Original Article

Factors Related to Transfer Anxiety in Family Members of Critically Ill Patients

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Abstract

OBJECTIVES: To describe transfer anxiety and its relationship with information support and illness uncertainty among family members of critically ill patients who are transferring out from Intensive care unit (ICU).

MATERIALS AND METHODS: The sample was family members of critically ill patients who were admitted to the ICU of hospitals under Bangkok Dusit Medical Company. A simple random sampling was used to recruit 136 family members into the study. Research instruments consisted of the demographic data questionnaire, the transfer anxiety questionnaire. Data were analyzed by using descriptive statistics and Pearson's Product Moment Correlation Coefficient.

RESULTS: The mean score of transfer anxiety from ICU among family members was moderate anxiety about moving out of ICU (65.24 ± 18.02). Information support had a significantly negative correlation with transfer anxiety at a moderate level ($r = -0.348$, $p < 0.01$). While illness uncertainty had a significantly high positive association with transfer anxiety ($r = 0.617$, $p < 0.01$).

CONCLUSION: Results of the study can apply to prepare family readiness before transferring patients from the ICU. Consistently providing information related to treatments and patients' conditions can reduce illness uncertainty and transfer anxiety among family members of critically ill patients. Moreover, nurses had recognized the importance of reducing transfer anxiety of patient's family members.

Keywords: transfer anxiety, critically ill patients, family members, information support, uncertainty

Anxiety is a common emotional state characterized by discomfort, worry or terror due to the threats in personal safety. Anxiety is a normal human emotion and is part of life. Humans encounter many events in their live that may cause them feel satisfied or stressed. A temporary emotional condition that arises in a particular situation may be called state anxiety.[1] When the patients transfer out from critical care, their family members may feel stress and anxiety[2] because they are leaving from a familiar place and critical care medical equipment.[3] Their family members shall need to adapt themselves to a new environment with different services, regulations and medical personnel.[3] Thus, the patient's family members may feel insecure after transferring the patient out from critical care. From the patient's perspective, they may feel discomfort and anxiety toward moving to an unknown place and environment. This may affect a patient's health condition.[4] In addition, their illnesses may include physical effects of illness, such as an inability to speak, owing to intubation,[5] suction, to wearing urinary catheter or wearing feeding tube. These are causes of anxiety.[2]

In Thailand, there was a study of Noommeechai N[6], "Selected Factors Related to Transfer Anxiety in Critically Ill Patients", conducted after transferring patients out from critical care at 48 hours. The result reported that factors related to the anxiety from moving critically ill patients out were: the types of transfer (Eta = 0.229, $p < 0.05$), the length of stay in critical care

(r = 0.28, $p < 0.05$) and the uncertainty in illness (r = 0.414, $p < 0.005$). Whereas, the information supports that the anxiety about the moving of critically ill patients out of critical care had statistically significantly negative correlation (r = -0.276, $p < 0.005$). Next, Pasawate K[7] conducted a study on "Factor Related to Anxiety Among Acute Ischemic Stroke Patients Transferring Out of Stroke Unit". The results reported that anxiety of the sample population about moving out from a stroke unit was at a moderate level (76.59 ± 8.27). Perceived severity of illness was positively moderately related to anxiety of transferring out from a stroke unit (rs = 0.343, $p < 0.01$). However, length of stay and information and emotional supports were not related to anxiety of transferring out from a stroke unit ($p > 0.05$).

The literature reviews were mostly done on outdated researches so their contexts may be different from current situation and clinical practices. This was a limitation in applying the outdated studies to the present day. However, the results from studying the correlation between factors and the anxiety about moving patients out from critical care showed mild to moderate correlation. The conflicts were seen in some variables. In addition, the previous studies on the anxiety about moving patients out from critical care were mostly conducted on patients in government hospitals. Studies on the anxiety of patient's family members were rare. Thus, the researchers were interested in the study on the anxiety among patient's family members toward the transfer of patients out from critical care to general ward in private hospitals.

After reviewing literature, the researchers were interested in conducting a study in the context of private hospitals on the anxiety about moving patients out among patient's family members toward the transfer of patients out from critical care to general ward and the correlation between the factors including the information support, the uncertainty in illness and the anxiety about moving patients out among patient's family members toward the transfer of patients from critical care to the ward. The objective of this study was to learn of the anxiety about moving patients out among patient's family members toward the transfer of patients out from critical care to general ward and the correlation between the information support, uncertainty in illness and the anxiety about moving out among patient's family members toward the transfer out of patients from critical care to general ward. The results of this study would be used to improve an effective nursing care plans for reducing the anxiety about moving patients out among patient's family members (Core patient's supporters) toward the transfer of patients out from critical care to a general ward, accordingly.

Materials and Methods

This study was a descriptive correlation research. The sample population was the patient's family members of critical patients in critical care.

