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Analysis Factors That Influence Associate Nurses Toward Decubitus Prevention On Bed Rest Patient In Intensive Care Unit At Ulin Banjarmasin Hospital

Abstract

Background: Hospital put patient safety as priority such as decubitus prevention to provides excellent service. The incidence of decubitus commonly occurs, such as in Western Europe generally occurs about 49%, 22% in North America, 50% in Australia, 29% in Jordan, and 33% in Indonesia. Nursing interventions to prevent decubitus is an indicator to assure the quality of nursing care. Nurses influenced by various factors toward decubitus prevention.

Objectives: Aim's of this study is to analyze the factors that influence nurses through decubitus prevention on bed rest patient.

Methods: The population was all nurses in Intensive Care Unit at Ulin Hospital Banjarmasin (n=30) this study used a cross sectional approach. Instrument research is a questionnaire and observastion sheet which adopted from NPUAP 2014. The statistical test used multiple logistic regression with significance level of 0,05.

Results: A multivariate results found that factors associated with decubitus prevention are knowledge (0,401), attitude (0,464), encouragement nurses (0,530), and facilities and infrastructure (0,530), p-value < 0,05.

Conclusions: The most related factors that influence toward decubitus prevention are knowledge, attitude, facilities and infrastructure, and encouragement nurses.

Keywords: decubitus prevention, facilities and infrastructure support, fellow nurse supports, knowledge, nurse's attitude

INTRODUCTION

The hospital important mission to provide excellent service required to put patient safety as a priority. According to WHO (2008), patient safety program is a prorgam to prevent health service errors, among others: nosokimial infections, fall patients, injection errors, elderly safety, pregnant women and newborns, and decubitus ulcers. Decubitus incidence is still quite high, in western Europe the incidence of decubitus is generally around 49%, North America 22%, Australia 50%, 29% in Jordan, and in Indonesia, the prevalence of decubitus is 33% (yusuf, 2011; Cooper, 2013).

According to the National Pressure Ulcer Advisory Panel (NPUAP) 2014, decubitus is a localized damage skin and or underlying tissue occur over a

bony prominence, caused by pressure or a combination of pressure and friction. Approximately 95% of decubitus ulcer cases occur in the lower areas of the body such as the sacrum, trochanter, ischia, heel, lateral malleolus, lateral side of the foot (Anders 2010; Adegoke, 2013; NPUAP 2014; Apostopoulou 2014; Macon and Soland, 2015). Decubitus occurrence is experienced by 40% of patients with bed rest. The cutaneous tissue leads to a progressive deterioration of the average emerging on the 5th day of treatment in 88.8% of immobilized patients (Sunaryanti, 2013).

The American Journal of Critical Care (2016) mentioned that ICU's patients with decubitus have a higher percentage of deaths (34%) when compared with non-decubitus (19%). Various

studies found that the incidence of decubitus occurred in the ICU of 10-41%. Patient who experience skin moisture from wounds, sweats, air conditioners, vomit and incontinence are susceptible to maceration. This situation leads to susceptibility to stress and decubitus (Morison, 2004; Cooper, 2013; Kirman, 2016). Florence Nightingale, 1859, in Sardina (2012), decubitus ulcer is not a disease but an error of the nursing. Decubitus incidence may be decreased if the healthcare service develops a decubitus prevention management policy. Nurses should take a multidisciplinary approach in the prevention of decubitus as a care provider. However, in carrying out its role the nurse is influenced by various factors (Yap, 2016)

Data from Hospital Acquired Infections (HAI's) of Ulin Hospital in Banjarmasin found that decubitus incidence in Intensive Care Unit on July-December 2015 period reached 6.4% and on January-March 2016 reached 9.4%. The preliminary study found decubitus patient on the 11th day care in the ICU. The absence of the Standard Operating Procedures for the prevention of decubitus makes different precautions for each nurse. Based on the above description, the problem found is the low prevention of decubitus in the Intensive Care Unit (ICU). The important factor that affects the prevention of decubitus is the nurse behavior.

Green and Kreuter Theory states factors that influence individual behavior include: Predisposing factors are those background or motivation of a behavior. Those are knowledge, attitudes, value systems, and beliefs; Enabling factors, are those factors that enabling motivation to be manifested into behavior, it is manifested on the physical environment such as rules, facilities and infrastructure; reinforcing factors are factor that against the incidence of attitudes and intentions to do something or not behave, manifested on individual support around (Green & Kreuter, 2000)

The effects of decubitus are numerous, such as progressive destruction of cutaneous tissue, pain, costly maintenance, extended hospitalization, and death caused by septicemia. In addition, the

occurrence of decubitus in the hospital will affect of poor healthcare services image. Therefore, decubitus should be preventable and the factors that influence the implementation of prevention of decubitus should be a common concern (Morison, 2004; Sabandar, 2008; Gambert, 2012; Yusuf 2015). Based on the above, the research question arises, what are factors that associated with decubitus prevention on bed rest patients?

