

**THE DEVELOPMENT OF CLINICAL NURSING PRACTICE
GUIDELINE BY UTILIZATION OF RESEARCH FINDINGS
TO FACILITATE COMMUNICATION AMONG
THE INTUBATED PATIENTS**

The seal of Mahidol University is a circular emblem. It features a central blue circle containing a golden chhatra (umbrella) with a flame-like base. This central circle is surrounded by a wider yellow ring. The Thai text 'มหาวิทยาลัยมหิดล' (Mahavithayalai Mahidol) is written in Thai script around the inner edge of the yellow ring. The outermost ring is white with the English text 'MAHIDOL UNIVERSITY' in yellow capital letters.

SUTHADA KUNHA

**A THEMATIC PAPER SUBMITTED IN PARTIAL FULFILLMENT
OF THE REQUIREMENTS FOR
THE DEGREE OF MASTER OF NURSING SCIENCE
(ADULT NURSING)
FACULTY OF GRADUATE STUDIES
MAHIDOL UNIVERSITY**

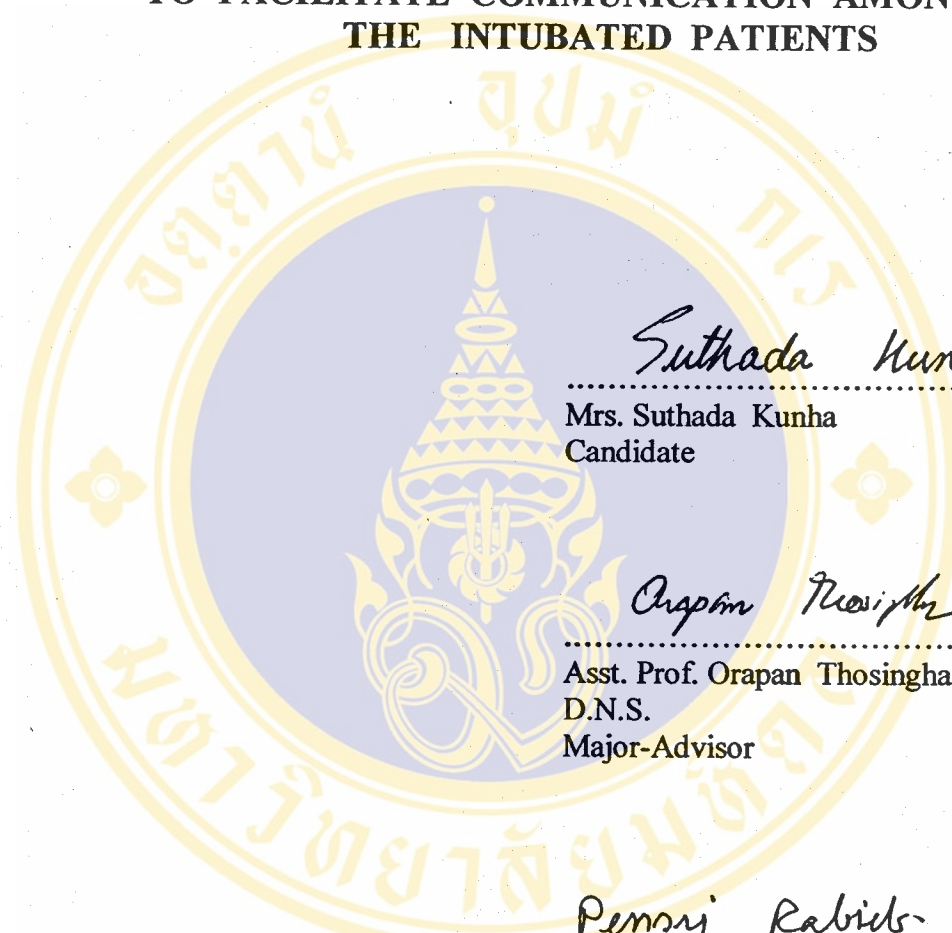
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THE DEVELOPMENT OF CLINICAL NURSING PRACTICE GUIDELINE
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COMMUNICATION AMONG THE INTUBATED PATIENTS.

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ABSTRACT

The objective of this study was to establish CNPG from research utilization process for promoting communication in intubated patients and evaluating the created CNPG for effective application. The establishment of CNPG was done from the synthesis of 20 relevant research studies and the results of the studies were clustered into 4 categories; the need to communicate information of intubated patients, the communication methods of intubated patients, the communication technique of nurses, and the indicators for successful communication. The CNPG underwent validity testing and the consensus of opinion by experts helped develop it. The pilot study was conducted on the medical intensive care patients who were admitted in M-ICU 1 and M-ICU 2 at King Chulalongkorn Memorial Hospital. Duration of data collection was from March to April 2003. The total number of patients were 10 samples. CNPG was tested on 5 samples by the investigator, while 5 registered nurses (RN) used CNPG on one sample each. The presentation of data was done by frequency, means, and standard deviation.

The results of study revealed that the established CNPG was able to promote communication in intubated patients and was possible to practice. It elevated the satisfaction of communication and decreased the difficulty during communication.

It is recommended that the CNPG should be integrated into routine practice with intubated patients. Further study to improve the CNPG is needed so that the CNPG could be continuously improved for its effectiveness.

KEY WORDS: CLINICAL NURSING PRACTICE GUIDELINE /
COMMUNICATION / ENDOTRACHEAL TUBE /
INTENSIVE CARE UNIT

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การสร้างแนวปฏิบัติการพยาบาลโดยใช้ผลการวิจัยเพื่อส่งเสริมการสื่อสารในผู้ป่วยใส่ท่อทางเดินหายใจ (THE DEVELOPMENT OF CLINICAL NURSING PRACTICE GUIDELINE BY UTILIZATION OF RESEARCH FINDINGS TO FACILITATE COMMUNICATION AMONG THE INTUBATED PATIENTS.)

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บทคัดย่อ

วัตถุประสงค์ของการศึกษาค้นคว้าครั้งนี้คือการสร้างแนวปฏิบัติการพยาบาลเพื่อส่งเสริมการสื่อสารในผู้ป่วยใส่ท่อทางเดินหายใจและประเมินแนวปฏิบัติการพยาบาลที่สร้างขึ้นว่าสามารถนำไปปฏิบัติได้จริงหรือไม่ แนวปฏิบัติการพยาบาลสร้างขึ้นตามกระบวนการใช้ผลการวิจัย จากการสังเคราะห์งานวิจัยจำนวน 20 เรื่อง จำแนกออกเป็น 4 ด้าน คือ ด้านข้อมูลที่ต้องการสื่อสารของผู้ป่วย ด้านวิธีการสื่อสารของผู้ป่วย ด้านเทคนิคการสื่อสารของพยาบาล และดัชนีชี้วัดความสำเร็จของการสื่อสาร แนวปฏิบัติการพยาบาลได้รับการตรวจสอบและความเห็นชอบจากผู้ทรงคุณวุฒิอย่างเป็นฉันทามติ และนำไปศึกษานำร่องในผู้ป่วยที่เข้ารับการรักษาในหน่วยวิกฤตอายุรกรรม 1 และ 2 โรงพยาบาลจุฬาลงกรณ์ ระหว่างเดือนมีนาคม ถึง เมษายน 2546 จำนวนทั้งสิ้น 10 ราย โดยที่ผู้ศึกษาเป็นผู้ใช้แนวปฏิบัติการพยาบาลกับผู้ป่วยจำนวน 5 ราย และพยาบาลวิชาชีพจำนวน 5 รายใช้แนวปฏิบัติการพยาบาลกับผู้ป่วยคนละ 1 ราย วิเคราะห์ข้อมูลโดยการแจกแจงความถี่ ค่าเฉลี่ย ส่วนเบี่ยงเบนมาตรฐาน

ผลการศึกษาพบว่าแนวปฏิบัติการพยาบาลที่สร้างขึ้นสามารถปฏิบัติได้จริงและช่วยส่งเสริมการสื่อสารในผู้ป่วยใส่ท่อทางเดินหายใจ โดยเพิ่มความพึงพอใจและลดความยากลำบากในการสื่อสาร

จากผลการศึกษา มีข้อเสนอแนะว่าควรบูรณาการแนวปฏิบัติการพยาบาลเพื่อส่งเสริมการสื่อสารในผู้ป่วยใส่ท่อทางเดินหายใจนี้เข้าสู่การปฏิบัติการพยาบาลเพื่อคุณภาพการดูแลผู้ป่วยใส่ท่อทางเดินหายใจ รวมทั้งการเผยแพร่แนวปฏิบัติการพยาบาลนี้ และมีการพัฒนาอย่างต่อเนื่อง

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CHAPTER I

INTRODUCTION

Background and Significance of the Study

Human beings are gregarious. They cannot live alone. They need to communicate with each other in order to exchange experience and convey information. Each day, human beings spend 75 percent of their time in communication (Tubbs & Moss, 1994: 5). There are two major types of communication, formal and informal. In formal communication, an objective, a pattern and time will be set. Regarding informal communication, there is no limit to the forms of communication. Thoughts, ideas, feelings, and so on can be communicated by speech, writing, facial expression or using body language (Chansong, V. & Intarasuksri, T., 1989: 24; Balzer-Riley, 1996: 5).

Communication is necessary in every step of nursing practice. Whatever nurses have to perform with the patients, they have to inform them first. For example, in order to find out what the problems of the patients are, nurses have to assess them by asking them questions. Treatment or care can be provided properly after nurses have informed the patients. The relationship between nurses and patients has to be built in order to carry out nursing and treatment (Stuart & Larais, 2001: 24). The implementation of a nursing care plan to reduce the discomfort of the patients or to solve the health problems of the patients including the evaluation of all nursing cares, means nurses need to communicate with patients. However, the communication between nurses and patients is different from the communication between ordinary people, since communication between nurses and patients takes place when patients suffer pain, fear, anxiety and stress. Especially, patients who cannot speak because they have to be inserted by same kind of tubes into their airway to maintain their normal breathing have great difficulty in communication.

The number of patients who are on oro-endotracheal tubes are more than the number of those who are on naso-endotracheal tubes (Kite-Pswell, In Ruppert, et al.,

1996: 449). However, the effects of inserting an endotracheal tube are not different. Especially, being disabled to communicate verbally is the first problem of every intubated patient (Johnson & Sexton, 1990; Rotondi, et. al., 2002). When the intubated patients cannot verbalize their needs, or feelings, they have to communicate by writing or using body language (Fabloski, 1994: 197-198; Thelan, et. al., 1994: 448). Nonetheless, most of these patients have difficulty in communicating in these ways because of their critical illnesses and exhaustion (Willians, 1992: 223). Moreover, some intubated patients usually receive analgesics, sedatives or muscle relaxants (Borsing & Steinnancker, 1982: 5-6; Hafsteindottir, 1996: 261; Johnson & Sexton, 1990: 57). As a result, non-verbal communication seems to be very hard for them.

The difficulty in communication causes conflict (Hafsteindottir, 1996; Kim, et al., 1999; MenZel, 1997; Stovsky, et. al., 1988), and includes fear, anger, anxiety, insecurity (Bergbom-Engberg & Haljamae, 1989; Jablonski, 1994: 198), and feelings of low self-esteem (Menzel, 1999). Several studies supported that intubated patients who experienced communication-difficulty always became depressed and refused to communicate their needs (Hafsteindottir, 1996: 261-271). This group of patients did not co-operate well in medical treatment and were discouraged. This problem should be taken into consideration because there is evidence to suggest that discouragement to fight against the illnesses delayed the recovery (Russell, 1999: 783; Williams, 1992: 222). The communication process between intubated patients and nurses in therefore needs to be fostered so that patients needs can be clearly assessed and nurses can provide them with appropriate care relevant to their needs. (Hall, 1996: 293).

In Thailand, there is no specific nursing procedure used in communicating with intubated patients. The methods used depend on the individual experiences. The frequently used communication techniques are using facial expression, moving lips slowly, using posture, indicating by pointing, and writing. There are two nursing guidelines related to intubated patients in medical intensive care unit II, King Chulalongkorn Memorial Hospital where the investigator has been working. The first one is the nursing guideline for helping doctors take care of patients who are on an endotracheal tube. The second one is the nursing guideline in taking care of patients who use different kinds of ventilators. Both nursing guidelines were developed by the nursing and treatment development committee, in October 15, 2001. Furthermore,

there is a nursing standard in taking care of intubated patients which was developed by the nursing standard determining committee, in October 15, 2001. Concerning the details about the communication of intubated patients, item 18 of the nursing guideline in taking care of patients who use the different kinds of ventilators, states that patients should be closely taken care of in order to reduce factors causing stress, and to promote the adaptation of patients by verbally and non-verbally communicating with patients (Nursing Department, King Chulalongkorn Memorial Hospital, 2001: 222). From the stated nursing guideline, the concept was applied to invent a method of communication by using pictures with Thai and English words underneath on A-4 paper: 1 word/ 1 picture/ 1 paper. The total pictures are 50. However, inconvenience in using this set of pictures has occurred. Both patients and nurses claimed that there were too many pictures and it took a long time to find the desired picture.

Therefore, improvement to the nursing guideline should be made in order to promote clarity in communication and to expand the details from item 18 of the nursing guideline invented by the Nursing Department, King Chulalongkorn Memorial Hospital. The readiness of both physical and psychological aspects of patients will be assessed so as to choose an appropriate technique in communication for individual patients. Especially, nurses who take care of patients most need to have a good knowledge and capability in assessing the readiness of the patients. In addition, they have to be able to use the appropriate technique in assessing the patient's need individually in order to make a sound nursing care plan to match the need of the patient.

Nursing practice claimed to have a quality need to have a basis and an integration from the data obtained from clinical and scientific evidence from research. That quality of a nursing practice can be used as a guideline for practice which can assert the rightness, and explain the rightness to the one who receives that service. In order to make a nursing practice guideline which has quality as stated previously, the research utilization process is recommended (Rosswurm & Larrabee, 1999; Stetler, et al., 1998). This research utilization process is accepted and has a quality which matching well the aim of health service management under the reformation of the health care system. That is the service has to have quality and can be examined. (Poonchareon, V. et. al., 2000: 7). Because of that reason, the investigator is interested

in using the research utilization process to formulate a clinical nursing practice guideline (CNPG) for promoting communication in intubated patients.

Conceptual Framework of the Study

Every patient who received treatment by being inserted with an endotracheal tube has a problem in communication. They cannot communicate verbally which is the normal way of communication, resulting in physical and psychological effects. Moreover, the methods used in communication with the patients are not appropriate. Therefore, in order to take care of intubated patients, it is necessary to have a nursing practice guideline for assessing the appropriate method of communication for each individual patient. In this study, the research utilization process, modified from Iowa Model of Research in Practice was used as a guideline for studying.

The Iowa Model of Research in Practice is the conceptual framework which mainly emphasizes solving the clinical problem. The Iowa Model of Research in Practice consists of 7 important steps. In this study, the investigator chose to study only the first 4 steps. One step was added, that was, the examination of the developed innovation. The first step in building the conceptual framework was researching the problem by using the experiences obtained from clinical work. The problem identified was the communication of intubated patients. In the second step, relevant research and literature were reviewed and selected according to the research process. In the third step, the data obtained were analyzed and synthesized in order to obtain the most appropriate clinical data for that problem. The nursing practice guideline was developed to promote communication with intubated patients. This clinical nursing practice guideline (CNPG) was then examined by experts in communication with intubated patients. The guideline was finally tested for quality in a pilot study.

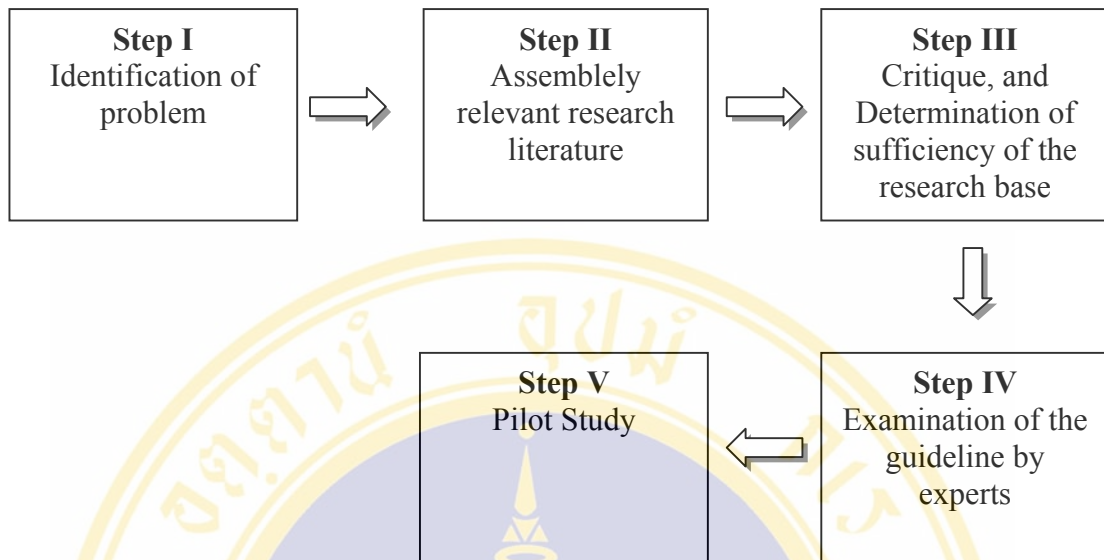


Figure 1 The conceptual framework of the development of the CNPG was by using the research utilization to promote communication of intubated patients

The Objectives of the Study

1. To develop the CNPG in order to promote communication of intubated patients by using research utilization.
2. To test whether the developed CNPG can be practically used or not.
3. To test whether the developed CNPG can promote communication of intubated patients or not.

The Scope of the Study

This study aimed to develop a CNPG in order to promote communication of intubated patients by using the research utilization. The guideline developed was then administered to the intubated patients in the pilot study at the medical intensive care unit (M-ICU), King Chulalongkorn Memorial Hospital between March to April 2003.

Expected Outcomes and Benefits

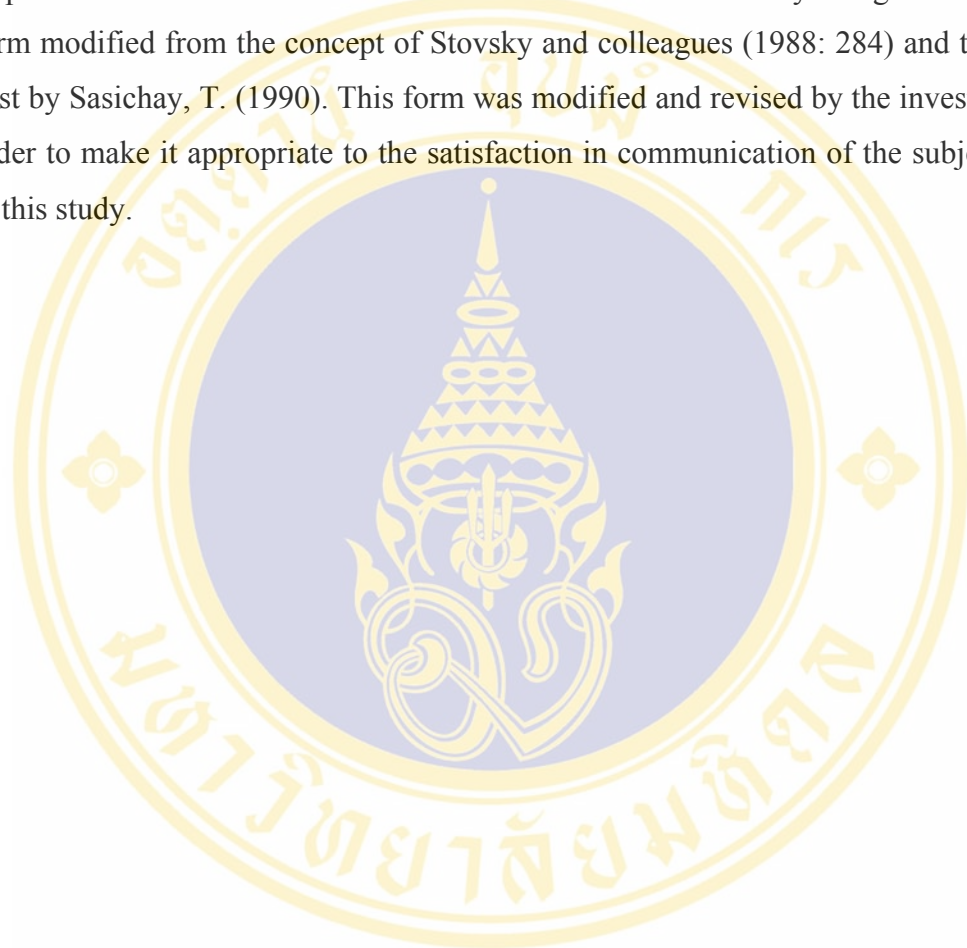
1. A Clinical Nursing Practice Guideline to promote communication of intubated patients in the medical intensive care unit would be obtained from the study.
2. The nursing quality in promoting the communication of intubated patients would be assured.
3. This study will be a guideline for the development of other clinical nursing practices by using the research utilization.

Definition of Terms

1. **Clinical Nursing Practice Guideline (CNPg)** to promote the communication of intubated patients referred to the method of clinical nursing practice which aimed to assist registered nurses communicate with intubated patients.
2. **Research utilization** referred to the developing process of the result obtained from the research which had scientific validity in order to be a nursing practice guideline for communicating with intubated patients. Iowa model of research in practice (Tiler, et al., 1994) was modified from 7 steps to 4 steps and used as a process in utilizing research findings in this study.
3. **Intubated patient** referred to a patient who had an endotracheal tube inserted either via mouth or nose. This tube was inserted through the mouth or nose and passed the larynx so that it was air impossible for air to pass. As a result, the voice could not be used. By observation, the intubated patients could not make sound when speaking.
4. **Communication** referred to the conveying of information between patients and registered nurses in order for them to understand what was being conveyed. The conveyance of information was in the form of writing, using body language, facial expression, moving of lips slowly or using picture with explanations underneath. The method of communication used by patients was derived from observation of patients' expressions.
5. **The difficulty of communication** referred to the feelings of patients toward the difficulty of communication. The difficulty of communication were evaluated by using the Ease of Communication Scale (Menzel, 1997: 366; 1998: 248)

together with a numeric rating scale modified from the concept of Stovsky and colleagues (Stovsky, et al., 1988: 284)

6. The satisfaction in communication referred to positive feelings toward the communication of nurses when the problems and the needs of the patients were responded. The satisfaction in communication was evaluated by using the evaluation form modified from the concept of Stovsky and colleagues (1988: 284) and translated first by Sasichay, T. (1990). This form was modified and revised by the investigator in order to make it appropriate to the satisfaction in communication of the subjects used in this study.



CHAPTER II

LITERATURE REVIEW

The review of related literature in this chapter aimed to promote comprehensive understanding about the knowledge relevant to this research, as discussed in detail below:

1. Concept of communication
 - 1.1 Definition of communication
 - 1.2 Components of communication
 - 1.3 Factors affecting communication
2. Intubation: A major barrier to patients' communication
 - 2.1 Definition of intubation
 - 2.2 Impact of intubation and its association with the communication process
 - 2.2.1 Physiological impacts
 - 2.2.2 Psychological and emotional impacts
 - 2.2.3 Apprehension
 - 2.2.4 Economic and social impacts
 - 2.2.5 Family impacts
3. Current solution of communication problems for intubated patients
4. Resolution to communication problems in intubated patients through research utilization
 - 4.1 Significance of research utilization
 - 4.2 Development of research utilization
 - 4.3 Research utilization model
 - 4.4 Iowa Model of Research in Practice

1. Concept of Communication

To understand the concept of communication, it is important to review various definitions of communication, the association between the communication process and essential components of communication, as well as factors influential in communication success and barriers to communication.

1.1 Definition of communication

Communication is an essential human activity that has significant influence on the existence of a society. George Miller, a former chairman of the American Psychiatric Association, said that communication is a medium that connects members of a society together (Fontenberry, In Rocchiccioli & Tilbury, Eds., 1998: 143). Effective communication induces a good relationship among people involving in the communication. In nurse-patient relationships, communication is an essential process that can lead to effective nursing care.

“Communication” has a variety of definitions, depending on the related subject. Nevertheless, the general meaning of communication is basically similar, as summarized below.

1.1.1 Referring to the definition in a Thai dictionary, produced by the Royal Institute B.E.2525, “communication” means connecting with each other or introducing each other (Royal Institute, 1982: 812). In general, the word “communication” in Thai usually focuses on the delivery of messages or materials that the sender would like the receivers to know. It also refers to the process of interpersonal interaction, aiming to send messages to other people in various forms.

1.1.2 In English, the word “communication” has its root in the Latin word “communitas” (Fontenberry, In Rocchiccioli & Tilbury, Eds., 1998: 143), which means commonness. Hence, considering the original root, it could be summarized that communication emphasizes common understanding of the delivered message.

1.1.3 Definitions of “communication” as defined by academics of various disciplines:

1.1.3.1 Administration. Administrative study defines “communication” as a basic human need as it provides means for humans beings to interact with each other in society with an aim to exchange information, news and experience. The goals of communication are to deliver knowledge, understanding and

motivation to the receiver of the message or to gain influence over the receiver (Cheuypratap, S., 1994: 17).

1.1.3.2 Sociology. Sociologists perceive communication as a process in which a person sends a message to another person and the person receiving the message reacts in response. The message may be symbolically delivered and the process may be verbal or nonverbal. In other words, it is the process of exchanging and sharing information with common understanding of the message symbolization (Prabnasak, B., & Jirawatkul, S., 1988: 9). Every interaction in a process of communication consists of at least four components: source, message, channel, and receiver (Pilanthmowartm, O., 1994).

1.1.3.3 Nursing. Referring to Grant and Massey (Grant & Massey, 1994: 51), communication is the delivery of either verbal or nonverbal information. In other words, it is the process of information exchange that involves symbolization, manners or behaviors that are commonly understood among the participating people. Communication is varied in difficulty, as it could be simple with a straightforward message or could be complicated with complex information.

Referring to the above definitions of communication in addition to the interaction between nurses and patients, nurse-patient communication could be summarized as follows:

1. Communication is an interaction between a nurse and a patient, in which one of them is the sender and the other one is the receiver.
2. Communication is a means to share ideas, beliefs and attitudes between nurses and patients.
3. Communication is a deliberate action with certain objective to induce changes in perception, awareness, feelings, emotions or behavior of the receiver, either nurses or patients.
4. Nurse-patient communication is a dynamic process as it involves constant changes, starting from message encoding with symbolization to the interpretation of symbols by the receiver who perceives the message according to the communication context and his or her sociocultural background. Nurses with different backgrounds will perceive the message differently. Likewise, patients with different backgrounds or different experiences will send a message differently.

5. Nurse-patient communication mainly focuses on achieving common understanding and ideas between the nurse and the patient.

1.2 Components of communication

Communication consists of six essential components as discussed Below (Arnold, et al., In Leahy & Kizilay, Eds., 1998: 214-215)

1.2.1 Encoder or sender: Encoder is the person who wants to, deliver information to or share his or her opinion and desire with other people. The encoder has information and messages, as well as a method of delivery of the message so as to establish common understanding with the receiver (Sujjantrarat, R., 1988: 4). After making a decision about the communication method, the encoder needs to apply thinking skills and uses all sensory organs to adjust the communication technique to be most suitable for the receiver (Balzer-Riley, 1996: 5; Dominick, 2002: 4; Peel, 1995: 12-13).

1.2.2 Message: Message is the physical outcome of the sender's encoding (Berlo, 1960: 54; Dominick, 2002: 5). It is presented to the receiver in the form of codes, either as words, signals or symbols. The receiver then decodes and interprets the meaning of the message (Nitikasetsunthorn, P., 1990: 43).

1.2.3 Sensory channel: Channel is the medium, coordinator or technique used in delivering the message from one person to another. Tubbs and Moss (1994: 11) indicated that the direct channel of communication uses the five basic senses comprising hearing, sight, smell, taste and touch; among the five sensory channels, the most frequently used are hearing, sight and touch (Sherman, 1994: 11).

1.2.4 Decoder or receiver: Receiver refers to a person, a group of people or an organization who receives a message that is delivered through a channel or a medium. Sherman (1994: 11) stated that after receiving the message, the receiver decodes and analyzes it through the five senses, using skills similar to that of the sender. Sometimes all five senses may be needed for the analysis of message. After the interpretation is completed the sender would give feedback to the sender and the sender will know whether the communication is successful.

1.2.5 Feedback: Feedback is the response from the receiver to the sender. In general, the feedback is demonstrated in the receiver's manner toward the sender after considering a message to send back. The feedback may be a confirmation

of common understanding when the receiver feels that he or she correctly has understood the message. The feedback could also be an answer or additional information, hence extending the conversation between the sender and the receiver (Windahl, et al., 1993: 16; Sujichantararat, R., 1988: 5-6).

