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**FACTORS ANALYSIS THE CAUSE OF THE INCIDENT OF
CONSTIPATION AMONG STROKE PATIENT IN THE WARD
AT DR SLAMET HOSPITAL GARUT.**

FULL TEXT ARTICLE

by:

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**FAKULTY OF NURSING
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Abstract

The incidence of complication especially constipation among stroke patients was so much. It cause discomfort during hospitalization. During the stroke patient was treated at the hospital, some patients experienced some limitations both physically and mentally. Those limitations encourage high incidence of complications of constipation, especially in patients who experience immobility in bed. The aim of the study was to identify the most dominant factor that cause constipation in stroke patients

The type of research was correlation analytic design. This study used cross sectional design for data collection on constipation causative factors (diet, fluids, and exercise) and the incidence of constipation. The sample size in the study was 40 samples of stroke patient who treated in dr Slamet Hospital. The analysis of univariable, bivariable and multivariable analysis was used.

Stroke patients mostly aged between 41-60 years. Nearly half have constipation. Nearly half dietary fiber was in poor condition. Almost half of fluid was in poor condition. More than half exercise was in the poor category. There was a significant relationship between constipation with dietary intake with ρ value of 0.004 ($\alpha < 0.05$). There was a significant relationship between constipation with exercise with ρ value of 0.034 ($\alpha < 0.05$). There was a significant relationship between constipation with fluid with ρ value of 0.019 ($\alpha < 0.05$). Dietary factors, fluid and exercise lead to constipation, but a more dominant cause of constipation is dietary fiber with value $p = 0.105$ and OR of 8.3.

To prevent constipation and maintain a normal defecation process in stroke patients should consume enough fluids, exercise regularly and mainly dietary fiber intake is sufficient. For nurses and other health care team should consider the needs of each dietary fiber and fluids are also trained in stroke patient exercise regularly

CHAPTER I

INTRODUCTION

1.1. Background

Along with the development of disease is shifted from infectious diseases to non-communicable diseases or degenerative diseases. This problem is happening all over the world since a couple of decades ago, and broad impact of physical and socio-economic. The epidemiological transition as a result of the demographic transition, leading to degenerative diseases occupies a fairly high proportion of the causes of high mortality and disability. Stroke itself is one of vascular diseases that have an effect on the central nervous system. Based on the data in the U.S. showed that stroke is the third leading cause of death besides heart disease and cancer. Each year approximately 700,000 people suffer a stroke, 500,000 cases are first attacks and 200,000 cases are repeated attacks. In 2002, 275,000 people died from stroke or 1 out of 15 deaths in the U.S. due to stroke (American Heart Association, 2005, Stroke Statistics, ¶ 1 <http://www.Strokecenter.Org/pat/ais.htm>, acquired on 26 October 2011).

In the pathophysiology of stroke occurs due to damage to the blood vessel walls in the brain. Most of the damage was caused due to the narrowing of the blood vessels in the brain caused by the factors of age, gender, hypertension, hyperglycemia, hypercholesterolemia, and smoking personality (Nurhayati, 1998 in Tyas, 2000: 3). Risk factors that have been identified previously can be hypertension, diabetes mellitus, and history of previous stroke, obesity and smoking. Beside that there are several factors associated with stroke is suspected, such as alcohol, hormonal contraceptives, trauma and herpes zoster. There are a couple of other stroke risk factors that can be mentioned include age, race (blacks is higher than whites), sex (males higher risk of stroke compared with women), previous heart disease, atrial fibrillation, cholesterol and triglycerides (Bustan, 2000).

An estimated 500,000 people Indonesia contracting of stroke each year, approximately 125,000 people (2.5%) died, and the rest is mild or severe disability. The number of stroke patients are likely to increase, not only the elderly, but also by those who are young and productive (Suyono, 2006, Yastroki the matter of stroke in Indonesia, ¶ 1, <http://.yastroki.or.id> obtained on 26 October 2011). Based on the age group, in Indonesia stroke survivors most are

productive age groups. If mortality and disability can be overcome then the stroke patient can resume a productive career. Prevent and overcome stroke is good, fast and precisely, meaning it can overcome the loss of human resources potential in Indonesian society. In 2006, Indonesia ranks first stroke of 10 diseases were the leading cause of death in the 4377 cases of hospital death (2007, Indonesia's health profile). Andardi (1993) estimated that in urban areas (urban), the incidence of stroke by about 300 per 100,000 populations per year. While the results of population studies conducted in rural areas in West Java found the incidence of stroke by 51.12 per 100,000 per year. The case of a stroke in 2005 that treated in hospital in West Java age > 65 years was 2446 cases (2.77%) of the total 36,755 cases, while at the age of 45-64 years was 3544 cases (4.31%) of the total 88,295 cases. In 2005 the first stroke was the leading cause of death in the existing hospital in West Java at the age of > 65 years the number of cases of 460 cases (12.76%) of the total 2169 cases of death while in the age of 45-64 years was 812 cases (22.52 %) of the total 3606 cases of death (2006, West Java Health Profile). In 2011 cases of stroke outpatient Hospital was in West Java, age > 65 years there had been 3753 cases (4.32%) of the total 86,892, while the age of 45-64 years was 3121 cases (1.29%) of the total 242,562 cases (2006, West Java Health Profile).

