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THE INFLUENCE OF NURSE'S INTERPERSONAL RELATIONSHIP ON PERIOPERATIVE PATIENT'S FAMILY UNCERTAINTY BASED ON HILDEGARD PEPLAU'S THEORY

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ABSTRACT

Nurse who is able to develop positive relationship with client can help to reduce uncertainty directly associated with high emotional distress, anxiety and depression by providing opportunity to patient to develop alliance, communication and acceptance. The purpose of the study was to analyze the influence of nurse's interpersonal relationship on perioperative patient's family uncertainty. The study used analytical design with cross sectional approach and involved 42 respondents of total family members who underwent perioperative's procedures using simple random sampling technique. The study conducted in Central Surgical Installation Unit (CSIU) at District Hospital in Jombang, East Java, from May to July 2015. The independent variable of the study was nurse's interpersonal relationship while the dependent variable was perioperative patient's family uncertainty. The result of the study showed that nurse's interpersonal relationship has been in good criteria (52,4%) and perioperative patient's family uncertainty has been in mid level (50%). The result of regression analysis showed the value of probablity 0,000 which was smaller than the value of alpha (a) 0,05 meant there was significant influence between nurses's interpersonal relationship on perioperative patient's family uncertainty with regression model formed as follows, uncertainty (y) = 96.316-2,231 x interpersonal relationship (x). The percentage influence of interpersonal relationship on uncertainty was 38,9%. The conclusion of the study stated there was significant influence between nurses's interpersonal relationship on perioperative patient's family uncertainty with regression model formed as follows, uncertainty (y) = 96.316-2,231 x interpersonal relationship (x).

Keyword : perioperative nursing, interpersonal relationship, uncertainty.

INTRODUCTION

Surgery is a difficult experience for almost all patients. Various bad possibilities in the future often make patients and their families show somewhat exaggerated attitude about anxiety experienced at the time of surgery (Kamarullah, 2005; Muslim, 2010). One of the form of illness and its management is uncertainty in illness (Dektrapon et al, 2009).

Unresolved uncertainty can result in emotional distress or anxiety for both the ill individual and his

or her family members (Mishell, 1988; Miller, 1993). Perioperative's nurse in practice is still too focused on the self-efficacy of the patient and not yet touched his or her family, whereas family is the primary support system for healthy or ill client (Suprayitno, 2004). Family members who are unable to cope with the uncertainty associated with critical illness may have an adverse effect on the patient's emotional state and ultimate recovery (Miller, 1994). The level of uncertainty in illness and its management perceived by the families can be lowered with good interpersonal relationship delivered by nurse to patient and his or her family members who accompanied (O'bryne, 2013).

World Health Organization (WHO) estimates that there are 230 million big operations performed annually in the whole world, one for every 25 people lives (Haynes et al., 2009). Study in 56 countries of 192 member states of WHO in 2004 estimated 234,2 million surgical procedures performed annually had potential complication and death (Weiser et al., 2008).

Uncertainty data of patient's family collected by conducting preliminary study in Central Surgical Installation Unit at District Hospital in Jombang. Subjects were recruited from Surgical Installation Unit. Samples were taken from one of family members of each 10 patients underwent operations procedures in April 2015. Preliminary studies had shown that 3 people (30%) from samples experienced uncertainty above average (Median resulted MUIS-FM> 93).

High levels of uncertainty are related to high emotional distress, anxiety and depression. Uncertainty in family will make the function of the family as main supporter in preventing anxiety of clients to grow. Doubt in perceived illness is influenced by several factors, namely ambiguity, uncertainty, complexity and inconsistency (Mishell, 1988; Mormick, 2002). The results of interaction with nurse can be significant in reducing anxiety, tension and frustration that support the quality of nursing care. The quality of nursing care is strongly influenced by the quality of relationship between nurse and patients (Peplau, 1952; Tomey, 1995).

Purpose of the study was to analyze and make model influence of nurse's interpersonal relationship based on Hildegard Peplau's theory on perioperative patient's family uncertainty in Central Surgical Installation Unit at District Hospital in Jombang. The theoretic benefit was to increase knowledge and reference in nursing science, especially nurse's interpersonal relationship with high level perioperative patient's uncertainty and become a source of reference for nurse's guidance in improving interpersonal relationship. The practical benefit was to provide input for institutions to acknowledge the influence of nurse's interpersonal relationship, so it can be used as information in order to manage / reduce the level of uncertainty in perioperative patient's family through good personal relationship between nurse and patient.

