CHAPTER 4

FINDINGS AND DISCUSSION

This chapter presents the findings of the three phases of quality indicator development. They were the: 1) nursing quality aspects and indicators for the care provided hospitalized stroke elders, 2) Delphi technique results, and 3) the applicability of the quality indicators. The discussion follows the presentation of the findings.

Findings

Phase 1: Nursing quality aspects and indicators for the care provided hospitalized non-surgical stroke elders

The first research question was "what should be the nursing quality aspects for care provided hospitalized elderly stroke patients?" The nursing quality aspects for care provided hospitalized non-surgical stroke elders were identified. They were based on the perceptions of the patients, their families, medical nurses, and the nurses and physicians who were experts in elderly stroke care.

Nursing quality aspects emerged from the qualitative approach used; this included focus group interviews and semi-structured interviews. After analysis of the data, subjects, who participated in the focus group interviews, were asked to confirm the results of the interviews. The researcher and a colleague independently validated the data from both the semi-structured and the focus group interviews. At the end of this process, six quality aspects emerged. They were management of the patient unit;

nursing staff qualification; nursing care activity; encouraging family participation in patient care; planning for discharge and promoting continuing care; and nursing care outcome.

Throughout these findings, data from the four experts has been referred to as E1-E4, data from the four focus group interviews of the head nurses and nurses has been referred to as F1-F4, data from the six non-surgical stroke elders has been referred to as ES1-ES6, and data from the six family members has been referred to as FES1-FES6.

Aspect one: Management of the patient unit

Nurses are the most significant determinant of the quality of care provided to hospitalized patients as they provide direct care around the clock to those in their hospital units (Koska, 1989). Therefore, the role of management of the patient unit belongs to the nurse administrator or head nurse, as well as the staff nurses who work in the unit.

Management of the patient unit means that nurses' performance in administrating the patient unit in order to increase the quality of care provided. The performance cover identifying necessary care and safety policies, allocating sufficient staff for each shift, providing needed equipments, coordinating with other disciplines, creating quality improvement projects and guidelines for health education, organizing the sharing of knowledge about the environment, managing human resources, and maintaining the safety equipment and environment.

The following statements indicate the role of nurse administrator in arranging the adequate number of the staff and assigning the right person to the right job in providing care for the non-surgical stroke elders.

Every year, we need to re- identify the number of nursing staff; this is because of the increasing number of comprehensive patients. We always use the previous patient length of stay as the basis for identifying the amount of nursing. However, not every year we have the new nurses because of nursing shortage problem. (FG1)

* We assign non-licensed staff to provide care for the simple cases and after they discharged, the new non-surgical stroke elders with comprehensive problems are admitted and used ventilator. We need re-assignment for the afternoon and night shift. (FG1)

The following statements were made by the informants regarding their concerns and about drug's side effect and accident. Therefore, they monitor drug side effect and employ drug alert policy.

* I found some elderly patients have problems of drug toxicity, so I discussed this issue with medical head nurses. Then we have the commitment to be aware of drug adverse problems in elderly patients together. (SI2)

* We discuss about drug alerts in elderly patient care, we identify eight high-risk drugs for elder and now we have the manual to prevent drug toxicity in elder group. (FG1)

* Normally, elder group are high risk to fall, this risk is increased in elder with stroke because their unstable conscious such in stroke patient. Therefore, it is essential to fix the railing around the bed and in the bathroom. (FG2)

The participants described the significant of nursing practice guidelines, patient education guidelines, and other documents that are provided to the patients and their families, and how these guidelines and documents affect the quality of care that is delivered as the following statements.

* Three years ago, our nursing organization fixed the clinical practice guidelines for stroke patients and it is under the process of trial. We believe that clinical practice guidelines have a lot of benefit for nurses. Then now, our hospital has a stroke fast tract for multidisciplinary teams for stroke care. (FG3)

* We develop a care map for stroke patients and present it at a patient care team conference. After used it for three months, we found that it was very effective tool for our care team because most nurses and neurologists had the same goal in providing patient care. (FI1)

* Health education planning for group teaching is very important. When I visited the patient unit in the holidays, I saw one patient have many family members visit. It is a good chance for nurses to teach the family

members how to care for patients in many aspects, for example, hygiene care, NG tube-feeding, promoting movement, and promoting activity in daily life. Therefore, the plan, the media, and the place for group teaching are considerable. (SI4)

 The below statement showed the importance of sharing knowledge and experience among nurses. In addition, the preparation/training courses for new nurses are very important.

> ** I appreciated nurses at the neurological unit of this hospital. I found that they have a team conference more often. I have chances to join. Most of conferences topic relates to the problem of elderly care. For example, last week they discussed about the effective assessment of dysphagia. (SI4)*
> ** Every year, we arrange a one- or two-week training course project for new nurses; it is composed of many contents related to neurological patient care such as the using Barthel Index Assessment. (F3)*

The informants described their perception at the below statements that working with other disciplines was a necessary aspect in providing quality care for non-surgical stroke elders.

> ** Ideally, in caring for stroke patients, the physicians, nurses, physical therapists, and other disciplines should work together in order to provide holistic care. However, in real situations, we work independently, so it takes time to solve a patient's problem. I realize that in some institutes, such as the Prasat Neurological Institute, they join to work together. (SI 2)*

Aspect two: Nursing staff qualification

In the patient unit, nurses are the main determinants of the quality of care provided to the patient. Many patients have commented that they are satisfied with the personality of nurses and their interpersonal relationships more than the nurses' technical skills.

However, from the perspective of other health care providers, the competency of the nurses who deliver care to the hospitalized non-surgical stroke elders is very important. Previous studies have found that most non-surgical stroke elders have underlying age-related health problems, such as hypertension and heart disease, as

well as stroke-related problems, such as disability and cognitive impairment (Bhalla et al. 2004; Hafesteinsdottir & Grypdonck, 1997). Therefore, nurses who provide care for them should be competent in both stroke care and elderly care.

The below statements indicate that the nurses who care for stroke elders should possess characteristics and have knowledge and skill specific to the need of such patients. For instance, neurological assessment and monitoring competency, the elderly care ability, and the early physical rehabilitation knowledge are required.

> *Most nurses in medical units are very gentle, they spend most of time with the patients, they always leave the unit very late and some help the family to find resources in the community. However, I have some information about some nurses. As we realized the stroke was very much a burden on the family, most of the family feels frustrated and cannot cope with many huge problems and they often ask the nurses various questions. If a nurse does not aware of the family's burden and lack emotional support knowledge. They cannot assist and support the family and sometimes nurses create new burdens for the family. (SI1)*
> *Nurses who work in the neurological unit should have a different competency from nurses in other areas. They should have knowledge and skill in assessing the neurological signs, especially sign of increase intracranial pressure, sign of brain damage from lack of blood supply, including knowledge in assessing the psychological crisis tests, the cognitive impairment and the laterogentic symptoms. In addition, they should have skill to promote activity in daily life. (SI4)*
> *Even though I am the APN (Advanced Practitioner Nurse) and the case manager of stroke care of this hospital, I think I need to learn more because the knowledge of stroke care is rapidly changing. I always encourage others to join in nursing conferences and attend the physician conferences because we can get new knowledge with effort. (SI3)*
> *Nurses' competency is very important, our nursing organization have identified neurological nurses competency many years ago. It includes competency in assessing the patient, planning care, providing and evaluating nursing care. (FG3)*

The subsequent comments were related to the interpersonal behaviors of nurses, which the non-surgical stroke elders and their families appreciated. Most of the elderly stroke patient appreciated nurses who showed respect to the old age patient. Patients and families were not satisfied with nurse who exhibited unpleasant and displeasing characteristics.

I like the nurses who talk to my husband and me with polite words and a soft tone, and I did not get angry about some nurses who present offensive behavior, I thing they were tired. (ESM1)

When my father sleeps and the nurse needs to do something, she usually talks to me very quietly. (ESM4)

She told me to call her whenever I needed help…I think she realized that my spouse and I are too old to do things by ourselves. (ESM4)

Yesterday, when my dad gets in dirty, then I asked the nurse to help me change the clothes, after that her faced seems displeased. This made me guilty. Therefore, my mom and I decided not to ask her again. (ESM5)

When I visit my dad, some nurses always smile at me; this made me relax. While some nurses attend only the activity that they do, they do not greet me. (ESM5)

Aspect three: Nursing care activity

The three main goals of stroke care are improving survival, minimizing impairment, encouraging and promoting rehabilitation (Eliopoulos, 2001). The following statement shows the stakeholders' perceptions regarding stroke care in a Thai context.

These statements make it obvious that nursing care during critical phases is essential. In addition, the provision of care to meet patients' basic needs such as hygiene care, nutritional care, fluid-medication care, excretion care are very significance, as well as promote the physical movements are required.

In my opinion, nurses should integrate nursing processes in caring for this group; close assessment is needed because many complications occur during the critical period. (FG1)

In the acute phase, nurses need to monitor neurological -signs and vital signs very strictly, including patient's signs and symptoms, even though she does not check by herself.   (FG2)

Nursing care in acute phase is very critical, our stroke fast tract guarantees the time of investigation. (FG3)

The first time after being admitted to this unit, the nurses' team came to assist my father around the bed and do many things very quickly and were well mannered…I felt more confident. (ESM3)

In critical period, we always found that nurses usually overlook to other need of the patient such as hygiene care, we conference on this problem more often. (FG2)

* Most of non-surgical stroke elders had aspiration so in a case that has oral food; the suggestion for aspirated pneumonia prevention is needed. (SI3)

* Firstly, I felt hopeless; I thought my dad had no chance to move. However, after nurses showed me how to help my dad move his arm and leg, and referred my dad to the rehabilitation unit, I got a new hope. (ESM5)

* Since our country is faced with an economic crisis, the shorter length of stay policy was announced. Most of the patients were discharged after they became stable. They were not consulted by the physical therapist for rehabilitation so it is an advantage for the patients if nurses teach them to move their muscles and joints. (SI1)

In addition, one cannot overlook the fact that most of Thai elders hold strong religious beliefs (Choowattanapakorn et al. 2004). As one can discern from the below statements, not only the physical care of non-surgical stroke elders is almost importance, but providing quality care for both their psychological and spiritual well-being are essential.