The inclusion criteria were

1. Age over than 20 years old.
2. Having relative admitted in ICU at least 24 hours.
3. Having relative with doctor ordered to transfer out from ICU.
4. Having full cognition and conscious.
5. Remembering date, time, place and people correctly.
6. Enabling to communicate well and enabling to read, speak, write, and listen Thai language.

The sample size was calculated by power analysis. For Pearson's correlation coefficient, the sample size of this study was calculated by G power 3.1 program[8]. The hypothesis testing was defined as two-tailed test. Estimated effect = 0.25. Deviation = 0.5. Power of test = 0.80.[9] The sample size was 123 people. To prevent the incompletion from withdrawal of sample population, the researcher had added 10% of sample size to 136 people.

Research Instrument

The study used 4 research instruments as follows: by patient's family members of critical patients in critical care:

1. Personal Information Questionnaire included of:
   1.1 Information Part I: Personal information questionnaire for the critical care patient's family members included information of gender, age, education level, marital status, experience of having a family member admitted to the critical care unit, severity of illness upon transfer out from critical care unit, relationship with the patient, living with the patient, child and underlying diseases. There were 11 questions in total questions.
   1.2 Information Part II: Patient health information questionnaire included diagnosis, operation, length of stay in critical care unit, time to moving out of critical care unit, severity of disease before transferring out of critical care evaluated by doctor (Apache II). There were 5 questions in total questions follows by the researcher.

2. Questionnaire of the Anxiety About Moving Out the Patient from Critical Care unit: Used the questionnaire about the anxiety about moving out the patient from critical care unit, Rakissara W.[10] The questionnaire was developed under the concept of transfer anxiety in critical care patients and their family member, Leith.[11] The content validity index was 0.90 and the Cronbach's Alpha Coefficient was 0.08. The questions were 5-point Likert's scale. The total questions were 30. Scoring was calculated by combining scores from all questions. The score range for the questionnaire was 30 – 150 points. The high score meant the anxiety about moving out of patient's family members was high. The low score meant the anxiety about moving out of patient's family members was mild.
3. Questionnaire of the Feeling of Uncertainty in Illness: Used the questionnaire of the feeling of uncertainty in illness, Arammuang S,[12] developed from the Mishel Uncertainty in Illness Scale-Family Member form (PPUS-FM) among spouse or family13 members of critical care patients. After that, Arammuang S[12] used the questionnaire about the

feeling of uncertainty in illness with 30 patients. The Cronbach's Alpha Coefficient was 0.76. The questions were 5-point Likert's scale. The total questions were 30. The questions were rating on scale of 1 to 5. Scoring was calculated by combining scores from all questions. The score range of questionnaire was 30 – 150 points. A high score meant the uncertainty toward transferring patients out among patient's family members was high. A low score meant the uncertainty toward transferring out among patient's family members was mild.

4. Questionnaire of Information Support: Used the questionnaire for interviewing about the information support for acute stroke. The questionnaire was applied from the interview of social support of older paralyzed patients, Polchaiyo S,[14] that was translated and adapted from the concept of social support, House,[15] the Cronbach's Alpha Coefficient was 0.87. The questions were 5-point Likert's scale. Scoring was calculated by combining scores from all questions. The score range for the questionnaire was 7 – 35 points. The high score meant the patient's family members fully received information support about transferring out. The low score meant the patient's family members rarely received information support about transferring out.

Data Analysis

The data were analyzed with the Statistical Package for the Social Sciences (SPSS) statistics; version 26 level was 0.05. The descriptive statistic was used to analyze frequencies, percentages, averages and standard deviation after the test of agreement was agreed.

1. General data of sample population included information of gender, marital status, education level, disease, refer-out time, experience of having a family member admitted to the critical care unit. The descriptive statistic was used to analyze frequencies, percentages, averages and standard deviation. For age and length of stay in critical care, they were used to analyze averages, standard deviation, minimum and maximum.
2. Transfer anxiety, information support, and uncertainty in illness overall to find average, standard deviation, maximum and minimum.
3. The relationship between and anxiety of transferring patients out of critical care patient's family member and information support, uncertainty in illness and were analyzed by Pearson correlation coefficient (Pearson's product – moment correlation).

Results

Among the total number of 136 critical care patient's family members who inclusion was accepted to participate in this study, 70.6% (n = 96) of patients were females, and 20.9% (n = 40) of the patients' caregivers were females.

The descriptive characteristics of **the family members of critically ill patients** who were transferred from the ICU to the wards. It was observed that 45.6% of the participating family members of critically ill patients are between 41-60 years of age, bachelor's degree graduates 52.9%, are married 47.8%, are self employed / merchandizer occupation 41.2%, has previous experience of having a family member admitted to the critical care unit 64%, perception of severity of illness are low severity 33.8%, of the relationships with patients are Father/ Mother 25%, living with the patient are 77.9% and no underlying disease 69.1%, See Table 1.