Based on the results of a preliminary study, found that the incidence of complication especially constipation among stroke patients was so much. It cause discomfort during hospitalization. During the stroke patient was treated at the hospital, some patients experienced some limitations both physically and mentally. Those limitations encourage high incidence of complications of constipation, especially in patients who experience immobility in bed. Thus family is very important to support stroke patients during care (Kosasih, 2011). This complication could have been prevented if the medical team who care for stroke patients has a strong commitment to provide the best service for stroke patients.

1.2. Formulation of the problem

Based on these data revealed that the research question in this study is what factors are causing the incidence of constipation among Stroke Patients in the ward of Dr. Slamet Garut hospital.

1.3.The purpose of research

1.3.1. General Purpose

To identify the most dominant factor that cause constipation in stroke patients

1.3.2. Special purpose

1.3.2.1.Find a picture of stroke patients treated in Dr. Slamet Garut hospital.

1.3.2.2.Knowing the relationship between diets with the incidence of constipation among stroke patients treated in Dr. Slamet Garut hospital

1.3.2.3.Knowing the relationship between exercises with the incidence of constipation among stroke patients in dr. Slamet Garut hospital.

1.3.2.4.Knowing the relationship between the fluids with the incidence of constipation among stroke patients treated in dr. Slamet Garut hospital.

1.3.2.5.Knowing the most dominant factor causing the incidence of constipation in stroke patients treated in dr. Slamet Garut hospital.

1.3.3. Benefits of the research

1.3.3.1.Theoretical benefits

The results of this study can be used as inputs of the factors that cause constipation in patients with stroke, especially in West Java.

1.3.3.2. Practical benefits

As consideration for the health team who care for stroke patients in preventing constipation in patients with stroke.

CHAPTER II

LITERATURE REVIEW

2.1. Basic Concepts of Stroke

2.1.1. Definition of Stroke

Stroke can be defined as a neurological deficit of sudden onset that has lasted 24 hours as a result of Cerebral Vascular Disease (Hudak et al, 1996: 254). "Stroke is a condition caused by an interruption of blood circulation in the brain that causes the death of brain tissue, resulting in a person suffering from paralysis or death" (Batticaca, 2008). "Stroke is a loss of brain function caused by interruption of blood supply to the brain" (Smeltzer et al, 2002:2131). Of the three terms of the above it can be concluded that stroke is a neurologic disorder that occurs suddenly due to an interruption of blood supply to the brain that occurs in cerebral blood vessels.

2.1.2. Classification of Stroke

According to Batticaca (2008) explains that stroke can be divided into two types: Ischemic stroke (ischemic stroke) and bleeding Stroke (Hemorrhagic Stroke).

2.1.2.1. Ischemic Stroke

Occurs when the blood supply to the portion of the brain is reduced. The cells are deprived of oxygen will not function properly. Ischemic stroke will cause the death of brain cells that cannot be recovered. The damage was called cerebral infarction often occurs at night until morning.

2.1.2.2. Hemorrhagic Stroke

The attacks often occur at the age of 20-60 years and usually occurs after physical activity or because of psychological (mental). Hemorrhagic stroke divided two parts: intracerebral hemorrhage (PIS) and subarachnoid hemorrhage (PSA).

2.2. Signs and Symptoms

Signs and symptoms of stroke as follows:

- a. The attack neurologic deficit / fatal paralysis, such as hemiparesis, which paralyzed after body right or left alone.
- b. Numbness or numbness next to the body, feels tingling, feels like a burning chili hit.
- c. Mouth oblique, tongue deviation when straightened.

- d. It's hard to swallow, drink like choking.
- e. Talk so silly
- f. Difficult language, spoken words are not satisfactory or speech disorders. Form pelo, nasal, and his words cannot be understood or not understood (aphasia).
- g. Talk is not smooth, broken only words were spoken.
- h. Talk is meaningless and frivolous
- i. Not understanding the speech of others
- j. Not able to read and write and do not understand the writing
- k. Walking becomes difficult, small steps
- l. Cannot count, decreased intelligence
- m. Forgetfulness (dementia)
- n. Vertigo (dizziness, headache), or whirling sensation that persisted when no activity
- o. Visually impaired, partially invisible visual field, visual disturbances without pain, double vision or momentary dark (hemianopsia)
- p. Deaf or hearing loss one ear
- q. Being prone to tears and laughter
- r. Eyelids difficult to open or fall
- s. Lots of sleep, always going to bed
- t. Uncoordinated movements, loss of balance, staggering or loss of coordination door body
- u. Disorders of consciousness to coma fainting

2.3. Etiology

Stroke is usually caused from one of the four events:

- a. Thrombosis: a blood clot in the blood vessels of the brain or neck. Cerebral circulation and slowing atherosclerosis is the leading cause of cerebral thrombosis which is the most common cause of stroke.
- b. Cerebral embolism: a blood clot or other material brought to the brain from other parts of the body.
- c. Ischemia: decreased blood flow to the brain area.
- d. Cerebral hemorrhage: rupture of cerebral blood vessels with bleeding into the brain tissue or the space around the brain. The result is a cessation of blood supply to the brain that

causes temporary loss or permanent movement, thinking, memory, speech, or sensation (Smeltzer, 2001).