* My experience occurred when my mother, aged sixty-five, had a stroke attack. At that time, I also suffered so I think nurses need to understand this and assist the family to cope and face the situation. (SI4)

* I think good nurses should understand the patients' culture more than they do now. Once there was in a case of a male stroke patient aged over seventy years. His symptom is in the stable stage. His spouse and son asked the nurse and the young physician to let the patient go home for a while for spiritual support by a traditional doctor. Then the nurse and physician allowed them to do that. In the afternoon, after coming back, the patient felt bad because they took a long time traveling. After I knew this situation, I mentioned that spiritual care for patients is very important but nurses should think critically about the consequence. In this case, if I were them, I would convince the family to bring the traditional doctor to the hospital if his treatment is not harmful to the patient and adverse to our treatment. (FG1)

* Some patients or their family members ask me to add the spiritual liquid in the bath water for them. I usually permit them to do everything they want, if I am sure that it does not make them worse. (FG4)

Aspect four: Encouraging family participation in patient care

The fourth quality aspect was encouraging family participation in patient care. A non-surgical stroke elder often experiences a physical impairment whereby, after discharge from the hospital, he/she still may require assistance from his/her family.

Nurse could encourage family participate in patient care by giving information, asking

for cooperation and presenting support and reinforcement.

The following statements demonstrate that showing support of the family and

encouraging them to be involved in the care of their loved one, while he/she is in the

hospital, is significant both for the patient and his/her family. In addition, the hospital

policies and guidelines regarding encouragement and promoting of family

participation in the care of hospitalized non-surgical stroke elders are required.

> ** We try to discuss patients' problems with their families as often as we can, because we know that the families are very important in patients' care. I saw some patients feel sad when the family was absent but felt better when the family was present. Even though, our hospital did not allow families to take care of the patients at nighttime, I persuaded them to involve us in care during the daytime. (SI3)*
>
> ** Our hospital allows the families stay with the patient both daytime and nighttime in order to encourage the family participate in patient care. (FG1)*
>
> ** I always reside with caregivers when they give tube-feed to stroke patients the first time, I sure that they can do, however but they still need some support and reinforcement from us. (FG2)*
>
> ** After they meet the nutritionist for learning liquid diet preparation, I frequently confirm this and give them more clear directions. I think it is very important to increase their confidence. (FG4)*
>
> ** We realized that family participation is very important for elderly stroke patients. From our experience, in younger cases, the family, especially the spouses, always visits the patient and pay attention to patient care. However, in elder stroke patients, some have no family or neighbor to take them to the hospital. As we are in a big city, sometimes the families face many problems such as a financial or transport problem so they cannot visit more often so they leave some non-surgical stroke elders in our institutes. In these cases, we needed to consult the social worker to take him/ her home. (FG3)*
>
> ** I felt unhappy, when the nurse checked on my dad and she did not let us know what they do. (ESM5)*

Aspect five: Planning for discharge and promoting continuing care

Since stroke is a chronic disease, most patients still suffer from physical

movement problems, dysphagia, cognitive impairment and other serious issues after

discharge from hospital. Therefore, planning for home care after discharge is very

necessary. The following statements clarify what nurses should concern when discharge patients from the unit, i.e. provision of home care technique, essential equipments, appropriate environment, etc.

> * I realized that out unit created discharge plan for stroke patient before the other group; because we found that stroke patient need a lot of care at home. So the discharge guideline is needed. (FG1)
> * The important goal in caring for non-surgical stroke elders is home care so we need to prepare families and the caregivers regarding the basic procedure   as much as we can. (FG2)
> * When I found some non-surgical stroke elders re-admitted with the serious complications especially, aspirate pneumonia, I always think the effectiveness of the discharge planning, do our nurses do it well or not. (FG4)
> * When the nurse provides care to my wife, she always explains me how to do that and what is the reason. She said after discharge, I needed to do what she did. (FM6)

The below statements clarify that good referral system is needed in order to promote continuing care. Nurse should give the information regarding the community health care service for the patients' urgent need.

> * When preparing for patient discharge, most of the nurses only describe what to do and how to do. They do not concern the other essential information that the patient and family should know, such as the referral system, the equipment center, or disability center for equipment and financial support (SI1).
> * I found that most nurses focus on physical care after discharge, such as tube feed, medication care, and excretion care. However, for me I extend my concern to the facility that the patient might need at home such as the walker, the bedpan. Therefore, I always include this issue on discharge plan. (SI3)
> * Referring system is very important; nurses should explain family members understand the referring system with the simple sentence. (FG4)
> * Home care education that nurse provides to the elderly stroke patients' families should cover the complication prevention and the immediate care if the complications happen. (SI1)

Aspect six: Nursing care outcome

Nursing care outcome is what nurse expected as care result.   Nursing outcomes clearly reflect the quality nursing care. The informants brought up many expected nursing care outcomes in term of the clinical outcomes. Most of the patients'

complications' that were repeatedly discussed among informants are the aspirated pneumonia, urinary tract infection, the joint stiffness, and fall/ injury.

The following statements showed the informants' perception regarding nursing care outcomes.

> *We realized that the goals of caring for non-surgical stroke elders are improving survival, minimizing impairment, and encouraging and promoting the rehabilitation process. I always mention these goals to our team. We plan to measure the outcomes of nursing care soon. (FG2)*
> *Some experts said that it is not right, when we identify one of the outcomes of nursing as pressure sores. They always comment that many factors influence this outcome. However, for me, since patients are admitted to our unit, nurses have the responsibility to care for them and to prevent complications. (FG3)*
> *When I talk with many non-surgical stroke elders at the private clinic, they usually talk about the feelings they have about nursing care. Many patients appreciate nursing behavior and communication style. (SI3)*
> *After the physician and our nursing team focused on drug adverse in elderly stroke patient, we identify the drug adverse rate as one of the important outcome of care. (FG1)*
> *Most of stroke fast track outcomes mention directly to the time, the investigation process...but for nurses we should to identify the outcome that reflect our responsibility such as joint or muscle stiffness because this symptom may not occur if nurse help the patients moving their arms. (FG3)*
> *The outcomes of health education need to be measure in order to guarantee the quality of health education. (SI2)*

In conclusion, the results of semi-structured and focus group interview composed of six quality care aspects, i.e. management of the patient unit; nursing staff qualification, nursing care activity; encouraging family participation in patient care; planning for discharge and continuing care; and, nursing care outcome. The definition of each quality aspect was identified (see Table 1).

Table 1

Quality aspect and definition of nursing care provided for non-surgical stroke elders

Quality aspect	Definition

Quality aspect	Definition
Management of the patient unit	Nurses' performance in administrating the patient unit in order to increase the quality of care provided. The performance covers identifying necessary care and safety policies, allocating sufficient staff for each shift, providing needed equipments, coordinating with other disciplines, creating quality improvement projects and guidelines for health education, organizing the sharing of knowledge about the environment, managing human resources, and maintaining the safety equipment and environment

Table 1 *(continued)*

Quality aspect	Definition
Nursing staff qualification	Nurses demonstrate characters and competencies in caring for hospitalized non-surgical stroke elders, including the interactions with the patients and their families. This takes place by communicating, paying respect, and providing information, and includes the reaction of the patients to them. The specification knowledge and skill which may required are the neurological assessment and monitoring knowledge and competency, the elderly care knowledge and ability,

Quality aspect	Definition
	and the early physical rehabilitation knowledge and competency
Nursing care activity	Nursing care activities in providing care to hospitalized non-surgical stroke elder are aimed at maintaining life, preventing complications, promoting recovery. These cover the provision of care to meet patients' basic needs such as hygiene care, nutritional care, fluid-medication care, excretion care as well as promote the physical movements. In addition, the responding to elderly stroke patients' psychosocial and spiritual needs are essential

Table 1 *(continued)*

Quality aspect	Definition
Encouraging family participation in patient care	Nurses' activities in motivating elderly stroke patients' family's involvement in their care in the hospital by giving information, asking for cooperation and presenting support and reinforcement ,as well as identifying policies for allowing families and caregivers to spend the night with their loved one in an appropriate area
Planning for discharge and	Nurses' activities in planning for the discharge of

continuing care	hospitalized non-surgical stroke elders to their home/community, as well as planning for their continuing care by creating guidelines regarding their needs, evaluating the family's readiness and concerns about caring for their loved one, providing self-care and patient care education, and utilizing a referral system between hospital and community health care facilities including the disability and equipments center
Nursing care outcome	The expected results of the nursing care provided elderly stroke patients' care during hospitalization that cover physical, psychosocial and spiritual dimensions including the unexpected nursing care outcome. They are the aspirated pneumonia rate, urinary tract infection

Table 1 *(continued)*

Quality aspect	Definition
Nursing care outcome	rate, the joint stiffness rate, fall/injury rate and drug adverse rate

Subsequent to the emergence of the six quality aspects, a pool 103 nursing quality indicators of the quality of nursing care, based on the definition of each aspect, as well as on the literature reviewed, were generated. Some of the indicators then were re-written in the form of indicator statements. The indicators that were felt to best reflect the quality of nursing care provided for hospitalized non-surgical stroke

elders were selected from the generated pool of indicators. The indicators considered redundant were deleted from the pool of selected indicators.

Finally, seventy-five nursing quality care indicators were determined from the pool of indicators. These included: 1) the management of the patient unit with 12 indicators; the nursing staff qualification with 11 indicators; 3) the nursing care activity with 14 indicators; 4) the encouraging family participation in patient care with 6 indicators; 5) the planning for discharge and continuing care with 12 indicators; and 6) the nursing care outcome with 20 indicators. (See Appendix A1)

Phase 2: Delphi technique results

In this phase, three rounds of the Delphi technique were used to identify the expert consensus in terms of the feasibility, importance and face validity of the newly identified nursing quality indicators. This section describes the results of the three rounds using the Delphi technique. It is divided into two parts. The first part explained the descriptions of the Delphi panel members. The second section describes the results of the Delphi technique.