1.2.6 Noises or communication contexts: The communication contexts refer to any objects or situations that may interfere with the delivery of a message or may induce an error in the reception of message (Dominick, 2002: 7; Gamble, 1993: 10; Tubb & Moss, 1994: 11). Gamble (1993: 10) stated that noise is not the only interference in communication; mental and physical discomfort, reduction in perception proficiency and interpretation skills, as well as the environment, also interfere with communication.

The components of communication highly affect the communication process. In nurse-patient communication, in which the patients are senders, trying to inform the nurses about their needs, the patients usually use verbal communication; however, if they have a restriction in the utilization of verbal channels, they may have to use other channels to communicate, such as facial expression or body language. The communication process is complete when the receivers, nurses in this case, give feedback showing that they have received the message. The absence of feedback or responses that indicate no reception of the message can make the patients feel frustrated as most of their messages are related to their physical needs such as pain or other physical discomfort. Patients' communication may be interrupted by various interferences such as a reduction in ability to use language or to speak because of endotracheal intubation which impairs the speaking organs functioning, the reception of sedative drugs which alters consciousness, or the reception of a muscle relaxant which has an effect on the ability to communicate with body language. These conditions are significant barriers to successful and effective communication.

1.3 Factors affecting communication

Communication is a dynamic process with consistent changes. The factors that affect communication have an impact on every step of the process. These factors are discussed in detail below:

1.3.1 Personal factors

1.3.1.1 Demographic characteristics of both the sender and the receiver: According to Sundeen and Stuart (1994: 116), individual differences have effects on communication and characteristics of people involved in communication should be considered in making a plan for effective communication. Therefore, in caring for intubated patients, nurses should be aware of differences concerning age, gender, educational level, religion, belief, experience and perception of each individual patient. Such demographic characteristics should also be considered in making a decision about feedback.

1.3.1.2 Communication skill: Communication skill is a person's proficiency in thinking and rationalizing for communication. It could be classified into verbal and non-verbal communication skill (Pragorbpol, R., 1992: 138; Satawatin, P., 1983: 63). If a patient, as a sender, can communicate with appropriate skill, nurses will be able to respond to his or her needs. On the other hand, if the patient is not capable of using the communication skill effectively, he or she will have difficulty in communication with nurses. For instance, intubated patients are not able to conduct verbal communication and need to utilize other communication channels but they may not have adequate skill to deliver the message.

1.3.1.3 Attitude: Attitude is an opinion, including emotion that is ready to respond to any an event. The sender's attitude includes self-attitude as well as the attitude toward content of message and toward the receiver. Tubb and Moss (1994: 23) stated that attitude has an effect on communication, either within a small group or a big organization. Alteration of attitude may lead to communication failure; nevertheless, if the involved people share the same viewpoint with common understanding, the communication could be effective. Attitude is a significant factor in a reduction or an increase in effectiveness of communication (Satawatin, P., 1990: 63). The communication is more likely to be successful if patients and nurses have a positive attitude and self-esteem. In addition, the patients' feeling of trust toward nurses and their belief in ability to communicate, as well as the nurses' intention and confidence in caring for the patients, have positive impacts on communication. On the other hand, communication is less likely to be successful if nurses and patients have a negative attitude toward each other.

1.3.1.4 Knowledge: Knowledge is important in communication. According to Berlo (1960: 48), the accuracy of communication depends on the sender's and the receiver's knowledge. Moreover, knowledge has an impact on communication behavior. Prabnasak, B. and Jirawatanakul, S. (1988: 44) explained that essential knowledge for communication comprises the knowledge about the message being communicated, about people involved in the communication and about the communication process. Efficient and experienced nurses are usually confident in communicating with patients and are able to understand the patients' message in any form. The communication is more likely to be successful if the patient is well educated; on the other hand, patients who are not well educated, such as those who cannot read or write, will have more difficulty in communication and they have to rely on non-verbal language to inform nurses about their needs.

1.3.1.5 Sociocultural status: Berlo (1960: 49) wrote that people from different social and cultural background have different ways of communication. Social status and culture have an effect on a person's expression and the use of language. Nurses should be aware of this factor as different regions in Thailand have different dialects, beliefs and local culture. For patients who use a local dialect in their communication, nurses may need to learn the dialect and try to understand the culture of the patient's hometown.

1.3.2 Message factors (Prabnasak, B., & Jirawattanakul, S., 1988: 46; Satawatin, P., 1990: 69-70) comprise the following:

1.3.2.1 Content: Effective communication requires informative content that demonstrates the sender's opinion, meaning and objectives; at the same time, the content should be valuable and should cover the intended message in comprehensible form. Patients have restriction in managing the content of a message; hence nurses need interpretative skills to comprehend the message even if it is not completely delivered. The interpretation, therefore, depends on the experience and communication ability of nurses and patients.

1.3.2.2 Code: The selection of code has a strong effect on the outcome of communication. The utilization of an inappropriate code will lead to incorrect interpretation of the message.

1.3.2.3 Treatment: Linguistic treatment of the message, including grammar and vocabulary usage, may help in simplifying the message or in attracting attention. On the contrary, the treatment with complicated words may have an effect on the receiver's comprehension. Illness is a barrier to treatment in communication, as patients cannot properly use the language, specifically intubated patients. Nurses, however, can use simple and precise language to make it easy for the patients to understand.

1.3.3 Channel or medium factors

Satawatin, P. (1990: 71) stated that the selection of channel can either increase or reduce the efficiency of communication. The communication will be highly effective if the sender chooses an appropriate channel for that situation. In selecting a communication medium, the following components should be taken into consideration.

1.3.3.1 Property and efficiency of the channel: Each medium has a specific property. In selecting a communication channel, the sender should consider its property concerning space, time, speed, permanence and participation of the receiver.

1.3.3.2 Effective selection of communication channel: Satawatin, P. (1988: 71) suggested that the sender should consider the type of available channels, expenses and popularity of the channels in the selection of a communication channel. The sender should select the channel that is widely available to most receivers with the least expenses and the channel should also be appropriate to the content and objectives of the communication. For nurse-patient communication, therefore, nurses should consider the channel suitable for each patient.

1.3.4 Factors concerning situational context of communication

Communication occurs in an environment involving light, air, temperature, furniture and various electronic machines. The context in which the communication occurs has an effect on the interpretation of the message and it may inhibit the interpretation (Gibson, 1993: 16). The context is, in other words, the communication environment.

1.3.5 Factors concerning communication status

Communication status affects the efficiency of communication. two-way communication generally induces better results, compared with one-way communication, in both aspect of understanding and interpersonal relationship. In complex communication, where the message is delivered through a number of media, errors and mistakes may occur, either intentionally or not. The communication between nurses and alert patients is usually two-way; nurses receive message from patients and interpret it to subsequently respond to the patients' needs. For patients who are unconscious, the communication is usually one-way.

Communication is a significant activity in human living, as human beings need to interact with people in the same society. Communication is composed of sender, message, receiver and feedback that indicates the effectiveness of communication. Whether a person is in normal condition or is ill, communication is important. In fact, its significance particularly increases when a person is ill because various barriers to communication may arise from illness. A major barrier to communication is inability to have verbal communication, which is the usual means of human communication. This barrier is inevitable in every intubated patient.

2. Intubation: A Major Barrier to Patients' Communication

Intubation is a basic medical procedure provided to critically ill patients in order to maintain sufficient gas exchange (St.John, 1999: 7). Most intubated patients are in acute critical condition with different physical requirements and problems depending on their illness. The following review of literature is a discussion of difficulties in patients' communication resulting from intubation.

2.1 Definition of intubation

Intubation is a procedure in which an artificial airway is placed through the nasal or oral cavity into the trachea (Dettenmeier, 1992: 294; Holloway, 1993: 214). Oral intubation is more common than nasal intubation, especially in emergency cases. Nasal intubation is frequently applied to patients who are fully conscious and require long-term intubation as it is easier to fasten the endotracheal tube and the patients feel more comfortable, in comparison with oral intubation. Moreover, the caliber of endotracheal tube used in nasal intubation is usually smaller than the tube

used in oral intubation (Kite-pswell, In Ruppert, et al., Eds., 1996: 449; Thelan, et al., 1994: 440). Endotracheal intubation is required for patients with the following criteria (McCann, Flynn and Bruce, 1993: 54):

1. Respiratory failure
2. Unconsciousness
3. Areflexia
4. Airway obstruction
5. Incapable of spontaneous breathing due to any cause
6. Requirement of endotracheal suctioning
7. Requirement of mechanical ventilation

The main objectives of intubation are listed below (Hillman & Bishop, 1996: 25; Hinds & Watson, 1996: 184; Kiatboonsri, S., In Jareanphun, P. & Kiatboonsri, S., Eds., 1992: 166; Pilbeam, 1998: 230; Urban, et al., 1992: 275; Vijitrwejpaisarn, P., 1996: 179).

1. To assist the patient's ventilation with sufficient oxygenation for the body's requirement; the utilization of mechanical ventilation may be necessary in some cases.
2. To prevent airway obstruction due to tongue flaccidity, oropharyngeal muscular weakness, hypersecretion, saliva obstruction in patients who cannot swallow or have pathogenesis of the oropharynx.
3. To drain pulmonary secretion by endotracheal suctioning and, to prevent infection from accumulative secretion.
4. To prevent aspiration of saliva, gastric juice or foreign bodies into the trachea in patients who are unconscious or have decreased reflexes to foreign bodies in the respiratory tract.
5. To accommodate a surgery or medical procedure concerning respiratory tract.
6. To provide medical treatment; for example, the reduction of PaCO₂ in patients with increased intracranial pressure.

2.2 Impact of intubation and its association with the communication process

2.2.1 Physiological impacts

Intubation is an insertion of an endotracheal tube passing the vocal cords directly to the trachea (Vijitrwejpaisarn, P., 1996: 161). The endotracheal tube that is commonly used at present is a curved-shape, PVC plastic tube with malleable property; hence it can be adjusted to make a desired curve. The proximal or upper end of the tube has an adaptor joint for connecting with a manual resuscitation bag or with a mechanical ventilator. The distal end of the tube, which is placed in the trachea, is a round tip with slanting cut to reduce possible trauma and to make the vocal cords visible during the insertion. There is a “cuff”, which is an inflatable balloon-like structure of two to five centimeters in length that surrounds the tip of the tube. The cuff is connected with an external pilot balloon so that the volume and pressure of the cuff can be measured (Dettenmeier, 1992: 295; Kiatboonsri, S., 1992: 171-172). Every intubated patient is at risk of complications, as listed below (Holloway, 1993: 216-218).

2.2.1.1 Malposition or loss of artificial airway: The tip of an endotracheal tube should be placed in the middle between the vocal cords and the carina or about half of the tracheal length (Tangsongsap, J. & Boonbooranapong, T., In Limpisawat, T., et al., Eds., 1998: 18). After confirming the position of the endotracheal tube, the tube must be tightly fastened with clothes or waterproof adhesive tape to prevent the tube from dislodging or unplanned extubation (Dettenmeier, 1992: 301; Traver, et al., 1991: 45) as it is found that the incidence of unplanned extubation is approximately 8.5 to 13 percent (Coppolo & May, 1990: 165-169). Referring to a study conducted by Dettenmeier (1992: 301), a cause of malposition of artificial airways is inappropriate use of fastening materials which causes the tube to loosening upon contact with secretion. Nevertheless, fastening with will tape or adhesive tape cannot completely prevent unplanned self-extubation (Barnason, 1998: 409-417). A study conducted by Tominage (1995: 586-590), however, found that the use of waterproof adhesive tape can reduce the incidence of endotracheal tube malposition. Another cause of endotracheal tube malposition is the movement of the patient’s head or frequent changes of position. It was found that the

head movement induces alteration of endotracheal tube position by approximately 2 centimeters from the previous position (Coppolo & May, 1990: 165-169; Kite-Pswell, In Ruppert, et al., Eds., 1996: 450). In addition, the tip of the endotracheal tube may consistently stimulate the nerve located behind the glottis, inducing swallowing and gagging reflexes and malposition of the tube may occur as a consequence (Thelan, et al., 1994: 442; Wijitrwejpaisarn, P., 1996: 239).

2.2.1.2 Airway obstruction: Airway obstruction may result from a kink in the endotracheal tube, secretion block, blood clot inside or at the tip of the tube, or even bowing the head (Urden, et al., 1992: 27). Other causes of airway obstruction include the patient's bite into the tube, herniation of the inflatable cuff, pressure from too much air in the cuff or the tube malposition to the extent that its tip presses against the trachea wall or against the carina (Hinds & Watson, 1996: 184).

2.2.1.3 Infection: According to Kite-Pswell (1996: 448), intubation impairs the defense mechanism of upper respiratory infection. The endotracheal tube is an airway opening that lets microorganisms and foreign bodies enter into the respiratory tract. In normal conditions, the respiratory tract, starting from the larynx to peripheral airways, is free of any organisms and is usually warm and humid. Intubation causes dryness in the airways, retention of secretion, impaired function of cilia on the airway wall and decreased ability to cough; as a result, pathogenic microorganisms may collect and grow in the airways, resulting in respiratory tract infection. Kiatboonsri, S. and associates (1992: 176) wrote that a major cause of infection is the aspiration of saliva or food and gastric juice from vomiting. Other causes of infection include contamination from medical equipment, contamination from staff practice, inappropriate use of equipment, lack of cautiousness and ignorance of decontamination principles, specifically in endotracheal suctioning.

2.2.1.4 Upper airway damages: Upper airways comprise the nose, the mouth, the glottis and the trachea, which are composed of soft tissues. The trachea starts from the larynx to the prong, which is known as carina, before separating into the left and the right bronchial areas. The trachea is a cylindrical tube with the size of 1.5 to 2.5 centimeters in diameter and 11-13 centimeters in length. The

anterior part of the trachea is composed of approximately 10 to 20 pieces of C-shape cartilages arranged in a longitudinal row. The posterior part of the trachea has thin tissue connecting each end of the C-shape cartilages together; thus the trachea is completely separated from the esophagus, which lies behind (Leff & Schumacker, 1993: 158). Upper airway damages from intubation may result from various causes as detailed below.

a. The process of intubation directly injures the upper airway as the endotracheal tube presses on the epithelium of the airway wall. Referring to Hinds & Watson (1996: 184), the body of the endotracheal tube applies pressure on various areas of the airways including the glottis, posterior part of vocal cords, arythnoid cartilages, and cricoartenoid joints; as a result, the epithelium cells of these areas are damaged. Vijitrwejpaisarn, P. (1996: 163) pointed out that normal arterial pressure in adult trachea is approximately 30.5-35 mmHg (42 cmH₂O), the pressure of tracheal venous end capillary is about 18-20 mmHg (24 cmH₂O), and the pressure of lymphatic duct is about 5-8 mmHg (9 cmH₂O); the application of pressure higher than 30 mmHg on the tracheal wall causes damages to the epithelium of the airway wall, and causes ischemia in tracheal cartilages which may progress to tracheal narcosis.

b. Air injection into the inflatable cuff can cause tissue damages. Tangsongsap, J. & Boonbooranapong, T. (1998: 21) wrote that if the pressure in the cuff is higher than 18 mmHg it induces venous obstruction and edema whereas the pressure lower than 15 mmHg (21 cmH₂O) allows consistent arterial and venous flow through the whole ventilatory cycle. The risk for tracheal necrosis is reduced when the pressure in the balloon cuff is lower than 25 mmHg; nevertheless, for patients with hypotension, balloon cuff pressure lower than 25 mmHg is not considered as a safe level (Pilbeam, 1998: 255).

c. Endotracheal suctioning directly damages tracheal mucosa, according to Pilbeam (1998: 292). Additionally, prompt application of suctioning pressure in response to the sense of resistance (when feeling that the suctioning catheter touches carina or tracheal mucosa) also induces damages to tracheal mucosa such as the laceration of epithelial cells on the airway wall, blood retention, and the loosening of cilia (Pete & Zapata, 2002: 130).

d. Other factors concerned with damages to upper airways due to intubation, as listed by Thelan and associates (1994: 445), may be a consequence of either a general or a specific cause. General causes include long-term intubation or long-term use of a mechanical ventilator, insufficient reception of sedative drugs, frequent bowing of the head, body movement in either bending or stretching position, breathing against the functioning of mechanical ventilation, restraint of the tube, endotracheal suctioning, repeated intubation, chronic illness that requires frequent endotracheal suctioning, respiratory tract infection, and hypotension. Specific causes are categorized according to each part of the trachea: damaging causes related to the larynx include frequency of intubation, through either the nasal or oral way, patient's lack of experience, unplanned and self-extubation; causes related to trachea include too much air in the cuff, the use of a mechanical ventilator in combination with PEEP and the inflated cuff size, which may be too large or too small.

The aforementioned physiological impacts of intubation have various effects on intubated patients comprising insufficient oxygenation, dyspnea, fever from infection or sore throat due to injured tissue of the tracheal wall, as well as the pain around the mouth, throat and larynx. Intubated patients feel uncomfortable from pain and have both physiological and psychological discomfort, which may finally impair the patient's ability in communication (Hafsteindottir, 1996: 161-271; Johnson & Sexton, 1990: 48-57; Menzel, 1997: 383-371; 1998: 245-252). Additionally, intubation inhibits patient's verbal communication to express the feeling of pain, exhaustion from insufficient breathing, and secretion retention (Hafsteindottir, 1996: 269-271). The patients, therefore, need to make an effort to inform medical staff about their needs (Puntillo, 1990: 526-533) and they suffer from difficulties in communication.

2.2.2 Psychological and emotional impacts

Intubation inhibits patients' verbal communication, hence it has a strong psychological impact. Traver and associates (1991: 146) explained that intubation induces an uncomfortable feeling and restriction to the patient's movement; therefore, it does not have only a physical impact but also has a psychological impact. A study of patients' experience in receiving mechanical ventilation found that the

inability to talk is the most dominant cause of stress (Johnson & Sexton, 1990: 48-57). This is similar to a study conducted by Rotondi (2002: 746-752), which examined the experience inducing stress in patients receiving long-term ventilation in an intensive care unit. It was found that 65 percent of the patients reported inability to speak as the most impressive experience concerning intubation, and 75 percent reported difficulties in talking as a superior impression concerning experience in an intensive care unit. These two experiences induce the sense of threat to the patients at a moderate to high level. Another study of stress-induced situation during the CABG operation found that intubation and inability to talk induced stress at a high level, compared to other situations ($p < 0.01$) (Pennock, 1994: 325).

A research study conducted by Paerungsakul, K. (1999) investigated the stress-induced situation based on the perception of patients and nurses in a surgical intensive care unit. The sample of this research were divided into two groups: 60 adults receiving care from the surgical intensive care unit and 19 staff nurses. It was found that both groups reported perceptions of the same physical and psychological situations that induced stress most: the physical situation was intubation and the psychological situation was the inability to speak.

Intubation also has emotional effects. A study conducted by Bergbom-Engberg (1989: 1068-1072) found that 50 percent of patients receiving mechanical ventilation presented negative emotional responses including anxiety, fear, and frustration from loss of ability to speak. The emotional impact is particularly strong in intubated patients who are in a critical stage and are under the condition of depersonalization, deprivation and are erratic, as well as those who experience insufficient sleep and restriction of movement (Salyer & Stuart, 1985: 20).

2.2.3 Apprehension

Apprehension consistently occurs with intubated patients and it induces continual stress. The body has systemic responses to stress involving the co-functioning of nervous, endocrine and immune systems (Hutcher & McCane, 1996: 222). The brain receives a sensory signal and subsequently transfers the signal to the hypothalamus, stimulating the release of hormones such as corticotropin. The released hormone, then, stimulates functioning of various systems, leading to significant physiological changes including increased blood sugar, increased disposal of lipid and

protein and increased cardiac output, heart rate, respiratory rate and blood pressure. Moreover, the increase in cortisol release is a defense mechanism that prevents prolonged response to stress and it helps in maintaining body balance. If the body response to stress is extended for a long period, body immunity may be reduced, resulting in susceptibility to infection and delayed wound healing. Cortisol also stimulate the release of acid and pepsin, hence leading to peptic ulcers; in addition, it has effects on the central nervous system and may cause concomitant mental disorder. According to Holloway (1993: 216), apprehension in intubated patients comprises the following:

2.2.3.1 Apprehension about an unknown situation: Every patient is filled with a certain apprehension nor previously experience. The severity of apprehension depends on each person's characteristics and experience. Only a small number of patients have experience of intubation; hence the situation is new to most patients. Apprehension about an unknown situation also covers the provision of medical treatment and the interaction with medical professionals.

2.2.3.2 Apprehension from discomfort due to intubation: Common discomfort from intubation is the feeling of pain on account of the pressure from the endotracheal tube. Referring to Kite-Pswell (1996: 450), the pressure on the areas that the endotracheal tube contacts is inevitable. Moreover the fixation of the tube, oral hygiene care and restriction of movement or tying up of the patients' hand to prevent self-extubation also contribute to the patients' discomfort (Traver, et al., 1991: 46).

2.2.3.3 Apprehension about loss of ability to speak: Loss of ability to speak is an inevitable situation during intubation. Nevertheless, the level of apprehension in this aspect is different depending on the experience of each patient. Studies of patients' experience during intubation have shown that the problem that has the strongest impact on intubated patients is inability to speak (Bergdom-Engberg, 1989: 1068-1072; Rotondi, 2002: 746-752; Hafsteindottir, 1996: 268-271). Speaking is a physical mechanism resulting from the vibration of vocal cords after a sudden shift of airflow, in combination with concomitant functioning of organs in the oral cavity, the throat and the glottis, which form into a speaking accent. The disorders of these organs, therefore, may impair the speaking mechanism (Guyton & Hall, 2000: 442;

Rutishauser, 1994: 501). Intubation causes problems in verbal communication as the endotracheal tube is placed passing the vocal cords hence inhibiting the vibration of the cords and disrupting the production of sound (Traver, et al., 1991: 146; Pilbeam, 1998: 162).

2.2.4 Economic and social impacts

Intubated patients are critically ill and usually require medical treatment in an intensive care unit with various advanced technology and equipment for their survival. Apart from mechanical ventilation, these patients generally receive insertion of various catheters into the body (Tantitham, J., 1996: 274); hence they are at high risk for infection, of which nearly all are hospital-acquired infections (Kiatboonsri, S., et al., In Charoenpan, P.& Kiatboonsri, S., Eds., 1992: 176). The most frequently found infection in intensive care units is pneumonitis with an incidence rate of approximately 46.9 percent of all hospital-acquired infection; among these, 86 percent are pneumonitis from the utilization of mechanical ventilation (Eggimann & Pittet, 2001: 2059-2093). Hospital acquired pneumonitis increases the length of hospital stay, mechanical ventilation requirement and cost of medical care (Rello, et al., 2002: 2115-2121). Complications have effects on cost of treatment and increase length of hospital stay (McCusker, et al., 2002: 143) and, finally, lead to an economic burden for patients, their family and the country.

Furthermore, patients who are intubated for longer than five days experience a higher level of sufferings than those who are intubated for one to five days (Yoosuk, S., 1993: 86-87). Loss of speaking ability during intubation is a major cause of suffering and it also has effect on a reduction in interpersonal interactions (Johnson & Sexton, 1990: 48-57), hence the patient feels isolated from close relatives or friends, becomes lonely, and disregards surrounding people (Ruppert & Meisel, In Ruppert, et al., Eds., 1996: 41). As a result, the patient may develop the sense of self-worthlessness, depersonilization, and social-isolation.

2.2.5 Family impacts

Most intubated patients require utilization of mechanical ventilation and intensive medical care; thus, normally, their families become frightened and anxious (Hanoucharoenkul, S., In S.Hanoucharoenkul, Ed., 1993: 7; Ruppert & Meisel, In Ruppert, et al., Eds., 1996: 39). A study on patients receiving

mechanical ventilation conducted by Johnson and Sexton (Johnson & Sexton, 1990: 48-57) found that the patients needed an effective communication tool to express their needs, to ask for help, or to inform their families about their feelings. Intubated patients cannot share their feelings with the family due to their inability to speak; likewise, the families cannot directly talk about the symptoms with the patients due to difficulties in communicating despite their attempt to help the patients in communication (Logan & Jenny, 1997: 144-145). Consequently, the families are under stress and are frightened of the sight of their relatives being intubated (Bokinskie, 1992: 192-193). In addition, the lack of knowledge and understanding about the equipment, anticipation of events, regulations of the hospital, limited visiting time and various events in intensive care units also increase the feeling of stress among the families (Chorlada, P.,1993).

Every intubated patient cannot verbally communicate with other people; hence intubation is a significant barrier to patient-nurse communication, as well as communication with other people. The patient's needs and problems may not be properly answered. Moreover, intubation also has impacts on patients in many aspects including physiological, psychological, emotional, apprehension, economic, social and family. The impact of intubation induces difficulties in communication and increases the need to communicate. Thus intubated patients should receive help to reduce communication difficulty and to increase their sense of satisfaction with their capability to express their needs to the extent that the needs are correctly responded to.

3. Current Solution of Communication Problems for Intubated Patients

Several techniques are currently applied to communication with intubated patients. The selection of techniques depends on nurses' experience and their awareness and care about the patient's problem. Increased workload including some non-nursing duties such as paperwork, accounting or financial work also affects patient-nurse communication. Although communication with patients should start before the intubation, physicians and nurses may be unaware of its importance. Sherman (1994: 12) pointed out that in an emergency situation, the communication between a practitioner and a patient may be one-way communication, in which the

sender is not interested in the receiver's feedback or participation, regardless of the patient's level of consciousness. Johnson and Sexton (1990: 48-57) conducted a study on experience of anxiety and sufferings when the patients are unable to speak and suggested that practitioners should pay more attention to interaction and communication with patients who are fully conscious and receive muscle relaxant drugs such as pancuronium bromide.

The communication between intubated patients and nurses is both verbal and non-verbal and it is mostly spontaneous communication. For verbal communication, nurses usually speak and the patients write. To non-verbally communicate, intubated patients mostly use facial expressions and body language such as pointing, nodding or shaking their heads whilst nurses use touching and facial expression. The patient's request will be correctly responded to when the communication is successful. Conversely, unsuccessful communication may lead to unsatisfactory responses such as nurses raising their voices or nurses spending so much time communicating with the patient that other work is negatively affected; at the same time, the patient may become frustrated, stressed, angry or anxious as his or her needs are not answered to. A study conducted by Logan and Jenny (1997) found that the feeling of frustration in intubated patients is mainly due to difficulty in communication, either in expressing their needs or in the utilization of communicative tools.

A couple of studies on communication in intubated patients in Thailand were conducted in the past 20 years, as summarized below.

Jaruwattana, L. (1985) conducted a study in 20 patients with respiratory failure who were intubated with an oro-endotracheal tube. The patients communicated with a button-typing communicative tool, which contained a list of the patients' needs. The researcher found that the patients using the intervention communicative tool reported less anxiety than those communicated with the method commonly used in the unit. Moreover, the tool helped in reducing time used in patient-nurse communication, hence nurses had more time to deliver nursing care.

Sasichay, T. (1989) compared satisfaction of post-operative patients with two communication techniques. The study was a quasi-experimental research conducted in 20 patients, equally divided into an experimental group and a control group. Patients in the control group communicated with the technique usually used in the ward,

whereas patients in the experimental group used the usual technique in combination with communicative tools. The result of this study indicated patients' satisfaction with the experimental technique.

A review of research papers found that researchers mostly emphasized the importance of instruction and the utilization of communicative tools, aiming to reduce anxiety and to promote satisfaction. Nevertheless, no percipient process for the promotion of communication is presented, as well as no selection or appraisal of certain communication techniques for an individual patient on the basis of a patient-centered approach. A plan for promotion of communication can be developed into nursing guidelines following the results of well-designed scientific research with empirical data. The guidelines, then, can serve as a standard of nursing practice in the future.

4. Resolution to Communication Problems in Intubated Patients through Research Utilization

4.1 Significance of research utilization

Nursing research is important in generating qualified nursing practice, which is an integration between beliefs and valuable professional systems. Nursing is the profession that emphasizes practice hence it requires reliable knowledge that is comprehensively examined through a research process (Gasemgijvattana, S., 1994: 1). At present, nursing research is widely supported, either in post-graduate studies or in short-course training. Nevertheless, the research will be of little value if the obtained knowledge is not practically applied to nursing practice for the benefits of patients (Nicoll & Beyea, In Fain, Ed., 1999: 261); and, in such cases, that research would not be considered as a study for professional development.

Therefore, nursing researchers should present their work to other nurses so that the results of their studies can be applied to nursing practice, and the gap between nursing research and practice will be subsequently narrowed. The promotion of research utilization also demonstrates the increasing strength and progression of the nursing profession; in addition, it is beneficial for patients and society. Research utilization also promotes quality of nursing care in the health service and it may reduce the cost of treatment (Sinthu, S. & Pookboonmee, R., 1998: 8).