2.4. Impact of Stroke

The impact of further stroke affect quality of life. As a result of stroke is determined by the part of the brain injury, but the changes that occur after stroke, both of which affect the right or left brain, in general, is paralyzed, mentally changes, communication disorders, emotional disturbances, and loss of sense of taste.

2.4.1. Paralyzed

Paralysis next part of the body (hemiplegia) is the most common disability due to stroke. When a stroke attack the left side of the brain, there was right hemiplegic. Facial paralysis occurs from the right side to the right leg, including the throat and tongue. If the right part of the brain is affected, it is the hemiplegic left. If the impact is lighter, usually the affected perceived not powered (right hemiparesis). Hemiparesis hemiplegic stroke patients or would have difficulty carrying out daily activities such as walking, dressing, feeding, or controlling or small bowel.

2.4.2. Mental Changes

After a stroke it can be an interruption in the power of thought, awareness, concentration, learning ability, and other intellectual functions. Sometimes the patient's were anger, sadness and helplessness often demoralizing emotional impact of his life so that it appears more dangerous. This is because the patient has lost certain abilities that were previously done such eloquent: agnosia, ataxia, apraxia, spatial distortion.

2.4.3. Communication Disorders

A quarter of all stroke patients experience a communication disorder related to listening, speaking, reading, writing and even sign language by gestures.

2.4.4. Emotional Disturbance

Generally patients are not able to independently any longer, most have difficulty controlling emotions. Patient's easy to feel scared, anxious, angry, and sad for their physical and mental deficiencies. Suffering is very common in stroke patients is depression signs of clinical depression include difficulty sleeping, loss of appetite, lethargy, and socially withdrawn, irritable, fatigue, self-loathing and suicidal thoughts. Depression as this can hinder healing can even lead to death by suicide.

2.4.5. Loss of Sense of Taste

Stroke patients may lose the ability to feel the sense of touch sensory stimulation or the distance.

2.5. Factors Affecting defecation

2.5.1. Age

Age not only affects stool characteristics, but also the controlling. Children are not able to control its elimination through the neuromuscular system develops, usually between the ages of 2-3 years. Adults are also changing experience that can affect the process of gastric emptying. Among these are atony (loss of normal muscle tone) of the smooth muscles of the colon that can result in slowing peristalsis and hardening (drying) feces, and decreased tone of the abdominal muscles that also reduce the pressure during the emptying of the stomach. Some adults also decreased muscular control of sphincter ani which may impact on the process of defecation.

2.5.2. Diet

The food is the main factor affecting the elimination of feces. Adequacy of cellulose, fiber in foods, it is important to increase the volume of stool. Certain foods in some people are difficult or cannot be digested. The inability will have an impact on gastrointestinal disorders. Eat regularly affect defecation. Irregular eating can interfere with the regularity of bowel habit. Individuals who eat at the same time each day will have a regular timing and physiological response to food intake patterns and regularities in the colonic peristaltic activity as well.

2.5.3. Fluid

Fluid intake also affects fecal elimination. When adequate fluid intake or expenditure (eg, urine, vomit) are over for some reason, the body continues to reabsorb water from chyme as he passed along the colon. The impact chyme becomes drier than normal, resulting in a hard stool. In addition the reducing of fluid intake to slow the chyme along the intestinal tract, thereby increases the reabsorb of fluid from the chyme.

2.5.4. Muscle tone

Tone abdominal, pelvic muscles and diaphragm are essential for defecation. Also stimulates peristaltic activity that facilitates the movement of chyme along the colon. Weak muscles that are often not effective in increasing intra-abdominal pressure during defecation or

bowel control. The muscles are weakened as a result of reduced training (exercise), immobility or impaired nerve function

2.5.5. Factors Psychology

It can be seen that stress can affect bowel movements. Certain diseases including chronic diarrhea, such as ulcer on colitis, may have a psychological component. It was known that some people are anxious or angry can increase the peristaltic activity and frequency of diarrhea. Plus a depressed person can slow intestinal motility, resulting in constipation.

2.5.6. Lifestyle

Lifestyle affects fecal elimination in several ways. Defecation training at an early time will cultivate the habit of defecation at a regular time, like every day after breakfast, or can be used on an irregular bowel habit. Availability of toilet facilities, anxiety about the smell, and the need for privacy also affect the pattern of fecal elimination. Clients who shared a room with another person at a hospital may not want to use a bedpan because of privacy and worries will scent.

2.5.7. Drugs

Some medications have side effects that can interfere of normal elimination. Some causes of diarrhea; others like large doses of certain tranquilizers and procedures followed by the provision of morphine and codeine, causing constipation. Some drugs directly affect elimination. Laxative is a drug that stimulates bowel activity and facilitates the elimination of feces. These drugs soften the stool, facilitate defecation. Certain medications such as dicyclomine hydrochloride (Bentyl), suppresses the activity of peristalsis and is sometimes used to treat diarrhea.

2.5.8. Diagnostic Procedures

Diagnostic procedures, such as sigmoidoscopy, required so that no food and liquids after midnight in preparation for the examination, and often involve enemas prior to the examination. In this action the client usually will not defecate normally until he was allowed to eat. Barium (used in radiology) produces further problems. Barium hardened feces if it remains in the colon, causes constipation and sometimes an impaction.