Table 1: Quantity, Percentage, Average and Standard Deviation of Sample Population That Were Classified by Personal Data (n = 136).

Personal Data	n (%)
Gender	
Male	40 (29.4)
Female	96 (70.6)
Age (Years)	
20 - 40	49 (36.0)
41 - 60	62 (45.6)
61 - 80	23 (16.9)
> 80	2 (1.5)
Min-Max	20 - 85
Mean ± SD	47.00 ±13.89
Education Level	
Primary Education	6 (4.5)
Secondary Education	14 (10.3)
Bachelor Degree	72 (52.9)
Higher than Bachelor Degree	37 (27.2)
Others	7 (5.1)
Marital Status	
Single	60 (44.1)
Married	65 (47.8)
Widow	7 (5.2)
Divorce	4 (2.9)
Occupation	
Student/ Undergraduate	4 (2.9)
Self Employed/ Merchandizer	56 (41.2)
Employee/ Worker	45 (33.1)
Government Officer/ State	10 (7.4)
General Contractor	6 (4.4)
Agriculturist	2 (1.5)
No Occupation	13 (9.5)
Experience of having a family member admitted to the critical care unit	
Yes	87 (64.0)
No	49 (36.0)
Perception of Severity of Illness	
Non-Severity	22 (16.2)
Low Severity	46 (33.8)
Medium Severity	44 (32.4)
High Severity	19 (14.0)
Critical Severity	5 (3.6)
Relationships with patients	
Wife/ Husband	31 (22.8)
Father/ Mother	34 (25.0)
Children	33 (24.3)
Brother/ Sister	17 (12.5)
Nephew	21 (15.4)
Living with the Patient	
Yes	106 (77.9)
No	30 (22.1)
Underlying Disease	
Yes	42 (30.9)
No	94 (69.1)

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The descriptive characteristics of **patient's personal data due to respiratory,** 23.5% length of stay in critical care 1-3 days, 66.9% and time for transfer-out at daytime (07:00 – 19:00 hrs.) 73.5%, see Table 2.

The transfer anxiety, information support, and uncertainty in illness overall to find average, standard deviation, maximum and minimum. The sample group had an average score of transfer anxiety moving out of ICU of family members of critically ill patients.

The overall score was 65.24 ± 18.02, with the highest score being 112 points and the lowest score being 30. For the variables studies, it was found that the sample group had an average score of information support from family members' transfers from ICU was 27.24 ± 5.57, and the mean score was the feeling of uncertainty from family members' of critically ill patients transfers from ICU was 76.35 ± 16.10, see Table 3.

The relationship between and anxiety of transferring out of critical care patient's family member and information support, uncertainty in illness were analyzed by Pearson correlation coefficient (Pearson's product – moment correlation). The research studies found transfer anxiety of family members of critically ill patients and information support had a significantly negative correlation with transfer anxiety at a moderate level (r = -0.348, $p < 0.01$). While illness uncertainty had a significantly high positive association with transfer anxiety (r = 0.617, $p < 0.01$), (Table 4).

Table 2: Quantity, Percentage, Average and Standard Deviation of Sample Population That Were Classified by Personal Data (n = 136).

Personal Data	n (%)
Diagnosis	
Internal Medicine	
Cardiology	19 (14.0)
Respiratory	32 (23.5)
Neurology	20 (14.7)
Urology	10 (7.4)
Septic Shock	11 (8.1)
Surgery	
Cardiothoracic Surgery	1 (0.7)
Neurology	18 (13.2)
Abdomen	13 (9.6)
Orthopedics	10 (7.4)
Obstetrics	2 (1.4)
Length of Stay in Critical Care	
1 - 3 Days	91 (66.9)
4 - 7 Days	29 (21.4)
8 - 14 Days	12 (8.8)
> 15 Days	4 (2.9)
Time for Transfer-Out	
Day (07:00 – 19:00 Hrs.)	100 (73.5)
Night (19:00 – 07:00 Hrs.)	36 (26.5)
Severity of Illness Evaluated by Doctor (Apache II) before Transferring Out from Critical Care	
0 - 4 Points	30 (22.1)
5 - 9 Points	70 (51.4)
10 - 14 Points	30 (22.1)
15 - 19 Points	6 (4.4)

Discussion

The research results found that family members of critically ill patients are worried about moving out of ICU, with a total score of 65.24 ± 18.02. This is slighty less than the midpoint of the questionnaire (75 points), probably because the majority of the study sample,70.6% are female, in the age range of 41-60 years,which is middle adulthood and working age, 47.8% had marital status, 25% had family members who were related as parents,77.9% had lived with the patient, 50.7% had children. Based on the characteristics of these family members, it can be seen that the majority of family members are middle-adult mature women, and are females who are aware of their role as caregivers. Family members have close relationships with the patients such as children, spouses, parents, including Severity of Illness Evaluated by Doctor (Apache II) before Transferring Out from Critical Care 5-9 points 51.4%. The acute physiology and chronic health evaluation II (APACHE II) score was applied for assessing

Table 3: Transfer Anxi Illness (n = 136).