METHODS

This research is a descriptive analytic, which analyze the relationship between variables with cross sectional approach, using total sampling that is as much as 30 people nurses. The researcher provided a questionnaire to nurse who had signed the informed consent sheet. The questionnaire contained about knowledge, attitude, facilities and infrastructure support, and nurse fellow support to decubitus prevention. In addition, the researchers also observed the prevention of decubitus performed by nurses related to risk assessment, skin assessment, skin care, nutrition, repositioning, and the use of mattresses.

Analysis of each variable was done by making the frequency distribution to see the characteristic of factors and decubitus prevention. Spearman Rank correlation test with p -value $<0,05$ is used to analyze the correlation between independent and dependent variable. Multiple logistic regression statistics test is used for suggestions about which independent variables (factors that influence behavior) have a major effect to dependent variable (decubitus prevention)

RESULTS

Data collected on 3rd week to 4th week December 2016 at ICU of Ulin Hospital in Banjarmasin. The sample of this study were 30 respondents. The data were analyzed by univariate, bivariate, and multivariate analysis.

Univariate Analysis

Table 1. Respondent Distribution Based on Characteristic (n=30)

Characteristic	F	%	
Age (years)	20–30	19	64
	30–40	10	33
	>40	1	3
	Total	30	
Education	D3	19	64
	S1	1	3
	Ners	10	33
	Total	30	
Years of Work (years)	< 5	14	47
	5 – 10	15	50
	>10	1	3
	Total	30	

Table 1 shows the distribution of respondents based on the characteristics of age, education, and years of work. The majority of respondents are between 20-30 years old, have associate degree education, and years of work about 5-10 years.

Table 2. Respondent Distribution Based on Independent and Dependent Variables (n=30)

Variable	F	%	
Independent Knowledge	Low	8	26,7
	Medium	13	43,3
	High	9	30
	Total	30	100
Attitude	Negative	16	53,3
	Positive	14	46,7
	Total	30	100
Facilities and infrastructure support	Non-support	17	56,7
	Support	13	43,3
	Total	30	100
Fellow nurse support	Negative	17	56,7
	Positive	13	43,3
	Total	30	100
Dependent Decubitus Pervention	Performed	16	53,3
	Not performed	14	46,7
	Total	30	100

Based on table 2, the most respondents have less knowledge level about decubitus; more than half the total number of respondents has negative attitudes toward the prevention of decubitus; the

facilities do not support the prevention of decubitus; less support from fellow nurses towards decubitus prevention, and majority of respondents did not prevent decubitus.

Bivariate Analysis

Table 3. Bivariate Analysis the Relationship Between Knowledge, Attitude, Facility And Infrastructure Support, And Fellow Support Toward Decubitus Prevention

Variable	r	p-value	
Knowledge	Low	0,40	0,028
	Medium	1	
	High		
Attitude	Negative	0,46	0,010
	Positive	4	
Facilities and Infrastructure support	Non-support	0,5	0,003
	Support	30	
Fellow nurse support	Negative	0,53	0,003
	Positive	0	

The statistical result shows there is relationship between knowledge with decubitus prevention, p-value 0,028 ($p < 0,05$), correlation coefficient = 0,40. It means there is positive relation between knowledge and prevention of decubitus.

The statistical result of relationship between nurse attitude and decubitus prevention got p-value 0,010 ($p < 0,05$), means significant relation between nurse attitude and decubitus prevention. The correlation coefficient = 0,464 mean there is positive relation between nurse attitude and decubitus prevention.

The statistical result of relationship between facility and infrastructure support with prevention of dekubitus got p-value 0,003 ($p < 0,05$) stated that there is significant relation between facility support and infrastructure with prevention of dekubitus. Furthermore from the results of the correlation coefficient = 0,530, this value indicates there is a positive relationship between facilities and infrastructure support for prevention dekubitus.

The statistical result of relationship between fellow nurse support with decubitus prevention got p-value 0,003 ($p < 0,05$), it shows significant relation between fellow nurse support with decubitus prevention. Correlation coefficient = 0,530 means there is a positive relationship between fellow nurse support and decubitus prevention.