4.2 Development of research utilization

Originally, researchers were not nurse practitioners and vice versa; hence interaction among researchers, nurse practitioners and other colleagues was difficult to establish. In addition, most nurses did not read research papers, were not interested in research conferences and were burdened with a heavy workload (Polit & Hungler, 1997: 434); thus there was a gap between research and clinical practice.

In 1970, nurses in the USA made a movement for an increase in the utilization of research results but a gap between nursing research and utilization of results still existed. However, the tendency of research utilization became apparent. The Western Interstate Commission for Higher Education (WICHE) is the first organization that established a program for research utilization in the USA. This program initiated coordination between researchers and clinical nurses to investigate problems in nursing practice, review related research, develop nursing plans based on research results and evaluate work outcomes from the implications of research findings (Goode & Krugman, 2001: 60).

Nursing research in Thailand has been done for a long time since research is a compulsory subject in the curriculum of graduate and post-graduate nursing studies. Nevertheless, the application of research findings to nursing practice is scarce. This may be due to limited publicizing, lack of in-depth understanding, disbelief in research findings, inability to apply the findings to practice and lack of permission for research utilization (Gasemgijvattana, S., 1994: 3). The curriculum of Master's degree in Nursing of Mahidol University has included research utilization into the study program since 1997. This progress should subsequently strengthen basic knowledge about nursing practice as well as improving efficiency in applying research findings to clinical practice.

4.3 Research utilization model

According to Nicoll and Beyea (1999: 264), research utilization models have been developed for appropriate application of research results or for further studies. The main objective of a research utilization model is to measure the outcome of practice on patients; however, some models may emphasize the development of nursing innovation. The models that are widely used currently are listed below:

4.3.1 The Western Interstate Commission for Higher Education (WICHE). This is the first research utilization model. It is aimed to promote nursing research development and to establish rapport between researchers and nurses for the identification of problems that could be answered with scientific studies and could lead to research utilization (Mitchell, 1994: 59).

4.3.2 The Conduct and Utilization of Research in Nursing (CURN). The main objectives of this model includes the promotion of clinical nursing research and the assistance with the application of research findings to nursing practice (Mitchell, 1994: 60).

4.3.3 The University of North Carolina (UNC). This model emphasizes distributing research findings (Nicoll & Beyea, 1999: 264).

4.3.4 The Stetler Model. This model is based on the conceptual framework of criteria for comprehensive decision-making with the application of research findings to clinical practice (Nicoll & Beyea, 1999: 264).

4.3.5 The Iowa Model of Research in Practice. This model starts from identification of clinical problems, followed by assembling research literature that is relevant to the problem. The information obtained must be sufficient for practice change. Experts may be needed to exchange ideas in making decisions about relevant research. When the research findings are applied to clinical practice and it is well accepted, the practice outcome will be evaluated and the research utilization will be reviewed continually and systemically.

A review of research utilization models demonstrated similarity among most of them; the major differences, however, are presented in the objectives of each model. The Iowa Model of Research in Practice focuses on creating an innovative and changing practice with the evaluation of outcomes and continuous monitoring; thus it is an appropriate model for this study.

4.4 Iowa Model of Research in Practice

The Iowa Model of Research in Practice is a widely used model. It comprises seven steps of action as detailed below:

1. Identification of problem or a knowledge focused trigger

The identification of problems derives from clinical experience and a trigger to improve nursing practice, which could be a knowledge-focused trigger from

reviewing research literature or a problem-focused trigger such as problems concerning risks, quality insurance or clinical problems (Titler, et al., 1995). This step requires work experience to develop an overview of the problem and to summarize interesting points in addition to the explanation of the problem's significance.

2. Assembling relevant research literature

The user of a research utilization model should have sufficient knowledge and understanding about the pathophysiology related to the problem and should be able to define the key word in searching for relevant literature. Resources of nursing research include electronic database systems in CD-ROM format e.g. Medline, CINAHL, mulinet and online internet database of various websites such as www.google.com, www.cochrane.org (Beaven, In Craig & Smith, Eds., 2002: 81, 85; Nicoll & Beyea, In Fain, Ed., 1999: 272).

3. Critique and determination of research base

To guarantee the best evidence-based determination, each research should be studied in detail with an exploration of its strengths and weakness, gaps and contradictive issues. The research utilization, then, is based on the critique of research components using Fain's method (Fain, 1999: 245-257). Significant components are recorded with the worksheet for critique designed by Rosswurm and Larrabee (Rosswurm & Larrabee, 1999: 317-322). The implementation potential of the innovation will be judged by the criteria listed by Polit and Hungler (Polit & Hungler, 1997: 444). The details for critique and determination of the research base are presented below.

3.1 Research design

- 3.1.1 Exploratory descriptive research
- 3.1.2 Correlation survey, comparative survey
- 3.1.3 Quasi - experimental and experimental research

3.2 Quality of the evidence used for developing the clinical practice guideline. In order to identify the quality of the evidence, the classification system as proposed by the Royal Thai College of Internal Medicine (Royal Thai College of Internal Medicine, 2001: 41) was used in this study. The explanation for selecting this classification system is that it consisted of 4 levels that made it simple to

understand and utilize. In addition, it is widely recognized and used among Thai physicians. Scientific evidence is categorized into four levels as follows:

3.2.1 Category A evidence is the evidence from a systemic review of a well-designed randomized control trial or randomized control clinical trials.

3.2.2 Category B evidence is the evidence from a systemic review of a well-designed control clinical study.

3.2.3 Category C evidence is the evidence from a systemic review of a descriptive study or from a systemic review of a controlled clinical study that is not very well designed.

3.2.4 Category D evidence is the evidence from the consensus judgment of an expert panel.

3.3 Criteria for evaluating the implementation potential of an innovation (Polit & Hungler, 1997: 444)

3.3.1 Transferability

3.3.1.1 Is the innovation suitable for the target organization?

3.3.1.2 Is the target organization similar to the target group of the innovation?

3.3.1.3 Is the health care philosophy of the innovation similar to that of the target organization?

3.3.1.4 Is the number of people gaining benefit from the innovation worth the implementation?

3.3.2 Feasibility

3.3.2.1 Do nurses have enough potential for the implementation of the innovation?

3.3.2.2 Is there an agreement to implement the innovation among members of the health care team?

3.3.2.3 Do nurses have skills in utilizing and evaluating the innovation and are they ready for the implementation?

3.3.2.4 Is the target organization prepared for the

innovation and will the organization supply essential resources; if not, is there any sources of supplies?

3.3.2.5 What are the possible outcomes if nurses do not conduct some nursing activities as they have to spend some time learning about the innovation?

3.3.3 Cost-benefit ratio

3.3.3.1 What are the risks and benefits that the innovation will bring to the patients?

3.3.3.2 What are the risks and the benefits that the innovation will bring to the nurses?

3.3.3.3 What are the short-term and long-term costs of the innovation?

3.3.3.4 What is the cost of health care if the innovation is not implemented?

3.3.3.5 What are other benefits that may be derived from the innovation implementation e.g. an increase in ethical awareness among new staff?

4. Pilot study

The innovation developed from the research utilization should be tried out in a real situation with an evaluation of the outcome and the process that had been conducted. After summarizing the results, all information can be applied to revise the innovation for improvement.

5. Decision making

The decision to implement the innovation should be based on the policy and philosophy of the target organization. The sources of promotion and support for the innovation implementation include administrators and staff. Problems and possible barriers, including the resolution of problems should also be considered in decision-making.

6. Plan for practice change

This step is the practical implementation of the innovation to induce practice change, using the change agent strategy after a modification for appropriate use and for the prevention of possible problems in the future.

7. Monitoring of outcome

The outcome of the innovation implementation should be evaluated in the following aspects:

7.1 Patient outcome by using the assessment tool with evaluate patient's satisfaction to CNPG. This assessment tool aimed to detect attitudes of patients toward communication methods with nurses. It especially aimed to measure patients' satisfaction as well as the difficulty in communication.

7.2 Process outcome by assessing the actual utilization and nurses' satisfaction after the intervention.

7.3 Fiscal outcome, evaluated from the cost-effectiveness of the innovation in each step of the process.

The utilization of the Iowa Model of Research in Practice in this study, in combination with a critique review of literature related to the research and the assignment of level of evidence quality, should lead to a qualified nursing practice guideline. This study followed the model to step 4 - the pilot study, because of the limitations of study time. One step was added between step 3 and step 4, that was the step to validate the guideline. According to this step, the experts were invited to give suggestions on the quality and the appropriateness of each procedures in the guideline. It was expected that this step could ensure the content validity of the guideline.

Summary

Communication is a common activity directly associated with human society. Various disciplines, therefore, have developed a variety of definitions and models of communication and have categorized communication into various types, depending on the nature and objectives of that particular discipline. Nevertheless, key components of communication are similar in every subject; the components are source, message, channel and receiver. The effectiveness of communication depends on factors influential to communication. Some significant factors may lead to ineffective communication; for example, patients with an oro-endotracheal tube or naso-endotracheal tube are unable to speak as the insertion of the endotracheal tube impairs the functioning of vocal cords hence inhibiting the sound-generating mechanism. This problem has an impact on patients in both physiological and psychological aspects.

The physiological impact of intubation frightens the patients as they feel discomfort and obscurity, in addition to the loss of ability to speak. The fright leads to stress, resulting in the disturbance of the body balance and, finally, it affects physical condition. Moreover, intubated patients are at risk of tube malposition and tube obstruction, which could be life threatening. In addition to the feeling of fear, the patients are also frustrated and anxious about their situation. Thus, communication is very important for them. However, intubated patients are not able to speak, which is the most simple and the most common channel of communication, and nurses may not be aware of the significance of communication. This problem, therefore, should be attended to with the development of nursing practice guidelines for the promotion of communication with intubated patients. The guidelines could be developed through a research utilization process using the Iowa Model of Research in Practice as a conceptual framework to create an innovation that can lead to practice change, resulting in the highest benefits for the client. Finally, the outcome could be an answer to the health insurance policy under current measures of the health care reform in Thailand.

CHAPTER III

METHODOLOGY

The objective of this study was to establish CNPG for promoting communication in intubated patients by the research utilization process and the test of a pilot study to validate its capability to utilize and promote communication. The study process included the followings:

1. Procedure of CNPG Establishment
2. Pilot Study

I. Procedure of CNPG Establishment

1. The assembly of relevant research literature: Related to intubation was researched from the electronic databases with CD-ROM from MEDLINE, CINAHL, and Mulinet while are popular sources in the healthcare and nursing fields. Other sources of information were from homepages of www.cochrane.org and www.google.com. The keywords that had been used to analysis the literature were communication, endotracheal tube, intubated patient, intensive care unit and ventilator and also searched from reference lists for related studies were searches.

2. Critique, and determination of sufficiency of the research base: Bring the selected research to be analyzed and synthesized regarding the criteria of research evaluation for evaluating the quality of evidence, clinical relevance, scientific merit and implementation potential. The evaluation should point out the transferability, feasibility and cost-benefit ratio (Pilot & Hungler, 1997: 442-445). The form of analysis and synthesis was modified from the worksheet for critique of Rosswurm & Larrabee (1999), the guideline for critique of a research report (Fain, In Fain, Ed., 1999) and the utilization criteria of Pilot & Hunger (1997). (Appendix)

3. Use the selected evidence to establish CNPG for promoting communication following the model of Titler & Menten (1999) (Appendix) that included with the objectives of this study, main definitions, high-risk patients,

inclusion of data collection, beneficiaries of CNPG utilization, nursing practice procedures, and the evaluation of using CNPG.

4. The validity testing of CNPG: The investigator brought the developed CNPG to have content validity testing by five experts who gave their opinions on the evaluation of CNPG (Appendix) with the criteria as follows:

4.1 If they agreed on the content in CNPG, the experts have to mark ✓ in the box "Agree".

4.2 If they disagreed on the content in CNPG, the experts have to mark ✓ in the box "Disagree".

4.3 If they have other suggestions, experts can write them down in the box "Suggestion".

There are 5 experts in the validity testing (Appendix) as follows:

Specialist experienced in intubation cares (Physician)	2 persons
Nursing instructor experienced in intubation care	2 persons
Registered nurse experienced in intubation care	1 person

After passing the validity testing from the five experts above, the investigator modified the guideline to meet the content validity, language suitability and proper sequential nursing practice according to the expert's suggestions and then brought it back for validation by the experts again. Every sub-item in CNPG had to get the approval, which called for consensus among the 5 experts and then it was able to be used in the pilot study.

II. Pilot Study

The pilot study was conducted with M-ICU patients in order to test the feasibility of CNPG that was aimed to promote communication with intubated patients. Details are as follow:

1. Population and sampling group

1.1 Population

1.1.1 Medical intensive care patients who was admitted in the M-ICU

1.1.2 Registered nurses who worked in the M-ICU

1.2 Sampling group

1.2.1 Ten M-ICU patients who met the inclusion criteria of sampling selection;

- a. Oro- or naso-intubated patients
- b. Aged over 15 years
- c. Over 24 hour good consciousness with the scores from the GCS evaluation as E4M6
- d. Being able to communicate in the Thai language
- e. Had never have diagnoses of CVA, delirium and psychotic illness
- f. Agreed to participate in this study

During the study, if the conscious level was changed and GCS < 10 or unstable hemodynamic value was seen as well the exclusion criteria, the subjects would be dropped from the study.

1.2.2 Registered nurses who met the inclusion criteria of sampling selection;

- a. Graduated with a bachelor's degree
- b. Over 5 years of working experience in M-ICU
- c. Agreed to participate in this study

2. Setting

The data collection of the pilot study was conducted in M-ICU, King Chulalongkorn Memorial Hospital—a tertiary-care hospital with 4 potential wards. But 2 wards were selected as M-ICU 1 and M-ICU 2. This hospital has obtained the quality assurance in nursing practice with the nursing standard and nursing guideline. The nursing standard and nursing guideline of intubation care in M-ICU were as follows:

- a. Professional Nursing Standard for intubated patients consisted of 8 criteria involved from the beginning of preparing patients in physical and psychological aspects until the safe extubation and effective self-breathing was completed. In considering, this there were two criteria directly associated with intubated patients and communication (Nursing Department, King Chulalongkorn Memorial Hospital, 2002: 46, 64-65);

The first criterion: Patients learned the psychological awareness to use the ventilator. This criterion emphasized information giving about the necessity and reason for using a ventilator, physical status and proper behavior and activities after intubation and ventilation.

The seventh criterion: Patients perceived proper responses to their basic needs. This criterion underlined the basic physical and psychological needs of patients.

b. Nursing Guideline (NG) included a NG for physician assistance and intubation cares—intubation and extubation, and NG of intubation nursing care with many types of ventilators. This NG of intubation nursing cares with many types of ventilators was directed at communication with intubated patients and in the procedure of intubation nursing cares, in item 18: “Giving warm and close care to patients can decrease influencing factors of stress and promote the adaptation of patients by providing both verbal and nonverbal communication with patients” (Nursing Department, King Chulalongkorn Memorial Hospital, 2001: 222).

Hence, the utilization of the established CNPG for promoting communication in intubated patients being used in departments was the expansion of existed standard nursing practice, and current NG to become the specific matter of promoting communication in intubated patients and M-ICU registered nurses.

3. Instruments in the pilot study

3.1 Instruments of data collection were (Appendix):

Part 1: Demographic Data Record comprised of 2 sets;

Set 1: Patient: General information related to gender, age, marital status, educational level, income, date and time of intubation and extubation, utilization and evaluation of the CNPG results including diagnosis.

Set 2: Nurses: General information related to gender, age, educational level, professional nursing level, working experience, experience in M-ICU and training experience in basic and advanced cardiopulmonary resuscitation (CPR) and basic and advanced critical care nursing (CCN).

Part 2: The evaluation of CNPG utilization for nurses consisted of 3 evaluative sets;

Set 1: The evaluation of implications of CNPG–Performance Checklist, consisting of 7 items. The items included assessing communication method, introducing and establishing relationship, providing essential advice, arranging a proper environment, educating about the communication method, communicative techniques of nurse, and coordinating communication. Each item contained questions with two-choice answers as follows.

"Practical" was defined as registered nurses were able to practice those item.

"Unpractical" was defined registered nurses were unable to practice those item.

In the case of unpractical reasons were written in the box "Suggestion"

Set 2: The evaluation of problems, obstacles and suggestions of using CNPG overall, had two open-end questions.

Set 3: The evaluation of using CNPG, consisted of 4 items. The items included, enhanced self-confidence in communication, enhanced fluent communication, promotion of communication, and capable of integration into routine nursing intervention. Each item was rated in 5 levels the least agree, slightly agree, agree, highly agree, and extremely agree.

Part 3: The evaluation on using CNPG utilization for patients comprised with:

Set 1: The evaluation of satisfaction of communication method that was modified from the concept of Stovsky and colleagues (1988: 284), as consisted of 9 items. It was translated by Sirichai T. (1990) and the scale was modified for measuring into a 3 point scale; more, moderate, and mild. The content validity was verified by five nursing experts. The Pearson's product moment correlation coefficient was .89. The investigator submitted a letter from the Graduate School, Chiang Mai University asking for permission to use the evaluation with patients (Appendix) and then the scores of satisfaction were modified a 5 point Likert scale from 1 (no satisfaction at all) to 5 (the most satisfaction). Some items were adjusted for appropriateness of language and context in the medical intensive care patient. The content validity was verified by five experts who improved the CNPG, and it was readjusted following the experts' opinion. The satisfaction of communication level was rated as follows:

Level of satisfaction	score
The most satisfaction	5
Much satisfaction	4
Moderate satisfaction	3
Little satisfaction	2
No satisfaction at all	1

Set 2: The evaluation of communication difficulty was done by evaluating the perception of communication difficulty using the Ease of Communication Scale of Menzel (1997: 366; 1998: 248), consisting of 10 items. The content validity was verified by three nurse experts with experience in communication with patients receiving mechanical ventilation, and pilot tested with 15 intubated patients. The internal consistency for the instrument was 0.88 and 0.81 for two study. The investigator received approval from Menzel to translate this scale into the Thai language by a professional translator (Appendix). The content validity was verified by five experts who improved CNPG, and it was readjusted following the experts' opinion. The communication difficulty items included what was perceived when communicating in general, when communicating with their family, when communicating with nurses about physical needs, when asking questions about their care and their condition, and in making themselves understood. The scores of communication difficulty used a 5 point Likert scale from 1 (no difficulty at all) to 5 (the most difficulty). The communication difficulty level was rated as follows.

Level of communication difficulty	score
No difficulty at all	1
A little difficulty	2
Moderate difficulty	3
A lot of difficulty	4
The most difficulty	5

Set 3: The evaluation of communication difficulty was modified from the concept of Stovsky and colleague (1988: 284) by using a numeric rating scale on a straight line with 10-cm. length and the numbers of 0-10. The sentence at the left end on the line represented no difficulty in communication with nurses, and the right end indicated extreme difficulty in communication with nurses.

3.2 The CNPG for promoting communication in the intubated patients (Appendix)

4. Data collection: The investigator collected data by herself. Prior to collecting data, the investigator as a graduate student of Mahidol University request permission for data collection. After the approval, data collection was started in the following procedure:

4.1 Bringing the introduction letter from the Graduate School, Mahidol University was submitted to the committee of the research on human subjects, King Chulalongkorn Memorial Hospital to request permission to conduct the research on human subjects. After approval was granted, a letter for permission to collect data (Appendix) was submitted to the Director of the hospital.

4.2 After the approval from the director of the hospital, the investigator introduced the study objectives and details of data collection to the nurse director, supervisors of M-ICU, the head nurse and registered nurses for their cooperation in the study. The investigator planed to collect data daily until the extubation period of samples with a 4-week duration.

4.3 Investigator assistant's preparation: The investigator selected one registered nurse in M-ICU who had an experience in research. She was invited to join the study. When she accepted the invitation, the pilot study procedure as well as the objectives of the study was explained to her. She was trained to use the assessment tool to collect data from the intubated patients. The actual assessment on patients was performed after the assistants had good understanding and confidence to do so.

4.4 Data collection of the pilot study was divided into 2 sections; the pilot study in intubated patients by the investigator, and the actual implication by registered nurses. The actual study using CNPG was on 10 samples.

Procedure of data collection in the pilot study by the investigator

1. The investigator selected patients who were admitted in M-ICU and met the criteria of the sampling group everyday.
2. The investigator established a relationship with patients, explained the study objectives and human rights protection and asked for their cooperation in the study. After the patients agreed to participate in the study, patients and legal relatives

(in the case of patients who could not give a signature at first, they were allowed to sign after extubation) had to sign the consent form (Appendix).

3. The investigator collected data according to the complete process of CNPG from the first day that intubated patients had 24-hours of good consciousness at 10:00 a.m.-6:00 p.m. until after extubation or three days and also monitored and documented the demographic data-general information by the assessment of CNPG utilization.

4. After above 24-hours of extubation or after the written order from the physician to relocate patients from the M-ICU, the assistant investigator evaluated the results of using CNPG for promoting communication in intubated patients. The evaluation was divided into follows:

4.1 The evaluation on satisfaction and communication difficulty in communication after using of CNPG

4.2 The evaluation on satisfaction and communication difficulty before using CNPG and after the evaluation of item 4.1 30 minutes for patient's rest or when patients were ready. The investigator suggested patients should recall the experiences relating to communication before using CNPG introduced by the investigator. Menzel (1997) stated that the duration of data collection by the recalling method after extubation in intubated patients showed no influence on the recalling method. The data collection in intubated patients might cause ethical problems by using the evaluation on CNPG about the satisfaction of communication and communication difficulty.

5. The investigator evaluated the feasibility of the CNPG utilization by the validity testing of CNPG.

Procedure of utilization of CNPG in practice by registered nurses

1. The investigator selected 5 registered nurses, who were working in M-ICU and met the inclusion criteria of the sampling selection.

2. The investigator established a relationship with the registered nurses, explained the study objectives and human rights protection and asked for their cooperation to follow the CNPG utilization procedure. After their approval was given, they had to sign the consent form for agree to participate in the study (Appendix).

3. A registered nurse practiced with an intubated patient, one-by-one, following the CNPG utilization procedure and also the investigator did so. This needed to be done everyday for three days or until the extubation period.

4. After extubation, the assistant investigator evaluated the results of using CNPG as well as the investigator did.

5. Registered nurses completed the performance checklist of CNPG utilization by the evaluation form of using CNPG for estimating communication problems and obstacles.

5. Protection of human rights

The protection of human rights was accomplished by explaining the study objectives and methodology for patients' cooperation in the study. Samples were persons who made a decision to participate in this study and had the right to withdraw from the study anytime. All collected data would be kept confidential and be reported as group data. After understanding and agreeing to participate in the study, they had to sign the consent form (Appendix). If samples were patients, legal relatives might need to be the co-signatures in the consent form. If patients could not presently sign the consent form, they would sign after extubation. Then, the investigator would start the study of CNPG utilization.

6. Data analysis

The investigator analyzed data as followings:

6.1 Demographic data—general information of intubated patients and registered nurses were analyzed by using the statistic of frequency.

6.2 The suggestions from experts in the validity testing of CNPG utilization and CNPG practice by RNs were presented by the statistic of frequency.

6.3 Clinical data—age, intubation duration, duration of CNPG utilization, duration of evaluating the results and the evaluation of the results to utilize CNPG were analyzed by using the statistic of mean and standard deviation.

CHAPTER IV

RESULTS

This study aimed to establish the CNPG from the research utilization in order to promote communication in intubated patients. The sampling group were 10 oro- or naso- intubated patients with good consciousness who were admitted in M-ICU 1 and M-ICU 2 and 5 registered nurses experienced with over 5 years of intubation care in M-ICU at King Chulalongkorn Memorial Hospital. The outcomes of the investigation were presented in the tables with explanations as follows:

Part 1: Establishment of the CNPG for promoting communication in intubated patients

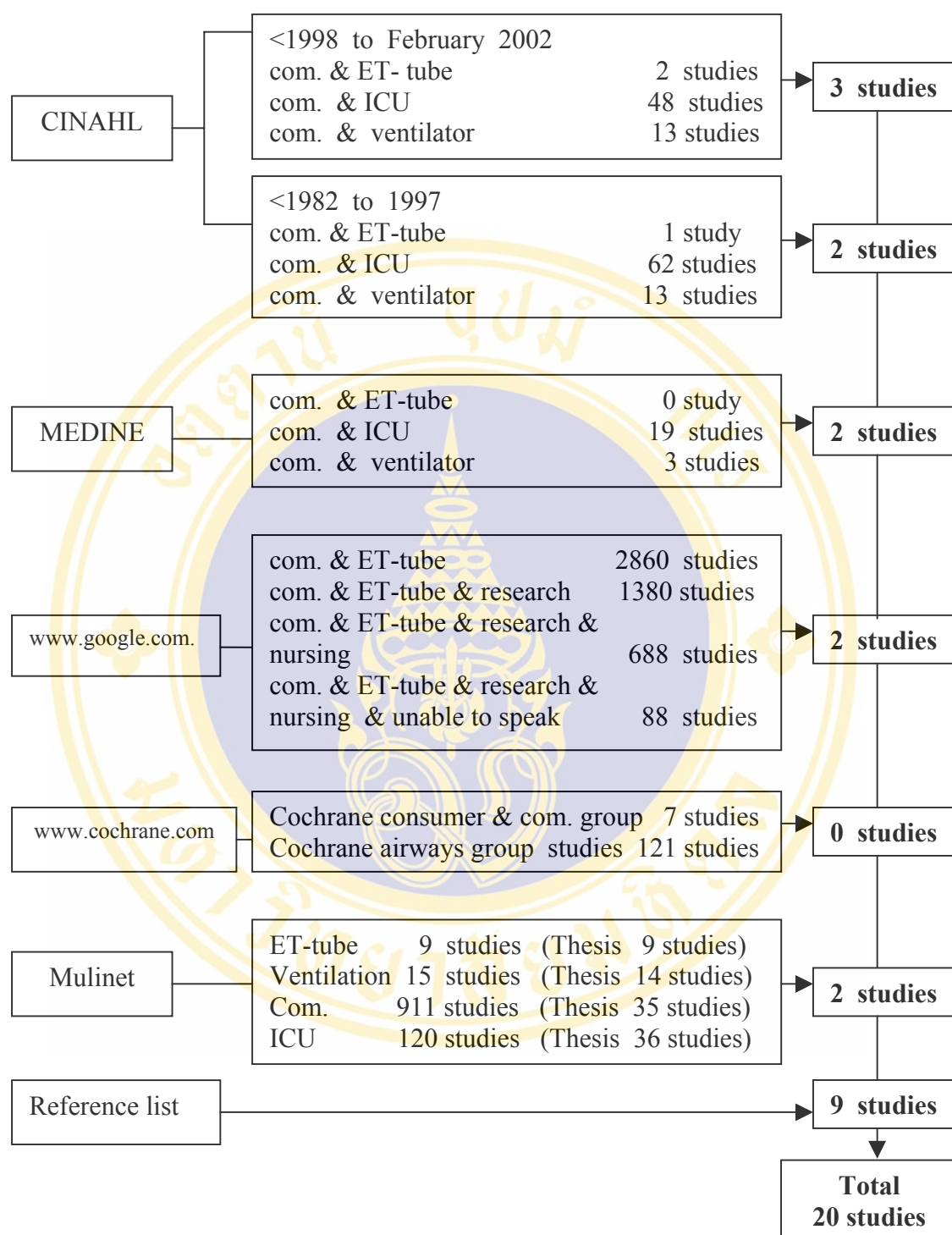
Part 2: Pilot Study

Part I: Establishment of the CNPG for Promoting Communication in the Intubated Patients.

1.1 Assembling relevant research literature

With regarding to the assembling of the relevant literature review (Figure 2) with keywords: Communication, endotracheal tube, intubated patient, intensive care unit, ventilator, nursing and research. From CINAHL of 1998-February 2002, 63 related research studies were identified but only 3 research studies were selected to be used in this study. In 1982-1997, 76 relevant research studies were identified but only 2 research studies were selected. So that from CINAHL, there were only 5 research studies relevant to the purpose of the guideline and which were selected for analysis. In the assembling the relevant literature from MEDLINE, 22 related research studies were identified, but only 2 were selected in this study. From www.google.com, 5016 related studies were identified and 2 researches were selected in this study. At www.cochrane.com, there was no solid research related to intubated patients. From the last electronic database, Mulinet, 94 related research studies were identified but only 2 research studies were selected. Considering the relevant research from the electronic database, there were 11 research studies. In addition, 9 related research studies were selected from the reference lists of the former research. The total research studies that were used for developing the guideline were 20.