Variable	Range		Mean ± SD
	Possible	Actual	
Anxiety of Transferring Out	30 - 150	30 - 112	65.24 ± 18.02
Information Support	7 - 35	7 - 35	27.24 ± 5.57
Uncertainty in Illness	30 - 150	34 - 108	76.35 ± 16.10

Table 4: Pearson Correlation Coefficient between Transfer anxiety of Critical Care Patient's Family Member and Information Support, Feeling of Uncertainty in Illness (n = 136).

Variable	Correlation Coefficient (r)
Information Support	-0.348***
Uncertainty in Illness	0.617***

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the severity of illness at ICU discharge, score was clearly related the level of low mortality, and most are primary caregivers. Receiving treatment information and progress of the patient's condition accordingly, namely transfer out of critical care is a move in the right direction. Therefore, there is moderate anxiety about moving out of ICU (65.24 ± 18.02).

The study reported that the information support and the uncertainty in illness were factors that related to transfer anxiety of critical care patient's family member. Transfer anxiety was an anxiety that was related to the transferring of patients out of critical care that usually occurred with people who had moved from a place or environment to another place or environment. The critical illness was a situation that immediately and unexpectedly occurred. When the illness condition had improved, the patient had usually been transferred out from critical care to a general ward with their family member assisting. The family member had played an important role in assisting the patient and asking the support from nurses or medical personnel in timely response when the patient's physical condition had changed. This role made the family member feel anxiety toward the transfer-out, because the patient was now separated from medical equipment and familiar medical personnel in critical care. This result was correlated with the study of Thanoochan R et al.[16] that reported the patient who was transferred out from critical care usually felt anxiety (69.81%).

Although the hospital had a guideline to support the critical care patient's family members such as providing information since an admission, the information given might not be comprehensive enough. In addition, the information and the inconsistent information from many medical personnel might make the patient's family members feel uncertainty in illness that aligned with the study of Singdong P and Jitpanya C[17] that reported the patient's family members usually asked information of illness from other patient's family members. They did not ask the details of illness from registered nurses because they did not like to disturb busy health workers. Only few patient's family members decided to ask information from nurses. Providing information about illness, treatment plan and possible side effect to the critical care patient's family members could reduce their feeling of uncertainty. It aligned with the earlier study of Jaya Rijal et al.,[18] Psychosocial Factors Associated with Transfer Anxiety among Open Heart Surgery Patients Transferred from ICU to the General Ward, that reported anxiety and uncertainty in illness were related. When the critical care patient's family members received the information support about transferring out from critical care, the nursing care after transferring the patient to general ward and patient instruction at general ward, they understand the guidelines of transferring out. They may try to understand, be aware and be ready to respond an unforeseen situation from properly transferring out from critical care. It aligned with the earlier study of Pomrod T et al.,[19] as same as the study of Boonkeaw S and Naphattalung J[20] that reported the information support was a vital need of critical care patient's family member.

For such patients, transfer from the critical care unit can be presented as a positive step. However, to minimize transfer anxiety, healthcare professionals should recognize the condition and approach accordingly to the emotional factors that affect patients. Therefore, during transferring from the critical care unit, it was suggested that the patients and their caregivers should be accompanied and supported in the process of adaptation throughout the transfer experience.

Limitations

This study was designed as descriptive research. In particular, the sample group were family members of critically ill patients in a private hospital and does not refer to family members from ICU in government hospitals. The health care system may be different. Therefore, the results obtained from this study should be used as basic information to study the factors predicting anxiety of moving out of ICU of family members of critically ill patients.

Conclusion

Results of the study can be applied to prepare family readiness before transferring patients from the ICU. Consistently providing information related to treatments and patients' conditions can reduce illness uncertainty and transfer anxiety among family members of critically ill patients. Moreover, nurses had recognized the importance of reducing transfer anxiety of patient's family members.

Recommendation

1. The information should contain details of disease and illness of patient within the scope of which the nurse could provide. To prepare patient's family members to be ready for transferring patients out from critical care would make them more able to adapt well to the treatment plan. The transferring of patients out from critical care would be more effective and could reduce anxiety about moving out.
2. Nursing Staff Organization (NSO) could extend the results for enhancing knowledge among nurses for providing the holistic care to patients and their family members. In addition, it could be applied to improve patient care processes within hospital.

Conflicts of interest

No potential conflict of interest relevant to this article reported.

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