Multivariate Analysis

Table 4. Odd Ratio (OR) Changes in Each Multivariate Modeling

Variable	OR I	OR II	OR III	OR IV
Knowledge				
Knowledge ₁	13,095 (99,9%)	5,768 (99,9%)	3,237 (99,9%)	-
Knowledge ₂	8,472 (20%)	9,306 (31,8%)	9,084 (28,7%)	-
Attitude	-	8830731 50,5 (99,9%)	3,013 (99,9%)	6178215 69,2 (99,9%)
Facilities and Infrastructur Support	34,733 (99,9%)	2021097 843 (99,9%)	-	1793771 404 (99,9%)
Fellow nurse support	13,502 (99,9%)	-	4,454 (99,9%)	4,487 (99,9%)

**
OR I 1st Multivariate model
OR II 2nd Multivariate model
OR III 3rd Multivariate model
OR IV 4th Multivariate model

Multivariate analysis of variables which has a significant relationship with the decubitus prevention are knowledge, attitudes, fellow nurse support and facilities and infrastructure support

DISCUSSION

According to NPUAP (2014), decubitus prevention includes risk assessment, skin assessment, skin care, nutrition, repositioning and use of mattress. Identification of risk factors is the first step in the prevention of decubitus. Assessment of risk factors should be performed, up to 8 hours after

admission to a clinical assessment (Joseph, 2013, Zuo, 2015).

Skin inspection and assessment is a way to detect the early signs of skin damage. Assessment should be performed at least once during the shift, and the frequency of assessment may be increased at high risk patients with decubitus ulcer. Skin assessment should be comprehensive at patient whom are has risk of decubitus. Skin assessment is one way to classify decubitus degrees. The classification shows severity of decubitus (Cooper, 2013; Zuo, 2015)

Protection against skin integrity is essential in the decubitus prevention. Some methods used such as soft and smooth surface selection, position changes, and skin care are performed to prevent decubitus (Madadi, 2015)

Skin care such as cleaning the skin and changing linens regularly and using topical agents to keep skin moisturized as creams, ointments or herbal products are intended to keep skin moist and protect against the effects of incontinence (ICSI, 2012; Guy, 2013; Zuo, 2015) .

Decubitus prevention by fullfill the adequate nutrition is to pay attention for the need for protein, fat and balanced energy. Malnutrition will interfere with tissue tolerance, inflammatory response, and decrease immune function. Patients's weigh less than 90% or more 110% of their ideal body weight had a greater risk of decubitus than those with normal weight (Black, 2011, Bank, 2013, Leaker, 2013)

Reposition in every 2-4 hours relieve pressure on current body parts, makes an adequate oxygen perfusion and nutrients into depressed areas to reduce the risk of decubitus. Lateral position of 30°, supine, and head elevation are position which often used on patient who has no contraindications (Gillespie, 2014)

Ideal matrix or mattress for decubitus is used when patient was identified as having a high risk of decubitus. An ideal decubitus mattress

distribute pressure and maintain the skin healthy (RCN, 2005)

Reposition is the most decubitus prevention method which performed by nurse, it's 66,6% and the use of mattress is the least one which performed by nurse, it's 46,6%. Repositioning is the most prevention of dekubitus performed by nurses because the facilities for repositioning action is available and repositioning procedure is easier than other method. The use of mattress is the least one due to the less quantity of mattresses. Nurses who do not use mattress to prevent decubitus may not want to do that, but caused by the mattresses not available.

Knowledge or cognitive is an important domain to form a person's actions (over behavior). Knowledge influenced by experience, education, and trust (Notoatmodjo, 2003; 2012).

The results of the questionnaire showed that the majority of nurses have good knowledge about the definition of decubitus, areas of the body at high risk for pressure sores, and risk factors for decubitus. The nurse has less knowledge about decubitus classification, the frequency of skin assessment, and Norton scale. However, generally nurses has poor knowledge about decubitus.

There is relationship between knowledge and decubitus prevention, p -value 0,028 ($p < 0,05$), correlation coefficient = 0,40. The higher nurse's knowledge, the prevention is better.

OR knowledge¹ of 8,167 means that nurses with high knowledge will have 8.167 times greater to performe decubitus prevention than nurses with moderate one. OR knowledge² of 14.00 means that the nurse whose high knowledge has 14.00 times greater to performe decubitus prevention than the low one.

The results of this study are in line with other research conducted by Nuru, et al (2015) about knowledge and practice of nurses towards decubitus prevention and associated factors in Gondar university hospital, Ethiopia. The results showed that half of the nurses (54.4%) had good

knowledge and performed good decubitus prevention (48.4%). A well-informed nurse had 2.4 times the possibility to performed decubitus prevention compared with a less one.