To classify the quality of evidence (Table 1) from the electronic database, there were 2 research studies in level B and 9 studies in level C. From the reference list, there were 2 studies at level B, 6 studies at level C and 1 study at level D. Those could be divided into 3 topics; the need to communicate information of intubated patients (4 studies), communication methods of intubated patients (8 studies), and communication techniques of nurses (8 studies). As classified by the evidence base, the levels of the evidence were defined as level C (15 research studies), level B (4 studies) and level D (1 study).



Com. = communication, ET-tube = endotracheal tube, ICU = intensive care unit

Figure 2 Numbers of assembling relevant research literature classified by electronic database; CINALH, MEDLINE, www.google.com, www.cochrane.com and Mulinet and reference list.

Table 1 Numbers of research studies classified by the research base after assembling relevant research, level of research, quality of evidence, and research contents. (n=20)

Characteristics		Number of research studies
Electronic database		
Evidence Rating		
Level	A	-
Level	B	2
Level	C	9
Level	D	-
Reference list from the retrieve research		
Evidence Rating		
Level	A	-
Level	B	2
Level	C	6
Level	D	1
Topic of the research		
Need to communicate information of intubated patients		4
Communication methods of intubated patients		8
Communication techniques of nurses		8

1.2 Critique, and determination of sufficiency of research base

1.2.1 Analysis of research finding (Table 2)

The analysis and synthesis of the 20 relevant research studies , The most researches were conducted in 1992-2001. Prior to 1992, there were only 5 relevant researches. Nineteen relevant research studies were studying in ICU. and one in community study. Four relevant research studies were experimental and quasi-experimental research. There were 15 relevant descriptive research studies and one case study. Major examination and research findings from each study were described in table 2. Also, analysis of the findings as well as the implication of each study were illustrated in the table 2.

Table 2 Analysis and synthesis of relevant research of communication in intubated patients (n=20)

Authors/Study/ Level/Sample	Major examination/ Finding	Analysis/ Implication
Authors: Sayler & Stuart (1985). Study: Descriptive study Level: C Sample : 1. The 20 M-ICU patients who were intubated for the purpose of having mechanical ventilation 2. 20 registered or licensed practical nurses assigned to care for the intubated patients.	Major examination: To describe the study and the instrument developed to measure nurse - patient interaction content. Finding: Nurse-patients interaction expressed in the same direction.	Analysis: Nurses should have explicit positive behaviors to intubated patients with nonverbal communication for promoting positive behaviors from patients and underline utilizing nonverbal communication with them. Implication: Communication techniques between nurses and intubated patients emphasized using nonverbal communication e.g. eye contact, touch during the communication.
Authors: Stovsky, et.al. (1988) Study: Quasi-experimental design Level: B Sample: The 48 patients who were scheduled to undergo cardiac surgery.	Major examination: To compare two types of communication techniques for effectiveness in communication in the early postoperative intubation period with patients who had cardiac surgery. Finding: Planned communication methods utilizing captioned picture boards elevated patient's satisfaction of post cardiac surgery but diminished nurse's satisfaction in communication with intubated patients	Analysis: Intubated patients employed mixed communication methods, especially favorite methods were lip movement, gesture and captioned picture boards that were initially introduced. Implication: 1. Communication methods such as lip movement and captioned picture boards. 2. The evaluation in extubated period.

Table 2 Analysis and synthesis of relevant research of communication in intubated patients (n=20) (continued)

Authors/Study/ Level/Sample	Major examination/ Finding	Analysis/ Implication
Author: Bergbom-Engberg (1989) Study: Descriptive study Level: C Sample : The 158 patients who had been respirator-treated for internal medical diseases after major surgical procedures or trauma in ICU	Major examination: To elucidate the relationship between various practical-technical aspects of the respirator treatment and the emotional reactions evoked by the treatment and nursing care. Finding: Inability of communication was the 1 st factor of patient's agony from intubation. The inferior ones were pain, discomfort, suction, losing track of time, and noise disturbance in ICU.	Analysis: Coming experiences were anxiety, fear, and inability of speaking. Hence, to nurses caring for intubated patients should pay attention to the communication on discomfort, suction, sleep deprivation, and position change-routine needs of intubated patients enhancing decreased anxiety, and fear of communication difficulty. Implication: Intubated patients needed to communicate their routine needs.
Author: Sasichay (1989) Study: Quasi-experimental design Level: B Sample: The 20 patients who were scheduled to undergo cardiac surgery.	Major examination: To compared two types of communication techniques Finding: The patient's satisfaction of post cardiac surgery intubated patients. Satisfaction was higher in using electric boards than the patient using common communication.	Analysis: Communication in intubated patients employing electric picture boards showed improved communication Implication: Communication methods as electric board
Authors: Johnson & Sexton (1990) Study: Descriptive study Level: C Sample : The 14 patients who have been mechanically ventilated.	Major examination: To identify those factors that were recalled as distressing by individuals who have been mechanically ventilated. Finding: Factors that were distressing in the ventilator patients such as; inability of speaking, pain, suction, uncomfortable, and losing track of time.	Analysis: 1. To decrease agony of communication inability by selecting proper communication methods for individual patients and conditions. 2. Should inform patients every time of nursing shift rotation. 3. Family and friends were important to decrease patient's agony and increase the ease of

Table 2 Analysis and synthesis of relevant research of communication in intubated patients (n=20) (continued)

Authors/Study/ Level/Sample	Major examination/ Finding	Analysis/ Implication
		communication with patients. Implication: 1. Family and friends were big supports of communication with patients. 2. Proper communication methods should be selected for individual need of patients. 3. The need to communicate was often as date and time
Author: Puntillo (1992) Study: Descriptive study Level: C Sample : 24 ICU patients.	Major examination: To describe various dimensions of intensive care unit patients Finding: Patient also described various sources of their pain, difficulties they had in communicating their pain, and nonpharmacological methods that helped relieve their pain.	Analysis: Intubated patients had difficulty from inability of speaking to express their pain. They needed to use eye contact, facial expression, gesture and writing. The best way was nurses should ask patients if they had pain or not. Implication: communication methods were eye contact, facial expression, gesture and the use of pen-paper.
Author: William (1992) Study: Case study Level: D Sample: 3 M-ICU and S-ICU intubated patients	Major examination: To test selecting a communication technique with intubated patients by using algorithm framework. Finding: All three patients were satisfied with the selected communication methods regarding the algorithm. The algorithm enhanced time saving and made simple evaluation of patient's communication ability.	Analysis: 1. The algorithm promoted to the selection of proper communication methods serving individual patients and it was an independent role of nurses. 2. Should prepare basic sentences or phases relating to routine activities of patients for assisting patient's communication. Implication: 1. Algorithm for selecting proper communication methods was suitable for each patient. 2. Preparing basic sentences

Table 2 Analysis and synthesis of relevant research of communication in intubated patients (n=20) (continued)

Authors/Study/ Level/Sample	Major examination/ Finding	Analysis/ Implication
Author: Jablonski (1994) Study: Descriptive (qualitative) study Level: C Sample: The 12 S-ICU patients who had used a mechanical ventilator for a minimum of 18 hours.	Major examination: To examine the experience of patients who required mechanical ventilation. Finding: Fifteen clusters included Pre-ventilation event, realization of respirator, proximity of death, patients' responses to the mechanical ventilator, responses to the ETT or tracheostomy, physical care and therapies experienced by the mechanically ventilated patients, effect of mechanical ventilation on senses, communication, the role of significant others, mechanical ventilator mishaps, interactions between patients and health care providers, the process of weaning, extubation and ventilator removal, after effects of mechanical ventilation and recommendations of patients.	or phases relating to patient's routine needs e.g. general comforts. Analysis: 1. Crucial experience in ventilation treatment affected communication ability of patients. 2. Health care providers (HCP) should pay attention to patient's communication from intubation until extubation. A popular communication method was written sentences but there were limitations in intubated patients with fatigue and poor vision. 3. Inability of speaking patient's needs evoked the feelings of anger, fear and anxiety. 4. Patients sometimes did not receive adequate information from HCP. Implication: 1. Favorite communication method in intubated patients was the writing. 2. Regarding communication technique, nurses should select a proper communication method for individual patient, should inform patients about nursing cares in advance and should make conversation relating to direct matters of intubated patients more than general issues.

Table 2 Analysis and synthesis of relevant research of communication in intubated patients (n=20) (continued)

Authors/Study/ Level/Sample	Major examination/ Finding	Analysis/ Implication
Author: Hafsteindottir (1996) Study: Descriptive study Level: C Sample : The 8 M- ICU patients who received mechanical ventilator treatment.	Major examination: To describe the patients' experiences of communication during the respirator treatment period. Finding: 1. Experiences of ventilated patients were inability of communication, negative emotions, boredom and exhaustion, 2. Experience of communication problems from ventilation were communication methods, difficulty of writing, lip movement, muscular fatigue and bored with not speaking.	Analysis: 1. Communication barriers were physical pain, visual impairment, impaired hearing, and improper communication methods for intubated patients. 2. After the failure in their attempt of finding the best communication methods to express their feelings, intubated patients experienced frustration, anger, and boredom. 3. The needs for information of intubated patients were involved with the reason of their treatments and nursing care. 4. They needed their relatives to stay close for helping during their communication inability. Implication: 1. Selecting communication methods for intubated patients needed them to first evaluate the patient's communication ability 2. To support needed information of intubated patients e.g. routine activities, endotracheal tube, treatment and nursing practice. 3. Relatives should stay with good conscious patients when nurses educated them about objectives of intubation, possible reactions during intubation, numbers of days they would be intubated, and proper behavior.

Table 2 Analysis and synthesis of relevant research of communication in intubated patients (n=20) (continued)

Authors/Study/ Level/Sample	Major examination/ Finding	Analysis/ Implication
Author: Hall (1996) Study: Cross-sectional experimental design Level: B Sample: The 30 registered nurses who had been assigned to a patient on a mechanical ventilator.	Major examination: To examine the interactions between nurses and patients on ventilators and the relationship between characteristics of these nurses and their communication with patients. Finding: Cognition and reaction of intubated patients and nurses and caring time influenced the interaction because nurses start more time to as give information they thought was necessary than to assess what intubated patients needed.	Analysis: 1. Nurses attempted to communicate with GCS. If having more time, nurses would try to communicate more although intubated patient had low GCS. 2. Nurses gave information that they thought was necessary more than they assessed patient's actual needs. 3. Factors in communication between nurses and patients were patient's comfort, acquaintance of nurses with patients in communication, perception and reaction of patients. Implication: Nurses should establish a good relationship with patients and create trust by the use of communication techniques.
Authors: Holland, et.al. (1997) Study: Descriptive (qualitative) study Level: C Sample: 21 cardiovascular ICU patients	Major examination: To describe the patients' recollections of critical care. Finding: 1. Caring behavior of nurses affected both negative and positive stress and recovery of patients. 2. Single given information relating to place, environment and treatments was inadequate for patients. 3. Direct experience of intubated patients included pain, fear, dependence	Analysis: 1. Intubated patients paid attention to the behavior of nurses as the closest persons. 2. So, nurses should perform proper behavior while caring for patients e.g. warm and sincere actions to ensure trust of patients. 3. Giving patients information was significant, especially date, time, place and prior informed nursing care although nurses could estimate accurate by patient's needs. Implication: 1. Nurses used communication technique as

Table 2 Analysis and synthesis of relevant research of communication in intubated patients (n=20) (continued)

Authors/Study/ Level/Sample	Major examination/ Finding	Analysis/ Implication
	and dreams.	redundancy in the patients with an unstable conscious level and were able to reasonably estimate. 2. Nurses should give needed information to patients, and should inform date, time and nursing cares, and should estimate patient's needs. 3. Single given information was inadequate. Repeated information giving should be done, especially in the patients with an unstable conscious level.
Authors: Logan & Jenny (1997) Study: Descriptive (qualitative) study Level: C Sample: 20 M-ICU patients	Major examination: To describe patients' recollections of their experiences during mechanical ventilation and weaning and to extend an evolving nursing theory of weaning Finding: 1. Sense making with all existing situations 2. Enduring ability to things or existing circumstances, 3. Preserving self-sustaining personal integrity and overcoming feelings of alienation 4. Controlling response related to patients attempt to cooperate with treatment and achieve weaning goals.	Analysis: 1. Positive cooperation in nursing care enhanced good recovery of patients. 2. Most intubated patients did not understand why they could not speak during the intubated period and were afraid of having permanent inability to speak. They had doubt about where the tube was located in their lungs. 3. Nurse's character was very important to create patient's trust and feeling of security. 4. Preserving self due to the relationship among patients, staff, families and nursing activities that showed respect to patients as an individual eliminated the feeling of alienation. Implication: 1. Nurses used a communication technique by enhancing good relationships

Table 2 Analysis and synthesis of relevant research of communication in intubated patients (n=20) (continued)

Authors/Study/ Level/Sample	Major examination/ Finding	Analysis/ Implication
Author: Menzel (1997) Study: Descriptive (correlation) study Level: C Sample: The 29 M-ICU and S-ICU patients who have been mechanical ventilation.	Major examination: To examine patients' communication related to responses during intubation and after extubation, and to determine whether differences in patients' report of responses at these two points in time, if present, were associated with demographic and situational variables. Finding: 1. Negative emotional reactions in communication of intubation and extubation showed no difference even if the time went by, patients still remembered a bitter experience of intubation. 2. The relationship among anger, anxiety and communication difficulty in intubated and extubated periods should a high positive relationship.	with patients and good character of nurses to win patient's trust. 2. Nurses should inform patients about the reasons for procedures, and the effects of intubation. Analysis: 1. The evaluation of communication difficulty in intubated patients could be provided in both intubated and extubated periods. 2. But the evaluation in the extubated period might be better because patients conveniently answered. 3. Prolonged oro-intubated period promoted increased communication difficulty. Implication: The evaluation in extubated period should be done
Author: Menzel (1998) Study: Descriptive (correlation) study Level: C	Major examination: To examine the relationships among the intensity of intubated patients' negative emotional responses to being unable to speak and selected personal and	Analysis: 1. Communication difficulty enhanced the feelings of anger, anxiety and fear. 2. Communication difficulty, low self-esteem and severe illness motivated the ease of

Table 2 Analysis and synthesis of relevant research of communication in intubated patients (n=20) (continued)

Authors/ Study/ Level/Sample	Major examination/ Finding	Analysis/ Implication
Sample : The 48 M-ICU and S-ICU patients who had used a mechanical ventilator for a minimum of 24 hours.	situational variables. Finding: 1. Intubated patients with inability to speak experienced moderate anger and anxiety. 2. Low self-esteem, severe illness and communication difficulty caused severe anger because of inability to speak. 3. Most favorite communication methods were lip movement and gesture. 4. Intubated duration and communication difficulty influenced severe anger at being unable to speak.	anger in intubated patients. 3. Prolonged intubation made patients feel anxiety and fear. 4. Favorite communication methods were lip movement, gesture and writing. 5. Promoting communication in intubated patients diminished their anger, anxiety and fear. Implication: Communication methods were lip movement, gesture and writing.
Author: Caris-Verhallen, et. al. (1999) Study: Descriptive (correlation) study Level: C Sample: The 47 nurses and 109 patients in a home care organization that provided nursing care in the community.	Major examination: To explores variables that might influence nurses' communication with elderly patients. Finding: 1. Educational level had a positive relationship with the giving information of illness and negative relationship with communication techniques. 2. Number of patients who needed nursing cares showed positive relationship with communication about lives and patient's feelings. It also expressed a negative relationship with clinical data. 3. Working hours of nurses	Analysis: 1. Both verbal and nonverbal communications have to be based on the principle of establishment and maintenance of a relationship. 2. Increased numbers of patients and working volume indicated that communication was significant. So, touch and smile could be an encouragement instead of speaking. 3. Highly educated nurses mostly paid attention to information giving with less concern to nonverbal communication. 4. They should pay attention to nonverbal communication that could promote the effective nursing cares.

Table 2 Analysis and synthesis of relevant research of communication in intubated patients (n=20) (continued)

Authors/Study/ Level/Sample	Major examination/ Finding	Analysis/ Implication
	indicated a positive relationship with communication of lives and patient's feelings	Implication: Nurses should be concern to apply more communication technique like nonverbal communication.
Authors: Kim, et.al. (1999) Study: Quasi-experimental Level: B Sample: The 22 subjects in the control group and 21 subjects in the experimental group who recieved mechanical ventilation for 48 hours	Major examination: To determine the impact of concrete objective information on negative emotions, and analgesics, and difficulty in communicating in Korean patients treated with mechanical cardiac surgery. Finding: Objective information giving in the pre operative experimental group resulted in decreased negative emotions in post operative subjects and the eliminated communication difficulty but no effect on the need for sedatives or analgesics	Analysis: Giving information relating to patient's needs was significant leading to decreased communication difficulty and negative emotional reactions. But intubated patients, who had no idea in advance such as ER patients, should receive information after they had good consciousness that could diminish communication difficulty and negative emotional reactions. Implication: Information about intubation.
Author: Russell (1999) Study: Descriptive study Level: C Sample: The 298 M-ICU and S-ICU patients who had spent longer than 1 week in ICU.	Major examination: To provide feedback to nurses about patients' experiences in ICU and to identify problems that may be alleviated through changes in practice. Finding: 1. Loss of voice made patients fear, lack of knowledge/information, incapability of communication and losing controlling power 2. Memory of the ICU was included with memories about cares of medical staff, equipment,	Analysis: 1. Patients needed to communicate with nurses about their pain, discomfort, fear, loneliness, privacy need, and quiet environment. 2. In the communication, nurses should inform patients that they respected patient's honor, prestige and privacy. 3. Patients would not be neglected and were free to express their needs. Implication: The development of assistant communication accessories should be considered basic needs of patients such as

Table 2 Analysis and synthesis of relevant research of communication in intubated patients (n=20) (continued)

Authors/Study/ Level/Sample	Major examination / Finding	Analysis/ Implication
	visitor regulations and operations. 3. At the post 6-month ICU discharge, ICU experience still was a remembrance of patients.	discomforts.
Authors: Hupcey&Zunnernan (2000) Study: Descriptive study Level: C Sample : 14 M-ICU patients	Major examination: To elicit the experience of knowing for critically ill patients and to explore the differences in perception of patients who were intubated and those who were not intubated during the illness. Finding: 1. Essential knowledge for patients was categorized into 2 phases. The 1 st phase–life crisis phase was involved with information giving, introduction of present location, and time including patient’s confusion; the 2 nd phase–post crisis phase regarded the need to know what really happened and details, 2. Different experiences between patients with and without intubation was demonstrated regarding severity of illness	Analysis: 1. The needs of ICU patients were to know information and their current location. 2. Some ICU patients might experience confusion in prior information giving. 3. Therefore, information giving should be periodically repeated. 4. More or less experience of patients due to severity of illness. 5. The significant matter was nurses should be detail-oriented e.g. what would happen to patients, especially minor details even if in nurse’s opinion, they were unimportant. Implication: Communication techniques of nurses were the periodic repeated information giving and the prior notice in every nursing activity with patients.
Author: Wojnicki-Johansson (2001) Study: Descriptive study Level: C Sample: 22 consecutive patients who had mechanical ventilation for a	Major examination: To study patient experiences of communication problems during ventilator treatment. Finding: 1. Communication methods by nurses were body language/ touch/ lip reading/ mime.	Analysis: 1. Communication methods that nurses preferred might not serve patient’s satisfaction. It should be good to assess which proper communication methods a individual patient was capable to using. 2. Patients and nurses agreed

Table 2 Analysis and synthesis of relevant research of communication in intubated patients (n=20) (continued)

Authors/Study/ Level/Sample	Major examination / Finding	Analysis/ Implication
minimum of 6 hours in the general ICU	2. Favorite communication methods by patients were body language, touch, paper-and-pen. 3. Patients evaluated most nurses were capable of communicating with good understanding and intention. 4. Most patients reported to have negative emotions and experienced communication difficulty during the intubated period. 5. Affecting factors to relationships were the limitations in communication, complex problems of patients, emotional and illness status and having family with them.	on the simple communication methods as body language and touch. 3. Assistant accessories promoted the ease of communication. 4. In communication, patients needed to know information relating to intubation, inability to speak, intubation duration, and the use of CNPG for promoting communication should be utilize in post 4-6-hour intubated period. Implication: 1. Communication method was preparing communication accessories such as stationery and picture boards. 2. Communication techniques employed by nurses should be reasonable to estimate. 3. Nurses should adapt new proper communication techniques if previous ones were unable to communicate. 4. Information that patients needed to express relating to intubation.
Author: Sae-choen (2002). Study: Descriptive study Level: C Sample: The 29 ICU intubated patients and 31 registered nurses assigned to care for the intubated patients.	Major examination: To describes nurse - patient interaction. Finding: Nurse-patients interaction used a mixture of communication methods. the top four communication methods were usinghand,nodding/shaking head, facial expression, and eye contract.	Analysis: Nurses should use nonverbal communication for promoting communication with intubated patients. Implication: Communication techniques emphasized using nonverbal communication e.g. eye contact, or touch during the communication.

1.2.2 Synthesis of research findings

From the research findings, the implications that could be used for establishing the clinical nursing practice guideline to facilitate communication among the intubated patients were clustered into 4 themes. Themes and sub-theme derived from synthesis of research findings are showed in table 3. The first theme, the needed information to communicate with intubated patients, was composed of 3 sub-themes. Nine research studies were used to synthesis the first theme. The second theme, communication method of intubated patients, was composed of 4 sub-themes. The synthesis used 12 studies. The third theme, communication techniques between nurses and intubated patients, was composed of 6 sub-themes. Eleven research studies were used to synthesis the third theme. Finally, the forth themes, was indicators for successful communication. The research studies used for synthesis were 2.

Table 3 The clusters of research findings

Themes /Sub- Themes	Authors/Years
Theme 1 The needed information to communicate of intubated patients	
Sub-theme 1.1 Information related to routine needs such as discomfort, suction, sleep deprivation, and position change	Bergbom-Engberg (1989) Holland, et.al. (1997) William (1992)
Sub-theme 1.2 Information related to objectives of intubation, possible reactions during intubation, numbers of days intubated and proper behavior	Hafsteindottir (1996) Kim, et.al.(1999) Logan & Jenny (1997) Wojnicki-Johansson (2001)
Sub-theme 1.3 Information related to date and time.	Holland, et.al. (1997) Johnson & Sexton (1990)
Theme 2 Communication method of intubated patients	
Sub-theme 2.1 Emphasized individualization and selected communication for individual needs of patients.	Hafsteindottir (1996) Jablonski (1994) Johnson & Sexton (1990) William (1992)
Sub-theme 2.2 Utilized accessories	
2.2.1 Pen-paper.	Jablonski (1994) Menzel (1998) Puntillo (1992)

Table 3 The clusters of research findings (continued)

Themes /Sub- Themes		Authors/years
	2.2.2 Picture boards	Stovsky, et.al. (1988) Wojnicki- Johansson (2001)
	2.2.3 Electric picture board	Sasichay (1989)
Sub-theme 2.3	Utilized non-verbal communication	
	2.3.1 Lip movement	Menzel (1998) Stovsky, et.al. (1988)
	2.3.2 Gesture	Menzel (1998) Puntillo (1992)
	2.3.3 Eye contact,	Puntillo (1992)
	2.3.4 Facial expression	Puntillo (1992)
Sub-theme 2.4	Emphasized a communication method that was relevant to patients need.	Russell (1999)
Theme 3 Communication techniques between nurses and intubated patients		
Sub-theme 3.1	Emphasized use of nonverbal communication e.g. eye contact, touch during the communication.	Caris-Verhallen, et. al. (1999) Sae-choen (2002). Sayler & Stuart (1985).
Sub-theme 3.2	Utilized repeated information giving.	Holland, et.al. (1997) Hupcey&Zunnernan (2000)
Sub-theme 3.3	Encouraged family and friends to participate.	Hafsteindottir (1996) Johnson & Sexton (1990)
Sub-theme 3.4	Established a relationship and trust.	Hall (1996) Logan & Jenny (1997)
Sub-theme 3.5	Focused on direct matters.	Jablonski (1994)
Sub-theme 3.6	Improved communication techniques by using an evaluation method.	Wojnicki- Johansson (2001)
Theme 4 Indicators for successful communication.		Menzel (1997) Stovsky, et.al. (1988)

1.3 The validity testing of CNPG for promoting communication in intubated patients (Table 4-6)

1.3.1 Regarding the validity testing of CNPG by 5 experts, in the first submission, most experts agreed on the established Clinical Nursing Practice Guideline but they gave some suggestions for revision as follows:

For the definition part, a nursing instructor who was a registered nurses with expertise in M-ICU suggested that the terms of "good consciousness, good perception and risk patients" , "good consciousness" should be deleted. In inclusion criteria of data collection, item 1: "Good conscious patients", an internal medicine specialist suggested rewriting it in terms of inclusion and exclusion. An anesthetist suggested adding some terms e.g. "could follow the order, spontaneous eye response assessed by the Glasgow coma scale as E4M6", and brain damage should be changed to "CVA and delirium". A nursing instructor experienced with M-ICU gave additional criteria of general perception/orientation. For aging criteria, two nursing instructors suggested to using the age > 15years. In the topic of beneficiary from CNPG, it was advised to add a sentence to item 1, "patients had good consciousness and were able to communicate" by an internal medicine specialist. It was suggested for item 2 to delete the word "internal medicine", and item 4 was modified by dividing the "department and organization" to be item 5 by an anesthetist.

In nursing intervention, item 2-introduction, an anesthetist suggested using the sentence "to participate in caring for patients who could avoid this study" proper details regarding individual patients were added by a nursing instructor experienced in Surgical ICU. Regarding item 3.4, an anesthetist directed to emphasize intubated patients were temporarily unable to speak. In item 4.2.1, a nursing instructor experienced in M-ICU suggested adding the phase, "to instruct the methods...". In item 4.2.2, an anesthetist suggested underlining the facial sway or nod that led to neck pain or dislocated endotracheal tube. In item 4.3.2: In the method of using a picture board, both an anesthetist and a registered nurse experienced in Trauma-ICU commented on the crowded pictures that needed to grouped into 4 pictures on each board with good classification. A nursing instructor experienced in M-ICU suggested not using a bald man in the picture board and a picture with the caption, "where were you now?" should be deleted because the location was initially in the introduction.

And also, the proper additional words were "exhausted", "itchy", and "see doctor". A registered nurse experienced in Trauma-ICU suggested adding two words "pain" and "need to sit". In item 4.3.3: Use of phase cards, an anesthetist commented that they were difficult to understand and should be combined but a registered nurse experienced in Trauma-ICU disagreed as it would be unnecessary, unsafe and redundant with the existing picture board. This item should have additional phrase cards for motivating communication in other aspects. Similarly, item 4.3.4 should be deleted. In item 5.7: Communication techniques, a nursing instructor experienced in surgical-ICU suggested having an additional explanation on the adaptation of communication methods.

In the evaluation, an anesthetist suggested that CNPG needed to be limited to an exact time of 3 days because patients in M-ICU had a prolonged stay and needed the evaluation of post extubation. A nursing instructor experienced in surgical-ICU advised that the CNPG should be used in the patients with over 24-hour good consciousness and the specific evaluation period of post extubation needed to be determined.

At the second submission of the validity testing, most experts agreed on the correction and had additional suggestions in the inclusion criteria of data collection as follows:

A nursing instructor experienced in M-ICU added the sentence "no problem of birth-mute in communication" and suggested arranging a proper environment for promoting communication. In the evaluation part, an anesthetist suggested adding add the evaluation in self-breathing of post 24-hour extubation and or written notice to relocate patients to other wards by an internal medicine specialist.