2.5.9. Anesthesia and surgery

General anesthesia causes movement of the normal colonic stimulus decreased parasympathetic inhibition in colon muscles. Clients who received local anesthesia will

experience something like that, too. Which directly involves intestinal surgery can cause temporary cessation of intestinal movement. It is called paralytic ileus, a condition that usually ends 24-48 hours. Hearing the sound of the intestines which reflect intestinal motility is an important issue in the management of post-surgical nursing.

2.5.10. Painful

Clients who experience discomfort such as post-surgical bowel hemorrhoid usually frequent urge to defecate to avoid pain. Clients such as these will have constipation as a result.

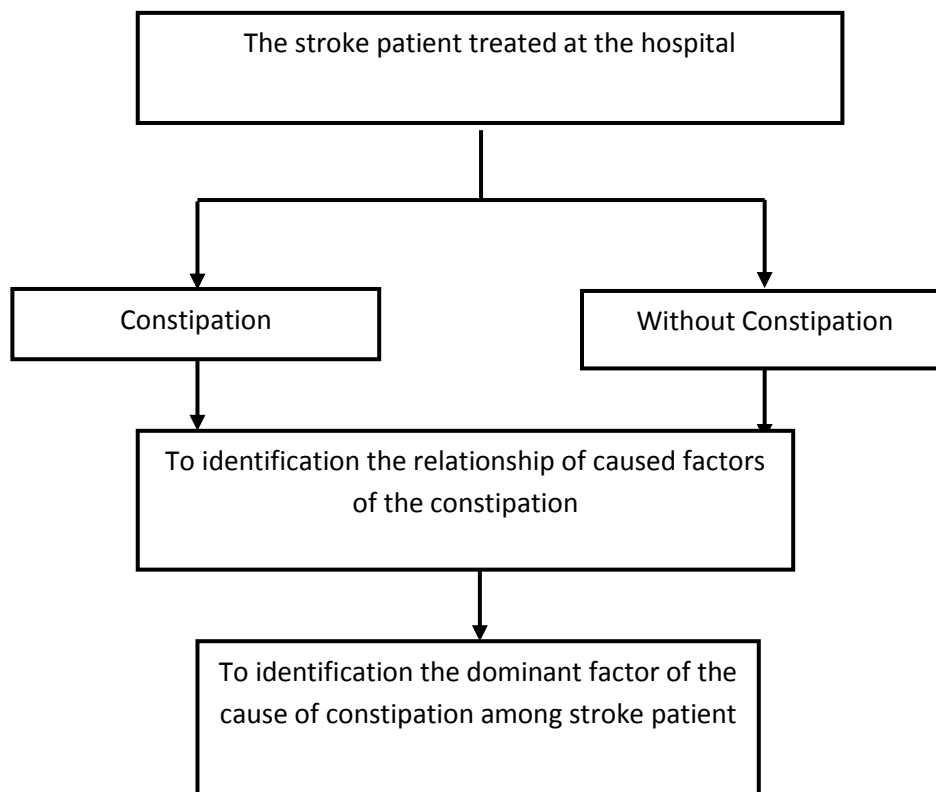
2.5.11. Irritant

Substances such as spicy foods, toxin bacteria and toxins can irritate the intestinal tract and causes diarrhea and often lead to flatus.

2.5.12. Impaired sensory and motor nerve

Injury to the bone marrow and the back of the head can reduce sensory stimulus for defecation. Impaired mobility can limit the client's ability to respond to the desire of defecation when he cannot find a toilet or get help. As a result, clients may experience constipation. Or a client may have fecal incontinent due to less functionality of spinkter ani.

2.6. Kerangka Konsep



2.7. The research hypothesis:

Ho1: There is no relationship between the diet with the incidence of constipation in patients are treated in dr. Slamet Garut hospital.

Ha1: There is a relationship between the diet with the incidence of constipation in patients are treated in dr. Slamet Garut hospital.

Ho2: There is no relationship between the exercise with the incidence of constipation in patients are treated in dr. Slamet Garut hospital.

Ha2: There is a relationship between the exercise with the incidence of constipation in patients are treated in dr. Slamet Garut hospital.

Ho3: There is no relationship between the fluid with the incidence of constipation in patients are treated in dr. Slamet Garut hospital.

Ha3: There is a relationship between the fluid with the incidence of constipation in patients are treated in dr. Slamet Garut hospital.

CHAPTER III

METHODS

3.1. Research Design

The type of research was correlation analytic design. This study used cross sectional design for data collection on constipation causative factors (independent variables) and the incidence of constipation (dependent variable) to be performed on a single observation.

3.2. Operational Definition

3.2.1. Diet

The definition of diet in this study is the number of foods consumed by stroke patients during hospitalization. The food consists of the number of calories consumed and the levels of fiber consumed. Measurement scale in the form of a nominal scale is a good diet if the number of calories consumed and fiber content according to the needs of the body, while bad diet if the number of calories consumed and less fiber than your body needs.

3.2.2. Fluid

The fluid in this study is an amount of water consumed by stroke patients during the day. Measurement scale nominal scale is good if the amount of water consumed by the stroke patients and the amount of fluid that comes out balanced while bad if the amount of fluid consumed by stroke patients do not correspond to the amount of fluid that comes out.

3.2.3. Exercise

Exercise in this study were sporting activities undertaken by stroke patients in a bed in the form of exercises range of motion (ROM), both active and passive. Measurement scale nominal scale is be good if the day of stroke patients perform ROM exercises regularly while bad if stroke patients do not exercise or perform a ROM irregular.