Descriptions of the Delphi panel members

The gender, age, the educational level, the professional employment, the period of professional work, and the area of expertise of the thirty-six Delphi panel members are described in Table 2.

Table 2

The descriptions of the Delphi panel members (N=36)

Description of Delphi panel members	Numbers (percent)
Gender	
Female	32 (88.9)
Male	4 (11.1)
Age (Years)	
30-40	7 (19.4)
41-50	14 (38.9)
51-60	14 (38.9)
61-70	1 (2.8)

Table 2 *(continued)*

Description of Delphi panel member	Numbers (percent)
Educational level	
Bachelor degree	4 (11.1)
Master degree	11 (30.7)
Doctoral degree	21 (58.2)
Professional Employment	
Head nurses and staff nurses	15 (41.7)
Nurse instructors	17 (47.2)
Physicians	3 (8.3)
Pharmacist	1(2.8)

Period of Professional work (Years)

10-20	14 (38.9)
21-30	15 (41.7)
31-40	7 (19.4)
Area of expertise	
Elderly care	12 (33.3)
Stroke care	12 (33.3)
Quality management	12 (33.3)

The Delphi panel consisted of 36 experts who consented to serve and to return the round one questionnaire. Of the panel members who returned demographic data forms four (11.1%) were male and thirty-two (88.9%) were female. The mean age of the panel members was 48.6 years.

Twenty-one (58.2%) of the panelists held doctoral degrees, eleven (30.7%) held master's degrees and four (11.1%) held bachelor's degrees. Of the panel members, seventeen (47.2%) were nurse instructors, fifteen (41.7%) were head nurses and nurses from medical units in hospital settings, three (8.3%) were physicians and one (2.8%) was a pharmacist.

The number of years of work experience of the panel members ranged from 10 to 40 years. Twenty-two (61.1%) of the 36 panel members had work experience of more than twenty years. In each category of expertise, stroke care, elderly care, and quality care management, there were 12 experts.

Delphi Technique results

This part presents the response rate of the experts, the results of the three rounds of the Delphi study, and both the consensus agreement and non-consensus agreement indicators.

The response rate

The response rate of the three round Delphi technique was very high in the three rounds. (85.3% - 97.2%).

The number of experts, their response rate, the number of nursing quality aspects and the number of nursing quality indicators for non-surgical stroke elders in each round are presented in Table 3.

Table 3

Number of expert panelists, response rates, quality aspects, and predetermined and revised indicators for each Delphi round

Issues	Round 1	Round 2	Round 3
Number of expert panelists	36	35	34
Response rates	97.2% (35)	97.1% (34)	85.3% (29)
Quality aspects	6	6	6
Predetermined indicators	75	45	27
Revised indicators	45	27	25

As shown in Table 3, the predetermined nursing quality care indicators for hospitalized non-surgical stroke elders sent to the panelists were made up of 75

indicators in six aspects. In addition, there were twenty-five revised indicators after round three.

The results of each round of the Delphi study, the median (MD), mean (M), standard deviation (SD), interquartile range (IQR), level of importance and feasibility of each quality care indicator of each aspect were established as topics of consensus, non-consensus, and new indicators. Besides each Delphi round, the experts' suggestions, comments, and the added indicators were presented.

The comments and suggestions made in each round were identified and grouped into general and specific categories. General suggestions and comments were the questions and statements that reflected the general characteristics of the questionnaire, namely the questionnaire format, and the Delphi questionnaire's scale. In addition, the specific suggestions and comments are questions and statements that relate directly to each indicator.

Delphi result round one

The result of each aspect of round one of the Delphi technique is presented in Appendix B, Table B1-B6.

The *management of the patient unit aspect* (See Table B1) consensus indicators consisted of nine indicators. Four of the indicators were deleted in this aspect. Those deleted included the proportion between licensed and unlicensed staff; nursing care hours per length of stay of hospitalized elderly stroke patients; proportion of registered and unregistered nurses; and quality improvement system in providing care for non-surgical stroke elders'. In addition, two indicators were re-worded and two new quality indicators were added. The explanation for doing this was presented

in the section where in round one suggestions and comments were discussed. Hence, there were ten quality indicators of the aspect, management of the patient unit.

In the *nursing staff qualification aspect* (See Table B2), seven quality indicators were accepted and four that had an interquartile range over 1.5 were deleted. They included nurses' knowledge in stroke care; nurses' knowledge in elderly care; nurses' skill in using equipment in providing care for non-surgical stroke elders'; and nursing service evaluation system. No new indicators were added in this aspect.

In the *nursing care activity aspect* (See Table B3), there were 8 consensus indicators and 6 non-consensus indicators. No new indicators were introduced in this aspect.

In the *encouraging family participation in patient care aspect* (See Table B4), three consensus indicators met consensus. However, three indicators did not meet consensus.

In the *planning for discharge and continuing care aspect* (See Table B5), six indicators met consensus. However, six indicators failed to meet consensus.

In the *nursing care outcome aspect* (See Table B6), there were ten indicators that met consensus. However, ten of the indicators did not meet consensus among the experts. One new quality indicator, "the number of research studies and publications achieved by nursing staff" was added in this aspect. Therefore, eleven nursing quality indictors emerged from the second Delphi round.

Suggestions & Comments

Twenty-six (74.3%) of the Delphi experts made specific comments and offered constructive suggestions on their returned round one Delphi questionnaire. They specifically recommended changes regarding the words and terms used in the

round one questionnaire. These included changing "nursing practice guidelines" to "nursing document", and "family" to "caregiver", to cover those that were not family members. Two of the experts felt the seven-point Likert scale provided too many categories to choose between, making it difficult for the participants to determine which one to choose. Two of the experts also recommended that the criteria of each indicator should be included with the statement for the respective indicator. In addition, one of the experts requested that the method for grouping the indicators be included in the first round questionnaire.

The suggestions made revealed that the experts were unclear as to the meaning of some of the terms used in the questionnaire. Four of them suggested, "staff mix" be changed to "licensed staff and unlicensed staff", while others stated they were unsure as to whether "collaboration system" covered "multidisciplinary care" or only "nursing care". Their suggestions and comments were reviewed and lead to changes being made in the phrasing of the statements regarding the indicators in the round two questionnaire.

Addition of indicators

The experts made suggestion to add indicators to the round two questionnaires. Four of them suggested adding two new quality indicators to the aspect, management of the patient units. They were 1) "policy in non-surgical stroke elders' care", and 2) "prevention guidelines for drug alerts in elderly patients". In addition, three of the experts recommended the addition of a new quality care indicator, "the number of research studies and publications achieved by nursing staff", to the nursing outcome aspect.

There were 75 predetermined quality indicators in round one. After analysis of the round one data, the number of indicators, the experts agreed to by consensus,

was 45. Thirty of the predetermined quality indicators in round one did not achieve consensus among the experts. In addition, three new quality indicators were added, and four of the predetermined indicators were reworded for use in round two. Thus, a total of 45 quality indicators were used as components of the six nursing quality aspects in the round two questionnaire. The number of quality indicators within each of the respective six nursing quality aspects were management of the patient unit (10 indicators); nursing staff qualification (7 indicators); nursing care activity (6 indicators); encouraging families participation in patient care (3 indicators); planning for discharge and continuing care (7 indicators); and nursing care outcome (9 indicators).

Delphi result round two

The result of each aspect of round two of the Delphi technique is presented in Appendix C, Table C1-C6.

In the *management of the patient unit aspect* (See Table C1)*,* there were 6 consensus and 4 non-consensus indicators. The four non-consensus indicators included: short training courses on providing caring for non-surgical stroke elders; multidisciplinary care system in providing caring for non-surgical stroke elders; area for rehabilitation of non-surgical stroke elders; and area for health education activity for non-surgical stroke elders with their families/caregivers.

In the *nursing staff qualification aspect* (See Table C2)*,* two indicators met achieved consensus among the experts. However, four indicators did not obtain consensus among the experts. They were nurses' competencies in dealing with caring families; policy to promote relationship between nurses and non-surgical stroke

elders; satisfaction of non-surgical stroke elders, their families and caregivers with the nurses' caring behavior; and satisfaction of the nurses' in providing care for the non-surgical stroke elders.

In the *nursing care activity aspect* (See Table C3), five indicators met consensus among the experts. However, three of the indicators failed to achieve consensus among the experts.

In the *encouraging family participation in patient care aspect* (See Table C4), the panel of experts agreed upon all three of the quality indicators.

In the *planning for discharge and continuing care aspect* (See Table C5), each of the four quality indicators that obtained consensus among the experts had a median score of 7 in regards to both importance and feasibility. On the other hand, each of the two non-consensus quality indicators had a median score for both importance and feasibility of 4 to 5.

In the *nursing care outcome aspect* (See Table C6), six quality indicators reached consensus, in terms of importance and feasibility, among the panel experts, while five of them failed to reach consensus, in terms of importance or feasibility, among the experts. Those quality indicators failing to obtain consensus were deep vein thrombosis rate; mortality rate of non-surgical stroke elders; medical error in providing care for non-surgical stroke elders; readmission rate of non-surgical stroke elders within 28 days of discharge from the hospital; and, the number of research studies and publications achieved by nursing staff.

Suggestions & Comments

Twenty (58.8%) of the panel of experts offered suggestions and made comments, in the form of questions and statements, directly related to the indicators used in the round two questionnaire. Several of the experts expressed concern about

criteria for measuring the various indicators in real-life situations, i.e. the patients' level of satisfaction with the care delivered.

Two main suggestions were made regarding the planning for discharge and continuing care aspect. Four of the experts encouraged inclusion of the consultation channel in the referral system, since they felt some of the patient units could not provide this service for the patients due to a lack of reserve staff. In addition, two of the experts commented that the referral system between the central hospital and the community hospitals needed to be a collaborative effort. They felt that such collaboration was essential to assure that the staff of the community hospitals knew how to provide the comprehensive care required meeting the needs of the non-surgical stroke elders after discharge from the central hospital.