Understanding the decubitus prevention is important to determine a proper management. A nurse had a good understanding of roles if he knows exactly how to complete the task as well as possible. This referring to the decubitus prevention that should be performed by nurse. The statistical results show that knowledge is the dominant factor which affects the nurse towards decubitus prevention. But the clinical fact stated that the majority of nurses do not performed decubitus prevention optimally, its caused by the less-knowledgeable factor.

Based on research 53,3% nurses have negative attitude towards decubitus prevention. The attitude's questionnaire contains the nurse's attitude toward decubitus prevention which is one of the nurse's responsibilities, such as risk assessment, skin assessment, skin care, nutrition fulfillment, repositioning, and mattress usage. The results show that 56.6% of nurses have disagreements if the mattress used before the patient exposed to decubitus. Mattress should be used when the patient has been identified risk of decubitus. The use of mattress is not only for curative and rehabilitative, but also promotive and preventive.

The statistical result about relationship between attitude and decubitus prevention performed by nurse got ($p < 0,05$) Significant relation between nurse attitude and decubitus prevention p -value 0,010 with correlation coefficient = 0,464 meaning the more positive nurse's attitude, the prevention which performed by nurse is better. Odd Ratio (OR) attitudes of 7,500 means that respondents with a positive attitude will have 7.5 times greater probability to do dekubitus prevention compared with respondents with a negative attitude.

The result of this research is also in line with Setiyawan about The Relationship of Knowledge Level, Attitude with Nurse Behavior toward

Decubitus Prevention at Cakra Husada Hospital Klaten in 2010. Bivariate analysis using chi square obtained that attitude has significant relationship with nurse's behavior toward decubitus prevention, p-value 0,008 (p-value <0,05) hypothesis testing in kendall's tau equal to 0,544. Descriptive study conducted by Aslan, et al, (2016) used a nurse's attitude toward decubitus prevention as an instrument to evaluate nurse's attitude. The results showed that positive attitudes may be associated with guidelines and training about decubitus prevention

Abebe's study (2015) showed that more than 67.3% of nurses performed good decubitus prevention which associated with good knowledge and attitude.

Facility and infrastructure support questionnaire contains facilities and infrastructure support for decubitus prevention such as form risk assessment, adequate nutrition availability, supporting surface such as linen and mattress, cushions, lotions, and hand towel / washcloth. Based on questionnaires, 86.6% of nurses said that facilities and infrastructure should be completed. The decubitus mattress must complete in numerous. According to the researchers, it is important because when the patient has been identified to be at risk of sores, as a precautionary measure, the patient should be put on a decubitus mattress.

A mattress will reduce pressure between patient's body and the bed. The pressure that occurs between the patient's body and the bed that exceeds 45 mmHg will cause the risk of decubitus increased, so it is important for use the matras to reduce capillary pressure to 32 mmHg (Dziedzic, 2014).

The nurse's attitude toward prevention of decubitus can be influenced by personal experience, the influence of others, culture, mass media, educational institutions, and emotional factors. The power of behavior and beliefs are influenced by attitudes. Attitudes can be assessed from the individual behavior, indicating internal cognition, can be used to assess emotional

reactions, and cause individuals to act in a certain way against individuals or objects. Attitudes are formed by learning and imitating the actions and attitudes of other individuals with direct experience / interaction with the individual (Altman, 2013; Borkowski, 2015).

The availability of resources will manifest attitudes into a real action. Decubitus prevention is determined by supporting of facilities and infrastructure with good guidelines. The statistical results got the significant and positive relation between facility-infrastructure and prevention dekubitus p-value 0,003 (p <0,05), correlation coefficient = 0,530. Better Facilities support makes better decubitus prevention. Odd Ratio (OR) of facility and infrastructure support equal to 10,833 mean that nurses who get strong facility and infrastructure support will have 10,833 times greater possibility to performed decubitus prevention compared to nurses do not had of facilities and infrastructure support.

The research questionnaire included facilities and infrastructure support towards decubitus prevention such as risk assessment format, nutrition, supporting surface such as linen and matras, pillow, lotion, and hand towel/ washcloth. Based on the results of questionnaires, 86.6% of nurses said that mattress should be added. It is important because when the patient has been identified at high risk of sores, then the patient must put on mattress.

Sullivan (2013), according to 18 studies about decubitus prevention in United States, state that interventions require specific resources to achieve maximum results, such as risk assessment, support base, skin moisturizers, good nutrition assessment and nutrition and hydration optimization.

NitiseMITO (1991), said that the work environment both physical and non physical affect workers. Facilities and infrastructure are physical environments that can affect the comfort of nurses in working. Inadequate facilities and infrastructure have an impact on decreasing the

spirit of nurses to performed decubitus prevention.

