single	00	00	02	10	.734
Married	04	20	14	70	
Education					
Diploma in General Nursing and Midwifery	04	20	09	45	.008
Bachelor of Science in Nursing	00	00	07	35	
Level of knowledge					
Good	03	15	11	55	.003
Less	05	25	01	05	
Working Experience in Emergency Room					
3 months - 1 years	00	00	01	05	.520
>1 years	04	20	15	75	

Sources: Primary Data of Questionnaire, 2022.

Based on the results of statistical tests, it showed a p-value of .008, which means that there is a significant relationship between nurse education and nurse response time in management of upper GI bleeding patients. In assessing the skills of a person, in this case, the response time of the nurse, this is the motivation of the nurse to practice the work skills obtained from their education. Many factors influence job performance, these factors include ability factors and motivation factors. Motivation is the willingness or desire within a person who encourages him to act (Jamal, et al., 2021)⁵.

Meanwhile, research conducted by Wahida Wahida & Gusriani Gusriani, 2022 on factors related to the quality of nursing services states that there is a relationship between the level of nursing education and the quality of nursing services⁶.

Based on the results of the chi-square analysis, it showed a p-value of .003, there is a significant relationship between the knowledge of nurses and the response time of nurses in management of upper GI bleeding patients.

The results of this study are in line with the research of Hasmoko, 2008, regarding the analysis of factors that affect the clinical performance of nurses based on the application of the hospital clinical performance management development system. It shows that knowledge affects the clinical performance of nurses⁷.

Discussion

Education Relationship with Response Time

Based on the results of the study showed that the education level of Emergency Room nurses in Diploma in General Nursing and Midwifery was 13 (65.0%), and Bachelor of Science in Nursing were 07 (35.0%). This is not in line with the research of Ganida, Annissa Putri, 2017, whose statement is that the majority of nurses who serve in the IGD Deli Serdang Hospital have a D3 nursing education⁸.

According to SITORUS, 2011 although Diploma III program graduates are also referred to as novice professional nurses who already have sufficient professional attitudes to master nursing knowledge and professional skills which include technical, intellectual, and interpersonal skills and are expected to be able to carry out professional nursing care based on care standards. nursing and nursing ethics⁹. However, nursing education must be developed in higher education so that it can produce graduates who have professional attitudes, knowledge, and skills to carry out their roles and functions as nurses.

The results of statistical tests showed that there is a significant relationship between nurse education and nurse response time in management of upper GI bleeding patients. In assessing a person's skills, in this case, the nurse's response time, could be influenced by other factors. This situation depends on the nurse's motivation to practice the work skills that are obtained from their education.

This is in line with the research of Maatilu, Vitrise, et al., 2014 on factors related to the response time of nurses in handling emergency patients in the ER at Prof. Dr. RD Kandau Manado, who said there was no relationship between nurse education and nurse response time in handling emergency patients².

The results of the researcher's findings are in line with Rondeau, 1992 theory which states that one's education has a high influence on employee performance¹⁰. According to Wahida Wahida & Gusriani Gusriani, 2022 the level of education of an organization's employees also greatly affects the quality of an organization, the higher the employee's education, the higher the quality that will be produced⁶.

The results of the researcher's findings are in line with Jamal, et al., 2021 which states that there is a significant relationship between nurse education and nurse response time in handling emergency patients with a value of p-value = .013.⁵

Knowledge Relationship with Response Time

Based on the results of the study showed that the respondents had a good level of knowledge, namely as many as 14 (60.0%). The results of the chi-square analysis showed that there was a significant relationship between the knowledge of nurses and the response time of nurses in management of upper GI bleeding patients.

The results of the researcher's findings are in line with Jamal, et al., 2021 which states that there is a significant relationship between knowledge of nurses and nurse response time in handling emergency patients with a value of p-value = .001⁵.

The results of this study are in line with the research of Hasmoko (2008), regarding the analysis of knowledge factors that affect the clinical performance of nurses based on the application of the hospital clinical performance management development system, showing that knowledge affects the clinical performance of nurses⁹.

Conclusions

The level of knowledge and clinical experience determines Nurses to make prompt decision and ability to provide assessment and nursing actions.

As the Nurses getting higher education levels and experience also increasing, on average they remain engaged in their work for longer time, so they are more productive and more training can improve their clinical practice.