MATERIALS AND METHODS

Study conducted in Central Surgical Installation Unit at District Hospital in Jombang of East Java Indonesia was started from May to July 2015.

The type of study used analytic with cross sectional approach to study the correlation dynamics among risk factors from the influence with approach, observation or data collection at once in one time, where every subjects of the study only observed once and conducted measurement on the character status or subject's variables during assessment (Notoadmodjo, 2012). The study discussed the influence of independent variable that was nurse's interpersonal relationship with dependent variable that was perioperative patient's family uncertainty.

The population in the study was patient's family members who had significant influence on clients (father, mother and spouse) and located in Central Surgical Installation Unit at District Hospital in Jombang. The average numbers of surgical patients in *CSIU* within 3 months during 2015 were 212

(*CSIU* Data at District Hospital in Jombang, 2015).

The study used simple random sampling with 42 samples of respondents.

The data collection on family's uncertainty used *MUIS-FM* (Mishel's Uncertainty in Illness Scale-Family Member) questionnaire that adopted from *PPUS-FM* (Parents Perception of Uncertainty in Illness Scale-Family Form) as referred from Uncertainty in illness theory stated by Mishel (1998) developed by Miller (1993) and Mitchell (2003). Meanwhile, to measure the level of nurse's interpersonal relationship used questionnaire based on Hildegard Peplau's theory with total 20 items divided into 4 phases according to the stages in the theory of interpersonal relationship by Hildegard Peplau (Buts & Rich, 2010; Revitasari, 2014).

The technique of data collection used questionnaires distributed to respondents. Before filling the questionnaire, respondents were given explanation about how to answer the questionnaire. The distribution was conducted simultaneously and after filling questionnaire, it was withdrawn for data analysis.

RESULT AND DISCUSSION

GENERAL DATA

Respondents characteristics by age

Table 5.1 showed over than half respondents, in total 12 respondents were aged over 50 year-old (28%).

Respondents characteristics by education level

Table 5.2 showed that almost half of respondents' education level were senior high school, in total 17 respondents (41%).

Respondents characteristics by relationship with patients

Table 5.3 showed that almost half of respondents had relationship with patients as spouse (husband/wife), in total 19 respondents (45%).

Respondents characteristics by length of hospitalized family member

Table 5.4 showed that almost half of respondents' family member been hospitalized for 1-3 days, in total 28 respondents (67%).

SPECIFIC DATA

Univariate Analysis

Interpersonal relationship of nurse

Table 5.5 showed that most of respondents, in total 22 respondents (52,4%), gave score exceeding the cut of point determined before (≥11,76), meant it was included in the criteria of good interpersonal relationship of nurse.

Interpersonal relationship of nurse that based on Hildegard Peplau's theory has four phases describing which part identifying the good or not good interpersonal relationship of nurse. Respondents' data showed the details in table 5.6.

Items mean data showed that resolution phase get lowest scores of the four phases *interpersonal*

relationship of nurse with 0,53.

Uncertainty in perioperative patient's family

Table 5.7 showed data that half of respondents been in mid uncertainty category, in total 21 respondents (50%).

Factors mean showed that ambiguity contribute to highest point to create uncertainty, that is 28,3. Yet, *complexity* was the factor had highest uncertainty from items mean scored 3,15.

Bivariate Analysis

Table 5.9 cross tabulation explained that almost half of respondents who stated good Interpersonal relationship of nurses tend to experience uncertainty in medium level, in total 17 respondents (40,5%), while almost half of respondents who stated not good interpersonal relationship of nurse been experienced high uncertainty, in total 16 respondents (38,1%). Small portions or one person of respondent (2,4%) who stated good interpersonal relationship of nurse been experienced low uncertainty and 4 respondents (9,5%) been experienced high uncertainty. In addition, there were 4 repondents (9,5%) who stated good interpersonal relationship of nurse been experienced high uncertainty.