3.3. Population and Sample

3.3.1. Population

Population affordable in this study was all patients with a medical diagnosis of stroke were hospitalized in Cempaka ward dr. Slamet Garut.

3.3.2. Sample

The samples in this study were all patients with a medical diagnosis of stroke were hospitalized in Cempaka ward dr Slamet Garut hospital that meet the inclusion and exclusion criteria and were willing to follow the study by signing a consent form (informed consent). Sampling in this study using the technique of Non-Probability Sampling was Consecutive Sampling. Consecutive Sampling Techniques is a collection or sample selection by assigning each patient who met the inclusion criteria, included in the study until the period of time set by the researcher, so that the required number of respondents satisfied (Sastroasmoro & Ismael, 2010).

1) Criteria for inclusion:

- (1) The patient was conscious, was upheld by a physician diagnosis of stroke in a hospital Cempaka
- (2) In hemodynamically stable condition.
- (3) Able to communicate well.
- (4) A stroke or recurrent first

2) The exclusion criteria:

- (1) Patients with stroke were in the life saving action.
- (2) Patients who were not able to remember day to day activities.

Calculation of the sample size in this study was based on a sample formula multivariable analysis (multiple logistic regression analysis), which is the formula of the rule of thumbs. In this formula, the sample size is 10 times the number of independent variables that will be examined (Dahlan, 2009; Hastono, 2007). In this study, there are 3 sub-variables are: diet, fluids, and exercise. So that the required minimum number of samples counted: 3×10 respondents = 30 respondents.

3.4. Instrument

The instruments used in the collection of data in this study was a questionnaire sheet compiled by the researchers based on the study of journals and books, consists of 8 questions. Question I Height, Weight Loss II, IV Age, Number of Chapter III, and Chapter V Consistency, diet VI, VII and VIII fluid exercise.

3.5. Validity and reliability

Before the questionnaires were used in the data collection, the analysis of the validity and reliability analysis was done. Analysis of the validity of the instrument was done by analysis of the construction validity after the instrument is constructed based on the aspects that will be measured based on a particular theory, then discussed with a team of experts to be consulted if the instrument can be used or do repairs. Reliability analysis performed in hospitals Garut, with a total sample of 10 people. Analysis of reliability of the instrument in this study, conducted on the question II, III, V, VI, VII and VIII by using test-retest method, which aims to determine the reliability coefficient stability. To view the reliability coefficient stability analysis will be performed by Pearson Product Moment Correlation, to determine reliable questionnaire by comparing the value of "r" count and "r" table, if the value of "r" count is greater than "r" table, the questionnaires revealed reliable (Nisfiannoor, 2009).

3.6. Research Ethics

The research will be carried out after obtaining permission from dr. Slamet Garut. The study also meets some of the principles of ethics according to Polit and Hungler (1999), namely:

3.6.1. Self-determination

This right was based on the ethical principles that respect every individual. Respondents as individuals have the autonomy to make decisions consciously and well understood, free from coercion to participate or not participate in this study or to withdraw from the study. This principle was applied through the explanation by the researcher to the respondent and the respondent to voluntarily provide a signature on the informed consent sheet. Respondents were given the freedom to decide whether willing or not the respondents in this study.

3.6.2. Anonymity and Confidentiality

During conducting the research, the respondent's name was not listed and instead researchers use the number of respondents. All the information obtained from the respondents remains confidential, including the involvement of the respondents in this study.

3.6.3. Protection from discomfort

The right to protection from discomfort and harm requires that the respondent be protected from exploitation and researchers should ensure that all efforts were made to

minimize harm or loss of an investigation. This principle was applied by not doing research at the time respondent was tired and wanted to rest or, stopping the research while in case of pain. Before the respondents were asked to fill out questionnaires, the researchers set the position of the respondent as comfortable as possible, set the environment and the bed was as comfortable as possible.

3.6.4. Beneficence

Researchers always keep the research process remains oriented towards the patient's needs for care or treatment. If in the process of filling the questionnaire the patient's condition suddenly dropped the case, the data collection was stopped and then coordinates with the nurses and doctors in the Cempaka ward. This study was also useful for the respondents to increasing knowledge of respondents about the complications of stroke and the causes of constipation.

3.6.5. Justice

Patients were entitled to fair treatment in accordance with procedures of handling stroke patients. Research activities filling the questionnaire did not disturb therapy must be obtained by the respondent. Each patient have equal opportunity to participate in this study. There was no difference in treatment between the patients who would be a respondent or reject it.

3.7. Analysis of data

The analysis used in this research is the analysis of univariable, bivariabile and multivariable analysis using multiple logistic regressions. Researchers at the stage of data analysis were using statistical computer applications.

3.7.1. Analysis Univariabel.

Univariable analysis aimed to describe each variable studied. Univariable analysis in this study were height, weight, age, number of defecation, defecation consistency, diet, fluids and exercise. Data displayed in a table with the size frequency distribution of the percentage or proportion.