Table 4 Numbers of experts classified by opinions and suggestions on CNPG for promoting communication among intubated patients in the first submission of the validity testing (n = 5)

Contents	Number of experts		Suggestions
	Agree	Disagree	
Objective To be a CNPG that promotes communication between intubated patients and registered nurses in Medical Intensive Care Unit (M-ICU).	5	-	
Definitions Communication refers to two-way communication between intubated patients with good consciousness and registered nurses who work in the M-ICU aimed at enhancing better understanding in information or meaning that required communicating. Effective two-way communication includes slow lip movements, facial expressions, gestures, written expression, phrase cards or pictures with captions. Intubated patient refers to a patient with an oro- or naso-endotracheal tube with good consciousness. The endotracheal tube passes through the voice box leading to air obstruction and no pronouncing voice while speaking.	4	1	(3) The words—good consciousness and good response should be magnified.
Risk patient Refers to an intubated patient via mouth or nose, with good consciousness	5	-	(4) The word "good consciousness" was deleted
Inclusion criteria of data collection 1. Good conscious patients	2	3	(1) Should be rewritten to be as inclusion and exclusion (2) Could follow the order, spontaneous eye response (3) criteria

Table 4 Numbers of experts classified by opinions and suggestions on CNPG for promoting communication among intubated patients in the first submission of the validity testing (n = 5) (continued)

Contents	Number of experts		Suggestions
	Agree	Disagree	
2. Age >18 years	3	2	of general perception/orientation should be added. (3) (4) Should limited to >15 years.
3. With intubation via mouth or nose	5	-	
4. Never perceived diagnosis of brain damage, or psychotic illness	4	1	(2) Should replace brain damage with CVA and delirium.
5. With Thai language communication	5	-	
Beneficiary from the intervention of CNPG			
1. Oro- and naso-intubated patients	4	1	(1) With good consciousness and capable of communicating
2. Professional nurses who work in M-ICU	4	1	(2) Professional nurses who work in ICU.
3. Other staff in the unit	5	-	
4. family, relative and the department and the organization	4	1	(2) The department and the organization should be divided into 4 items
Nursing Intervention Procedure			
1. To assess the readiness and select the communicative method for using with patients regarding to guideline on the selection of communicative methods in intubated patients	5	-	
2. To introduce and establish a good relationship aiming to create patient's acquaintance and trust	4	1	(1) Suggested Participating in caring for patients who could avoid this study.
3. To give proper essential details (regarding individual patient) as follows:	4	1	(3) Explain obviously how suitable essential advice should be

Table 4 Numbers of experts classified by opinions and suggestions on CNPG for promoting communication among intubated patients in the first submission of the validity testing (n = 5) (continued)

Contents	Number of experts		Suggestions
	Agree	Disagree	
3.1 Objectives of intubation	5	-	
3.2 Characteristics of endotracheal tube explained by a real sample	5	-	
3.3 Indicating the location of the endotracheal tube with a picture	5	-	
3.4 Expected effects of intubation with picture	4	1	(2) should emphasize speaking inability was temporary
3.5 Duration of intubation, weaning, and the extubation procedure.	5	-	
3.6 To explain major nursing activities during intubation as follows:	5	-	
3.6.1 Ventilator			
3.6.2 Suction			
3.6.3 Body relocation			
3.6.4 Assistance calling			
4. To educate communication methods while intubated			
4.1 To introduce proper communication methods for serving individual patients and individual needs. It can be a mixed method as follows:	5	-	
4.1.1 Gesture	4	1	(3) Should add more explanation...
4.1.2 Head movements or hand signals for accepting and denying	3	2	(2) Should underline the facial sway and nod might cause neck pain or tube dislocation (3) Should add more explanation...
4.1.3 Lip movement	4	1	(3) Should add more explanation...
4.2 To instruct about communication with many patterns of assisting accessories as follows:			
4.2.1 Method of writing some sentences by pens with	5	-	

Table 4 Numbers of experts classified by opinions and suggestions on CNPG for promoting communication among intubated patients in the first submission of the validity testing (n = 5) (continued)

Contents	Number of experts		Suggestions
	Agree	Disagree	
other accessories such as paper, a supportive sheet–strong, light-weight, size 8x12 inches and pens full of ink for smooth writing without much compression.			
4.2.2 Method of using picture board with 18 pictures that can express M-ICU patient's needs. Each caption explains each picture for instance, please change my position, please lift my bed-head up, please put my bed-head down, too warm, too cold, elimination, hungry/thirsty, cannot sleep, please suction, cannot breath, please remove my tube, dizzy, nausea/vomiting, abdominal distension, sore throat, what time is it now?, where am I now?	2	3	(3) "Where am I?" should not be asked because it was in prior introduction, need to see my family. (2) (5) Crowded pictures, could be confusing, should arrange and group 3-4 pictures in one board (3) Should not use a bald man (2) should consider some words should be separated (3) should add exhausted, itchy, need to see doctor (5) should add pain, want to sit
4.2.3 Method of phrase cards determining patient's needs as in 4.2.2 all 18 phrases	3	2	(1) phrase cards are not easy to use and require reading ability, summarized sheet–easy to search, should be created (5) Unnecessary, money consuming and redundancy in picture boards, should add the classified alphabets for assisting with communication in other issues

Table 4 Numbers of experts classified by opinions and suggestions on CNPG for promoting communication among intubated patients in the first submission of the validity testing (n = 5) (continued)

Contents	Number of experts		Suggestions
	Agree	Disagree	
4.2.4 Method of picture boards regarding 4.2.2 with 18 phrases	4	1	(5) mimic with 4.3.2 and 4.3.3, should select one that enhanced benefits for patients with/without reading ability
5. Communicative techniques of nurses			
5.1 Evaluating capability of patients in communication	5	-	
5.2 Making agreement about communicative methods that patients can perform	5	-	
5.3 Preparing proper accessories for assisting communication	5	-	
5.4 Paying attention, and having concern and time during communication by eye-to-eye contact with patients	5	-	
5.5 Reasonably estimating patient's needs, not repeating the same question because patients may be frustrated and bored	5	-	
5.6 Responding immediately to patient's needs after their expression	5	-	
5.7 Modifying method of communication when patients are unable to communicate	4	1	(4) should explain how to modify the method of communication
5.8 Searching for family support in communication with patients	5	-	
6. Coordinating the communication between patients-families, patients-staff	5	-	

Table 4 Numbers of experts classified by opinions and suggestions on CNPG for promoting communication among intubated patients in the first submission of the validity testing (n = 5) (continued)

Contents	Number of experts		Suggestions
	Agree	Disagree	
Evaluation			
1. To evaluate patient’s satisfaction with communication method using the evaluation of Stovsky and colleague translated into the Thai language by Sasichay, T.	5	-	(3) should specify the exact date of intervention, 3 days should be enough because M-ICU patients have prolonged stay and should evaluate post extubation (4) nurses should specify at least how many hours after extubation, should evaluate after 24-hour good conscious.
2. To evaluate the perception relating to difficulty and non-difficulty using the evaluation of Menzel translated into the Thai language by the investigator			
3. To measure the difficulty and non-difficulty of communication of nurses using the evaluation of Stovsky and colleague.			
(1) an internal medicine specialist, (2) an anesthetist, (3) a nursing instructor experienced in M-ICU, (4) a nursing instructor experienced in S-ICU, and (5) a registered nurse experienced in Trauma-ICU (The list of experts see appendix)			

1.3.2 The validity testing of CNPG relating to the evaluation of results by 5 experts (table 5). At the first submission for validity testing, most experts agreed on questions as follows:

In the evaluation of patient's satisfaction of communication 4 experts agreed but a nursing instructor experienced in M-ICU suggested adding "Are you satisfied to..." in front of each question. At the 2nd evaluation : difficulty of communication, In item1, an internal medicine specialist advised deleting "As a whole picture". A nursing instructor experienced in M-ICU suggested changing sentences in item1-4, item 7, 8, and 10 (Shown in table 4: the suggestions).

For the measurement of difficulty of communication, 5 experts advised as follows: an internal medicine specialist suggested using the phrases "the most easy" and "the most difficult" an anesthetist and a nursing instructor experienced in M-ICU suggested using the phrases "not difficult at all" and "very difficult" a nursing instructor experienced in M-ICU and a registered nurse experienced in Trauma-ICU recommended the phrases "not difficult at all" and "extremely difficult" and to use a numerical rating scale.

In the second submission for the validity testing, all experts agreed on questions in all 3-evaluation records.

Table 5 Numbers of experts classified by opinions and suggestions on CNPG proposing to promote communication among intubated patients in the outcome evaluation (n = 5)

Contents	Number of experts		Suggestions
	Agree	Disagree	
The 1st evaluation: Satisfaction of communication			
1. Are you satisfied to perceive the supervision of communication with nurses the during your intubation?	5	-	
2. Are you satisfied with current communication method the during your intubation?	5	-	
3. Are you able to easily express your problems and needs to nurses?	4	1	(3) Should add "Are you satisfied to...?"
4. Nurses immediately realized your problems and needs after your communication.	4	1	(3) Should plus "Are you satisfied when...after your communication?"
5. Nurses pay attention to your problems and needs after your communication with their gratefulness.	4	1	(3) Should add "Are you satisfied to...?"
6. You perceive routine care from nurses that satisfy your needs.	4	1	(3) Should add "Are you satisfied to...?"
7. You receive help or any problem solving from nurses, that satisfy your needs.	4	1	(3) Should add "Are you satisfied to...?"

Table 5 Numbers of experts classified by opinions and suggestions on CNPG proposing to promote communication among intubated patients in the outcome evaluation (n = 5) (continued)

Contents	Number of experts		Suggestions
	Agree	Disagree	
8. You accept regular nursing care from nurses.	4	1	(3) Should add "Are you satisfied to...?"
9. Nurses are able to provide good nursing care that meet your single needs.	4	1	(3) Should add "Are you satisfied to...?"
The 2nd evaluation: Difficulty of communication			
1. Overall, how much is inability to speak a difficulty, do you think?	3	2	(1) Should cut off the phase "As the overall" (3) Should change to "As the over all, you think how much difficult you have with your inability to speak".
2. How difficult is your inability to speak is among your family and your friends, do you think?	4	1	(3) Should change to "how much difficulty do you think you have in your inability to speak with your family and friends who visit you".
3. How difficult is your inability to speak with nurses, do you think?	4	1	(3) Should change to "how much difficulty you think you have in your inability to speak with your nurses".
4. How difficult is your inability to speak with your doctors, do you think?	4	1	(3) Should change to "how much difficulty you think you have in your inability to speak with your doctors".
5. How difficult is it to express your physical needs (e.g. need suction, change position, need analgesics), do you think?	5	-	

Table 5 Numbers of experts classified by opinions and suggestions on CNPG purposing to promote communication among intubated patients in the outcome evaluation (n = 5) (continued)

Contents	Number of experts		Suggestions
	Agree	Disagree	
6. How much difficult is it to ask questions about your treatment and care, do you think?	5	-	
7. How difficult is it to ask questions about your symptoms, do you think?	4	1	(3) Should alter to "how much difficulty do you think you have to ask questions relating to your illness".
8. How difficult is it to express your thoughts, do you think?	4	1	(3) Should change to "how much difficulty do you think you have in expressing your needs".
9. How difficult is it to to express your feelings, do you think?	5	-	
10. How difficult is it to make others understand you with your inability to speak, do you think?	4	1	(3) Should alter to "how much difficulty do you think you have to make others understand you with your inability to speak".
The 3rd evaluation: Measurement of communication difficulty	-	5	(2) (3) Should change to "not difficult" and "very difficult" (1) Should use "very easy" and "very difficult" (4),(5) Should change to "not difficult" and "extremely difficult", should use numerical rating scale as 0-10 that ease to use.

1.3.3 Regarding the suggestions of experts on CNPG for promoting communication among intubated patients (table 6), all 5 experts agreed on the CNPG is essential in leading to the creation of effective qualified nursing care that will bring about the further certification of the quality assurance. The CNPG is effective with its strong fundamental which its utilization enhances the good nursing practice. Some disagreed on the aspects of CNPG-that are suitable for some departments and unnecessary for other.

Table 6 Numbers of experts classified by opinions and suggestions on the whole picture of CNPG aim to promoting communication among intubated patients (n = 5)

Contents	Number of experts		Suggestions
	Agree	Disagree	
1. Clinical Nursing Practice Guideline is essential leading to the effective nursing practice qualified to the quality assurance.	5	-	
2. Clinical Nursing Practice Guideline is effective with good fundamentals. Its utilization motivates good practice.	5	-	
3. Clinical Nursing Practice Guideline is suitable for some departments.	-	5	All experts suggested that it is suitable for all department.
4. Clinical Nursing Practice Guideline is not necessary to be utilized.	-	5	All experts suggested it is necessary to utilize it.

Part II: Pilot Study

2.1 Characteristics of sampling group (Table 7 and 8)

2.1.2 Intubated patients were in the age range of 35-78 years, females than males, all were married (married 5 cases, widowed 4 cases, and separated 1 case) and the most common educational level was elementary level (6 cases). Four-tenths of the samples was unemployed. Five subjects earned a monthly income of 1,000-10,000 baht and one had an income over 10,000 baht a month.

Table 7 Numbers of intubated patients classified by gender, age, marital status, level of education and monthly income (n=10)

Characteristics	Number of patients approved by		Total
	Registered nurses	Investigator	
Gender			
Male	3	1	4
Female	2	4	6
Age (years)			
< 60	1	2	3
≥ 60	4	3	7
	Mean = 67.40, S.D.= 9.40	Mean = 62.40, S.D.=13.25	Mean = 69.13, S.D.=8.90
Marital status			
Married	4	1	5
Widowed / Separated	2	3	5
Level of education			
No formal education	-	1	1
Elementary level	2	4	6
Secondary level	2	-	2
Bachelor's degree	1	-	1
Monthly income (Baht/month)			
No income	1	3	4
1,001-5,000	1	2	3
5,001-10,000	2	-	2
> 10,000	1	-	1

All subjects experienced their first intubation. Diagnoses were congestive heart failure (CHF), 4 cases; pneumonia, 3 cases; cobra bite, diabetic ketone acidosis (DKA), and myasthenia gravis (MG), one sample each. All had oro-intubation with an intubated duration of 54-1,104 hours, the mean was 210.60 hours (S.D.= 317.03). The period of CNPG utilization was 12-40 hours with the mean of 22.40 hours (S.D. = 8.89). The evaluation period in post extubation was 5-47 hours with the mean of 24.9 hours (S.D.= 13.64).

Table 8 Numbers, means and standard deviations of intubated patients classified by causes and experience of intubation, intubated duration, CNPG utilization and evaluation on nursing practice (n=10)

Characteristics	Number of patients approved by		Total
	Registered nurses	Investigator	
Medical diagnosis			
CHF	1	3	4
Pneumonia	2	1	3
Cobra bite	1	-	1
DKA	1	-	1
MG	-	1	1
Experience of first intubation	5	5	10
Intubated duration (hrs.)			
Total			
48-72	3	-	3
73-96	-	1	1
≥ 97	2	4	6
	Mean =297, S.D.=454.34	Mean =124.20, S.D.=32.44	Mean =210.60, S.D.=317.03
Using CNPG			
≤ 24	4	4	5
> 24	1	1	5
	Mean =20.60, S.D.=11.80	Mean =20.20, S.D.=5.31	Mean =22.40, S.D.=8.89
Extubated duration until evaluation of CNPG (hrs.)			
≤ 24	3	2	5
> 24	2	3	5
	Mean=24.20, S.D.=13.90	Mean=25.60, S.D.=14.89	Mean=24.90, S.D.=13.64

2.2.1 Registered nurses (Table 9) as a sampling group were female, had a bachelor's degree in nursing, had worked at professional nursing level 5 and 6 (2 and 3 cases, respectively). They had work experience in M-ICU of 5 (1 case) and 8 (4 cases) years. All of them had been trained in basic and advanced CPR and basic and advanced CCN. There was no CNPG in the samples' working places for promoting communication in intubated patients, except some communication assisting accessories such as supportive sheets to write on and a picture folder.

Table 9 Numbers of nurses in the sampling group classified by gender, educational level, professional nursing level, working experience, training experience, CNPG and communication accessories in M-ICU (n=10)

Characteristics		Numbers
Gender		
	Female	5
	Male	-
Educational level		
	Bachelor's degree	5
	Master's degree	-
Professional nursing level		
	Level 5	2
	Level 6	3
Working experience (years)		
	5 - 7	1
	≥ 7	4
Training experience (years)		
	Basic and advanced CPR	5
	Basic and advanced CCN	5
CNPG		
	Yes	-
	No	5
Communication accessories		
	Yes	
	Flip chart	5
	Paper and pen	5

2.2 The results of evaluation of using CNPG

2.2.1 Process (Table 10)

With regarding to using CNPG for promoting communication in intubated patients as a pilot study in an actual situation, CNPG could be practiced by registered nurses and the investigators. One registered nurse stated that the explanation about nursing activities in item 3.6.1: The use of ventilation might be impossible to practice because the patient was weaned on T-piece breathing. Concerning the environmental arrangement supporting communication such as a clock and a calendar, one registered nurse stated that it might be impossible to have a calendar on the bedside table because of its small area. Four registered nurses indicated as impossible the arrangement of all the equipment on the bedside table because of improper locations of beds and bedside tables. Five investigators gave the same opinions that it was impossible to implement.

In the topic of introduction in communication, item 5.2.1 and 5.2.3, 2 registered nurses and one investigator said it was an impossible practice because of inability of reading and writing in intubated patients. The item 5.2.2: the use of picture board for promoting communication was possible to practice but 9 patients did not employ them because they had other effective communication methods to use, just only one patients used it. For items 6.7 and 6.8, one registered nurse stated it was impossible practice because patients had no problem in communication.

Table 10 Numbers of practice following the CNPG for promoting communication in the intubated patients (n=10)

CNPG	Registered nurses (n=5)		Investigators (n=5)	
	Practiced	Not - practice	Practiced	Not- practice
Nursing Intervention Procedure				
1. To assess the readiness and select the communicative method for using with patients regarding the guideline on the selection of communicative methods in intubated patients	5	-	5	-

Table 10 Numbers of practice following the CNPG for promoting communication in the intubated patients (n=10) (continued)

CNPG	Registered nurses (n=5)		Investigators (n=5)	
	Practiced	Not-practice	Practiced	Not-practice
2. To introduce and establish a good relationship aiming to create patient's acquaintance and trust	5	-	5	-
3. To provide the essential advice as the followings by considering in suitability and significance of illness of patients	5	-	5	-
3.1 To explain the objectives of intubation	5	-	5	-
3.2 To explain the characteristics of endotracheal tube by a real sample	5	-	5	-
3.3 To explain the location of the endotracheal tube with a pictures.	5	-	5	-
3.4 To explain the effects of intubation with pictures in item 3.3 underlining the inability to speak during intubation period as the temporary defect	5	-	5	-
3.5 To explain the duration of intubation, weaning, and the extubation procedure.	5	-	5	-
3.6 To explain major nursing activities during intubation as follows:				
3.6.1 Ventilator	4	1 Patient on T- piece	5	-
3.6.2 Suction	5	-	5	-
3.6.3 Body relocation	5	-	5	-
3.6.4 Assistance calling	5	-	5	-
4 To arrange proper environment for promoting communication such as location of a clock that eased to see and a table calendar	-	5 improper locations of beds and bedside tables	-	5 improper locations of beds and bedside tables

Table 10 Numbers of practice following the CNPG for promoting communication in the intubated patients (n=10) (continued)

CNPG	Registered nurses (n=5)		Investigators (n=5)	
	Practiced	Not-practice	Practiced	Not-practice
5. To educate communication methods while intubated				
1.1 To introduce the appropriate communication methods that patients were capable to and preferable to use for expressing their needs as a mixed one as follows:	5	-	5	-
1.1.1 To introduce the body language or gesture	5	-	5	-
1.1.2 To guide the methods of head movement or hand signals for accepting or denying emphasizing face sway or nod might cause tube dislocation or neck pain	5	-	5	-
5.1.3 To direct the lip movement to intubated patients	5	-	5	-
1.2 To suggest communication method with assisting accessories as follows:				
1.2.1 The instruction of using pens to write what they needed, preparing accessories e.g. paper and supportive sheets-strong, light weight, size 8x12 inches including full-ink of pens with smooth ink and no need to compress much while writing.	3	2 patients with reading and writing inability	4	1 patients with reading and writing inability
1.2.2 The instruction of using picture boards that represented M-ICU patient's major needs. Its characteristics consisted of 4 pictures with subtitles in each board with good grouping.	5	-	5	-
1.2.3 The instruction of using Thai alphabetical cards with vowel characters and tonal marks (except patients with reading inability)	3	2 patients with reading inability	4	1 patients with reading inability

Table 10 Numbers of practice following the CNPG for promoting communication in the intubated patients (n=10) (continued)

CNPG	Registered nurses (n=5)		Investigators (n=5)	
	practiced	Not-practice	practiced	Not-practice
6. Communicative techniques of nurses				
6.1 Evaluating capability of patients in communication	5	-	5	-
6.2 Making agreement about communicative methods that patients can perform	5	-	5	-
6.3 Preparing proper accessories for assisting communication	5	-	5	-
6.4 Paying attention, and having concern and time during communication by eye-to-eye contact with patients	5	-	5	-
6.5 Estimating patient's needs reasonably, avoid repeated questions that made patients bore and frustrate.	5	-	5	-
6.6 Responding patient's needs Immediately after they expressed their needs.	5	-	5	-
6.7 Modifying communication methods when having problems or patients could not communicate through those ones.	4	1 no problem in commu- nication.	5	-
6.8 Searching for family support in communication with patients	4	1 no problem in commu- nication.	5	-
7. Coordinating the communication between patients-families, patients-staff	5	-	5	-

2.2.2 The outcomes of using CNPG

2.2.2.1 In the registered nurse's view (table 11 and 12), all samples strongly agreed that the CNPG enhanced self-confidence to communicate with intubated patients. As for fluent communication, 4 registered nurses highly agreed and one subject moderately agreed. In the aspect of promoting communication, 4 registered nurses showed more concurrence and one expressed the most. For the integration to routine nursing practice; one, three and one registered nurse scored different levels of opinion, moderate, more and the most respectively. For the overall of CNPG, 3 subjects stated that CNPG was essential to utilize for promoting effective qualified nursing practice leading to the quality assurance. Five samples indicated CNPG gained high quality because of its good principles motivating good practice. One registered nurse claimed that CNPG could be used in some departments only.

Table 11 Numbers of registered nurses classified by the outcomes of using CNPG for promoting communication between intubated patients and nurses. (n=5)

Contents	Number of opinions				
	The least agree	Slightly agree	agree	Highly agree	Extremely agree
1. Enhanced self-confidence to communication with intubated patients.	-	-	-	5	-
2. Enhanced fluent communication with intubated patients.	-	-	1	4	-
3. Promoted communication with intubated patient.	-	-	-	4	1
4. It was capable of integration into routine nursing practice	-	-	1	3	1

Table 12 Numbers of registered nurses classified by the outcomes of using CNPG for promoting communication in intubated patients in the overall aspect (n=5)

Contents	Number of opinions	
	Agree	Disagree
1. Clinical Nursing Practice Guideline is essential leading to effective nursing practice qualified to the quality assurance.	4	1
2. Clinical Nursing Practice Guideline is effective with good fundamentals. Its utilization motivates good practice.	5	-
3. Clinical Nursing Practice Guideline is suitable for some departments.	1	4
4. Clinical Nursing Practice Guideline is not necessary to be utilized.	-	5

2.2.2.2 The intubated patients (table 13-15)

In the assessment of patient's satisfaction, communication difficulty and measurement of communication difficulty by a numerical rating scale, the mean of satisfaction in pre-practice of CNPG by registered nurses and investigators was 3.47 and 3.26, respectively. The mean of satisfaction in post-practice of CNPG was 4.33 and 4.17, respectively. The increased satisfaction in both pre and post - practice of CNPG was equal to 0.84 and 0.91, sequentially.

In the communication difficulty of intubated patients, the mean of pre-practice of CNPG by registered nurses and investigators was 3.96 and 4.28, respectively. The mean of post-practice of CNPG by registered nurses and investigators was 3.26 and 3.52. The communication difficulty had declined in both groups equal to 0.70 and 0.76, sequentially. In the measurement of communication difficulty by a numerical rating scale, the diminished means were in pre-practice of CNPG by registered nurses and investigators 8.20 and 9.40, and in post-practice of CNPG by registered nurses and investigators the same 6.40 in each group including a decrease in pre and post CNPG of 1.8 and 3 respectively.

The scores of satisfaction in each item of pre and post - practice of CNPG classified by registered nurse and investigators indicated that the means of every question in post CNPG had increased. The most increased mean was satisfaction of perceiving introduction to the communication methods with nurses during the intubation period in both registered nurses and investigators. The mean differences in pre and post CNPG were mostly elevated at 1.8 and 2.0 respectively. The communication difficulty in both registered nurses and investigators showed a decreased mean in every question as well as the mean from the measurement of communication difficulty by a numerical rating scale.

Table 13 Means and standard deviations of satisfaction scores and difficulty scores of intubated patients in pre and post - practice following CNPG assessment in samples under the nursing cares of registered nurses and investigators (n=10)

Evaluation items	Registered nurses (n=5)				Investigators (n=5)			
	Pre		Post		Pre		Post	
	Mean	S.D.	Mean	S.D.	Mean	S.D.	Mean	S.D.
Satisfaction scores	3.47	0.44	4.31	0.52	3.27	0.52	4.18	0.62
Difficulty scores (measured by interview)	3.96	0.40	3.26	0.22	4.28	0.62	3.52	0.54
Difficulty scores (measured by numerical rating scale)	8.20	0.84	6.40	1.82	9.40	0.89	6.40	2.70

Table 14 Means and standard deviation of patient's satisfaction in pre and post practice following CNPG assessed in samples under the nursing care of registered nurses and investigators (n = 10)

Questions related to satisfaction	Registered nurses (n=5)				Investigators (n=5)			
	Pre		Post		Pre		Post	
	Mean	S.D.	Mean	S.D.	Mean	S.D.	Mean	S.D.
1. Are you satisfied with the advice relating to communication methods during your intubation period?	2.40	0.55	4.20	0.84	2.80	1.48	4.80	0.45
2. Are you satisfied with the communication methods that were used during your intubated period?	3.00	0.71	3.60	1.14	2.20	1.09	3.80	0.84
3. Are you satisfied with your ability to easily express your problems and needs to nurses?	3.20	1.30	4.00	1.00	3.20	0.84	4.20	0.84
4. Are you satisfied when nurses immediately understood your problems and needs after utilizing CNPG?	3.80	1.30	4.40	1.34	3.20	1.09	4.00	1.00
5. Are you satisfied with your nurses paying attention to your problems and needs after utilizing CNPG with good willingness?	4.60	0.55	5.00	0.00	3.80	1.30	4.60	0.89
6. Are you satisfied you received routine nursing care from nurses that were identical to your needs?	3.40	0.89	4.40	0.89	4.20	0.84	4.40	0.89
7. Are you satisfied to receive helps or problem solving from nurses which is the same as your needs?	3.40	0.89	4.60	0.89	3.00	1.00	3.20	1.48
8. Are you satisfied to accept regular nursing cares from nurses?	4.00	0.70	4.40	0.55	4.00	1.00	4.20	0.84
9. Are you satisfied when nurses can perform good care meeting your single needs?	3.40	0.89	4.20	0.84	3.00	1.00	4.40	0.89

Table 15 Means and standard deviation of the mean in communication difficulty among intubated patients with pre and post practice following CNPG assessed in samples under nursing care of registered nurses and investigators. (n = 10)

Questions related to difficulty	Registered nurses (n=5)				Investigators (n=5)			
	Pre		Post		Pre		Post	
	Mean	S.D.	Mean	S.D.	Mean	S.D.	Mean	S.D.
1. How much difficulty do you think you have with your inability to speak.	4.80	0.45	3.80	0.84	5.00	0.00	3.80	1.09
2. How much difficulty do you think you have in your inability to speak with your family and friends who visit you.	3.60	1.14	3.20	1.30	3.80	1.64	3.00	0.71
3. How much difficulty do you think you have in your inability to speak with your nurses”.	3.80	0.45	3.20	0.84	3.80	1.79	3.00	1.00
4. How much difficulty do you think you have in your inability to speak with your doctors.	3.60	0.89	3.20	0.45	3.80	1.79	3.20	0.84
5. How difficulty do you think you have to express your physical needs (e.g. need suction, change position, need analgesics).	3.40	1.14	2.40	1.14	3.20	1.30	2.60	1.34
6. How much difficulty do you think you have to ask questions about your treatment and care.	4.60	0.55	4.00	0.71	4.80	0.45	4.60	0.55
7. How much difficulty do you think you have to ask questions relating to your illness.	4.20	0.84	3.80	0.84	4.80	0.45	4.40	0.55
8. How much difficulty do you think you have to express your needs	3.60	1.14	2.80	1.30	4.20	1.30	2.60	1.34
9. How much difficulty do you think you have to express your feelings.	3.80	1.09	3.00	1.22	4.60	0.55	3.40	0.89
10. How much difficulty do you think you have to make others understand you with your inability to speak	4.20	0.84	3.20	0.84	4.75	0.45	4.60	0.55

CHAPTER V

DISCUSSION

The objective of this study was to establish a CNPG in order to promote communication in intubated patients from the synthesis of relevant research and the evaluation of the CNPG developed by testing in a pilot study at M-ICU 1 and M-ICU 2 at King Chulalongkorn Memorial Hospital. The samples selected for the pilot study were 10 intubated patients and 5 registered nurses experienced in intubation care for over 5 years. The results of the study showed same interesting issues as follows:

The Establishment of CNPG

1. Assembling relevant research literature (figure 2 and table 1)

After assembling relevant research literature, there were a total of 20 research studies that were related to intubation: 11 research studies were from electronic databases and the other 9 studies from reference lists. The electronic database was located in the library as the CD-Rom from MEDLINE, CINAHL and Mulinet which are popular in the healthcare and nursing fields. MEDLINE is an electronic database of general health information. CINAHL is specific to nursing information. The USA established both electronic databases (Beaven, In Craig & Smyth, Eds. , 2002: 55, Nicoll & Beyea, In Fain, Ed., 1999: 272). The beginning of assembling relevant research literature was with selecting keywords. The initial selected keywords of this study were communication and endotracheal tube. Both electronic databases since 1982-2002 were presented with those initial keywords, and 3 related research studies were found and one was found from <http://www.google.com>. It was not enough so that additional selected keywords were devised such as intubated patients; intensive care unit; ventilator; and finally 9 more related research studies were found.