Table 5.1 Distribution of respondents' frequency by age

No.	Age	Frequency	Percentage (%)
1.	19-25 year-old	5	12
2.	25-30 year-old	6	14
3.	31-35 year-old	2	5
4.	36-40 year-old	7	17
5.	41-50 year-old	10	24
6.	50-70 year-old	12	28
	Amount	42	100

Source: Primary data 2015

Table 5.2 Distribution of respondents' frequency by education level

No.	Education	Frequency	Percentage (%)
1.	Elementary School	11	26
2.	Junior High School	8	19
3'.	Senior High School	17	41
4.	Bachelor Degree	6	14
	Amount	42	100

Source: Primary data 2015

Table 5.3 Distribution of respondents' frequency by relationship with patients

No.	Relationship with patients	Frequency	Percentage (%)
1.	Spouse (Husband/Wife)	19	45
2.	Parents	8	19
3.	Children	11	26
4.	Siblings	3	7
5.	(Older/Younger)	1	2
6.	Grandpa/Grandma	0	0
7.	Uncle/Aunty	0	0

Amount	31	100

Source: Primary data 2015

Table 5.4 Distribution of respondents' frequency by length of hospitalized family member

No.	Length of hospitalized family member	Frequency	Percentage (%)
1.	1-3 Days	28	67
2.	4-6 Days	13	31
3.	≥ 7 Days	1	2
Amount		42	100

Source: Primary data 2015

Table 5.5 Distribution of respondents' frequency by nurse's interpersonal relationship category

Interpersonal Relationship Of Nurse	Frequency	Percentage (%)
Good	22	52,4
Not good	20	47,6
Total	42	100

Source: Primary data 2015

Table 5.7 Distribution of uncertainty in perioperative patient's family

Uncertainty in family	Amount	Percentage %
No uncertainty	0	0
Low uncertainty	1	2,4
Mid uncertainty	21	50
High uncertainty	20	47,6
Very high uncertainty	0	0
Total	42	100

Source : Primary data 2015

Table 5.8 MUIS-FM Factors Mean and Items Mean

Factors	Items in the Factor	Factors Mean	SD	Items Mean
Ambiguity	10	28,3	7,66	2,83
Complexity	7	22	5,24	3,15
Inconsistency	4	11,9	7,48	2,98
Unpredic-tability	3	8,24	0,57	2,75
Total Scale	24	70,45		

Source: Primary data 2015

Table 5.9 Cross Tabulation of Influence of Nurse's *Interpersonal Relationship* on Perioperative Patient's Family

Uncertainty	*Interpersonal relationship*				Total	
	God		Not good			
	n	%	N	%	n	%
None	0	0	0	0	0	0
Low	1	2,4	0	0	1	2,4
Mid	17	40,5	4	9,5	21	50
High	4	9,5	16	38,1	20	47,6
Very high	0	0	0	0	0	0
Amount	22	52,4	20	47,6	42	100

Source: Primary data 2015

Normality Data Test

Kolmogorov Smirnof's output table showed that the value of significance (p) was 0,2 and greater than 0.05 (alpha) meant the data was normally distributed.

Autocorrelation test

Run Test resulted in significance (p) 0,876 and greater than 0,05 (alpha). It proved that there was no problem of autocorrelation.

Heteroscedasticity test

Heteroscedasticity test could be seen in scatterplot indicated error variance where its homoscedasticity spread randomly and did not form specific patterns resulted in conclusion there was no problem of heteroscedasticity.

Simple linear regression analysis test

Complete model test using *ANOVA* resulted in *p* value (significance) of F statistic was 0,000, was less than 0,05 (alpha) where model formed was able to explain the empirical data completely.

Partial test of simple linear regression analysis showed that the unstandarized coefficient was -2,231 with significance or probability value (0,000) much smaller than 0,05 or ($\rho<\alpha$), compared to significance <0,05 ($p<\alpha$), meant that interpersonal relationship of nurse had significant influence on perioperative patient's family uncertainty at alpha 5% into negative direction with total percentages seen from *R square*'s in the model summary 0,389 (38,9%).

Regression model formed was:

Uncertainty (Y) = 96,316 – 2,231 x Interpersonal relationship (X).

DISCUSSION

1. **Interpersonal relationship of nurse**

Data collected from family members of perioperative's patient showed that most of the family members, in total 22 respondents (52,4%) gave scores exceeding the cut of point determined before (≥11,76), where it was included in the criteria of good interpersonal relationship of nurse. The conclusion withdrawn that most of family members of perioperative's patient considered interpersonal relationship of nurse based on the theory stated by Hildegard Peplau had well

conducted. Meanwhile, a number of 20 respondents gave scores of less than 11,76, where it was included in the criteria of not good interpersonal relationship of nurse.

Most of respondents who still considered interpersonal relationship of nurse was not good (47,6%) showed that nurse need to evaluate self performance to improve interpersonal relationship with patients. Factors that could influence interpersonal relationship between nurse and patients were the lack of effective communication, empathy, emotional awareness and attitude of nurse (Revitasari, 2014).