A lack of experience may hinder a clinician's capacity to reason, think, and make decisions that will enable them to deliver safe, high-quality treatment. Continuous learning and performance review are essential to a nurse's expert performance.

The high-performance expectation of nurses is dependent upon the nurses' continual learning, professional accountability, independent and interdependent decision making, and creative problem-solving abilities.

Owing to the topic's significance, it is imperative to encourage the creation of more research aimed at identifying the variables associated with response time. This will allow for a scientifically proven knowledge of what can be done to reduce it.

Contributions: "Conceptualization, Shashi Prakash.; methodology, Shashi Prakash.; software, Shashi Prakash. and Dr. Guresh; validation, Dr. Shasthry S M., Dr. Ankur Jindal., Dr. Abhijeet Ranjan., D. L. Suhasini Agrahari., Vijay VR., Tarika Sharma. and Sarita Ahwal.; formal analysis, Shashi Prakash.; investigation, Shashi Prakash.; data curation, Shashi Prakash., Madhavi Verma., Dr. Shasthry S M.; writing—original draft preparation, Shashi Prakash.; writing—review and editing, Shashi Prakash.; supervision, Madhavi Verma. and Dr. Shasthry S M.; project administration, Shashi Prakash.; Final approval: Shashi Prakash., Madhavi Verma. and Dr. Shasthry S M.

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Conflicts of Interest: The authors declare no conflict of interest.

Appendix 1. Observation Checklist

Observation checklist to assess the response time of nurses regarding management of upper GI bleeding

Instructions:

The purpose of this section is to assess the response time of Nurses related to management

of Upper GI bleeding. The observer completes by placing a tick (✓) in the appropriate space and in Time and Response Time write duration in minutes.

S. No.	Nurses' Practice	Done correct / Complete	Done incorrect / Incomplete	Not Done	N/A	Time	Response Time
I	Receive the patient						
II	Primary Assessment						
1.	Assesses for patency of Airway						
2.	Assesses Breathing: resp. rate, accessory muscle use, air entry, SpO ₂						
3.	Check's pulse						
4.	Checks BP						
5.	Checks for the Temperature						
6.	Identifies emergency signs and symptoms (hypotension, bradycardia, tachycardia, dyspnoea, weak and thready pulse. Shock, altered level of consciousness) and documents						
7.	Assesses GCS						
III	Resuscitation/Stabilisation						
8.	Establishes two large bore IV cannula						
9.	Collect blood specimen						
10.	Arranges blood for grouping and crossmatching						
11.	Arranges fresh frozen plasma if bleeding coagulopathies						
12.	Infuses I/V fluids as prescribed						
13.	Initiates continuous cardiac monitoring						
14.	Initiate's oxygen therapy						
IV	History collection & health assessment						
15.	Asks for if patient has previous hospitalization and past major illness.						
16.	Vital sign monitoring 15-minutes or 2 hourly.						

17.	Gathers appropriate patient history						
	Alcohol intake						
	Complementary alternative medicine						
	Antitubercular drugs						
	Mental confusion						
	Pain abdomen						
	Gall bladder stones						
	Any known medical history like, cirrhosis, Hepatitis, CLD, peptic ulcer disease, Ascites, malena, hematochezia, bleeding coagulopathies.						
18.	Assesses and documents vomitus for:						
	Bright red or coffee colour ground granules						
	Amount of vomitus						
19.	Assesses and documents skin for icterus/cyanosis						
20.	Assesses and documents for presence of ecchymosis/petechiae						
21.	Assesses bowel sounds						
22.	Assesses abdominal mass						
V	Supportive Treatment						
23.	Ensures Nil by Mouth (NBM)						
24.	Monitors vital signs two hourly (BP, HR, RR, T, SpO2)						
25.	Monitors neurological status GCS						
26.	Assesses pain						
27.	Maintains good oral hygiene						
28.	Monitor's hourly intake output						
29.	Insert nasogastric tube for decompression						
30.	Conduct lavage if prescribed (ensure left lateral position)						
31.	Checks blood glucose level						
32.	Takes 12 lead ECG tracing						

33.	Documents nursing interventions and condition of the patient						
VI	Transfer out						
34.	Ward ICU Endoscopy						

Scoring

- Total possible item is 34
- Total possible score is 34

Therefore, the scoring would be

Percentage of Total score
34-Not applicable

Minimum possible score is zero.

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