However, they were not sufficient to establish a CNPG. Beaven (2002: 53-54) explained that a systematic review should search the Cochrane Library as items the best resource because it was full of research of randomized control trials (RCTs). The Royal Thai College of Internal Medicine (2544: 41) accepted they were A-quality-level researches but no research related to the topic of this study had been found. Hence, reviewing from reference lists of unpublicized research and journals was required. Finally, 11 more research studies were identified. Assembling the relevant research literature from the reference list was essential for finding many related research studies that could not be found in CD-ROM regarding the specific keywords. That was harmonious with the advice on assembling relevant research literature of Nicoll & Beyea. (1999: 272)

Regarding the twenty related research studies, all of them were conducted by nurses only because nurses were the ones who spent much time with patients in providing 24-hour nursing cares and they also realized the significance of physical and psychological needs of patients. For those reasons, the studies of communication with intubated patients were of more interest to nurses than other medical staff.

Likewise, there were only 8 research studies directly related to intubated patients (Kim, et.al., 1999; Menzel, 1997, 1998; Sae-choen, T., 2002; Sasichay, 1989; Stovsky, et.al., 1988; William, 1992; Hafsteindottir, 1996). Three quasi-experimental research should be related to the communication methods in intubated patients that were conducted with surgical patients who knew their operative plan in advance (Kim, et.al., 1999; Sasichay, T., 1989; Stovsky, et.al., 1988). Similarly, there were only 2 research studies in Thailand selected for this study. These 2 studies were master's thesis paper submitted for the requirement of graduate study (Sae-choen, T., 2002; Sasichay, T., 1990) and these studied with intensive care patients.

After assembling the relevant research literature, it was found that 4 B-quality-level research studies could be taken as good evidence for establishing the CNPG. There were other research studies which the reliability of the evidence. Although, the investigator selected one D-quality-level research (William, 1992), because it had no clinical evidence while meant the suggestion of the Internal Medicine Royal College of Thailand was that this research could be used.

2. Critique, and Determination of Sufficiency of Research Base (table 2 and 3)

Total of 20 research studies that were selected to be studies by analysis and synthesis, one research was an experimental research (Hall, 1996) and three were quasi-experimental researches with B-quality-level evidence (Kim, et.al., 1999; Sasichay, T., 1989; Stovsky, et.al. 1988). The other fifteen research studies were descriptive researches with the C-quality-level evidence (Bergbom-Engberg, 1989; Caris-Verhallen, et. al., 1999; Hafsteindottir, 1996; Holland, et.al., 1997; Hupcey & Zimmerman, 2000; Russell, 1999; Jablonski, 1994; Johnson & Sexton, 1990; Logan & Jenny, 1997; Menzel, 1997, 1998; Puntillo, 1992; Russell, 1999; Sae-choen, T., 2002; Sayler & Stuart, 1985; Wojnicki-Johansson, 2001). There was only one case study with the D-quality-level evidence (William, 1992).

This analysis and synthesis proposed to investigate some evidence associated with nursing care or patients and to enable the researcher to identify the research quality to see if results were sufficient to answer questions from health care providers or patients or not (Newman & Robert, In Craig & Smyth, Eds., 2002: 87). This helped in grouping the identified evidence. Considering the individual mentioned studies, the investigator clustered the results of the studies into 4 clusters; the need to communicate information intubated patients, the communication methods of intubated patients, the communication techniques of nurses, and the indicators for successful communication.

After analyzing and synthesizing all eighteen research studies it was found most of the existing studies were conducted by both nurse practitioners and nurse educators. Nineteen studies occurred in ICU and one in the community. After consideration, it was found there were only 4 studies conducted in M-ICU that were associated with the setting of the investigator's requirement. Most of them were descriptive studies with C-quality-level of evidence. The Royal Thai College of Internal Medicine (2544: 39) determined them as primary clinical research results being as good evidence with positive transferability directing to the objective context

of the departments. The feasibility of those studies indicated the capability of direct utilization by registered nurses (Polit & Hungler, 1996: 444). Pennock (1994) conducted a study associated with a situation that created stress in CABG patients. Its result indicated that the stresses in CABG patients were intubation and inability to speak but there was no evidence about the needs of CABG patients during the intubated period that the investigator required to use in this establishment of CNPG. Fifteen studies were conducted in other ICUs but most samples experienced intubation. Those offered some useful evidence for this study. It is possible to use all evidence to develop CNPG. Nicoll & Beyea (1999: 274) stated about the understanding of characteristics of sampling groups and setting, to the analysis so that the investigator selected most matters relating to intubated patients.

Moreover, the Royal Thai College of Internal Medicine (2544: 38) suggested that good CNPG should be developed by more than one expert who had gained knowledge and skill associated with research contents and 1-2 experts who had strong knowledge and skill in the investigation of a research base, research methodology, biostatistics, clinical decision analysis, and clinical economics. In the literature review, the size of a successful sampling group was 10-20 persons (Thomas & Hotchkiss, In Craig & Smyth, Eds., 2002: 192). Because of the limitation of time, there was no establishment of a committee for developing this CNPG, so the investigator developed it by herself. Nicoll and Beyea (1999: 272) stated that the analysis and synthesis to have good evidence lead to the successfully developed CNPG due to strategies and experience in the analysis and synthesis. In the case of less experience or lack of confidence, clinical experts or other experts in related fields might be required to criticize this study again which was the method being used with this study.

3. Experts assessment of validity (table 4 and 6)

Regarding the validity testing for promoting communication in intubated patients by 5 experts, in the first submission, they suggested correcting some sentences such as definitions, inclusion criteria of data collection and beneficiaries of CNPG. Also the nursing intervention section, in the nurse introduction, information giving, the introduction of the communication method of gesture with accessories, and communication techniques of nurse should be modified. Finally, in the evaluation

section, they advised to providing the exact evaluation time after extubation and the exact period of using CNPG of 3 days because M-ICU patients had a prolonged stay and CNPG should be used in intubated patients with over 24-hour good consciousness.

In the 2nd submission of validity testing, all experts agreed on the corrections and gave additional advice regarding the inclusion criteria of data collection, no problem of birth-mute in communication, and the arrangement of proper environment for promoting communication. The evaluation should be performed after more than 24-hours extubation or having written notice to relocate patients from M-ICU to other wards by an internal medicine specialist.

Regarding the validity testing of CNPG, the suggestions were significant, especially the suggestions from experts who were experienced in other professional fields that were counted as specific viewpoints (McPheeters & Lohr, 1999: 100). The suggestion from an internal medicine specialist was to rewrite the criteria specification to have both inclusion and exclusion criteria. An anesthetist directed adding, “can follow orders” and “spontaneous eye response”. Those were harmonious with The Scottish Intercollegiate Guideline Network (SIGN 2001) - an organization with the main purpose of developing the CNPG that emphasized on the validity testing and the consensus of experts who were experienced in 4 different fields of expertise e.g. clinical expertise, other specialist expertise, practical understanding of problems faced in the delivery of care and critical appraisal skills (Thomas & Hotchkiss, In Craig & Smyth, Eds., 2002: 192). Most of the 5 experts who were selected in this study met the specifications of SIGN 2001 and included with an internal medicine specialist experienced with M-ICU patients with respiratory disease, an anesthetist experienced in surgical-ICU and anesthesia, a nursing instructor experienced in M-ICU, a nursing instructor experienced in surgical-ICU and a registered nurse experienced in ER cares. Most of them had earned the experience over ten years in intubation care and were experienced in conducting research.

However, the validity testing of the establishment of CNPG should encourage patients' involvement (McPheeters & Lohr, 1999: 100; Thomas & Hotchkiss, In Craig & Smyth, Eds., 2002: 192), although experience of illnesses was lack of the evidence as well as the evidence-based. In this study, the investigator encouraged patients to indirectly participate in the establishment of CNPG from the

point of view the selection of qualitative studies and of the needs of intubated patients being clues to develop CNPG.

Pilot Study

1. Sampling group

1.1 The medical intensive care patients with intubation (table 7 and 8)

The sampling group ranged in the age of 35-78 years. There were 7 intubated patients aged over 60 years. Females were more than males. Most subjects had married status (5 married, 4 widowed and 1 separated). Most had studied in the elementary educational level (6 cases). Four-tenths of the samples were unemployed. Five subjects earned a monthly income of 1,000-10,000 baht and one had an income over 10,000 baht a month. Seven-tenths of the samples were elderly who had a high risk of illnesses because of their physical impairment and unhealthy status (Thongjareon V., 2000: 3) which could lead to serious illnesses and communication problems from hearing impairment and impaired vision. Most of them earned a low income because the elderly usually relied on their children and families. Nine-tenths of the samples reported their educational level as elementary but only 7 of them could read and write. Intubation resulting from serious illnesses meant patients experienced with fatigue, exhaustion, poor vision, and hand tremor (Hafsteindottir, 1996: 266) bringing about communication difficulty.

All subjects had experienced their first intubation. Their diagnoses were 3 congestive heart failure, 4 pneumonia, and one each Cobra bite, DKA and M G. All had oro-intubation with an intubated duration of 54-1104 hours, and the mean was 210.60 hours (S.D.= 317.03). The period of using CNPG was 12-40 hours with the mean of 22.40 hours (S.D.= 8.89). The evaluation period in post extubation was 5-47 hours with the mean of 24.9 hours (S.D.= 13.64). As the literature review indicated an intubated duration of over 5 days presented negative effects to intubated patients of which most important difficulty was inability to communicate (Usuk S., 1993: 60). Those who showed a prolonged intubated period had more communication difficulty (Menzel, 1997).

1.2 Registered nurses working in M-ICU (table 9)

All samples were females with bachelor's degree, registered at nurse level 5 and 6, experienced over 5 years in M-ICU and trained in basic - advanced CPR and basic - advanced CCN and were now working in M-ICU 2. The M-ICU 2 had no CNPG for promoting communication with intubated patients but had some accessories for assisting communication such as a supportive sheet, pencils, and a picture folder. As the literature review, indicated a five-year working experience as explained by the Dreyfus Model (Bener, 1984) showed the skill and ability of clinical nurse level 4 that was called Proficient. That five-year experience of nurses was a moment of realizing the overall situation, employing a long-term plan, elevating learning for discovering new knowledge and being able to estimate the future changes. They were suitable to be proper samples in the pilot study for establishing CNPG.

2. The results of CNPG evaluation

2.1 The process evaluation was assessed by the performance check list and the assessment of problems and obstacles in using CNPG (table 10). From the findings as presented in table 10 it can be stated that using CNPG for promoting communication in intubated patients in the pilot study was possible. There was very little problem about using it among the registered nurses. The discussion is presented as follows. Registered nurses claimed that the introduction of nursing activities explaining about ventilator was impossible to practice because patients practiced T-piece breathing but registered nurses educated them about T-piece instead. As the arranged environment supported the communication such as a clock and a calendar, one registered nurse could not complete providing a calendar because of the small area of the bedside table but the location of bedside table was good to see a clock. In M-ICU2, only 4 beds could easily see a clock and the other three beds could not be arranged for both a clock and a calendar because of inconvenient bed locations and a small bedside area. Similarly, the result of 5 patients showed it was impossible to arrange the environment because of unsuitable bedside tables. Both registered nurses and investigators repeatedly informed patients about dates and times and every shift rotations. Similarly in the literature review, there was evidence to support the idea that intubated patients need information about date, time and location (Holland, et al., 1997; Hupcey & Zunnernan, 2000; Johnson & Sexton, 1990) and it needed to be repeated frequently (Holland, 1997).

The three patients who were unable to read, were invited to use other methods for communication. The use of assistance accessories in communication was possible in practice but nine patients did not use them because they had other mixed communication methods to employ such as gesture, head-hand signals, lip movement, and writing by patients with writing ability. These results supported the studies indicating patients pointed as a mixed communication method (Johnson & Sexton, 1990; Menzel, 1997; Sae-Choen, 2002). One intubated patient used the assistance accessories in communication following a nurse's advice and she presented its advantages.

Regarding the communication techniques of nurses, one registered nurse addressed that it was impossible to use if because patients had no problems in communication. Other techniques were to modify the current communication method when patients were unable to communicate and search for family assistance in communication with patients. This demonstrated the fact that registered nurses could conduct this procedure, but the procedure was omitted because no communication problem had occurred.

2.2 The results of using CNPG

2.2.1 Registered nurses (table 11 and 12)

Most registered nurses highly agreed that CNPG created confidence in nurses to communicate with intubated patients. Four-fifth of subjects claimed to have increased their flexibility in and promotion of communication. One registered nurse mostly suggested that CNPG enhanced the promotion of communication in intubated patients. The integration of the developed CNPG into routine clinical nursing practice was in the range of moderate-to- highest level. That suggested that the developed CNPG could be integrated into the routine clinical nursing practice and could promote the confidence of nurses to communicate with intubated patients. This was similar to the study of Polit & Hunger (1997: 444), which CNPG was developed from relevant research that indicated suitability of transferability, feasibility and a good cost-benefit ratio. Barriers of CNPG utilization were not found but additional suggestions were associated with adding more essential pictures in the picture boards.

Concerning the overall value of CNPG, registered nurses noted that CNPG was essential to utilize and could lead to the effective qualified nursing practice that would gain broad acceptance and further quality assurance. CNPG is effective because its strong fundamentals bringing about good nursing practice. That was harmonious with the hospital accreditation guideline requiring professional standards and evidence-bases for developing effective nursing practice guidelines which caused reaching high satisfaction of patients (Health Care Research Institute, 1998).

2.2.2 Patients (table 13, 14, and 15)

The evaluated results of patient's satisfaction in using CNPG, communication difficulty, and the measurement of communication difficulty by a numerical rating scale in intubated patients, in pre and post use of CNPG, and in RNs and investigators were as follows:

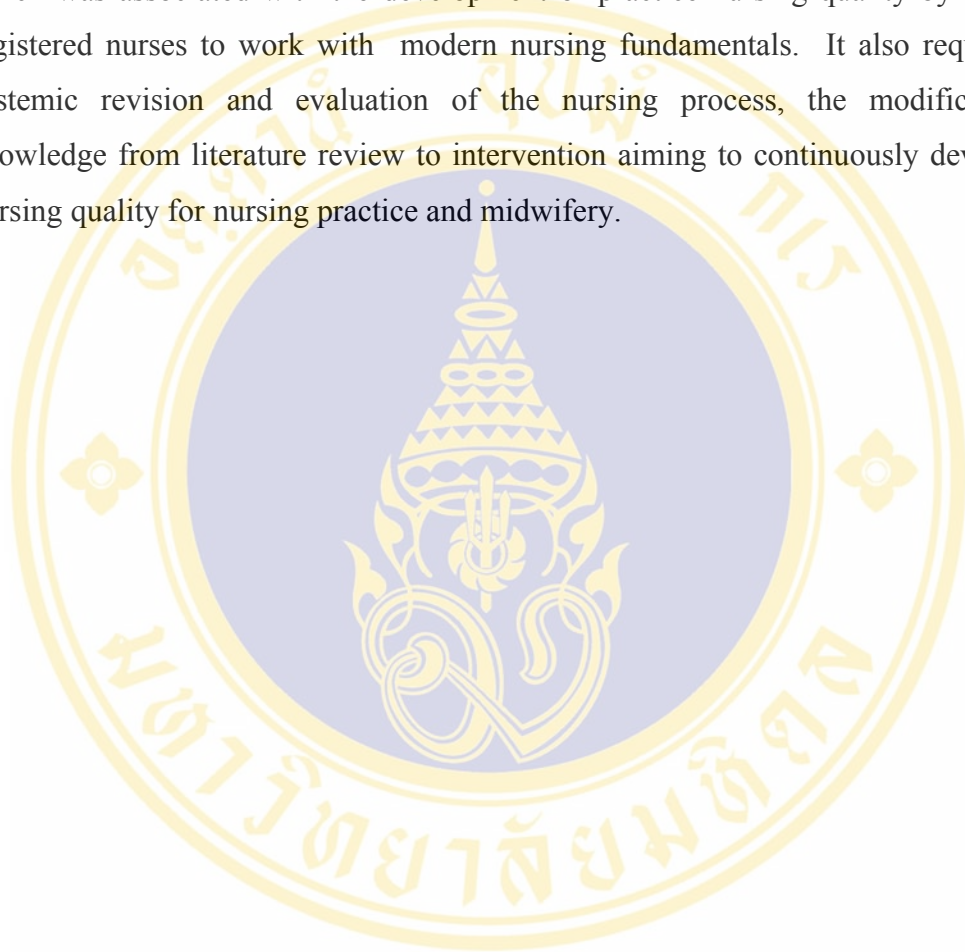
a. The evaluation on patient's satisfaction in pre and post use of CNPG, and in registered nurses and investigators found that the mean of satisfaction in pre using CNPG by RNs and investigators was 3.47 and 3.26, respectively. The mean of satisfaction in post using CNPG was 4.31 and 4.18, respectively. The increased satisfaction of patients after using the CNPG as assessed by the registered nurses was equal to 0.84 and 0.91. Similar to the individual sub-scale, the means of post using CNPG were elevated for every question. The highest mean was satisfaction of perceiving the introduction relating to communication methods with nurses during the intubated period in both RNs and investigators. The mean of pre using CNPG was equal to 2.40 and 2.80, respectively, and post using CNPG were 4.20 and 4.80, respectively. The mean differences in pre and post using CNPG were mostly elevated at 1.8 and 2.0, respectively. Those were congruent with the studies of Stovsky, et. al. (1988) and Sasichai T. (1989) that stated intubated patients claimed to have high satisfaction on perceiving the introduction of communication methods with nurses before intubation. The lower mean differences of satisfaction with communication methods while intubated in registered nurses and investigators were increased at 1.1 and 1.60, respectively. Most intubated patients utilized mixed communication methods to express their needs similar to the study of Sae-Choen T. (2002) but they would ask for accessories in the case of being unable to

communicate. Associated with the study of Wojnicki-Johansson (2001: 34), favorite communication methods in intubated patients were gesture, touch (54%) and writing for explaining their needs (23%).

b. Regarding the communication difficulty in intubated patients, the mean of pre using CNPG by registered nurses and investigators was as 3.96 and 4.28, respectively. The mean of post using CNPG by registered nurses and investigators was 3.26 and 3.52. The mean difference of the communication difficulty in pre and in post using CNPG had declined in both groups equaling to 0.70 and 0.76, respectively. Regarding the measurement of communication difficulty by a numerical rating scale, the diminished means were in pre using CNPG by registered nurses and investigators 8.20 and 9.40,, and in post using CNPG by registered nurses and investigators 6.40 in each group, including a decrease of pre and post using CNPG of 1.8 and 3, respectively. Likewise, Kim's study (1999) on the introduction of information and communication methods during intubation demonstrated that the means of communication difficulty in the controll group and experimental group were 7.82 (S.D. = 4) and 5.48 (S.D. = 4), sequentially. The mean difference had decreased by 2.34. That meant the introduction of information and communication methods during intubation influenced the decrease in communication difficulty.

Following the literature review, the establishment of CNPG for promoting communication in intubated patients from research utilization passed the validity testing by 5 experts who was experienced in intubation care and then it was tested in the pilot study and evaluate the results evaluated in procedure and the outcomes categorized in registered nurses and investigators. They identified that using CNPG was possible and created satisfaction including the elimination of communication difficulty in intubated patients. Consequently, it should be processed continuously along with the other 3 steps of the Iowa Model of Research in Practice consisting of decision making in the actual utilization of the developed CNPG, the plan for creating a difference in the quality of nursing cares, and the process of continuous monitoring aimed at revising and developing modern further nursing care. The Iowa Model of Research in Practice was an objective practice to elevate the quality of nursing care that was directly utilized in nursing practice. Similarly, Hospital Assurance required hospitals to set a standard of service or effective management in order to use the

scientific process as a guide in the decision making process for quality assurance in order to attain quality services and the high satisfaction of patients. The Nursing Council of Thailand provided the standard of nursing and midwifery that supported the Professional Nursing and Midwifery act no. 2, B.E 2540 (The Royal Gazzett, 2001) which was associated with the development of practice nursing quality by requiring registered nurses to work with modern nursing fundamentals. It also required the systemic revision and evaluation of the nursing process, the modification of knowledge from literature review to intervention aiming to continuously develop the nursing quality for nursing practice and midwifery.



CHAPTER VI

CONCLUSION

The objective of this study was to establish CNPG for promoting communication in intubated patients, based on the synthesis of relevant literature and evaluating the created CNPG by testing in a pilot study if it would be possible to practice it or not and if it would promote communication or not. After assembling the relevant research literature, there were a total of 20 research studies that were related to intubation. Those were analyzed and synthesized to provide an evidence-base with quality level B in 4 researches, quality level C in 15 researches and quality level D in 1 research study. Then, all evidence was used in the establishment of CNPG and was approved for validity by 5 experts. The developed CNPG was tested in a pilot study with 10 M-ICU intubated patients who were admitted in M-ICU1 and M-ICU 2, and five female nurses who were experienced for over 5 years in M-ICU, King Chulalongkorn Memorial Hospital. The duration of the data collection was from March to April 2003. The presentation of data was by frequency, means, and standard deviations. The results of this study are summarized as follows:

1. The establishment of CNPG was from the synthesis of relevant researches aiming to promote communication in intubated patients and included the objectives of this study, main definitions, high-risk patients-intubated patients, inclusion criteria of data collection, beneficiaries of CNPG utilization, nursing practice procedures relating to establishing a relationship and related information giving, the introduction of communication methods and techniques during communication between intubated patients and nurses. Finally, the evaluation of CNPG utilization and its association with the satisfaction of patients, and communication difficulty in communication methods during intubation and reference list that could be used in this study.

2. The pilot study for testing the effectiveness of CNPG showed the results that the sampling group of patients were intubated patients in M-ICU aged 35-78 years, who has experienced their first intubation at this time. All subjects, M-ICU patients had oro-intubation with intubated duration of 54-1104 hours. The period of

using CNPG was for 12-40 hours. The evaluation period in post extubation was 5-47 hours. Most samples, five registered nurses were females with bachelor degree, professional nurse level 5 and 6, experienced for over 5 years in M-ICU and trained in the basic and advanced CPR and the basic and advanced CCN and were now working in M-ICU 2, King Chulalongkorn Memorial Hospital. The M-ICU 2 had no CNPG for promoting communication in intubated patients but had some accessories for assisting communication such as supportive sheets, pencils, and a picture folder.

It can be concluded that the CNPG developed from the results of a relevant research utilization is able to promote communication in intubated patients and it is possible to practice by registered nurses and investigators. It increased the mean of satisfaction by 0.84 and 0.91, respectively. The highest increased mean was in satisfaction of perceiving the introduction in communication methods with nurses during intubation and was 1.8 and 2, respectively for registered nurses and investigator. The means of communication difficulty of registered nurses and investigators decreased to 0.70 and 0.76 sequentially. The integration was a part of nursing practice associated with the increased confidence and flexibility in communication with intubated patients. The modification should be done in essential information given about “ventilator” that should be changed to ventilation or oxygenation for wide range aspect. Arranging the environment had the limitation of location so, emphasizing dates, times and adding more pictures for enhancing communication should be done.

Implications for Nursing Practice

1. The CNPG should be used in regular practice and aimed to be a good practical model for the other nurses in M-ICU
2. The CNPG should be introduced to other health care provider in order to promote the routine use of the CNPG in the following ways:
 - 2.1 Introduce the CNPG to the head of nurse M-ICU for permission to distribute the CNPG in the unit.
 - 2.2 Introduce the CNPG to other health care providers in the M-ICU monthly meeting.

2.3 Arrange a group discussion with other nurses for undertaking CNPG and rotate them to practice the CNPG.

3. The CNPG should be published in media, such as nursing journals, intranet, and internet in order for it to be distributed to other units. This was includes local and national conferences.

4. The CNPG should be put into the nursing standard for intubated patient and the nursing guideline for helping physicians and taking care of intubated patients in Chulalongkorn Memorial Hospital.

5. The CNPG should be integrated into the actual nursing practice with continuous monitoring and evaluation of the utilization including the feedback of information to nurses for modifying and developing the CNPG.

6. The CNPG should allow patient's relatives to participate in using it by introducing communication methods and techniques to them.

7. The fiscal outcome that was cost benefit analysis should be monitored in order to evaluate the cost benefit ratio from using the CNPG.

Limitations

1. Because of, the small size of registered nurses and intubated patients, the finding of this study can not be generalized to the population.

2. The outcome evaluation in the pilot study was performed for a single time after extubation. So that the result derived from the evaluation may not clearly confirm the effectiveness of the CNPG. Periodic evaluation is therefore recommended in further studies.

Implication for Further Study

The recommendations for further study are as follows:

1. A quasi-experimental study should be conducted to test the effectiveness of the CNPG.

2. The study should be conducted in other groups of intubated patients, for example, in intubated surgical patients.

3. Further studies relating to CNPG utilization with a large number of Samples should be undertaken.

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ระหว่างใช้เครื่องช่วยหายใจ. วิทยานิพนธ์ปริญญาพยาบาลศาสตรมหาบัณฑิต,
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An expert who bilanguage specialist

1. Asst. Prof. Dr. Punchalee Wasanasomsithi
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INFORMATION CONSENT FORM

แบบฟอร์มการยินยอมและพินัยสิทธิ์ผู้เข้าร่วมการศึกษา (ส่วนของญาติผู้ป่วย)

ข้าพเจ้านางสุธาดา กัณหา นักศึกษาพยาบาลศาสตรมหาบัณฑิต สาขาการพยาบาล ผู้ใหญ่ คณะพยาบาลศาสตร์ มหาวิทยาลัยมหิดล กำลังทำการศึกษาก่อร่างแนวปฏิบัติการพยาบาลโดยใช้ผลการวิจัยเพื่อส่งเสริมการสื่อสารในผู้ป่วยใส่ท่อทางเดินหายใจ ในหน่วยวิกฤตอายุรกรรม โรงพยาบาลจุฬาลงกรณ์ ซึ่งแนวปฏิบัติการพยาบาลดังกล่าวประกอบด้วยความรู้ที่เกี่ยวข้องกับการใส่ท่อทางเดินหายใจ ผลที่เกิดขึ้นจากการใส่ท่อทางเดินหายใจ การปฏิบัติตัวที่สำคัญขณะมีท่อทางเดินหายใจและวิธีการสื่อสารขณะมีท่อทางเดินหายใจ เพื่อเป็นการทดสอบความเป็นไปได้ของการนำแนวปฏิบัติการพยาบาลไปใช้ ดิฉันจึงใคร่ขออนุญาตท่านใช้แนวปฏิบัติการพยาบาลดังกล่าวกับญาติของท่านซึ่งเป็นผู้ป่วยชื่อ.....นามสกุล.....อายุ.....ปี ซึ่งมีความเกี่ยวข้องกับท่านโดยเป็น.....

แนวปฏิบัติการพยาบาลเพื่อส่งเสริมการสื่อสารในผู้ป่วยใส่ท่อทางเดินหายใจ เอื้อประโยชน์กับญาติของท่านโดยตรงในด้านการสื่อสาร ไม่ว่าท่านจะเข้าร่วมการศึกษาหรือไม่ก็ตาม จะไม่มีผลกระทบกับญาติของท่านแต่อย่างใดและหากท่านสมัครเข้าร่วมศึกษาแล้วเกิดเปลี่ยนใจในภายหลังท่านมีสิทธิ์ที่จะถอนตัวออกจากการศึกษาได้โดยไม่มีข้อแม้ใดๆทั้งสิ้น

สุธาดา กัณหา

นักศึกษพยาบาลศาสตรมหาบัณฑิต มหาวิทยาลัยมหิดล

สำหรับผู้เข้าร่วมศึกษา

ข้าพเจ้าได้รับทราบรายละเอียดของการศึกษาดังได้อธิบายไว้ข้างต้นแล้วมีความเข้าใจและยินดีเข้าร่วมการศึกษา

ลงชื่อ.....

วัน/เดือน/ ปี.....