Resolution phase and orientation got lowest point from respondents of four phases stated by Hildegard Peplau. It was associated with the function of nurse in starting role as a stranger and end role as adult person were still beyond other functions. In the orientation phase there was data collection process and building mutual trust relationship process between nurse and client. Phase where first time nurse identify herself with name and professional status, stated her purpose, nature and service time for patient (Peplau, 1997; Fawcett, 2006).

The resolution phase of client was gradually release themselves from dependence to professionals. It was phase where client was given the opportunity to meet his needs based on his own ability. In this phase, planning to go home started to prepare.

Main task in the resolution phase was to release patients to be active in life. Second, both nurse and patient of course should be participated in relief process. Relocation from hospital situation to be participated in the community needed to break relationship of nurse-patient and strengthen personality for new social interdependent relationship (Butt & Rich, 2011).

2. Peripertive patient's family uncertainty

Samples taken from family member of perioperative's patient obtained perception uncertainty results that interpreted through questionnaire adopted from Mishel's Uncertainty in Illness Scale-Family Member Form where obtained scores from the range of 47-88 (Mean = 70,45, SD = 11,643). The range and standard deviation resulted from respondents showed wide variability in the level of uncertainty assessed.

The descriptive analysis provided data that the average scores of uncertainty from perioperative patient's family member was 70,45 with standard deviation 11,643. Meanwhile the lowest uncertainty scores was 47 and the highest scores was 88 with median number 70 and score 62 as the highest score resulted from respondents.

Based on measurement used *MUIS-FM*, half of respondents been in the category of mid uncertainty, in total 21 respondents (50%) and followed by high uncertainty, in total 20 respondents (47,6%). It described high uncertainty level experienced by family member of perioperative's patient in Central Surgical Installation Unit at District Hospital in Jombang was in medium level.

Ambiguity was factor that contributed to highest uncertainty number based on factors mean 28,3. It was consistent with the theory proposed by Miller (1993) who said that the ambiguity often mentioned as key factor that contributed to the development of uncertainty. Budner (1962) stated a situation that created the ambiguity, namely a completely new situation which contained several cues of complex situations containing a large number of cues for considerations; and contradictory situation in which the different cues indicated a different structure and had lots of meanings (Miller, 1993). Ambiguity in this case showed that the client's family still yet able to interpret the meaning of explanation given both by the doctor and nurse. Explanation from medical personnel could be interpreted in different meanings by the client's family so that the meaning absorbed by the client's family had yet cleared its goals and objectives.

Complexity gave the highest mean (3,15) when viewed from the items mean where respondents experienced higher complexity problem more than the four subscales in uncertainty. Complexity was the complication of the operations, procedures and care for self operation. Family member experienced uncertainty when there was an adequate explanation or lack of understanding. It was associated with high value of ambiguity score above. A stressor that often occured from uncertainty is about how to develop relationship with health service. Lack of explanation may also arise when family member do not receive an adequate explanation or if the explanation provided is delivered in a complex and complicated sentences (Mishel, 1983; Miller, 1993). The family still felt the perioperative procedures experienced by clients was complicated so that the family could not understand the operations performed by doctor or nurse in a surgical procedure taken.

The mean of respondents (Mean = 70,45) was still below the mean of *MUIS-FM* (Mean = 72) of total 24 items *MUIS-FM,* yet based on normative data according to Mishel & Epstein (1990), uncertainty scores perceived by respondents were at moderately high level where in the study interpreted by mid uncertainty.

Mishel & Epstein (1990) conducted a study on 42 parents of newborns who suffered from critically illness and got average scores of uncertainty 76,3 with standard deviation 20,4 as measured by 31 items based on *Parent Perception Uncertainty Scale (PPUS)* (Miller, 1993).

Categorizing age of the respondents did not have significant impact on the high value of uncertainty. Mitchel (2003) has indeed stated that with increasing age of family members will have significant impact in reducing anxiety value related to uncertainty. Almost half of respondents, in total 12 respondents (28%) had been at the age of 50-70 year-old and followed by small proportion of respondents, in total 10 respondents (24%), but this did not indicate low value of uncertainty, thus it did not influence on the uncertainty value itself. The conclusion was supported by study conducted by Miller (1993).

One of caused the high value of uncertainty was hospitalized length of patient. Most of the patients who accompanied by new respondents hospitalized within 1-3 days were 28 respondents (67%). Mishel (1988) showed intimate with the health service environment will evolve over time and through the experience. The impact will result the less time spent in adapting to the environment to make possible the uncertainty numbers gets higher (Miller, 1993).