Two of the experts on the panel also expressed concern about the pneumonia rate indicator. The predetermined quality indicator was indicated as the rate of aspirate pneumonia. However, both experts felt that the rate of pneumonia was a more appropriate indicator to measure the quality of care since there are many causes of pneumonia, including aspirate pneumonia.

Addition of indicators

No new nursing quality indicators were added during the second round of the Delphi technique.

In summary, a total of 27 nursing quality indicators for hospitalized non-surgical stroke elders emerged from the round two of the Delphi technique. On the other hand, eighteen nursing quality indicators were rejected during this round. The indicators accepted for each respective quality aspect were management of the patient unit (6 indicators); nursing staff qualification (3 indicators); nursing care activity (5 indicators); encouraging family participation in patient care (3 indicators); planning

for discharge and continuing care (6 indicators); and nursing care outcome (6 indicators).

Delphi result round three

The result of each aspect of round three of the Delphi technique is presented in Appendix D, Table D1-D6.

In the *management of the patient unit aspect* (See Table D1), the level of face validity was high. Five indicators obtained consensus, while one indicator failed to obtain consensus, among the panel of experts in this aspect. Consensus was not reached regarding the policy regarding care of non-surgical stroke elders, although it was one of the new indicators that was added in round one.

In the *nursing staff qualification aspect* (See Table D2), two nursing quality indicators, importance and feasibility, both obtained consensus among the panel of experts with high levels of validity. The panel of experts rejected one quality indicator that had moderate face validity. It was the nurses' experiences in training courses on nursing care for non-surgical stroke elders.

In the *nursing care activity aspect* (See Table D3), all of the quality indicators reached consensus among the panel of experts. In addition, all of the indicators had a high level of face validity.

In the *encouraging family participation in patient care aspect* (See Table D4), all the quality indicators in this aspect obtained consensus among the experts. In addition, all of them had a high level of face validity.

In the *planning for discharge and continuing care aspect* (See Table D5), all four of the quality indicators reached consensus among the panel of experts. In addition, all of them had a high level of face validity.

In the *nursing care outcome aspect* (See Table D6), the panel of experts agreed on all of the quality indicators used in the second round. All of them had high face validity.

Suggestions and Comments

Three (8.6%) of the experts' included suggestions and comments on their round two questionnaires. One of them suggested that the area for the families and caregivers to stay in the hospital, in order to participate in the care of the hospitalized non-surgical stroke elders, could be the area around the patient's bed. However, many hospitals do not have specific areas for the families and caregivers in proximity to the patient, except for those patients who are in private rooms.

Two of the experts provided comments relating to the name of the indicator "nurses' experiences in training courses on nursing care for non-surgical stroke elders". One expert suggested that the indicator was not sufficiently valid because some of the nurses may have attended courses long ago. The other expert asked about the length of training courses.

Addition of indicators

No new nursing quality indicators were added during the third round of the Delphi technique.

Summary

Three rounds of Delphi technique was used to determine consensus among a panel of experts in terms of feasibility, importance and face validity of nursing quality indicators for hospitalized non-surgical stroke elders. The Delphi panel consisted of 36 experts with expertise in the area of stroke care, elderly care, or quality care management. The response rate for each round of the Delphi technique was 97.22%, 97.14%, and 85.29% respectively. Seventy-five predetermined nursing quality indicators, in six quality aspects, were identified in Delphi technique round one.

After analysis of the data achieved during round one, 42 care indicators that had obtained consensus among the panel of experts, 33 indicators did not achieve consensus among the experts. In addition, three new quality indicators were identified and added for round two of the Delphi technique. In all, forty-five quality indicators were used for round two of the Delphi study.

Analysis of the data obtained from round two Delphi technique revealed that the panel of experts did not reach consensus on the importance and feasibility of eighteen of the indicators. Therefore, the remaining twenty-seven nursing quality indicators were identified for the round three of the Delphi technique.

Round three Delphi technique resulted in twenty-five nursing quality indicators achieving consensus, in terms of their importance, feasibility, and face validity, among the panel of experts. Therefore, the number of nursing quality indicators identified in rounds one, two, and three were seventy-five, forty-seven, and twenty-five respectively. The overall picture of the nursing quality indicators used in each round is presented in Table 4. In addition, the overall nursing quality aspects and indicators for hospitalized non-surgical stroke elders are presented in Figure 3.

Table 4

Summary of predetermined indicators and results of rounds one, two, and three

Predetermined indicators	Round 1 results	Round 2 results	Round 3 results
1. Management of the patient unit			
1.1 Proportion between licensed and unlicensed staff	No consensus agreed		
1.2 Nursing care hours per length of stay of elderly stroke patients	No consensus agreed		
1.3 Proportion of registered and unregistered nurses	No consensus agreed		
1.4 Nursing practice guidelines for caring for non-surgical stroke elders	Consensus agreed	Consensus agreed	Consensus agreed
1.5 The number of short training courses on caring for non-surgical stroke elders	Consensus agreed	No consensus agreed	
1.6 Multidisciplinary care system in caring for non-surgical stroke elders	Consensus agreed	No consensus agreed	
1.7 Area for rehabilitation of non-surgical stroke elders	Consensus agreed	No consensus agreed	
1.8 Health education guidelines for non-surgical stroke elders / families	Consensus agreed	Consensus agreed	Consensus agreed
1.9 Area for health education activity for non-surgical stroke elders with families/caregivers	Consensus agreed	No consensus agreed	
1.10 Activity for knowledge sharing among nursing staff in the topic related to non-surgical stroke elders' care	Consensus agreed	Consensus agreed	Consensus agreed
1.11 Quality improvement system in caring for non-surgical stroke elders' care	No consensus agreed		
1.12 Prevention guidelines for accidents/injury in elderly patients	Consensus agreed	Consensus agreed	Consensus agreed
	Policy in non-surgical stroke elders' care' care (New)	Consensus agreed	No consensus agreed
	Prevention guidelines for drug alerts in elderly patients (New)	Consensus agreed	Consensus agreed
2. Nursing staff qualification			
2.1 Nurses' knowledge in stroke care	No consensus		
2.2 Nurses' knowledge in elderly care	No consensus agreed		
2.3 Nurses' characteristics and competency in non-surgical stroke elders' care	Consensus	Consensus	Consensus
2.4 Nurses' experiences in training courses on nursing care for non-surgical stroke elders'	Consensus	Consensus	No consensus agreed
2.5 Nurses' competencies in dealing with caring families	Consensus agreed	No consensus agreed	
2.6 Nurses' skill in using equipment in non-surgical stroke elders' care	No consensus agreed		
2.7 Policy to promote relationship between nurses and non-surgical stroke elders'	Consensus agreed	No consensus agreed	

Table 4 *(continued)*

Predetermined indicators	Round 1 results	Round 2 results	Round 3 results

Predetermined indicators	Round 1 results	Round 2 results	Round 3 results
2.8 Satisfaction of non-surgical stroke elders', families and caregivers toward personality and nursing interaction	Consensus agreed	Consensus agreed	Consensus agreed
2.9 Satisfaction of non-surgical stroke elders, families and caregivers toward nurses' caring behavior	Consensus agreed	No consensus agreed	
2.10 Satisfaction of nurses' in providing care for non-surgical stroke elders	Consensus agreed	No consensus agreed	
2.11 Nursing service evaluation system	No consensus agreed		
3. Nursing care activity			
3.1 Nursing care plan for non-surgical stroke elders covering holistic care	No consensus agreed		
3.2 Nursing care plan for non-surgical stroke elders covering four aspects of health care	No consensus agreed		
3.3 Assessment of vital sign of non-surgical stroke elders	No consensus agreed		
3.4 Assessment of neurological -sign of non-surgical stroke elders	No consensus agreed		
3.5 Assessment and monitoring of non-surgical stroke elders in the critical phase	Consensus agreed	Consensus agreed	Consensus agreed
3.6 Assessment of motor power and motion in non-surgical stroke elders	Consensus agreed	No consensus agreed	
3.7 Assessment of swallowing ability of non-surgical stroke elders	No consensus agreed		
3.8 Assessment of nutritional status of non-surgical stroke elders	Consensus agreed	No consensus agreed	
3.9 Assessment of excretion system of non-surgical stroke elders	No consensus agreed		
3.10 Promoting motor power of muscles and joints	Consensus agreed	Consensus agreed	Consensus agreed
3.11 Promoting non-surgical stroke elders' activity in daily life	Consensus agreed	Consensus agreed	Consensus agreed
3.12 Nursing care of non-surgical stroke elders in the issues of hygiene care, nutritional care, fluid-medication care, excretion care, psychosocial care, and spiritual care	Consensus agreed	Consensus agreed	Consensus agreed
3.13 Assessment of anxiety and depression of non-surgical stroke elders	Consensus agreed	No consensus agreed	
3.14 Prevention of complications in the issues of pneumonia, urinary tract infection, pressure sores, and joint stiffness	Consensus agreed	Consensus agreed	Consensus agreed
4. Encouraging family participation in patient care			
4.1 Guidelines for promoting family participation in caring for non-surgical stroke elders	Consensus agreed	Consensus agreed	Consensus agreed
4.2 Percentage of families and caregivers who received encouragement participation in non-surgical stroke elders' care	No consensus agreed		
4.3 Percentage of families and caregivers who participated in the care of non-surgical stroke elders	No consensus agreed		