แบบฟอร์มการยินยอมและพินัยสิทธิ์ผู้เข้าร่วมการศึกษา (ส่วนของผู้ป่วย)

ข้าพเจ้านางสุธาดา กัณหา นักศึกษาพยาบาลศาสตรมหาบัณฑิต สาขาการพยาบาล ผู้ใหญ่ คณะพยาบาลศาสตร์ มหาวิทยาลัยมหิดล กำลังทำการศึกษการสร้างแนวปฏิบัติการพยาบาลโดยใช้ผลการวิจัยเพื่อส่งเสริมการสื่อสารในผู้ป่วยใส่ท่อทางเดินหายใจ ในหน่วยวิกฤตอายุรกรรม โรงพยาบาลจุฬาลงกรณ์ จึงใคร่ขอความร่วมมือจากท่านในการศึกษาและตอบแบบสอบถามภายหลังจากถอดท่อทางเดินหายใจโดยใช้แบบสอบถามซึ่งใช้เวลาในการตอบประมาณ 20 นาที จำนวน 1 ชุด ซึ่งประกอบด้วย ข้อมูลส่วนบุคคลของผู้ป่วย แบบประเมินความพึงพอใจและความยากลำบากในการสื่อสาร และแบบวัดความยากลำบากในการสื่อสาร โดยประเมินก่อนและหลังการใช้แนวปฏิบัติการพยาบาลเพื่อส่งเสริมการสื่อสารในผู้ป่วยใส่ท่อทางเดินหายใจ

การศึกษานี้เอื้อประโยชน์กับท่านโดยตรงซึ่งข้อมูลที่ได้มาจะเป็นประโยชน์ต่อการพัฒนาแนวปฏิบัติการพยาบาลเพื่อส่งเสริมการสื่อสารในผู้ป่วยใส่ท่อทางเดินหายใจ ไม่ว่าท่านจะเข้าร่วมการศึกษาหรือไม่ก็ตามจะไม่มีผลกระทบกับท่านแต่อย่างใดและหากท่านสมัครเข้าร่วมศึกษาแล้วเกิดเปลี่ยนใจในภายหลังท่านมีสิทธิ์ที่จะถอนตัวออกจากการศึกษาได้โดยไม่มีข้อแม้ใดๆทั้งสิ้น ข้อมูลที่ได้จากท่านถือเป็นความลับและจะนำเสนอผลการศึกษาในรูปแบบข้อมูลของผู้ป่วยใส่ท่อทางเดินหายใจโดยรวม

สุธาดา กัณหา

นักศึกษาระดับปริญญาโท สาขาการพยาบาลศาสตรมหาบัณฑิต มหาวิทยาลัยมหิดล

สำหรับผู้เข้าร่วมศึกษา

ข้าพเจ้าได้รับทราบรายละเอียดของการศึกษาดังได้อธิบายไว้ข้างต้นแล้วมีความเข้าใจ และยินดีเข้าร่วมการศึกษา

ลงชื่อ.....

วัน/เดือน/ปี.....

แบบฟอร์มการยินยอมและพินัยสิทธิ์ผู้เข้าร่วมการศึกษา (ส่วนของพยาบาล)

ข้าพเจ้านางสุธาดา กัณหา นักศึกษาพยาบาลศาสตรมหาบัณฑิต สาขาการพยาบาล ผู้ใหญ่ คณะพยาบาลศาสตร์ มหาวิทยาลัยมหิดล กำลังทำการศึกษการสร้างแนวปฏิบัติการพยาบาลโดยใช้ผลการวิจัยเพื่อส่งเสริมการสื่อสารในผู้ป่วยใส่ท่อทางเดินหายใจ ในหน่วยวิกฤตอายุรกรรม โรงพยาบาลจุฬาลงกรณ์ จึงใคร่ขอความร่วมมือจากท่านในการศึกษาโดยทดลองใช้แนวปฏิบัติการพยาบาลที่สร้างขึ้นในผู้ป่วยใส่ท่อทางเดินหายใจ จำนวน 1 รายเป็นระยะเวลา 3 วันหรือจนกระทั่งผู้ป่วยถอดท่อทางเดินหายใจ และตอบแบบสอบถามภายหลังการใช้ซึ่งใช้เวลาในการตอบประมาณ 20 นาที จำนวน 1 ชุด ซึ่งประกอบด้วย ข้อมูลส่วนบุคคล แบบประเมินการปฏิบัติตามแนวปฏิบัติการพยาบาล ปัญหา อุปสรรคและข้อเสนอแนะจากการใช้แนวทางปฏิบัติการพยาบาลเพื่อส่งเสริมการสื่อสารในผู้ป่วยใส่ท่อทางเดินหายใจ

การศึกษานี้มีประโยชน์กับท่านโดยตรงซึ่งข้อมูลที่ได้มาจะเป็นประโยชน์ต่อการพัฒนาแนวปฏิบัติการพยาบาลเพื่อส่งเสริมการสื่อสารในผู้ป่วยใส่ท่อทางเดินหายใจ ไม่ว่าท่านจะเข้าร่วมการศึกษาหรือไม่ก็ตามจะไม่มีผลกระทบกับท่านแต่อย่างใดและหากท่านสมัครใจเข้าร่วมศึกษาแล้วเกิดเปลี่ยนใจในภายหลัง ท่านมีสิทธิ์ที่จะถอนตัวออกจากการศึกษาได้โดยไม่มีข้อแม้ใดๆ ทั้งสิ้น ข้อมูลที่ได้จากท่านถือเป็นความลับและจะนำเสนอผลการศึกษาในรูปแบบข้อมูลของผู้ป่วยใส่ท่อทางเดินหายใจโดยรวม

สุธาดา กัณหา

นักศึกษาพยาบาลศาสตรมหาบัณฑิต มหาวิทยาลัยมหิดล

สำหรับผู้เข้าร่วมศึกษา

ข้าพเจ้าได้รับทราบรายละเอียดของการศึกษาดังได้อธิบายไว้ข้างต้นแล้วมีความเข้าใจและยินดีเข้าร่วมการศึกษา

ลงชื่อ.....

วัน/เดือน/ ปี.....

INSTRUMENTS FOR THE DEVELOPMENT OF CNPG

เครื่องมือที่ใช้ในการสร้างแนวปฏิบัติการพยาบาลประกอบด้วย 3 ส่วน ดังนี้

ส่วนที่ 1 แบบการวิเคราะห์ สังเคราะห์งานวิจัย

ส่วนที่ 2 รูปแบบแนวปฏิบัติการพยาบาล

ส่วนที่ 3 แบบแสดงความคิดเห็นของผู้ทรงคุณวุฒิในการตรวจสอบแนวปฏิบัติการพยาบาล

ส่วนที่ 1 แบบการวิเคราะห์ สังเคราะห์งานวิจัยเพื่อสร้างแนวปฏิบัติการพยาบาลเพื่อส่งเสริม
การสื่อสารในผู้ป่วยใส่ท่อทางเดินหายใจ

ชื่อเรื่องงานวิจัย.....

ผู้แต่ง.....

แหล่งตีพิมพ์.....

หัวข้อ	รายละเอียดของการวิเคราะห์
วัตถุประสงค์ในงานวิจัย	
คำถามการวิจัย	
ตัวแปรที่ใช้ในการวิจัย	
เครื่องมือที่ใช้	
การออกแบบการวิจัย	
กลุ่มตัวอย่างที่ใช้	
แหล่งที่เก็บข้อมูล	
ข้อค้นพบจากงานวิจัย	
ข้อจำกัดของการวิจัย	
คุณภาพของหลักฐานที่ประเมิน	
สรุปผลการวิเคราะห์	

ส่วนที่ 2 รูปแบบแนวปฏิบัติการพยาบาลเพื่อส่งเสริมการสื่อสารในผู้ป่วยใส่ท่อทางเดินหายใจ วัตถุประสงค์

เพื่อเป็นแนวปฏิบัติการพยาบาลเพื่อส่งเสริมการสื่อสารระหว่างผู้ป่วยที่ใส่ท่อทางเดินหายใจกับพยาบาลวิชาชีพหน่วยวิกฤตอายุรกรรม

คำจำกัดความ

การสื่อสาร (communication) หมายถึง

ผู้ป่วยใส่ท่อทางเดินหายใจ (intubated patient) หมายถึง

ผู้ป่วยกลุ่มเสี่ยง

ผู้ป่วยใส่ท่อทางเดินหายใจทางปากหรือจมูก

เกณฑ์การรวบรวมข้อมูล

1. ผู้ป่วยรู้สึกตัวดี มีคะแนนประเมินจาก Glasgow Coma Scale คือ E4M6
2. อายุ > 15 ปี
3.
4.

ผู้ได้รับประโยชน์จากการใช้ CNPG

1. ผู้ป่วยที่ใส่ท่อทางเดินหายใจทางปาก หรือจมูกที่รู้สึกตัวดีและสามารถสื่อสารได้
2. พยาบาลวิชาชีพผู้ปฏิบัติงานในหน่วยวิกฤต
3.
4.

ขั้นตอนการปฏิบัติการพยาบาล

1.
2.
3.
4.

การประเมินผลลัพธ์

1.
2.
3.

ส่วนที่ 3 แบบแสดงความคิดเห็นของผู้ทรงคุณวุฒิในการตรวจสอบแนวปฏิบัติการพยาบาล เพื่อส่งเสริมการสื่อสารในผู้ป่วยใส่ท่อทางเดินหายใจ

คำชี้แจง แบบแสดงความคิดเห็นการตรวจสอบแนวปฏิบัติการพยาบาลเพื่อส่งเสริมการสื่อสาร
ในผู้ป่วยใส่ท่อทางเดินหายใจ ประกอบด้วย 2 ส่วน คือ

ส่วนที่ 1 แบบแสดงความคิดเห็นในส่วนของการจำกัดความ

ส่วนที่ 2 แบบแสดงความคิดเห็นในส่วนของการขั้นตอนการปฏิบัติการพยาบาล

ส่วนที่ 3 แบบแสดงความคิดเห็นในภาพรวมของแนวปฏิบัติการพยาบาล

โปรดทำเครื่องหมาย ✓ ลงในช่องตามความคิดเห็นของท่านดังต่อไปนี้

เห็นด้วย หมายถึง เห็นด้วยกับข้อความนั้นทั้งหมด

ไม่เห็นด้วย หมายถึง ไม่เห็นด้วยกับข้อความนั้น

กรณีไม่เห็นด้วย กรุณาให้ข้อเสนอแนะในช่องข้อเสนอแนะ

ส่วนที่ 1 แบบแสดงความคิดเห็นในส่วนของการจำกัดความ

ข้อความ	รายละเอียดเกี่ยวกับหลักฐานที่ใช้อ้างอิง		ความคิดเห็นของผู้ทรงคุณวุฒิ		
	ที่มาของหลักฐาน	ระดับของหลักฐาน	เห็นด้วย	ไม่เห็นด้วย	ข้อเสนอแนะ
วัตถุประสงค์					
.....					
คำจำกัดความ					
.....					
ผู้ป่วยกลุ่มเสี่ยง					
.....					
เกณฑ์การรวบรวมข้อมูล					
1. ผู้ป่วยรู้สึกตัวดี					
2.					
3.					
ผู้ได้รับประโยชน์จากการ					
ใช้ CNPG					
.....					

ส่วนที่ 2 ขั้นตอนการปฏิบัติการพยาบาลและการประเมินผล

ข้อความ	รายละเอียดเกี่ยวกับหลักฐานที่ใช้อ้างอิง		ความคิดเห็นของผู้ทรงคุณวุฒิ		
	ที่มาของหลักฐาน	ระดับของหลักฐาน	เห็นด้วย	ไม่เห็นด้วย	ข้อเสนอแนะ
ขั้นตอนการปฏิบัติการพยาบาล					
1.					
2.					
3.					
4.					
5.					
6.					
การประเมินผล					
1.					
2.					
3.					

ส่วนที่ 3 แบบแสดงความคิดเห็นในภาพรวมของแนวปฏิบัติการพยาบาลเพื่อส่งเสริมการสื่อสารในผู้ป่วยใส่ท่อช่วยหายใจ

คำชี้แจง กรุณาทำเครื่องหมาย✓ตามความคิดเห็นของท่านต่อแนวปฏิบัติการพยาบาลเพื่อส่งเสริมการสื่อสารในผู้ป่วยใส่ท่อช่วยหายใจ (ตอบได้มากกว่า 1 ข้อ)

หัวข้อความคิดเห็น	เห็นด้วย	ไม่เห็นด้วย	เหตุผล
1. แนวปฏิบัติการพยาบาล.....			
2. แนวปฏิบัติการพยาบาล.....			
3. แนวปฏิบัติการพยาบาล.....			
4. แนวปฏิบัติการพยาบาล.....			

INSTRUMENTS FOR DATA COLLECTION

เครื่องมือที่ใช้ในการเก็บข้อมูลการศึกษานำร่องการใช้แนวปฏิบัติการพยาบาลเพื่อส่งเสริมการสื่อสารในผู้ป่วยใส่ท่อทางเดินหายใจ

ส่วนที่ 1 แบบบันทึกข้อมูลส่วนบุคคล

ชุดที่ 1 ข้อมูลส่วนบุคคลของผู้ป่วย

ชุดที่ 2 ข้อมูลส่วนบุคคลของพยาบาล

ส่วนที่ 2 แบบประเมินการปฏิบัติตามแนวปฏิบัติการพยาบาลเพื่อส่งเสริมการสื่อสารในผู้ป่วยใส่ท่อทางเดินหายใจด้านผู้ปฏิบัติการพยาบาล (performance check list)

ชุดที่ 1 แบบประเมินการใช้แนวปฏิบัติการพยาบาล

ชุดที่ 2 แบบประเมินปัญหา อุปสรรค และข้อเสนอแนะ

ชุดที่ 3 แบบประเมินการใช้แนวปฏิบัติการพยาบาลในภาพรวม

ส่วนที่ 3 แบบประเมินการใช้แนวปฏิบัติการพยาบาลเพื่อส่งเสริมการสื่อสารในผู้ป่วยใส่ท่อทางเดินหายใจในผู้ป่วย

ชุดที่ 1 แบบประเมินความพึงพอใจในการสื่อสาร

ชุดที่ 2 แบบประเมินความยากลำบากในการสื่อสาร

ชุดที่ 3 แบบวัดความยากลำบากในการสื่อสาร

ส่วนที่ 1 แบบบันทึกข้อมูลส่วนบุคคล

คำชี้แจง กรุณาเติมข้อมูลลงในช่องว่าง และทำเครื่องหมาย ✓ ลงในช่อง ☐ ตามความเป็นจริง

ชุดที่ 1 ข้อมูลส่วนบุคคลด้านผู้ป่วย

1. เพศ

☐ หญิง

☐ ชาย

2. อายุ.....ปี

3. สถานภาพสมรส

☐ โสด

☐ สมรสแล้ว โปรตรระบุ.....(คู่/ม่าย/หย่า/แยกกันอยู่)

4. ระดับการศึกษา

☐ ไม่ได้เรียนหนังสือ

☐ ประถมศึกษา

☐ มัธยมศึกษา

☐ ประกาศนียบัตร

☐ ปริญญาตรี

☐ สูงกว่าปริญญาตรี

5. อาชีพ

☐ นักเรียน นักศึกษา

☐ แม่บ้าน

☐ ค้าขาย

☐ รับจ้าง

☐ เกษตรกร

☐ รับราชการ

☐ อื่นๆ ระบุ.....

6. รายได้ต่อเดือน

☐ ไม่มีรายได้

☐ ต่ำกว่า 1,000 บาท

☐ 1,001-5,000 บาท

☐ 5,001-10,000 บาท

☐ มากกว่า 10,001 บาท

7. วันที่ใส่ท่อทางเดินหายใจ.....เวลา.....

8. วันที่ใช้แนวปฏิบัติการพยาบาล.....เวลา.....

9. วันที่สิ้นสุดการใช้แนวปฏิบัติการพยาบาล.....เวลา.....

10. วันที่ถอดท่อทางเดินหายใจ.....เวลา.....

11. วันที่ประเมินผลลัพธ์ใช้แนวปฏิบัติการพยาบาล.....เวลา.....

12. การตรวจวินิจฉัยโรค.....

ชุดที่ 2 ข้อมูลส่วนบุคคลด้านพยาบาล

1. เพศ

☐ หญิง☐ ชาย

2. อายุ.....ปี

3. ระดับการศึกษา

☐ปริญญาตรี☐ ปริญญาโท☐ อื่นๆ ระบุ.....

4. พยาบาลวิชาชีพพระดับ.....

5. ประสบการณ์การทำงาน.....ปี.....เดือน

6. ประสบการณ์การทำงานในหน่วยวิกฤตอายุรกรรม.....ปี.....เดือน

7. ประสบการณ์การฝึกอบรมที่ได้รับ

☐ Basic CPR☐ Advanced CPR☐ Basic CCN☐ Advanced CCN

8. แนวปฏิบัติการพยาบาลเพื่อส่งเสริมการสื่อสารในผู้ป่วยใส่ท่อทางเดินหายใจ

☐ ไม่มี☐ มี

9. อุปกรณ์ช่วยการสื่อสารในผู้ป่วยใส่ท่อทางเดินหายใจ

☐ ไม่มี☐ มี ได้แก่.....

ส่วนที่ 3 แบบประเมินการปฏิบัติตามแนวปฏิบัติการพยาบาลเพื่อส่งเสริมการสื่อสารในผู้ป่วยใส่ท่อทางเดินหายใจด้านผู้ปฏิบัติการพยาบาล (performance check list)

ชุดที่ 1 แบบประเมินการใช้แนวปฏิบัติการพยาบาล

คำชี้แจง กรุณาทำเครื่องหมาย ✓ ลงในช่องให้ตรงกับสิ่งที่ปฏิบัติจริง ดังนี้

ปฏิบัติได้ หมายถึง แนวปฏิบัติการพยาบาลสามารถปฏิบัติได้จริง

ปฏิบัติไม่ได้ หมายถึง แนวปฏิบัติการพยาบาลไม่สามารถปฏิบัติได้จริงพร้อมทั้งระบุเหตุผลหรือข้อเสนอแนะ

ขั้นตอนการปฏิบัติการพยาบาล	ผลการปฏิบัติ		ข้อเสนอแนะ
	ปฏิบัติได้	ปฏิบัติไม่ได้	
1. ประเมินความพร้อม.....			
2. แนะนำตัว			
3. ให้คำแนะนำที่สำคัญ.....			
4. จัดสภาพแวดล้อม.....			
5. แนะนำวิธีการสื่อสาร.....			
6. เทคนิคการสื่อสาร.....			
7. ประสานงานการสื่อสาร.....			

ชุดที่ 2 แบบประเมินปัญหา อุปสรรค และข้อเสนอแนะ

คำชี้แจง กรุณาตอบข้อมูลลงในช่องว่างตามความคิดเห็นของท่าน

1. ปัญหา อุปสรรคที่พบในการใช้แนวทางปฏิบัติการพยาบาลเพื่อส่งเสริมการสื่อสารในผู้ป่วยใส่ท่อทางเดินหายใจ

.....

2. ข้อเสนอแนะที่ควรแก้ไขปรับปรุงการใช้แนวทางปฏิบัติการพยาบาลเพื่อส่งเสริมการสื่อสารในผู้ป่วยใส่ท่อทางเดินหายใจ

.....

ชุดที่ 3 แบบประเมินการใช้แนวปฏิบัติการพยาบาลในภาพรวม

คำชี้แจง กรุณาทำเครื่องหมาย ✓ ลงในช่องตามความคิดเห็นของท่านภายหลังการใช้แนวปฏิบัติการพยาบาลเพื่อส่งเสริมการสื่อสารในผู้ป่วยใส่ท่อทางเดินหายใจ

น้อยที่สุด หมายถึง ท่านเห็นด้วยกับข้อความนั้นในระดับน้อยที่สุด

น้อย หมายถึง ท่านเห็นด้วยกับข้อความนั้นในระดับน้อย

ปานกลาง หมายถึง ท่านเห็นด้วยกับข้อความนั้นในระดับปานกลาง

มาก หมายถึง ท่านเห็นด้วยกับข้อความนั้นในระดับมาก

มากที่สุด หมายถึง ท่านเห็นด้วยกับข้อความนั้นในระดับมากที่สุด

ข้อความ	ระดับความคิดเห็น				
	น้อยที่สุด	น้อย	ปานกลาง	มาก	มากที่สุด
1. สร้างความมั่นใจในการสื่อสารกับผู้ป่วยใส่ท่อทางเดินหายใจ					
2. เพิ่มความคล่องตัวในการสื่อสารกับผู้ป่วยใส่ท่อทางเดินหายใจ					
3. ส่งเสริมการสื่อสารในผู้ป่วยใส่ท่อทางเดินหายใจ					
4. สามารถบูรณาการแนวปฏิบัติการพยาบาลเข้ากับการปฏิบัติงานประจำ					

คำชี้แจง กรุณาทำเครื่องหมาย ✓ ลงในช่อง ☐ ตามความคิดเห็นของท่านภายหลังการใช้แนวปฏิบัติการพยาบาลเพื่อส่งเสริมการสื่อสารในผู้ป่วยใส่ท่อทางเดินหายใจ (ตอบได้มากกว่า 1 ข้อ)

- ☐ แนวปฏิบัติการพยาบาลดังกล่าวมีความสำคัญ(essential) ในการนำไปใช้เพื่อให้เกิดการพยาบาลที่มีคุณภาพเป็นที่ยอมรับและเป็นการปฏิบัติที่นำไปสู่การรับรองคุณภาพ
- ☐ แนวปฏิบัติการพยาบาลดังกล่าวเป็นแนวปฏิบัติการพยาบาลที่มีคุณภาพ สร้างจากหลักฐานที่ดี การนำไปใช้จะทำให้เกิดการปฏิบัติการพยาบาลที่มีคุณภาพ (good practice)
- ☐ แนวปฏิบัติการพยาบาลดังกล่าวเป็นแนวปฏิบัติการพยาบาลที่ใช้ได้เฉพาะบางหน่วยงานเท่านั้น
- ☐ แนวปฏิบัติการพยาบาลดังกล่าวเป็นแนวปฏิบัติการพยาบาลที่ไม่มีความจำเป็นในการนำไปปฏิบัติ

ส่วนที่ 4 แบบประเมินการใช้แนวปฏิบัติการพยาบาลเพื่อส่งเสริมการสื่อสารในผู้ป่วยใส่ท่อทางเดินหายใจในด้านผู้ป่วย

แบบประเมินชุดที่ 1 แบบประเมินความพึงพอใจการสื่อสารในผู้ป่วยใส่ท่อทางเดินหายใจ

คำชี้แจง กรุณาทำเครื่องหมาย ✓ ลงในช่องที่ตรงกับความรู้สึกต่อการสื่อสารของท่าน

ไม่เลย หมายถึง ไม่พึงพอใจต่อข้อความในข้อคำถามนั้นเลย
 น้อย หมายถึง พึงพอใจต่อข้อความในข้อคำถามนั้นในระดับน้อย
 ปานกลาง หมายถึง พึงพอใจต่อข้อความในข้อคำถามนั้นในระดับปานกลาง
 มาก หมายถึง พึงพอใจต่อข้อความในข้อคำถามนั้นในระดับมาก
 มากที่สุด หมายถึง พึงพอใจต่อข้อความในข้อคำถามนั้นในระดับมากที่สุด

ผู้ใช้แบบประเมิน ☐ ด้านผู้ศึกษา เวลาที่ประเมิน ☐ ก่อนการใช้แนวปฏิบัติ
☐ ด้านผู้ปฏิบัติการพยาบาล ☐ หลังการใช้แนวปฏิบัติ

ข้อคำถาม	ความพึงพอใจ				
	ไม่เลย	น้อย	ปานกลาง	มาก	มากที่สุด
1. ท่านพอใจที่ได้รับคำแนะนำเกี่ยวกับวิธีการสื่อสารกับพยาบาลขณะที่ใส่ท่อทางเดินหายใจ					
2. ท่านพอใจในวิธีการสื่อสารที่ใช้อยู่ในขณะที่ใส่ท่อทางเดินหายใจ					
3. ท่านพอใจที่ท่านสามารถบอกปัญหาและความต้องการของท่านกับพยาบาลได้ง่าย					
4. ท่านพอใจที่พยาบาลทราบปัญหาและความต้องการของท่านได้อย่างรวดเร็วหลังจากใช้วิธีสื่อสาร					
5. ท่านพอใจที่พยาบาลให้ความสนใจต่อปัญหาและความต้องการของท่านภายหลังจากที่ใช้วิธีการสื่อสารด้วยท่าที่ที่เต็มใจ					
6. ท่านพอใจที่ท่านได้รับการดูแลเกี่ยวกับกิจวัตรประจำวันจากพยาบาลตรงกับความต้องการของท่าน					
7. ท่านพอใจที่ท่านได้รับการดูแลช่วยเหลือหรือแก้ไขปัญหามาจากพยาบาลตรงกับความต้องการของท่าน					
8. ท่านพอใจที่ท่านได้รับการดูแลเอาใจใส่จากพยาบาลอย่างสม่ำเสมอ					
9. ท่านพอใจที่พยาบาลสามารถให้การพยาบาลแก่ท่านได้เป็นอย่างดีตามความต้องการของท่านได้ทุกครั้ง					

แบบประเมินชุดที่ 2 แบบประเมินความยากลำบากต่อการสื่อสารในผู้ป่วยใส่ท่อทางเดินหายใจ

คำชี้แจง กรุณาทำเครื่องหมาย ✓ ลงในแต่ละช่องที่ตรงกับความรู้สึกที่เป็นจริงของท่าน

ไม่เลย หมายถึง การสื่อสารไม่มีความยากลำบากเลย

น้อย หมายถึง การสื่อสารมีความยากลำบากเล็กน้อย

ปานกลาง หมายถึง การสื่อสารมีความยากลำบากปานกลาง

มาก หมายถึง การสื่อสารมีความยากลำบากมาก

มากที่สุด หมายถึง การสื่อสารมีความยากลำบากมากที่สุด

ผู้ใช้แบบประเมิน ☐ ด้านผู้ศึกษา

เวลาที่ประเมิน ☐ ก่อนการใช้แนวปฏิบัติ

☐ ด้านผู้ปฏิบัติการพยาบาล

☐ หลังการใช้แนวปฏิบัติ

ข้อคำถามการสื่อสาร	ความยากลำบาก				
	ไม่เลย	น้อย	ปานกลาง	มาก	มากที่สุด
1. ท่านคิดว่าท่านมีความลำบากมากน้อยเพียงใดที่ท่านไม่สามารถสื่อสารโดยการพูดได้					
2. ท่านคิดว่าท่านมีความลำบากมากน้อยเพียงใดที่ท่านไม่สามารถสื่อสารโดยการพูดกับ(ครอบครัว/เพื่อน)ที่มาเยี่ยมท่าน					
3. ท่านคิดว่าท่านมีความยากลำบากมากน้อยเพียงใดที่ท่านไม่สามารถสื่อสารโดยการพูดกับพยาบาลที่มาดูแลท่าน					
4. ท่านคิดว่าท่านมีความยากลำบากมากน้อยเพียงใดที่ท่านไม่สามารถสื่อสารโดยการพูดกับแพทย์ที่มาดูแลท่าน					
5. ท่านคิดว่าท่านมีความยากลำบากมากน้อยเพียงใดที่จะบอกความต้องการทางด้านร่างกาย (เช่น ต้องการให้อุ้ม/ห่ม, ให้อาบน้ำ, ต้องการยาแก้ปวด)					
6. ท่านคิดว่าท่านมีความยากลำบากมากน้อยเพียงใดที่จะถามคำถามเกี่ยวกับการดูแลรักษาตัวท่านเอง					
7. ท่านคิดว่าท่านมีความยากลำบากมากน้อยเพียงใดที่จะถามคำถามเกี่ยวกับอาการเจ็บป่วยของท่าน					
8. ท่านคิดว่าท่านมีความยากลำบากมากน้อยเพียงใดที่จะสื่อสารความต้องการในใจของท่านออกมา					
9. ท่านคิดว่าท่านมีความยากลำบากมากน้อยเพียงใดที่จะสื่อสารความรู้สึกของท่านออกมา					
10. ท่านคิดว่าท่านมีความยากลำบากมากน้อยเพียงใดที่จะทำให้ผู้อื่นเข้าใจในตัวท่านโดยที่ท่านไม่สามารถสื่อสารออกมาเป็นภาษาพูดได้					

THE CNPG FOR PROMOTING COMMUNICATION IN THE INTUBATED PATIENTS

แนวปฏิบัติการพยาบาลเพื่อส่งเสริมการสื่อสารในผู้ป่วยใส่ท่อทางเดินหายใจ

วัตถุประสงค์

เพื่อเป็นแนวปฏิบัติการพยาบาลเพื่อส่งเสริมการสื่อสารระหว่างผู้ป่วยที่ใส่ท่อทางเดินหายใจกับพยาบาลวิชาชีพหน่วยวิกฤตอายุรกรรม