3.7.2. Analysis bivariabile.

Bivariable analysis performed to determine the relationship between two variables (independent variables with the dependent variable). Variables independently associated were:

diet, fluids, and exercise associated with the dependent variable was constipation. Bivariable analysis was performed using the statistical computer program application. Because the independent variables and the dependent variable in this study was linked categorical variables (nominal), to analyze the relationship between the independent variables and the dependent variable, researchers analyzed the research hypotheses using Chi Square analysis / Fisher test.

Tabel 3.1. The list of variable and statistical analysis

No	Independent Variable	Dependent Variable	analysis type
1	Diet (Nominal)	Constipation (Nominal)	Chi Square/ Fisher Test
2	Fluid (Nominal)	Constipation (Nominal)	Chi Square
3	Exercise (Nominal)	Constipation (Nominal)	Chi Square

P value (value) is a value that indicates the amount of chances either rejects H_0 of research data. To determine the relationship between independent variables with the dependent variable, the statistical analysis of the decisions taken by comparing the value of p (value) to the value of alpha ($\alpha = 0.05$) with the following provisions:

- a. H_0 is rejected if the value of $p \leq 0.05$
- b. H_0 is accepted if the value of $p \geq 0.05$

3.7.3. Multivariable Analysis

In Multivariable analysis was done by connecting several independent variables with the dependent variable at the same time (Hastono, 2007). Multivariable analysis in this study was using multiple logistic regression analysis, because the data on the form of categorical dichotomous dependent variable.

Steps used in the multivariable analysis was first conducted bivariable selection by using simple logistic regression analysis, if the analysis has bivariable p value (value) < 0.25 , then the variables can be included in the multivariable modeling p (value) > 0.25 , still included in the multivariable analysis if the substance was an important variable. In this study, three variables, namely diet, fluids, and exercise incorporated into the modeling. From the results of multivariable analysis will obtained as the dominant cause of constipation in patients with strokes in dr Slamet hospital Garut.

CHAPTER V
RESULTS AND DISCUSSION

4.1. Result

4.1.1. Picture of stroke patients cared for in dr Slamet Garut hospital.

Table 4.1. The frequency distribution of the age of stroke patients treated in inpatient ward of Dr Slamet Garut hospital n = 40.

Age (year)	Frequency	%
21-30	2	5
31-40	9	22
41-50	10	25
51-60	10	25
61-70	7	17
71-80	2	5
Total	40	100

From table 4.1. above shows that stroke patients treated in a neurological mostly aged between 41-60 years. Age was entered into the category of middle age.

Table 4.2. Distribution of the frequency of occurrence of constipation stroke patients treated in dr Slamet Garut hospital n = 40

Occurrence	Frequency	%
Constipation	13	32.5
Normal	27	67.5
Total	40	100

Table 4.2. above shows that of the sample of 40 people suffer from constipation almost half (32.5%).

Table 4.3. The frequency distribution of dietary fiber condition of stroke patients treated in dr Slamet Garut hospital n = 40.

Diet of fiber	Frequency	%
Poor	12	30
Good	28	70
Total	40	100

From the table above showed that the intake of dietary fiber on stroke patients by nearly half in poor condition (30%).

Table 4.4. The frequency distribution of fluid intake stroke patients treated in Dr Slamet Garut hospital n = 40

Fluid consume	Frequency	%
Poor	14	35
Good	26	65
Total	40	100

Fluid intake in hospitalized stroke patients in a neurology shows that almost half (30%) in poor condition.

Table 4.5. The frequency distribution of exercise performed by stroke patients treated in Dr Slamet Garut hospital n = 40.

Exercise	Frequency	%
Poor	21	52.5
Good	19	47.5
Total	40	100

Exercise / sports in bed stroke patients admitted to the neurology more than half (52.5%) in the category of poor.

4.1.2. The relationship between diets with the incidence of constipation in patients treated in dr Slamet Garut hospital.

Table 4.6. The relationship between diet with the incidence of constipation in patients treated in

Dr Slamet Garut hospital n = 40.

		diet		Total	ρ
		Poor	good		
Constipation	Constipation	8	5	13	0.004
	Normal	4	23	27	
Total		12	28	40	

From the table above seems significant relationship between constipation with dietary intake stroke patients treated with ρ value of 0.004 ($\alpha < 0.05$).

4.1.3. The relationship between exercise and the incidence of constipation in patients treated in dr Slamet Garut hospitals.

Table 4.7. The relationship between exercise and the incidence of constipation in patients at dr Slamet Garut hospital n = 40

		Exercise		Total	ρ
		Poor	Good		
Constipation	Constipation	10	3	13	0.034
	Normal	11	16	27	
Total		21	19	40	

From the table above seems significant relationship between constipation with exercise / sports in bed stroke patients treated with ρ value of 0.034 ($\alpha < 0.05$).

4.1.4. The relationship between the fluids with the incidence of constipation in patients treated in dr Slamet Garut hospital.

Table 4.8. The relationship between fluid and the incidence of constipation in dr Slamet Garut hospital n = 40.

		Fluid		Total	ρ
		Poor	Good		
Constipation	Constipation	8	5	13	0.019
	Normal	6	21	27	
Total		14	26	40	

From the table above seems significant relationship between constipation with fluid intake of stroke patients with ρ value of 0.019 ($\alpha < 0.05$).