Value of uncertainty also related with education level of the samples. A small portion of respondents who have education up to bachelor degree level was only 6 respondents (14%), more dominated by senior high school graduate were 17 respondents (40%) and elementary school graduates were 11 respondents (26%). Mitchel (2003) found significantly positive correlation statistics between uncertainty factors and family members who were under 12 grade of education (rpbi = .39, p = 0,033). It showed that the family member in the study who was less in education perceived more uncertainty related with the inability to predict the course or outcome of illness. This finding was supported by previous studies (Mishel, 1981, 1984) who found 120 individuals with lower levels of education have an impact on the uncertainty with higher levels associated with the illness and service system (Mitchell, 2003).

Additional explanation which described moderately high level of uncertainty was the possibility related with the significant number of spouse (husband / wife) (45%) in the sample of respondents. Miller (1993) stated that there is positive correlation which statistically significant between spouses and the vagueness of uncertainty factors (rpbi = .39, p = 0,035). Although all the subjects in the study admitted close relationship with family member who was ill, there was possibility that high level of commitment perceived by most spouses could have contributed to the high level of

uncertainty and threat (Miller, 1993).

3. Analysis of the influence of the interpersonal relationship of nurse on perioperative patient's family uncertainty

Simple regression analysis started with classical assumption test used to determine whether the results of simple linear regression analysis were used to analyze in the study was free of classic assumption deviation including normality test, heteroscedasticity and autocorrelation.

From the classical assumption test could be concluded that the study data had considerable requirements to proceed with the simple linear regression analysis test.

Complete regression model test showed that based on *ANOVA*'s statistical table test found that the model formed from the two variables was able to explain the empirical data as a whole.

The final phase in regression analysis test was to conduct individual tests (partial) to acknowledge the influence between variables of interpersonal relationships of nurse on uncertainty variable in perioperative patient's family. Based on output test of regression analysis found significant values or probability value (0,000) which was much smaller than 0,05 or ($\rho < \alpha$), by comparing with significance value <0,05 ($p < \alpha$), meant the interpersonal relationship of nurse had significant influence on perioperative patient's family uncertainty at alpha 5%. The significant influence was interpreted by *R square* in the model summary which meant interpersonal relationship of nurse was able to explain family's uncertainty variability as much 38,9%. While other variables that affected the uncertainty itself at 61,1%.

Regression coefficient value resulted was -2,231. Negative numbers were found to prove that there was negative correlation between the variables of interpersonal relationship of nurse on variables of family's uncertainty where the better value of interpersonal relationship of nurse the lower uncertainty values and vice versa.

Journal of Marris (1996) supported the result of study which stated that the key of uncertainty management is communication to create interpersonal relationship (Brasher, 2001).

Hildegard Peplau also stated that the result of interaction with nurse can be very significant in reducing anxiety, tension and frustration as products of uncertainty. The quality of nursing care is strongly influenced by the quality of nurse relationship with clients (Peplau, 1952; Tomey, 1995).

Mitchel (2003) in his study also revealed that uncertainty is significantly associated with anxiety. Preliminary studies showed that the coping abilities of individuals affected by anxiety and uncertainty in the illness that limits patients adaptation to new environmental conditions. It causes disruption of relationship and psychological pressure when patients rely on family support. Intervention used by Mitchel was to reduce uncertainty and increase satisfaction of family members by improving communication and tied relationship between family members and ICU nurses (Mitchel, 2003).

CONCLUSION

Results of the study "The Influence of Nurse's Interpersonal Relationship on Perioperative Patient's Family Uncertainty Based on Hildegard Peplau's Theory" in Central Surgical Installation Unit (CSIU) at District Hospital in Jombang of East Java Province on May 11 to June 12, 2015 could be concluded as follows:

There was significant negative influence between interpersonal relationship of nurse on perioperative patient's family uncertainty in Central Surgical Installation Unit at District Hospital in

Jombang with regression model formed (Y) = 96,316-2,231x interpersonal relationship (X).

Nurse should further enhanced its ability to build interpersonal relationship not only with patients but also with families accompanying patients to undergo procedures that gave difficult experience for the client, especially in an invasive procedures like in Central Surgical Installation Unit at District Hospital, so that the level of uncertainty which was the membrane of anxiety or high emotional distress could be pressed to a lower level. It could be done by opening good communication at the beginning of meeting and deeper in exploring the issues raised and also provided education at the end of meeting thus to ensure significant development between before and after nurturing.

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