Table 4 *(continued)*

Predetermined indicators	Round 1 results	Round 2 results	Round 3 results

Predetermined indicators	Round 1 results	Round 2 results	Round 3 results
4.4 Policy regarding the staying of families/caregivers at night time	Consensus agreed	Consensus agreed	Consensus agreed
4.5 Area for families/caregivers to stay in hospitals in order participation in care	Consensus agreed	Consensus agreed	Consensus agreed
4.6 Satisfaction of family in participating in patient care	No consensus agreed		
5. Planning for discharge and continuing care			
5.1 Guidelines for planning the discharge of non-surgical stroke elders	Consensus agreed	Consensus agreed	Consensus agreed
5.2 Discharge planning for non-surgical stroke elders and families/caregivers covers rehabilitation techniques, promoting activity in daily life, feeding, medicine, complication prevention, home situation	Consensus agreed	No consensus agreed	
5.3 Nurse preparation of families and caregivers before the discharge of non-surgical stroke elders	Consensus agreed	Consensus agreed	Consensus agreed
5.4 Nurse provision of education to non-surgical stroke elders/ families/ caregivers for caring patients at home	Consensus agreed	Consensus agreed	Consensus agreed
5.5 Percentage of non-surgical stroke elders who were satisfied with discharge planning	No consensus agreed		
5.6 Percentage of non-surgical stroke elders who received advice before discharge	No consensus agreed		
5.7 Percentage of non-surgical stroke elders who received advice for stopping smoking	No consensus agreed		
5.8 Non-surgical stroke elders' knowledge of self-care after discharge	No consensus agreed		
5.9 Referral system for non-surgical stroke elders after discharge	Consensus agreed	Consensus agreed	Consensus agreed
5.10 The consultation channel for non-surgical stroke elders, families/caregivers after discharge	Consensus agreed	No consensus agreed	
5.11 Number of non-surgical stroke elders with information who refer to the health care organization in the community	No consensus agreed		
5.12 Number of non-surgical stroke elders' return of information from community back to hospital	No consensus agreed		
6. Nursing care outcome			
1. Aspirated pneumonia rate	Consensus agreed	Consensus agreed	Consensus agreed
2. Urinary tract infection rate	Consensus agreed	Consensus agreed	Consensus agreed
3. Pressure ulcer rate	Consensus agreed	Consensus agreed	Consensus agreed
4. Joint stiffness rate	Consensus agreed	Consensus agreed	Consensus agreed
5. Fall/injury rate	Consensus agreed	Consensus agreed	Consensus agreed
6. Drug adverse rate	Consensus agreed	Consensus agreed	Consensus agreed
7. Deep vein thrombosis rate	Consensus agreed	No consensus agreed	

Table 4 *(continued)*

Predetermined indicators	Round 1 results	Round 2 results	Round 3 results

Predetermined indicators	Round 1 results	Round 2 results	Round 3 results
8. Mortality rate of non-surgical stroke elders	Consensus agreed	No consensus agreed	
9. Medical error in the care of non-surgical stroke elders	Consensus agreed	No consensus agreed	
10. Readmission rate of non-surgical stroke elders within 28 days	Consensus agreed	No consensus agreed	
11. Percentage of non-surgical stroke elders who received nursing care completely followed by nursing guidelines	No consensus agreed		
12. Percentage of non-surgical stroke elders who had monitored and recorded signs and symptoms of increased intracranial pressure	No consensus agreed		
13. Percentage of non-surgical stroke elders who had rehabilitation planning	No consensus agreed		
14. Percentage of non-surgical stroke elders who had been taught about improving activity in daily life	No consensus agreed		
15. Percentage of non-surgical stroke elders who had been assessed for activity in daily life before discharge	No consensus agreed		
16. Percentage of non-surgical stroke elders who had been assessed for disability before discharge from hospital	No consensus agreed		
17. Percentage of non-surgical stroke elders who received fluid, nutrition and medicine under physician's orders	No consensus agreed		
18. Percentage of non-surgical stroke elders who had increased intra-cranial pressure after admission	No consensus agreed		
19. Percentage of non-surgical stroke elders who have increase ability in daily living activity	No consensus agreed		
20. Percentage of elderly stroke patients, families/caregivers complaining	No consensus agreed		
	The number of research studies and publications achieved by nursing staff	No consensus agreed	

Nursing care activity
- Assessment and monitoring non-surgical stroke elders in the critical phase
- Nursing care of non-surgical stroke elders in the issues of hygiene care, nutritional care, fluid-medication care, excretion care, psychosocial care and spiritual care
- Promoting motor power of muscles and joints
- Prevention of complications in the issues of pneumonia, urinary tract infection, pressure sores, and joint stiffness
- Promoting non-surgical stroke elders' activity in daily life

Nursing staff qualification
- Nurses' characteristics and competency in non-surgical stroke elders' care
- Satisfaction of non-surgical stroke elders, families and caregivers toward personality and nursing interaction

Nursing care outcome
- Aspirated pneumonia rate
- Urinary tract infection rate
- Pressure ulcer rate
- Joint stiffness rate
- Fall and injury rate
- Drug adverse rate

Nursing Quality Aspects & Indicators for Hospitalized Non-Surgical Stroke Elders

Management of the patient unit
- Nursing practice guidelines for caring non-surgical stroke elders
- Health education guidelines for non-surgical stroke elders and families
- Activity for knowledge sharing among nursing staff in the topic related to non-surgical stroke elders' care
- Prevention guidelines for drug alerts in elderly patients
- Prevention guidelines of accidents/injury in non-surgical stroke elders

Encouraging family participation in patient care
- Guidelines for promoting family participation in caring for non-surgical stroke elders
- Policy regarding the staying of families and caregivers at night time
- Area for families and caregivers to stay in hospitals in order participation in care

Planning for discharge & continuing care
- Guidelines for planning the discharge of non-surgical stroke elders
- Nurse preparation of families and caregivers before the discharge of non-surgical stroke elders
- Nurse provision of education to non-surgical stroke elders / family/ caregivers for caring for patients at home
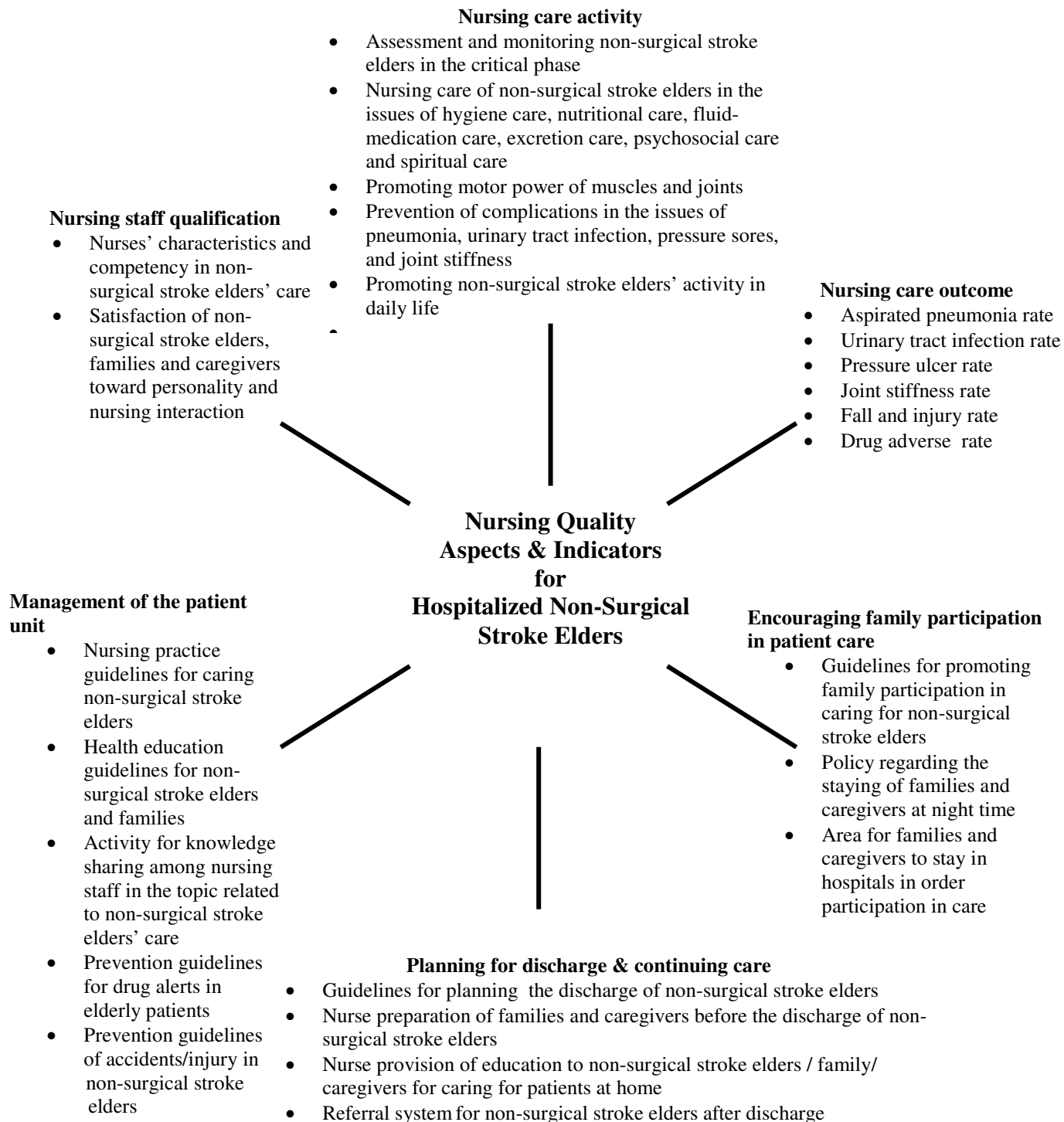- Referral system for non-surgical stroke elders after discharge

Figure 3 The nursing quality aspects and indicators for hospitalized non-surgical stroke elders

Phase 3: The pilot testing for the applicability of nursing quality indicators

The second research question was "would the identified nursing quality indicators for hospitalized non-surgical stroke elders be applicable in a hospital setting?" As a result, the pilot testing for the applicability of the indicators was done. Before the applicability of the nursing quality indicators were pilot tested in the hospital setting, the applicability questionnaire for detecting the applicability of each indicator was developed and approved for the content validity.