4.1.5. The most dominant factor causing the incidence of constipation in patients treated in dr Slamet Garut hospital.

Table 4.9. Factor analysis results bivariable cause incidence of constipation in patients treated in Dr Slamet Garut Hospital used as Candidate Tests multivariable

No	Variable	ρ
1	Diet	0.004
2	Exercise	0.034
3	Fluid	0.019

According to table 4.9 of the 3 variables all have a value of $p < 0.25$ i.e. diet, exercise, and fluids. Thus, the variable was included as a candidate in the multivariable test because they have substance as a factor that causes constipation.

Table 4.10. Multivariable analysis results the cause of the incidence of constipation in patients was treated in dr Slamet Garut Hospital.

Variables	B	S.E.	Wald	Sig.	Exp(B)	95.0% C.I.	
						Lower	Upper
diet	2.116	1.306	2.625	.105	8.295	.642	107.212
Fluid	-.327	1.367	.057	.811	.721	.049	10.522
Exercise	1.055	.906	1.354	.245	2.871	.486	16.959

In Table 4.10, shows the modeling done to 3 variables. In multiple logistic regressions, of the three variables tested were no significant values. However there was variable approaching the diet with $p = 0105$. With OR 8.3 means that stroke patients who consume a poor diet had 8.3 times the likelihood of getting constipation in patients taking a good diet.

4.2. Discussion

4.2.1. Picture of stroke patients cared for in hospitals dr Slamet Garut.

Based on the analysis of the study found that stroke patients who were admitted to the neurological mostly aged between 41-60 years and there are patients who are elderly (5%). In this age of stroke patients were into the category of middle age and elderly. Old age will experience some setbacks or degenerative the physiological body system and also in line with Saparinah (1983) found that at age 55 to 65 years old is the age group that reaches pension stage, at this stage will experience a variety of lower resistance or health and various psychological pressures. Thus there will be changes in his life. Also it was confirmed again by Constantinides (1994) in Mary et al (2008) in the elderly will be the disappearance of the network's ability to self-repair or replace and maintain normal function slowly so it can withstand the infection and repair the damage. For the digestive system in the elderly there is a change in the form of a reduction in absorption, decreased intestinal peristalsis. Therefore, the assessment and treatment of attention is required when caring for stroke patients especially those who fit into the category elderly.

Patients treated in the inpatient neurological part is very susceptible to incidence of constipation as shown in the results of the study found that nearly half experience constipation (32.5%). Constipation condition is closely related to aging things can be because of aging or degenerative process may also due to other factors that can exacerbate the cycle of bowel movements (defecation) physiological. This was in line with what was expressed by Mary et al (2008) about the decline of physiological functions of the digestive system, especially in the elderly. Constipation can also be caused by physical or psychological disorders may be physically impaired neurological disorders other factors could be due to a lack of fiber, muscle weakness or stress and anxiety (Asdie, 1999).

In this research found that intake of dietary fiber on stroke patients by nearly half in poor condition (30%). The food is the main factor affecting the elimination of feces. Adequacy of cellulose, fiber in foods, it is important to increase the volume of stool. Certain foods in some people are difficult or cannot be digested. The inability will have an impact on gastrointestinal disorders. Eat regularly affect defecation. Irregular eating can interfere with the regularity of bowel habit. Individuals who eat at the same time each day will have a regular timing, physiological response to food intake patterns and regularities in the colonic peristaltic activity. It was closely related to the condition of constipation experienced by almost half of stroke patients admitted to hospital as much 32.5%. These findings were also confirmed by Asdie (1999) Physical and psychological disorders can be due to a lack of fiber and can lead to constipation.

The results showed that exercise / sports in bed stroke patients were admitted to the neurology more than half (52.5%) in the category of poor. Inadequate exercise will affect the normal process of defecation. Tone abdominal, pelvic muscles and diaphragm are essential for defecation. Also stimulates peristaltic activity that facilitates the movement of chyme along the colon. Weak muscles that are often not effective in increasing intra-abdominal pressure during defecation or bowel control. The muscles are weakened as a result of reduced training (exercise), immobility or impaired nerve function.

4.2.2. The relationship between diets with the incidence of constipation in patients treated in dr Slamet Garut hospital.

From the results of statistical analysis showed that the apparent significant relationship between constipation with dietary intake stroke patients treated with ρ value of 0.004 ($\alpha < 0.05$). In the fiber contained a substance called lignin. This substance is the most difficult to digest. The nature of this substance is to inhibit the digestion of other fiber components. Fiber serves to soften the stool and stool volume boost. Thus the fiber makes bowel movements and increase intestinal gas production. Spending one's stool with diet (eating) high fiber is about 80-160 grams per day. Fiber also affect the transit time of food taken into the digestive tract. The short transit time is due to the amount of water retained in the gut cavity by materials that are difficult to digest. Cellulose and hemicelluloses contained in the fibers are laxatives or facilitate defecation. Low-fiber diet causes the amount of stool and a little harder, to remove waste types require contraction of the muscular wall of the colon. Tremendous pressure on the intestinal cavity facilitates the lump. Fiber can also prevent colon cancer.

The results were consistent with research conducted by Sari (2010) which examined the relationship fibrous diet with the incidence of constipation in Dr H. Adam Malik, who showed an association between the occurrence of fiber constipation ($p < 0.001 < 0.05$). This research was also supported by research conducted by Gardiarini (2010) which examines the student defecation patterns related to fiber and fluid intake and physical activity results show that there is a connection between bowel habit with fiber and fluid intake ($0.00 p < 0.05$).