คำจำกัดความ

การสื่อสาร (communication) หมายถึง การรับส่งข้อมูลระหว่างผู้ป่วยใส่ท่อทางเดินหายใจที่รู้สึกตัวดีและมีการรับรู้ปกติกับพยาบาลวิชาชีพซึ่งปฏิบัติงานในหอผู้ป่วยวิกฤตอายุรกรรม เพื่อให้สามารถเข้าใจข้อมูลหรือความหมายที่ต้องการ โดยใช้วิธีการรับส่งข้อมูลในรูปแบบของการ ขยับริมฝีปากอย่างช้าๆ การแสดงสีหน้า การแสดงท่าทางประกอบการชี้มือ การใช้ปากกาเขียนข้อความ การใช้นัตรข้อความ หรือการใช้รูปภาพประกอบคำอธิบาย

ผู้ป่วยใส่ท่อทางเดินหายใจ (intubated patient) หมายถึง ผู้ป่วยใส่ท่อทางเดินหายใจที่รู้สึกตัวดีโดยความยาวของท่อพาดผ่านกล่องเสียงทำให้อากาศไม่สามารถผ่านกล่องเสียงเพื่อทำให้เกิดเสียงในขณะพูดได้

ผู้ป่วยกลุ่มเสี่ยง

ผู้ป่วยใส่ท่อทางเดินหายใจทางปากหรือจมูก

เกณฑ์การรวบรวมข้อ

1. ผู้ป่วยรู้สึกตัวดี มีคะแนนประเมินจาก Glasgow Coma Scale คือ E4M6
2. อายุ > 15 ปี
3. ใส่ท่อทางเดินหายใจทางปากหรือจมูก
4. ไม่ได้รับการวินิจฉัยว่าเป็น CVA, delirium, Psychotic illness
5. สื่อสารด้วยการใช้ภาษาไทย

ผู้ได้รับประโยชน์จากการใช้ CNPG

1. ผู้ป่วยที่ใส่ท่อทางเดินหายใจทางปาก หรือจมูกที่รู้สึกตัวดีและสามารถสื่อสารได้
2. พยาบาลวิชาชีพผู้ปฏิบัติงานในหน่วยวิกฤต
3. บุคลากรอื่นๆ ในหน่วยงาน
4. ครอบครัวและญาติ
5. หน่วยงานและองค์กร

ขั้นตอนการปฏิบัติการพยาบาล

1. ประเมินความพร้อมและคัดเลือกวิธีการสื่อสารกับผู้ป่วยตามแนวทางการคัดเลือกวิธีการสื่อสารในผู้ป่วยใส่ท่อทางเดินหายใจอย่างมีขั้นตอน (ตามเอกสาร ก)
2. แนะนำตัว สร้างสัมพันธภาพให้ผู้ป่วยเกิดความคุ้นเคยไว้วางใจ
3. ให้คำแนะนำที่สำคัญดังต่อไปนี้โดยพิจารณาตามความเหมาะสมและความสำคัญ
ของสภาพความเจ็บป่วยของผู้ป่วย
 - 3.1 วัตถุประสงค์ของการใส่ท่อทางเดินหายใจ
 - 3.2 ลักษณะของท่อทางเดินหายใจที่ผู้ป่วยใช้ โดยแสดงตัวอย่างของท่อทางเดินหายใจที่ผู้ป่วยใส่
 - 3.3 อธิบายตำแหน่งของท่อทางเดินหายใจประกอบรูปภาพ (ตามเอกสาร ข)
 - 3.4 อธิบายผลที่เกิดขึ้นจากการใส่ท่อทางเดินหายใจประกอบรูปภาพในข้อ โดยเน้นให้ผู้ป่วยทราบว่าขณะใส่ท่อทางเดินหายใจ จะพูดไม่มีเสียงแต่จะเป็นอยู่เพียงชั่วคราวระหว่างการใส่ท่อเท่านั้น
 - 3.5 อธิบายระยะเวลาการใส่ท่อทางเดินหายใจ การหย่า การนำท่อออก
 - 3.6 อธิบายกิจกรรมการพยาบาลที่สำคัญขณะใส่ท่อทางเดินหายใจ
 - 3.6.1 การใช้เครื่องช่วยหายใจ
 - 3.6.2 การดูดเสมหะ
 - 3.6.3 การพลิกตะแคงตัว
 - 3.6.4 การขอความช่วยเหลือ
4. จัดสภาพแวดล้อมที่เอื้อต่อการสื่อสารของผู้ป่วย เช่น นาฬิกาในตำแหน่งสามารถมองเห็นชัดเจน ปฏิทิน
5. แนะนำวิธีการสื่อสารที่ใช้ขณะมีท่อทางเดินหายใจ
 - 5.1 แนะนำวิธีการสื่อสารที่สามารถใช้ได้ตามความสามารถและความต้องการของผู้ป่วยเพื่อสื่อความต้องการของตนเองโดยใช้แบบผสมผสาน ดังนี้
 - 5.1.1 แนะนำวิธีการแสดงออกด้วยท่าทาง
 - 5.1.2 แนะนำวิธีการใช้ศีรษะเคลื่อนไหวหรือสัญญาณมือเพื่อตอบรับหรือปฏิเสธ เน้นเวลาส่ายหน้าหรือพยักหน้า ท่อจะขยับอาจเจ็บคอหรือท่อเลื่อนหลุด
 - 5.2 แนะนำวิธีการสื่อสารโดยใช้อุปกรณ์ช่วยในการสื่อสารโดย มีรูปแบบต่างๆ ดังนี้

5.2.1 วิธีการใช้ปากกาเขียนข้อความพร้อมทั้งเตรียมอุปกรณ์ซึ่งประกอบด้วย แผ่นรองเขียนซึ่งมีลักษณะแข็งแรง ขนาด 8x12 นิ้ว พร้อมปากกาที่น้ำหมึกไหลต่อเนื่องโดยไม่ต้องใช้แรงกดมากและกระดาก

5.2.2 วิธีการใช้แผ่นรูปภาพที่แสดงความต้องการของผู้ป่วย วิกฤต อายุรกรรมที่สำคัญ มีลักษณะเป็นรูปภาพประกอบคำอธิบายได้รูปภาพจำนวน 4 ภาพต่อแผ่น จัดเป็นหมวดหมู่ดังนี้ (ตามเอกสาร ค)

- แผ่นที่ 1 ช่วยพลิกตัวให้ด้วย ไขหัวเตียงขึ้น ไขหัวเตียงลง ยากนั่ง
- แผ่นที่ 2 ร้อน หนาว มีไข้ ยากเช็ดตัว
- แผ่นที่ 3 ถ่ายอุจจาระ ปัสสาวะ คลื่นไส้ อาเจียน เวียนหัว
- แผ่นที่ 4 หิวข้าว ยากดื่มน้ำ นอนไม่หลับ อึดอัดแน่นท้อง
- แผ่นที่ 5 ช่วยดูแลแผล/น้ำลาย หายใจไม่ออก ยากเอาท่อออก เหนื่อย
- แผ่นที่ 6 ปวด เมื่อย คัน เจ็บ
- แผ่นที่ 7 ต้องการพบญาติ ต้องการพบแพทย์ เวลาเท่าไร

5.2.3 วิธีการใช้แผ่นตัวอักษร ก-ฮ พร้อมด้วยสระ วรรณยุกต์

6. เทคนิคการสื่อสารของพยาบาลที่ใช้กับผู้ป่วย

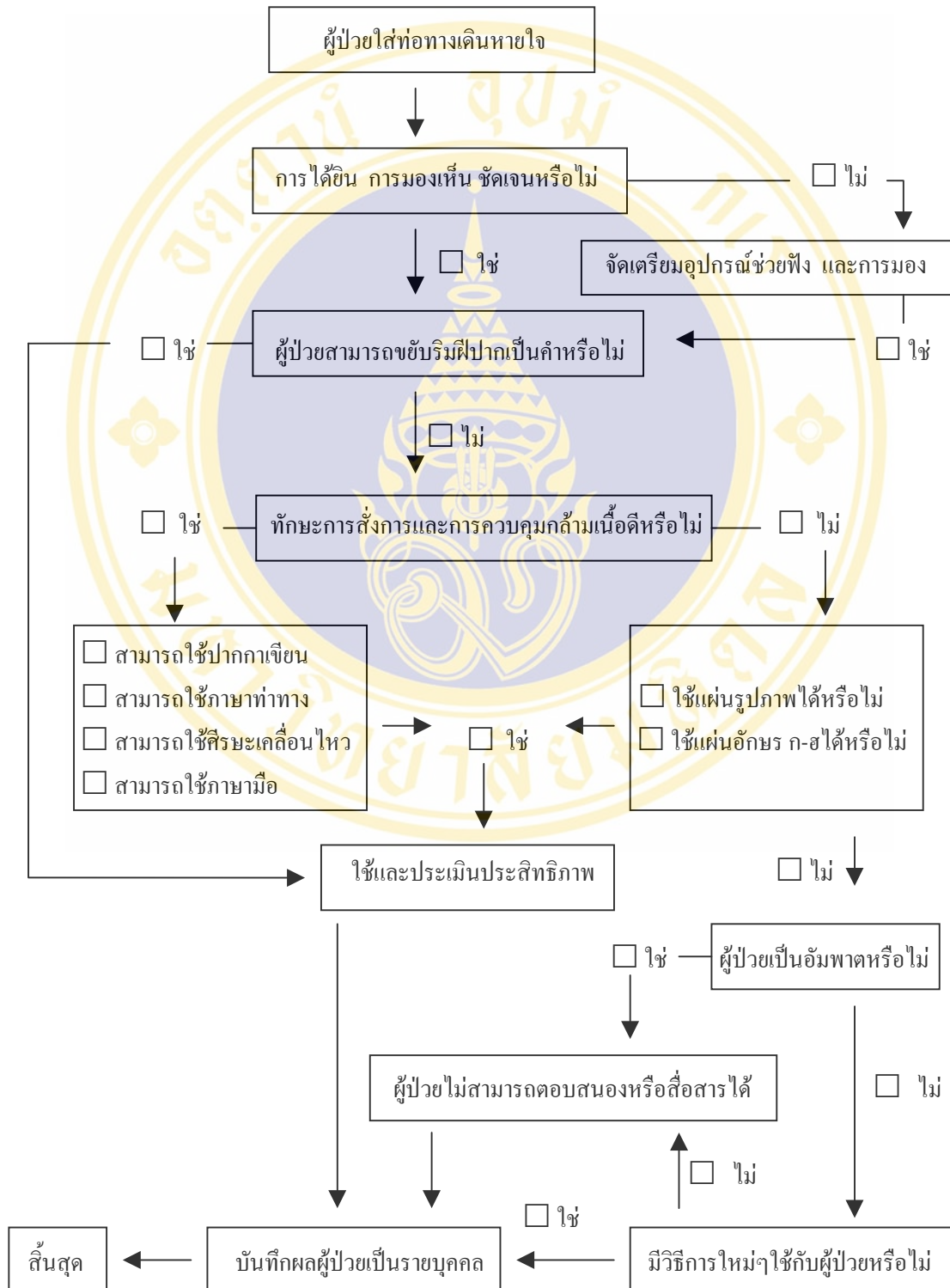
- 6.1 ตกลงกับผู้ป่วยถึงวิธีการสื่อสารที่ผู้ป่วยสามารถปฏิบัติได้ตามความสามารถ
 - 6.2 เตรียมอุปกรณ์ช่วยในการสื่อสารให้เหมาะสมในกรณีที่ต้องใช้
 - 6.3 ให้ความสำคัญ ความสนใจ และเวลาผู้ป่วยระหว่างการสื่อสารโดยสะดวก ขณะสื่อสารกับผู้ป่วย
 - 6.4 คาดเดาความต้องการของผู้ป่วยอย่างมีเหตุผล ไม่ถามคำถามซ้ำๆ จะทำให้ผู้ป่วยเกิดความเบื่อหน่าย ขี้ใจร้อนได้
 - 6.5 ตอบสนองความต้องการของผู้ป่วยทันทีเมื่อผู้ป่วยสื่อสารความต้องการได้
 - 6.6 ปรับเปลี่ยนวิธีการสื่อสารในรูปแบบอื่นเมื่อเกิดปัญหาหรือเมื่อผู้ป่วยไม่สามารถสื่อสารได้ความต้องการของตนเองได้
 - 6.7 ค้นหาแหล่งสนับสนุนทางครอบครัวเพื่อช่วยในการสื่อสาร
7. ประสานงานการสื่อสารระหว่างผู้ป่วย, ญาติ ผู้ป่วย, บุคลากรอื่นๆ

การประเมินผล

1. ประเมินความพึงพอใจของผู้ป่วยต่อวิธีการสื่อสารโดยใช้แบบประเมิน The patient and nurse satisfaction questionnaires ของ ศตอफी และคณะซึ่งแปลโดย จูตินันท์ ศรีฉาย (ตามแบบประเมินชุดที่ 1)
2. ประเมินการรับรู้ความยากง่ายในการสื่อสารโดยใช้แบบประเมิน Ease of communication ของ เมนเชล แปลโดยผู้ศึกษา (ตามแบบประเมินชุดที่ 2)
3. วัดความยากง่ายในการสื่อสารกับพยาบาลด้วย Numeric rating scale with statement ซึ่งพัฒนามาจาก ศตอफी และคณะ (ตามแบบประเมินชุดที่ 3)

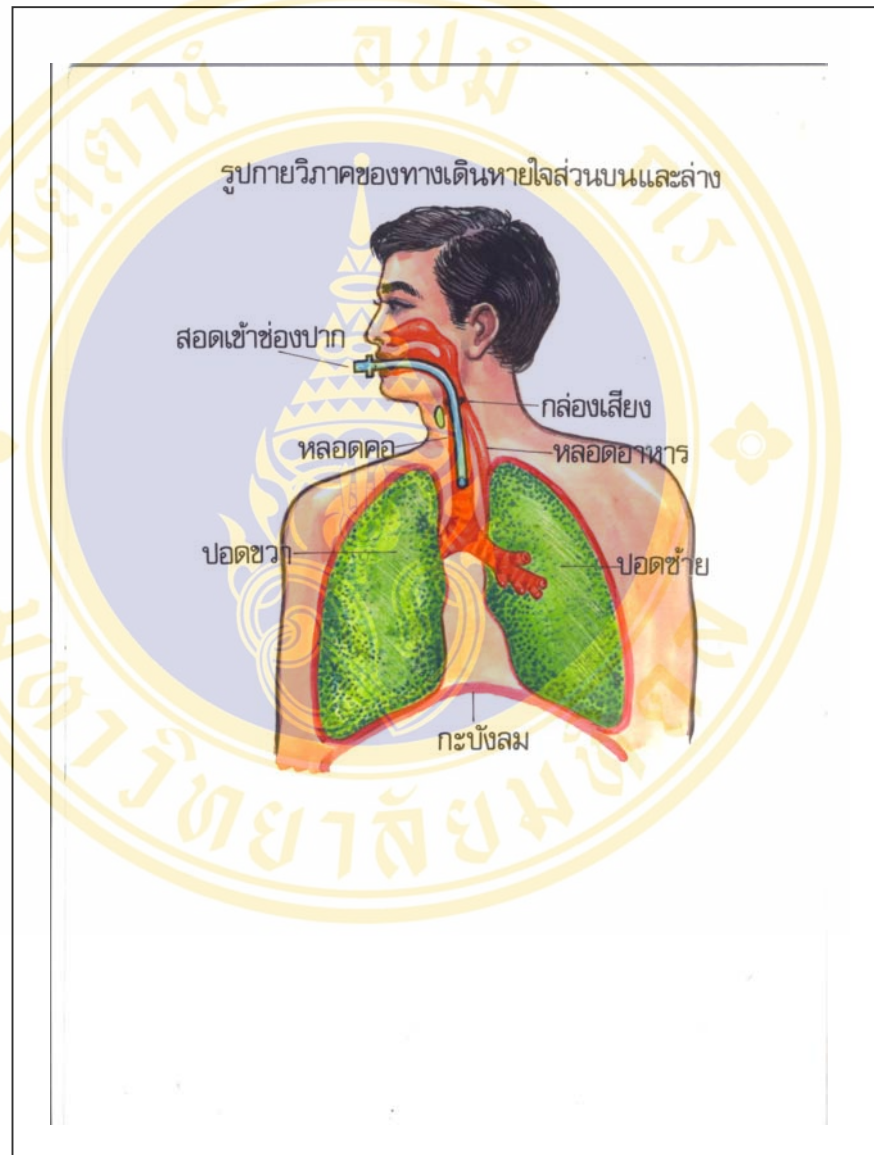
เอกสาร ก

แนวทางการคัดเลือกวิธีการสื่อสารในผู้ป่วยใส่ท่อทางเดินหายใจอย่างมีขั้นตอน



เอกสาร ข

รูปภาพประกอบคำอธิบายข้อ 3.3 และ 3.4



เอกสาร ค

แฟ้มรูปภาพ



แผ่นที่ 1

แผ่นที่ 2

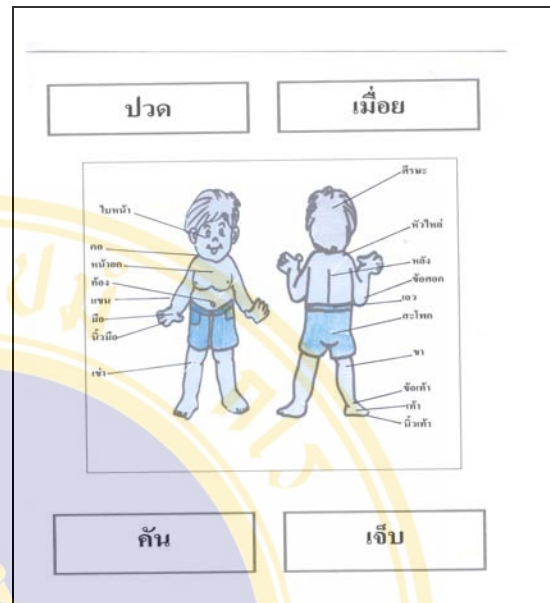


แผ่นที่ 3

แผ่นที่ 4



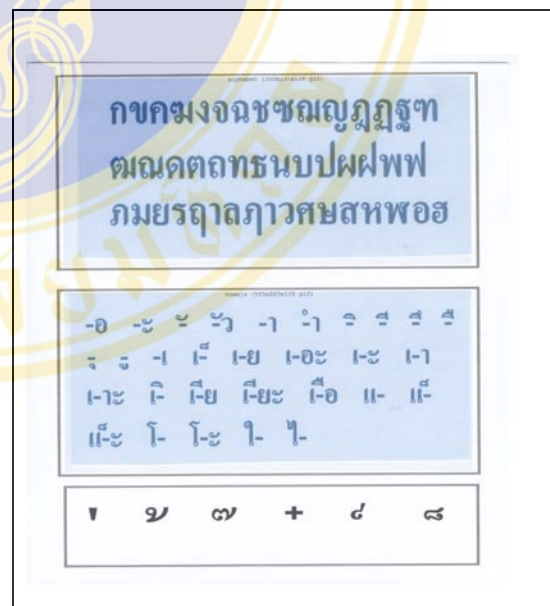
แผ่นที่ 5



แผ่นที่ 6



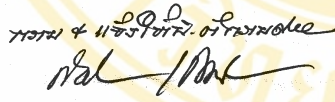
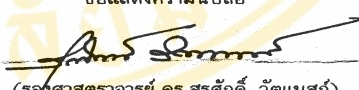
แผ่นที่ 7



แผ่นที่ 8

PERMISSION LETTERS FOR USING INSTRUMENT

หนังสืออนุญาตให้ใช้แบบประเมินความพึงพอใจจากบัณฑิตวิทยาลัย มหาวิทยาลัยเชียงใหม่

	บัณฑิตวิทยาลัย มหาวิทยาลัยเชียงใหม่ 239 ถนนห้วยแก้ว อำเภอเมือง จังหวัดเชียงใหม่ 50200
ที่ ทม 0613/ 090	
๑ มกราคม 2546	
เรื่อง อนุญาตให้ใช้เครื่องมือวิจัย	
เรียน ประธานกรรมการบริหารหลักสูตรพยาบาลมหาบัณฑิต มหาวิทยาลัยมหิดล	
อ้างถึง หนังสือ ที่ พย.ม.1336/2545 ลงวันที่ 17 ธันวาคม 2545	
ตามที่ประธานกรรมการบริหารหลักสูตรพยาบาลมหาบัณฑิต มหาวิทยาลัยมหิดล มีความประสงค์จะขออนุญาตให้นางสุธาดา กัณหา นักศึกษาพยาบาลศาสตรมหาบัณฑิต สาขาวิชาการพยาบาลผู้ใหญ่ มหาวิทยาลัยมหิดล นำเครื่องมือวิจัยในวิทยานิพนธ์ของจิตติณัฐ ศศิฉาย ไปใช้ในการงานวิจัย นั้น	
บัณฑิตวิทยาลัยพิจารณาแล้วไม่ขัดข้อง และยินยอมให้นำเครื่องมือดังกล่าวไปใช้ประโยชน์ในการศึกษาวิจัยได้	
จึงเรียนมาเพื่อโปรดทราบ	
ทวณ ๔ 	ขอแสดงความนับถือ  (รองศาสตราจารย์ ดร.สุรศักดิ์ วัฒนเนสก์) รองคณบดีฝ่ายวิชาการ ปฏิบัติราชการแทน คณบดีบัณฑิตวิทยาลัย
งานบริการการศึกษา โทร. 053-942423 โทรสาร 053-892231	

หนังสืออนุญาตให้ใช้เครื่องมือ Ease of communication ของ Menzel, L.K.

MSN Hotmail - Message

Page 1 of 1

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คลิกเพื่อดูรายละเอียด

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peppermildmint@hotmail.com

Free Newsletters | MSN Featured Offers | Find Message

Save Address(es) | Block

Previous | Next | Close

From : lmenzel <lmenzel@asapnet.net>
 To : peppermildmint@hotmail.com, lmenzel@asapnet.net
 Subject : Ease of Communication Scale
 Date : Tue, 21 Jan 2003 09:24:58 -0600
 Attachment : easeofcomm.sca.doc (8k)

Reply | Reply All | Forward | Delete | Put in Folder...

Printer Friendly Version

Dear S,Kunha,
 I am so very sorry about the delay in my responding to your letter which I received around our Christmas holidays. It has been on my mind to write to you, but I have been so busy. I hope you will forgive me.

I am very happy to have you use my Ease of Communication Scale, with the understanding that you will share the result of your study with me and any significant relationships or important data related to my scale. How will you use the Scale? I am attaching it as a Word attachment in case you would like to see the current version.

Thank you for your interest in this instrument, and I look forward to hearing from you again.

With warm wishes to you and your family,
 Linda Menzel, PhD, RN, FNP-BC

Notice: Attachments are automatically scanned for viruses using McAfee

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http://sea1fd.sea1.hotmail.msn.com/cgi-bin/getmsg?curmbox=F000000001&a... 24/1/2546

PERMISSION LETTER FOR DATA COLLECTION

หนังสืออนุญาตให้เก็บข้อมูล หอผู้ป่วยวิกฤตอายุรกรรม โรงพยาบาลจุฬาลงกรณ์

ที่ จพ.ล. 2423 /2546

18 มีนาคม 2546

เรื่อง ขินดีให้เก็บข้อมูลเพื่อประกอบการทำสารนิพนธ์
เรียน ประธานคณะกรรมการบริหารหลักสูตรพยาบาลศาสตรมหาบัณฑิต
อ้างถึง หนังสือที่ พย.ม. 1374/2545 ลงวันที่ 23 ธันวาคม 2545

ตามหนังสือที่อ้างถึง คณะพยาบาลศาสตร์ มหาวิทยาลัยมหิดล แจ้งความ
ประสงค์ขอความอนุเคราะห์ให้ นางสาวธิดา กัมพะ นักศึกษาหลักสูตรพยาบาลศาสตรมหา-
บัณฑิต สาขาการพยาบาลผู้ใหญ่ แผนก ข เข้าเก็บข้อมูลจากผู้ป่วยที่หน่วยวิกฤตอายุรกรรม
หอผู้ป่วย 1 และ 2 ตั้งแต่เดือนมกราคม 2546 เป็นต้นไปจนกว่าจะได้ข้อมูลครบ 10 รายนั้น
โรงพยาบาลจุฬาลงกรณ์พิจารณาแล้ว ไม่ขัดข้อง ขินดีให้ดำเนินการตามที่แจ้ง
กรุณาติดต่อขอพบหัวหน้าพยาบาล ดิถีจักรพงษ์ชั้น 2 ในวันที่เก็บข้อมูล อนึ่ง ก่อนพบบุคคล
ดังกล่าว ขอให้ศึกษานำบัตรนักศึกษาหรือบัตรประจำตัวประชาชนพร้อมจดหมายฉบับนี้มา
ติดต่อรับบัตรประจำตัวผู้เก็บข้อมูล ณ ตึกอำนวยการ ชั้นล่าง ห้องหมายเลข 4
จึงเรียนมาเพื่อทราบ

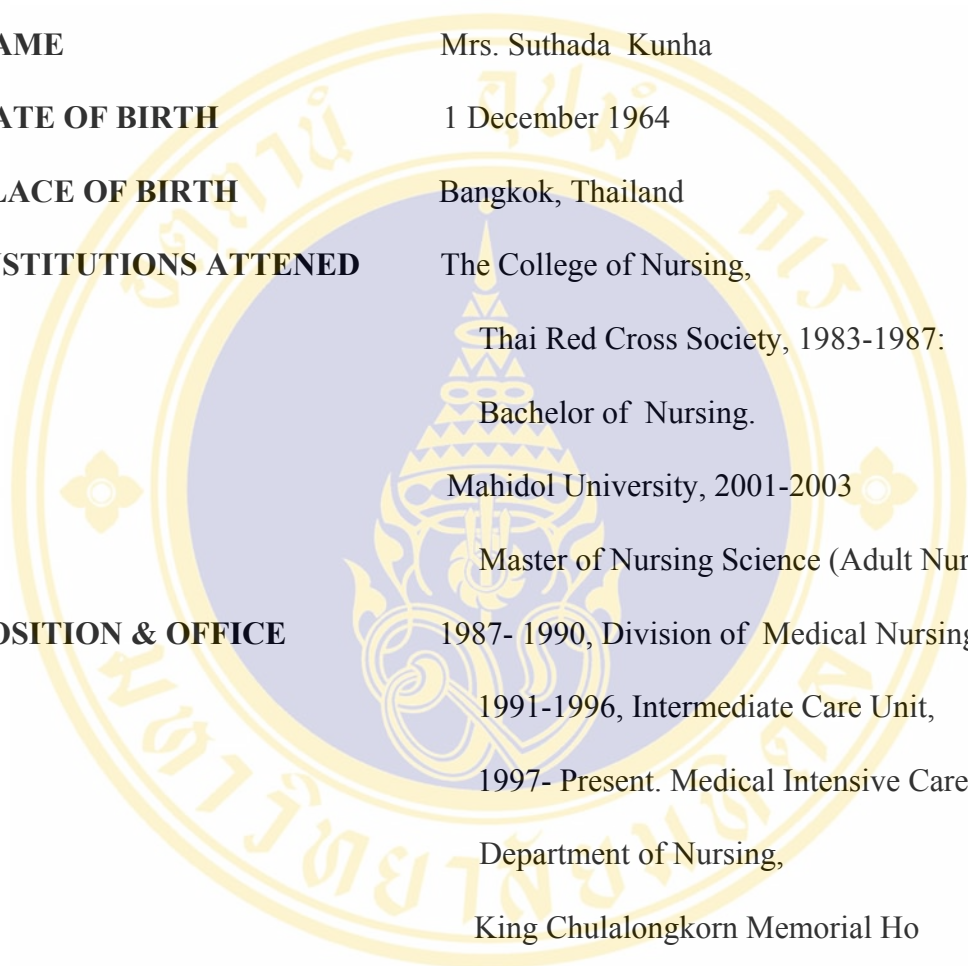
ขอแสดงความนับถือ

(รองศาสตราจารย์นายแพทย์คณะศรี แว่วจิต)

รองผู้อำนวยการฝ่ายวิชาการ
ปฏิบัติการแทน ผู้อำนวยการโรงพยาบาลจุฬาลงกรณ์

ฝ่ายการพยาบาล โทรศัพท์ 0-2256-4360

ฝ่ายเลขานุการ โทรศัพท์ 0-2652-4600-29 ต่อ 3291 โทรสาร 0-2256-4368

BIOGRAPHYThe background of the table features a large, faint, circular seal of Mahidol University. The seal is gold and blue, with Thai script around the perimeter and a central emblem depicting a traditional Thai building.

NAME	Mrs. Suthada Kunha
DATE OF BIRTH	1 December 1964
PLACE OF BIRTH	Bangkok, Thailand
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