Content Validity testing

Five members of the panel of experts (See Appendix E2) assessed the content validity of the indicator applicability questionnaire. The content validity index (CVI) of the questionnaire was determined by dividing the judged content validity of each indicator by the total number of indicator (Waltz et al. 1991). The CVI of the indicator applicable questionnaire was 0.88

Applicability testing

The indicator applicable questionnaires were given to eight head nurses of eight medical units; four are the medical units of a regional hospital, other four units are of a provincial hospital. The result of the applicability testing of each care indicator is presented in Table 5

Table 5

Applicability of nursing quality indicators for hospitalized non-surgical stroke elders

Quality indicator	Number of the patient units with evidence/occurrence	Applicability level
1. Management of the patient unit		
1.1 Nursing practice guidelines for providing care for non-surgical stroke elders	6	Most applicable
1.2 Health education guidelines for non-surgical stroke elders/families	6	Most applicable
1.3 Activity for knowledge sharing among nursing staff on topics related to providing care for non-surgical stroke elders	5	Most applicable
1.4 Guidelines for prevention of accidents/injury among non-surgical stroke elders	6	Most applicable
1.5 Prevention guidelines for drug alerts among non-surgical stroke elders	6	Most applicable
2. Nursing staff qualification		
2.1 Nurses' characteristics and competency in providing care for non-surgical stroke elders	4	Less applicable
2.2 Satisfaction of non-surgical stroke elders, their families and caregivers toward the nurses' personalities and nursing interactions	8	Most applicable
3. Nursing care activity		
3.1 Assessment and monitoring of non-surgical stroke elders in the critical phase	8	Highly applicable
3.2. Nursing care of non-surgical stroke elders regarding issues of hygiene care, nutritional care, fluid-medication care, excretion care, psychosocial care and spiritual care	8	Highly applicable
3.3 Promoting movement of muscles and joints	8	Highly applicable
3.4 Prevention of complications with respect to pneumonia, urinary tract infection, pressure sores, and joint stiffness	8	Highly applicable
3.5. Promoting non-surgical stroke elders' activity in daily life	8	Highly applicable
4. Encouraging family participation in patient care:		
4.1 Guidelines for promoting family participation in providing care for non-surgical stroke elders	4	Less applicable
4.2 Policy regarding families and caregivers spending the night with non-surgical stroke elders	8	Highly applicable
4.3 Area for families and caregivers to spend the night in the hospital in order to participate in providing care for non-surgical stroke elders	8	Highly applicable

Table 5 *(continued)*

Quality indicator	Number of the patient units with evidence/occurrence	Applicability level
5. Planning for discharge and continuing care:		
5.1 Guidelines for planning the discharge of non-surgical stroke elders	8	Highly applicable
5.2 Nurse preparation of families and caregivers before the discharge of non-surgical stroke elders	8	Highly applicable
5.3 Nurse provision of education to elderly stroke patients/ family/ caregivers regarding providing care for non-surgical stroke elders at home	8	Highly applicable
5.4 Referral system for non-surgical stroke elders after discharge	8	Highly applicable
6. Nursing care outcome: 6.1 Aspirated pneumonia rate	8	Highly applicable
6.2 Urinary tract infection rate	8	Highly applicable
6.3 Pressure ulcer rate	8	Highly applicable
6.4 Joint stiffness rate	8	Highly applicable
6.5 Fall and injury rate	8	Highly applicable
6.6 Drug adverse rate	8	Highly applicable

Table 5 shows the level of applicability of the nursing quality indicators for hospitalized non-surgical stroke elders. It shows that 17 of the 25 nursing quality indicators are 'highly applicable', 6 of the nursing quality indicators are 'most applicable', and 2 of the nursing quality indicators are 'less applicable'. The two less applicable nursing quality indicators were the nurses' characteristics and competency in providing care for elderly stroke patients' indicator, and the guidelines for promoting family participation in providing care for non-surgical stroke elders' indicators.

Discussion

This study established a set of nursing quality indicators for providing care for hospitalized non-surgical stroke elders. This section presents the discussion in two parts including: 1) the findings, and 2) the methodology.

Discussion of the findings aspect

The findings of this study dealt with the nursing quality aspects and nursing quality indicators used in providing care for hospitalized non-surgical stroke elders. The nursing quality aspects, which were derived from the stakeholders' perspectives, consisted of six aspects: 1) management of the patient unit, 2) nursing staff qualification, 3) nursing care activity, 4) encouraging family participation in patient care, 5) planning for discharge and continuing care, and 6) nursing care outcome. In addition, twenty-five nursing quality indicators for providing care for hospitalized non-surgical stroke elders were selected via consensus among a panel of individuals, who were experts in stroke care, elderly care or quality care management. The discussion of the findings follows the order used in reporting the findings of this study.

Firstly, the discussion of the management of the patient unit aspect and the indicators of this aspect are identified as the following.

The management of the patient unit aspect is similar to the structure category in the quality assessment model proposed by Donabedian (1966, 1988). In this study, the management of the patient unit is defined as nurses' performance in managing the patient unit by identifying necessary care and safety policies, allocating sufficient staff for each shift, creating quality improvement projects and guidelines for health education, organizing the sharing of knowledge about the environment, managing

human resources and maintaining the equipment. In Donabedian's model, the structure category is defined as the attributes of the setting in which care occurs and includes features such as material resources, which include the facilities, resources, equipment, and number and qualifications of the staff. In addition, the management of the patient unit aspect is congruent with the structure of nursing care quality of Thailand purposed by Kunaviktikul et al (2000, 2001).

The indicators of this aspect are: nursing practice guidelines for providing care for non-surgical stroke elders; health education guidelines for non-surgical stroke elders /families; activity for knowledge sharing among nursing staff on topics related to providing care for non-surgical stroke elders; prevention guidelines for accidents/ injury among non-surgical stroke elders; and prevention guidelines for drug alerts among non-surgical stroke elders.

There are several studies to support the important of each indicator. According to Indredavik (2003), an effective stroke unit must have standardized programs, including treatment, health educational, and rehabilitation programs.

In the year 2004, Kelly-Hayes proposed that providing care for stroke patients in the acute phase, the identification of changes in their neurological status, and the prevention of complications are major responsibilities of the nurses on the patient units. In addition, nurses have the role of providing emotional support for stroke patients and their families (Benner & Tanner, 1987: Kirkevold, 1997). Therefore, good nursing practice guidelines regarding providing care for non-surgical stroke elders in the acute, post-acute, and rehabilitation phases are important and they should cover the physical, psychosocial, and spiritual aspects of care.

The nursing quality indicator, educational guidelines, also obtained consensus among the panel of experts. This indicator matches the nurse's role of contributing to

the health education of patients and their families regarding the provision of care individuals who have experienced a stroke presented in previous studies (Allen et al. 2003; Forbs et al. 1997; Jones & Stewart, 2002). Previous research studies have investigated the educational needs of stroke patients and their families, in relation to knowledge about stroke, ways to manage life after a stroke and the role of spouses in providing care for the victim of a stroke both during hospitalization and after discharge (M.E. van der Smagt-Duijnstee et al. 2001; Rosenthal, Pituch, Greninger & Metress, 1993). Thus, educational guidelines regarding the provision of care for non-surgical stroke elders and their families is an indicator that relates has been recognized as essential to the provision of the quality of nursing care for elderly stroke patients.

In the context of patient safety, falls are the most frequent causes of injury among hospitalized non-surgical stroke elders (Phipps & Kelly-Hayes, 1991 cited in Kelly-Hayes, 2004). Therefore, it is essential that the nursing indicator, "fall/injury prevention guidelines" be evaluated when seeking to determine the quality of nursing care provided to hospitalize non-surgical stroke elders. Thus, fall/injury prevention guidelines should be evaluated with respect to whether they facilitate identification of patients who have a high risk of falling. As well as whether anti-tipping devices are used on wheelchairs, whether alarm systems are in place for patients to use when they fall, and whether information regarding fall prevention is provided to the patients and their families (Kelly-Hayes, 2004). Results regarding fall/injury prevention activities need to be reflected in the nursing care outcome, fall/injury rate.

The outcomes and effects of the use of drugs in the treatment of the elderly has been recognized as a issue that nurses need to be aware of when providing care for hospitalized non-surgical stroke elders. It is known that elderly patients are more

susceptible to drug toxicity (Roberston & MacKinnon, 2002). Thus, in accord with previous findings, a new indicator, guidelines for preventing drug effects and medication errors, was introduced.

The last indicator in this aspect is the sharing of knowledge among the nursing staff about the care provided for hospitalized non-surgical stroke elders. Sharing knowledge should be an ongoing activity and should occur during team meetings, nursing care conferences, care discussions, nursing rounds, and short and full course training sessions. This indicator is similar to quality components related to the service organization in the National Sentinel Audit of Stroke used in Wales, England, and Northern Ireland (Rudd et al. 2005).

Allen et al. (2003) created team member roles and responsibilities for healthcare team on stroke units. They also established roles and responsibilities for nurses on such units, and pointed out that it is the responsibility of the clinical nurse specialists to provide ongoing education to the staff regarding clinical care issues in the care of patients, including the hospitalized elderly, who have experienced a stroke.

Moreover, the results of the focus group interviews suggest that most of the nurses, in this study, felt that stroke units should be established wherein specific care would be provided for stroke patients in Thailand. This suggestion is in line with the findings of studies undertaken in other countries.

Rudd et al (2005) explored stroke unit activities and outcomes in England, Wales, and Northern Ireland. They found that stroke patients, who are admitted to a stroke unit, have better care and better survival rates than do those not admitted to a stroke unit. Therefore, the establishment of a stroke unit appears essential when a hospital is delivering care for stroke patients.

Secondly, the discussions of the nursing staff qualification aspect with the two indicators are described below.

Nursing staff qualification is the nursing character and competency in caring for hospitalized non-surgical stroke elders, including their interactions with the patients and their families. This takes place by communicating, paying respect, and providing information, and includes the reaction of the patients to them. This aspect is in line with the structure category of the quality assessment model (Donabedian, 1966).

Two indicators, the nurses' characteristics and competency in providing care for the hospitalized non-surgical stroke elder and the satisfaction of hospitalized non-surgical stroke elders, their families and caregivers towards the nurses' personalities and interactions, emerged in reference to the nursing staff qualification aspect of this study. Competency means having both clinical care competency and human care competency. In clinical care, one's knowledge, attitude, and skill in providing physical care are considered important. In human care, competency in providing psychological and spiritual care, especially for elderly patients is needed. According to Nolan & Nolan (1998), most of nurses lack of the accurate knowledge needed to identify elderly patients' psychological problems. This lack of ability is considered a deficit when providing care for non-surgical stroke elders. Allen et al. (2003) identified the healthcare team roles and responsibilities in establishing stroke units via use of an acute care model. For example, the registered nurse on the acute care unit is considered to have responsibility for: coordinating a discharge plan the involves all the healthcare team members; facilitating referrals to the appropriate section; assuring that the tests ordered by the physicians are undertaken; and, ensuring that the procedures are efficiently planned and implemented.