The lack of facilities and infrastructure support makes the nurse's motivation to prevent decubitus decreased. In addition, Danneshkohan in the *Global Journal of Health Science* (2015) argues that factors that can improve the motivation of health workers include good management, supervisor support and leadership in the face of problems, good relationships with colleagues, fair treatment of the leadership, and availability of resources. While things that can reduce the motivation of health workers include unfair treatment, poor management, poor appreciation of the leadership, etc.

The statistical result show the significant and positive relation between fellow nurse support with decubitus prevention (p -value 0,003; Correlation coefficient = 0,530). Good fellow nurse supports make decubitus prevention better. Odd Ratio (OR) 10,833 means that respondents who get strong support from nurse colleagues will have 10,833 times greater possibility to performed decubitus prevention.

Fellow nurse support questionnaire describes support of fellow nurse associates in social supports and role models form in the prevention of decubitus. Social supports are emotional, information, psychological, and instrument support. The questionnaire form which describing the social support of the fellow nurse are "fellow nurse provides information about decubitus prevention", "remind the effects if not taking precaution", "provide support when the nurse taking precautions", "remind the nurse when forgot to taking reposition", "assistance from fellow nurses to identify high risk patients", and "ignorance by fellow nurses when they forget to taking precautions". As a role model, fellow nurses provide an example by performing decubitus prevention optimally.

The questionnaire form which describing fellow nurse support as a role model are "fellow nurses are a good on performing decubitus prevention such as taking precaution every shift, risk

assessment, maintaining bed hygiene, maintaining patient skin hygiene, taking care of nutritional intake and hydration status, change position regularly, keep the patient's skin moist, and use the decubitus matrass appropriately".

Based on questionnaire, 60% of nurses said that they do not always get social support from fellow nurse. The highest support comes from the support as a role model, fellow nurse always put patient's bed clean and keeps the skin moist, with a percentage of 90%. the lowest role model support was the use of mattress by fellow nurse, 56.6% of the nurses said their fellows did not put mattress to patients when they has been identified at high risk of decubitus.

All health workers in the Intensive Care Unit (ICU), in this case nurse has obliged to make good coordination about patient care, ensuring the management of the service going well to prevent the decubitus optimally. This is in line with the theory of nursing King "Goal Attainment Theory" which suggests that every behavior has a purpose. Decubitus prevention aims to maintain patient safety and an excellent service to the patients. On the nurse support context, King's theory refers to an interpersonal system approach includes interaction, communication, transactions, roles and stress (Asmadi, 2008)

Nurse brings different knowledge, goals, and perceptions that influence their interaction. In addition, the interaction process will be affected by stress such as conflict and high workload then makes a dynamical interaction. Good interaction occurs when nurses has a good communication in giving information about decubitus prevention and become a good role model, these calls with a good transaction. Growth and development of positive relationships between nurses in the workplace occurs with a good transaction. These will affect the nurse to performed its role as a care giver.

Statistical results also show that fellow nurse support is one of the dominant factors that influence nurses toward decubitus prevention. The majority of nurses get a debilitating support

from fellow nurses to perform optimal decubitus prevention. Fellow can provide strengthening or weakening support for nurses. Good social support makes nurse able to improve the ability to manage the problems. Positive support is associated to the nurse's integration of the work environment. Positive work environment creates a good work culture, this also affect the nurse to perform its role as caregiver as well.

The results of this study are in line with Social Learning Theory by Bandura (in Ashford, 2010) which suggests that individual behavior is formed through imitation of environmental behavior. Individuals will observe the behavior in their environment as role models, nurses will imitate how their co-workers perform an action as a role model. If it is get reinforcement by the environment, then the behavior will be attached to itself.

The lack of support from fellow nurses is associated with motivational factors of each individual. Motivation makes the nurse perform its role as care giver optimally. Maslow's theory of motivation is an absolute embodiment of self as the fulfillment of needs which has growth and individual development characteristics, nurse's behavior towards decubitus prevention should be motivated and provided by leader.

CONCLUSION

Knowledge, attitude, facilities and infrastructure support, and fellow nurse support are associated with decubitus prevention. Those significant factors are in a circumference, means that its influenced each other. Evaluation and good management for decubitus also should be provided in order to give an excellent healthcare service.

Development of nursing research on other factors that associated decubitus prevention is required by considering other factors: motivation, workload, years of work, and policy support for decubitus prevention with various groups of respondents in different hospitals. In addition, the development of research with qualitative designs that can explore the various phenomena

regarding the perceptions, experiences and contributions of nurses on various topics towards decubitus prevention also required

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