Thus, adequate consumption of fiber in the diet of stroke patients in particular will help facilitate bowel movements patterns. Besides, there are a lot of benefits if you consume enough fiber in the diet to maintain health.

4.2.3. The relationship between exercise and the incidence of constipation in patients treated in dr Slamet hospital Garut.

Statistical analysis addressing the significant relationship between constipation with exercise/sports in bed stroke patients treated with ρ value of 0.034 ($\alpha < 0.05$). These results indicated that exercise performed by patients on a regular basis will increase the improvement especially in bowel habit. Abdominal muscles are very important in the process

of defecation, sports / ROM exercises performed by stroke patients will help to strengthen the muscles which in turn will facilitate the process of defecation.

The results were consistent with research conducted by Koniyo (2011) Effectiveness of Passive ROM Overcoming Constipation In Stroke Patients In Room Neuro Regional Public Service Board (BLUD) RSU Dr. MM Dunda Gorontalo regency with the result that 75% of the effectiveness of passive ROM to overcome the constipation in patients with non-hemorrhagic stroke in (BLUD) RSU DR. M.M. Dunda Gorontalo regency. The research was also supported by research conducted by Gardiarini (2010) which examines the bowel habit Student Relation to Fiber and Fluid Intake and Physical Activity that shows the result that there was a connection between bowel habit with fiber and fluid intake ($0.00 p < 0.05$).

Exercise or sport either passive or active ROM was played in the patient's bowel habit. Therefore, for patients hospitalized stroke patients both by him and assisted by nurses and families should exercise regularly.

4.2.4. The relationship between the liquid with the incidence of constipation in patients treated in dr Slamet hospital Garut.

From the analysis of apparent significant that there was relationship between constipation with fluid intake among stroke patients treated with ρ value of 0.019 ($\alpha < 0.05$). Fluid consumed by the patient will obviously affect the consistency of the stool, the less fluid intake, and the harder at the consistency of the stool. Conversely, if the liquid is consumed is adequate the stool softer and easier to get out at the time of defecation. This of course affects bowel habit in patients during hospitalization

The study was in line with research conducted by Tampubolon (2008) which examines the effect of water treatment on the process of defecation in constipated patients Delitua Deli Serdang Hospital Sembiring with results showing that water therapy affects patients constipation defecation frequency ($P = 0.022, \alpha = 0, 05$). Adequacy of water consumed in the diet plays an important role in preventing constipation and maintaining normal bowel movement process.

4.2.5. The most dominant factor causing the incidence of constipation in stroke patients treated in dr Slamet hospital Garut.

Based on the results of the multivariate analysis of the three variables, namely dietary fiber, fluid intake and exercise shows that the results of multiple logistic regression, no significant variable nevertheless diet was the most dominant factor compared to other factors with $p = 0.105$. From the analysis it was found that among adult stroke who consume a poor diet likely to get constipated 8.3 times compared with stroke patients who consume a good diet. This shows that diet was the most dominant factor that can cause constipation as well as two other factors, namely fluid intake and exercise.

Thus, prevention of constipation, particularly in stroke patients can be done by raising the intake of fiber into the diet consumed, since the majority of stroke patients experiencing disorders/neurological deficit that causes patients with eating disorders and paralysis. Nevertheless, because the third variable has more than a value of $\alpha = 0.05$ then both dietary intake, fluid intake and exercise play an important role in the prevention of constipation. So that stroke patients admitted to hospital should pay attention to three aspects in order to avoid complications of constipation that can cause discomfort to the stroke patient.

4.3. Limitations of Research

Related to the research that has been done, there were several limitations of the study including research design used in this study was cross-sectional with disabilities to determine cause and effect due to the risks and effects of data collection conducted at the same time and the number of respondents was not enough if the variables studied were numerous. Therefore in this study only emphasizes on how many times the chances of developing constipation due to the factors that cause it. To find out the main causes of constipation is needed a cohort study.

CHAPTER V

CONCLUSION AND RECOMMENDATIONS

5.1. Conclusion

- 5.1.1.** Stroke patients admitted to the neurological mostly aged between 41-60 years. Nearly half have constipation. Intake of dietary fiber on stroke patients. Nearly half in poor condition. Consumption of fluid Almost half of stroke patients in poor condition. Exercise / sports in bed more than half of stroke patients in the poor category.
- 5.1.2.** There was a significant relationship between constipation with dietary intake stroke patients treated with ρ value of 0.004 ($\alpha < 0.05$).
- 5.1.3.** There was a significant relationship between constipation with exercise / sports in bed stroke patients treated with ρ value of 0.034 ($\alpha < 0.05$).
- 5.1.4.** There was a significant relationship between constipation with fluid intake stroke patients treated with ρ value of 0.019 ($\alpha < 0.05$).
- 5.1.5.** Dietary factors, fluid and exercise lead to constipation, but a more dominant cause of constipation is dietary fiber with value $p = 0.0105$ and OR of 8.3.

5.2. Suggestion

- 5.2.1.** To prevent constipation and maintain a normal defecation process in stroke patients should consume enough fluids, exercise regularly and mainly dietary fiber intake is sufficient.
- 5.2.2.** For nurses and other health care team should consider the needs of each dietary fiber and fluids are also trained in stroke patients exercise regularly

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