For the second indicator, the satisfaction of hospitalized non-surgical stroke elders, their families and caregivers toward the nurses' personalities and interactions, of this care aspect achieved consensus among the panel of experts. Satisfaction, in this study, was defined as the opinion of the hospitalized non-surgical stroke elders and their families towards the care provided in relation to the personalities of and their relationships with the nursing staff. This indicator is in accord with prior research findings, probably because patient satisfaction could be generalized and assessed by most health care agencies (The American Nurse Association, 2000). Forbes (1996) further points out those clients' characteristics affect their perceptions of satisfaction; therefore exploring the satisfaction of a specific group is more appropriate when seeking quality improvement is. In addition, the satisfaction of care is one of the components of the outcome of care in quality assessment model (Donabedian, 1988). In addition, it is in line with the effectiveness of interpersonal care of the model of quality of care for individual patient (Campbell, 2000).

In Thai study, Kunavitikul et al. (2001; 2005), stated that the patient satisfaction composed of three dimensions, which are in accord with the proposed by the American Nurse Association (2000). They are satisfaction with health education; satisfaction with pain managements, and satisfaction with general nursing care. Nevertheless, the result of this study mentioned the satisfaction toward the nurses' personalities and interactions.

According to the results of semi-structure interview in the first phase of this study, most non-surgical stroke elders and their family prefer nurses' interpersonal skill to nurses' technical skill. This result was supported from several studies (Chao & Roth, 2005; Choowattanapakorn, Mlitt, & Fetherstonhaugh, 2004; Marini, 1999; Sritanyarat & Arunsang, 2007).

When providing care for elderly patients, their opinions about the care provider are significant and affect the care outcomes. In the Thai society, elders are valued, and children are taught to respect the elderly as they would their own relatives (Choowattanapakorn et al. 2004). However, limited studies regarding elder's satisfaction with healthcare they receive in Thailand have been conducted.

Sritanyarat & Arunsang (2007) described innovations in providing care for the elderly and called the innovations "aged - friendly protocols". The protocols consisted of nine components, for instance, the nutritional care; the accident prevention; the psychosocial care including the respecting the elderly patients behavior.

Therefore, the indicator, in this study, that measured the satisfaction of hospitalized non-surgical stroke elders with the personality of, and interactions with, the nurses was significant. Nurses, in Thailand, can show respect to elderly patients by greeting them nicely, taking time to talk with them, and referring to them as relatives (Choowattanapakorn et al. 2004).

Thirdly, the discussions of the nursing care activity aspect, which was defined nurses' activity in providing care to hospitalized non-surgical stroke elders through maintaining life, preventing complications, promoting recovery, and responding to their physical, psychosocial and spiritual needs, the five indicators achieved consensus among the panel of experts. For instance, the assessment and monitoring of non-surgical stroke elders in the critical phase indicator, the promoting elderly stroke patients' activity in daily life indicator.

This aspect is in line with the process of care category (Danabedian, 1966) and other quality concepts, such as the model of quality care for individual patient (Campbell et al. 2000).

According to Castillo (1999) and Kelly-Hayes (2004), the condition of twenty-five percent of stroke patients worsens within the first twenty-four hours after a stroke attack. Therefore, successful stroke care begins with the initial identification of the changes in the patient's neurological status, and the prevention of complications. Both of which are major concerns of nurses. In addition, once a stroke patient's medical status is stabilized, early mobilization is encouraged so as to decrease the possibility of the patient developing complications. Good nursing care during both the acute and-post-acute phases directly contributes to good outcomes for the patient during the rehabilitation phase.

It has been recognized that providing emotional support for the patients and their families during the critical period after a stroke has occurred is beneficial for stroke victims and families (Warner, 2000). The psychological needs of non-surgical stroke elders are present in the acute phase (Watson & Quinn, 1998). In addition, the stroke experience for an elderly stroke patient often leads to psychological problems due to becoming incontinent, having to self-medicate, and needing to learn how to provide care of him/herself (Kirkevold, 1997; Ryan, 1998: Warner, 2000).

Moreover, the process of promoting the movement of muscles and activities in daily life are important in the rehabilitation of the stroke patient. Earlier rehabilitation is required by 40% of those with acute strokes (Jones & Stewart, 2002). Duncan et al. (2000) suggested that multidisciplinary stroke rehabilitation programs in the post-acute period decreases the death rate and dependency amongst stroke patients. Therefore, it is an advantage if rehabilitation activities are implemented as soon as possible after the stroke event.

Fourthly, the discussions of the encouraging family participation in patient care aspect with the three indicators are explained below.

In this aspect, three indicators were established in relation to encouraging family participation in providing care for non-surgical stroke elders. These were in regards to guidelines for promoting family participation in providing care for non-surgical stroke elders, the policy regarding families spending the night in the hospital with the stroke patients, and the provision of an area within the hospital for families to spend the night in order to provide care for the non-surgical stroke elders. Prior findings support the idea that non-surgical stroke elders usually appear to recover more rapidly when their families are involved in their care. Similarly, family members feel good when they participate in the care of a hospitalized family member's care, as they are able to fulfill their sense of filial obligation. The feeling of filial obligation is strong throughout the Thai culture (Choowattanapakorn et al. 2004).

Moreover, encouraging families to participate in the care of the elderly is one of the nine components of an aged friendly protocol reflecting the authentic needs of older people in Thailand (Sritanyarat & Arunsang, 2007).

Family member need to participate in providing care for their hospitalized loved one from time of hospital admission through discharge, in order to be better prepared to provide caring for their ill family member after discharge. In addition, family involvement in providing care for the ill family member contributes to improvement in his/her functional outcome (Wojner & Anne, 1996). Stroke patients seem to recover more quickly when their families are involved in providing care for them. For this reason, family member participation in providing care can be a positive experience both for elderly patients and for their families. Therefore, nurses should encourage family participation in the provision of care for their ill family members, and should facilitate family involvement by arranging for an area for them to spend the night in the hospital with their loved one.

For the fifth aspect, planning for discharge and continuing care which defined as nurses' activities in planning for the discharge of hospitalized non-surgical stroke elders to their home/community, as well as planning for continuing care by creating guidelines, evaluating the family's readiness, provide education for patient care at home, utilize referral system. This aspect is in accorded with the nursing quality indicators of the process category in acute care proposed by the American Nurse Association (2000).

This aspect generated four indicators. The time that non-surgical stroke elders spend in the hospital is longer than that of younger individuals, and the stroke outcomes among the elders are much poorer than for those of any other age group (Bhalla et al. 2004; Linde, 1993). However, the government policy for the Thai healthcare system is to promote shorter lengths of hospital stays among every age group. Therefore, early preparation of families regarding how to provide care for the elderly stroke family members after discharge is important.

This need for planning for discharge is in accord with the review criteria used for stroke rehabilitation outcomes proposed by Forbs et al (1997). In addition, the Implement Stroke Best Practices Project also identified discharge planning as one of the important components in the continuum of care for stroke patients (Alberts, & Easton, 2004).

Nurses' provision of knowledge regarding self–care to non-surgical stroke elders and their families can be seen as an important aspect of care. This is because it promotes independence, facilitates adaptation to life after a stroke, and enables stroke patients to monitor their own health (Davis, 1999).

Lastly, the nursing care outcome aspect that was defined as the expected results of the non-surgical stroke elders' physical, psychosocial, and spiritual care provided during hospitalization.

The nursing care outcomes aspect consisted of six indicators that obtained consensus among the panel of experts. This aspect and its indicators are seen as being in line with the outcome category of quality care assessment in Donabedian's model. Professional care groups, including nurses, can contribute to the clinical outcomes of stroke patients (Myco, 1984; Warner, 2000).

Nursing care outcomes are the result of the care that nurses provide in the acute and post-acute phases. In the acute phase, the nurse has the responsibility of identifying changes in the patient's neurological status and in the prevention of complications. Analysis of the qualitative data revealed that many of the nurses, in this study, expressed concern about the patient outcomes because non-surgical stroke elders encountered often encounter complications both from their stroke and from the aging process.

The nursing care outcomes that indicate the quality of nursing care provided for non-surgical stroke elders are the: aspirated pneumonia rate, urinary tract infection rate, pressure ulcer rate, joint stiffness rate, fall/injury rate and adversity to drugs rate.

Adams et al. (2003) found that the percentage of pneumonia cases causing death after a stroke attack accounts for fifteen to twenty-five percent of deaths after a stroke has been experienced. Pneumonia usually occurs in stroke patients who are weak and immobile, especially those who are elderly. The second most common complication after a stroke is urinary tract infection. Such infections may be related to sphincter control difficulties that often are experienced after stroke attacked.

Another nursing care outcome that achieved consensus was the pressure ulcer rate. Pressure ulcers occur in 15 % of stroke patients. The risk of this complication increases in stroke patients who are comatose, debilitated, obese, have incontinence of bladders and bowels, and show symptoms of spasticity (Kelly- Hayes, 2004). Good nursing care to prevent pressure ulcers includes providing adequate nutrition and frequently turning the stroke victim so as to reduce and decrease pressure.

The range of selected quality indicators indicates that nurses have numerous responsibilities and roles including that of manager of the unit, care provider, and health educator. The results of this study concur with the roles nurses occupy in stroke care identified by the Prasat Neurological Institute (2002) and the Stroke Center at Abington Memorial Hospital (2004) regarding biological care, psychosocial care, effective communication, and prevention of complications. In addition, several indicators of the nursing outcome aspect are in line with the nursing outcome quality indicators of the Thai study, such as urinary tract infection indicator, fall indicator (Kunaviktikul et al, 2001; 2005; Nursing division under Medical Department, 2004).

In opposed results, the fifty indictors failed to obtain consensus among the panel of Delphi experts, they were deleted between the three rounds of the Delphi technique. Reasons why the panel of experts did not concur regarding the deleted fifty indicators follow.

Some of the deleted indicators were redundant, i.e. the proportion between the licensed/non-licensed indicator and the proportion of registered nurse and unregistered nurse indicator. The panel of experts considered these two indicators to be similar.

Some of the indicators considered important but difficult to use during a financial crisis. The nursing care hours per patient, length of stay indicator is one

example of this reasoning. The experts felt that this indicator could not reflect the real situation, because of the current nursing shortage in Thailand.

In addition, some of the indicators were rated at a high importance level, but a low level of feasibility. For example, in a real situation, the experts felt it would be difficult for a nurse to accurately assess the swallowing ability of an elderly stroke patient, because a false result potential would create a serious problem, aspirate pneumonia.

For those indicators that reached consensus among the panel of experts, many facets need to be described. All of the indicators that were determined from this study and were grouped together as nursing quality indicators emerged from medical diagnoses. From review of the literature, it was found that the nursing quality indicators had emerged from four approached: 1) the clinical area; 2) generic aspects of care; 3) specific aspects of care, and nursing and diagnoses; and 4) medical diagnosis (Idvall et al. 1997). The twenty-five indicators, in this study, consisted of two types, sentinel event type (19 indicators), and rate-based type (6 indicators), of nursing care outcome.

To conclude, the findings from this study strongly revealed that quality aspects and indicators are in line, and harmonious, with those previously studied in three areas. Firstly, most of the quality aspects and indicators are in line with the nursing quality indicators proposed by nursing organizations and previous studies both in Thailand and in other countries (Campbell, 2000; Donabedian, 1966; 1988; JCAHO, 1993; Kunaviktikul et al. 2001; 2005; Nursing Division under Medical department, 2004). These include the issues of risk management, teaching patients, patient satisfaction, professional characteristics, and nursing care outcome.

Secondly, some of the quality aspects and some of the indicators reflect the main aspects of elder care both in a universal and Thai context (Choowattanapakorn et.al. 2004; Marini, 1997; Sritanyarat & Arunsang, 2007).

Finally, the findings indicate that excellent care for hospitalized non-surgical stroke elders should cover their needs holistically in the acute, post acute and rehabilitation phase (Alberts, & Easton, 2004; Davis, 1999; Forbs et al. 1997; Kelly-Hayes, 2004; Rudd et al, 2005; the Prasat Neurological Institute, 2002; the Stroke Center at Abington Memorial Hospital, 2004). In addition, most of the quality indicators probably could be employed to any non-surgical stroke patient, however many of the indicators are highly significant for elderly group. They are the accidental/injury prevention guideline indicator, the drug alert prevention guideline indicator, the encouraging family to participate in patient care aspect and the promoting motor power of muscle and joints indicator (Kelly-Hayes, 2004; Roberston & McKinnon, 2002). However, some quality indicators may point that they might not be specific for the elderly care, for instance, the activity for knowledge sharing among nursing staffs, the policy regarding the staying of the families at nighttime.

Discussion of the methodological aspect

The methodology used for the development of the indicators in this study consisted of three phases. The three phases included identifying nursing quality aspects and indicators, empirical testing, and pilot testing.

The first phase consisted of the identification of the nursing quality aspects and indicators. In this phase, a qualitative approach was used. The qualitative approach used in the initial phase consisted both of semi-structured and focus group

interviews with hospitalized non-surgical stroke elders, their families and caregivers, nurses, and expert nurses and physicians. This phase aimed at identifying the participants' perception of what constituted quality nursing care.

It is accepted worldwide, that exploring the stakeholders' perspectives on what constitutes quality nursing care is particularly suitable to bringing about quality improvements in nursing care, rather than focusing only on the providers' perspectives. This is because quality care is achieved when the service providers respond to the demands of those who need the service being provided the most (Campbell et al. 2000; Masso, 1989; Øvretveit1992).

There is no universally accepted definition of quality care; people view what is quality differently (Masso, 1989). Generally, quality suggests a degree of excellence. The quality care is the degree to which patient care services increase the probability of achievement of desired patient outcomes, and reduce the probability of undesired outcomes occurring, and is made up of various aspects (Donabedian, 1966; JACHO, 1993).

Traditionally, the quality of nursing care has been defined and evaluated from the perceptions of nurses. However, more recently the importance of patients' perspectives in health care systems has been acknowledged. The involvement of patients and their families in evaluating the quality of care being delivered has lead to healthcare providers being more responsiveness to patients' preferences, thereby contributing to nurses providing better nursing care.

Most definitions of nursing care quality, its attributes, and the instrument used to measure it, have been developed from various perspectives (Bowers, Swan, & Koehler, 1994; Leinonen et al. 1996; Wensing & Elwyn, 2002). Frost (1992) indicated that it is significance to more systematically include the patients in defining

quality and important indicators because of the risk that nurses address their own values and not those of the patients.

Thailand reflects a worldwide trend, whereby the importance of patients as evaluators of the quality of care they receive has become increasingly emphasized in health care policy, particularly since the Hospital Accreditation project was implemented (The Institute of Hospital Quality Improvement & Accreditation, 1999) Previous studies have explored the quality of care delivered based on the perspective of stroke patients. Pound et al (1995) used a qualitative approach to investigate the view of stroke patients regarding their hospital admission. In addition, Radhika (1995) described the hospitalization experiences of adults recovering from strokes with respect to the quality of nursing care they received.

It is not only the role of patients and their families in the evaluation of the quality of care they received that is significant. Rather, the involvement of other stakeholders also is important when attempting to determine the quality of care being delivered. The stakeholders include the nurses, physicians and other healthcare providers. Excellent care can be achieved through learning about the care that currently is being provided. Providers need to know what they do, how they do it and how to improve the quality of what they are doing (Pronovost et al. 2004).

To conclude, studies that have based on multi perspectives are more effective than those without such perspectives are, when investigating the quality of care provided in a hospital. Therefore, the multi-perspective methods adopted for use, in this study, to identify the quality of care provided for hospitalized non-surgical stroke elders seem appropriate.

The second phase was the phase of empirical testing. In this phase, the three-round Delphi approach was used. The discussions in this section focus on the Delphi

panel members and the strength of using a Delphi technique for the development of indicators.

Prior studies have shown that, if nursing quality indicators are to provide meaningful information, they must possess key characteristics such as specificity, validity, reliability, acceptability, applicability, ease of retrieval, feasibility, and links to nursing care (Campbell et al. 2002; Jennings et al. 2001; Katz & Green, 1992: Malathum & Intarasombat, 2006; Rubin, Pronovost & Diette, 2001).

In this study, the Delphi technique was employed to establish consensus about the importance, feasibility, and face validity of the indicators among thirty-six experts, who met the inclusion criteria used for expert selection. A Delphi technique's claim to credibility lies in its ability to draw on expertise (Miller, 2001), so the experts' qualifications are of considerable importance.

The characteristics, the professional education, and the professional experience of the Delphi panel members, in this study, show that the expert panel members met the inclusion criteria and represented areas of expertise in stroke care, elderly care and quality care improvement. This is in accord with the suggestions made by Hill and Fowles (1975), recommended that experts used in a Delphi study, should meet some minimal formal criteria of knowledge or involvement in the area of the study. Moreover, the use of highly regarded experts in a field of study enhances the results of the study (Linstone & Turoff, 1975).

The other issue that warrants concern is the Delphi panel size. Williams & Webb (1994) considered that there was no precise mechanism for identifying the number in a Delphi panel. This must be based on the characteristics of the panel, such as the homogeneity or heterogeneity of the panel members. Some studies have used over 60 participants, while others have involved as few as 15 experts (Hasson et al.

2000; Ludwig, 1997). Additionally, Thomas Macmillan (1971 cited in Vehachart, 2005) proposed that the error reduction of Delphi results decreased by a minimum value of 0.02 when the number of experts is more than 17.

In this study, the panel's was very high at thirty-six; and the response rate throughout the study was excellent. These responses were considered adequate to accomplish the study

In order to ensure validity, this study identified the inclusion criteria before selecting the experts. All the experts met the inclusion criteria. According to Goodman (1987), the use of participants with extensive knowledge and interest in an area may also contribute to the validity of the study. Moreover, the validity of the study also was affected by the response rate of the panel members (Linstone & Turoff, 1975), which was 97.2% to 81.9% in the three rounds of this study.

In brief, the Delphi technique which was used in this study examined the validity, feasibility, and the important of the identified quality indicators through the experts' agreement.

Lastly, phase of pilot testing for the applicability of the identified quality indicators was done. The applicability scores of the twenty-five indicators in eight medical units of the regional and provincial hospitals were established at high level.

This is the early study undertaken, in Thailand, which has established nursing quality indicators for hospitalized non-surgical stroke elders. Nevertheless, the Delphi technique results of the importance, feasibility, and face validity including the pilot testing of the applicability suggest that almost all the nursing quality indicators developed could be implemented in regional and provincial hospitals in Thailand.

Another point is the methodology whereby the indicators were developed. In general, the development of quality indicators may use either a top-down approach or

a bottom-up approach (Redfran & Norman, 1990). These indicators were developed by using a bottom-up approach, because they were based on the perspectives of hospitalized non-surgical stroke elders and their families, and included those of nurses and physicians.

To conclude, the methodology of this study consisted of: identifying quality aspects and indicators by using a qualitative approach; empirical testing by using a Delphi technique; and pilot testing for applicability. It can be concluded that the methodology was appropriate and the research purpose was accomplished.

Summary

In summary, the discussion of this study composed of two parts; the findings discussion and the methodological discussion. From the finding discussion, the results showed that most of the selected quality aspects and indicators are in line with the previous studies within Thailand and other countries. The discussion also mentioned about the descriptions of the quality indicators for hospitalized non-surgical stroke elders and the reason of the unselected indicators. Finally, the research methodological used of this study is discussed in term of the appropriateness with the research objectives.