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Chapter

Development of Management Model Post-Stroke Urinary Incontinence

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Abstract

Post-stroke urinary incontinence (UI) is one of the sequelae of stroke. This situation affects all aspects of the patient's life both physically, psychologically, socially, and spiritually. Post-stroke UI as a chronic disease requires holistic treatment. Many chronic health problems will respond well when handled from a holistic perspective. The holistic health view focuses on the patient's health care needs, not only needs related to the patient's physical condition of health, but also subjective aspects related to social representation of his/her health conditions. Developing a holistic post-stroke UI management model and continuous care at the patient's home needs to be done. This chapter includes model components which are also interventions that can be done to overcome post-stroke UI. These interventions include information and understanding of post-stroke UI; ways to overcome post-stroke UI; conduct self-control and stay motivated; perform daily activities independently according to ability; and get family support and peer attention. This model was developed based on previous qualitative studies and literature studies related to post-stroke urinary incontinence. Intervention in this model is aimed at patients who have passed the acute phase of stroke, when they will be discharge from the hospital and continued at the patient's home.

Keywords: Post-stroke urinary incontinence, holistic care, continuous care, hospitalized, patient's home, intervention model

1. Introduction

Urinary Incontinence (UI) is characterized by involuntary leakage of urine, which can occur immediately after a stroke or later [1]. The prevalence of post-stroke UI ranges from 32% - 79%, of which approximately 25% - 28% of patients experienced UI after discharged from the hospital and about 15% experienced UI one year after discharged from hospital [2]. The incidence of post-stroke UI in patients older than 75 years old was higher than in patients aged less than 75 years [3]. International studies showed the average prevalence of UI was 8.2% to 26.8% in 2016, of which 13% - 38.7% occurred in women and 2.9% - 9.9% in men. When compared with the elderly population, the prevalence of UI in the elderly reached an average of 29.4% where 26.7% - 36.3% of this number occurred in women and 6.4% - 17% in men [4].

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Post-stroke UI affects all aspect of a person's life (physically, psychologically, socially, and spiritually), so that it situation affects the patient's quality of life [5–8]. Research has found that 66% of UI on women report that their quality of life was affected by their UI [8]. Post-stroke UI is also associated with limb weakness that prevents patients from urinating in the toilet. Post-stroke UI patients need a management post-stroke urinary incontinence in a holistic and continuous care manner up to the patient's home so as to increase the patient's independence. Therefore, the basic theories used in developing this model are the Human becoming theory, the Self-care deficit theory of nursing, and several theories related to post-stroke UI.

The critical point in this model is the development of management model post-stroke urinary incontinence in a holistic and continuous care manner up to the patient's home which is developed through up-to-date justification to describe what things are need to do in this model as an effort to improve patient independence.

2. Model description

This post-stroke UI management model is a model of post-stroke UI management in nursing that is carried out holistically and given by nurses to stroke patients who have UI and have passed the acute period of stroke. It begins when the patient will go out from hospital and continuing at the patient's home. Implementation of the model begins with the nurse identifying the patient's health condition, including identifying the patient's performance status using the Karnofsky scale, and monitoring the patient's incontinence status using the Bladder diary format for three days (72 hours). After that, the nurse and the patient together determine the goals to be achieved using the SMART method (specific, measurable, achievable, realistic, and there is a time limit).

The implementation of the post-stroke UI management model includes providing information and understanding about post-stroke UI, ways to deal with post-stroke UI, self-control and staying motivated, performing daily activities independently according to patient's ability, and increasing family support and peer attention.

Providing information and understanding about post-stroke UI through health education about post-stroke UI which includes definition, etiology, pathophysiology, types of post-stroke UI, assessment of post-stroke UI, and treatment of post-stroke UI. Increasing the patient's ability to perform ways to deal with post-stroke UI is also through health education and skills training such as bladder retraining, pelvic floor muscle exercise, deep breathing relaxation exercise, and range of motion (ROM) exercise. Self-control and staying motivated also through health education about positive thinking and controlling emotions. Carrying out daily activities independently according to ability is carried out gradually involving patients in daily activities at home such as activities related to personal hygiene and household chores. Family support in every action taken by the patient and the involvement of peers who have successfully overcome post-stroke UI in sharing experiences about things that have been done while experiencing post-stroke UI. In the final stage of model, the nurse evaluates and conveys the results of the evaluation of the achievement of goals to the patient.

3. Model development process

This post-stroke UI management model was developed based on literature studies, result of previous qualitative research, and expert consultation. The integration of theories used to develop this model is described in detail as follows:

3.1 Post-stroke urinary incontinence

3.1.1 Definition of post-stroke urinary incontinence

Post-stroke Urinary Incontinence (UI) is an involuntary (unconscious) leakage of urine, which can occur immediately after a stroke or later [1]. UI is a condition that affects the physical and psychological aspects of life with consequences that affect the quality of life [9]. UI has been shown to disrupt patients and negatively affect many aspects of life, including sleep quality, emotional well-being and depression, social relationships, work productivity, and overall health-related quality of life. The symptoms of urinary disorders can affect daily routines, causing limitations in physical, social, occupational, domestic, and sexual activities. Post-stroke UI interferes with the patient's activities of daily living and social activities so that it can lead to a reduced desire to participate in the treatment program [10]. Social and hygienic discomfort caused by the fear of passing urine and the smell of urine, can affect the quality of life. UI patients were burdened with anxiety, feelings of shame, and they live in fear that others will discover their condition. Major depression has been shown to add to a cycle of low self-esteem, increased social withdrawal, and ultimately decreased quality of life [11].

3.1.2 Types of post-stroke urinary incontinence and their causes

The types of post-stroke UI and their causes can be seen in **Table 1**:

3.1.3 Pathophysiology of post-stroke urinary incontinence

Damage to the midbrain that responsible for micturition can result in an inability to coordinate bladder contractions with urethral sphincter relaxation. After a stroke, the brain may enter a transient phase of acute brain shock. During this time, the bladder will be in retention – detrusor areflexia. After the brain shock phase subsides, the bladder exhibits detrusor hyperreflexia (overactivity of the bladder detrusor) with coordinated urethral sphincter activity. This occurs because the pontine micturition center (PMC) is responsible for suppressing the periaqueductal

Types of post-stroke urinary incontinence	Causes of post-stroke urinary incontinence
Detrusor hyperreflexia and urge incontinence	Direct damage to the neuromicturation pathway; Accidental leakage of urine accompanied or preceded by urgency
Detrusor hyporeflexia and overflow incontinence	Loss of bladder tone and non-stroke factors; Continuous dribbling and/or leakage of urine with incomplete bladder emptying and urinary retention
Awareness of urinary incontinence is impaired	Reduced ability to be aware of bladder signals before a leak, to notice a possible leak, or both
Functional incontinence	Communicative, cognitive, and mobility impairments causing UI despite normal bladder function.
Stress incontinence	Not directly due to a stroke but pre-existing problems can make things worse. Stress incontinence occurs when the urethral sphincter, pelvic floor muscles, or both of these structures have weakened or been damaged so that they cannot hold urine continuously.

Table 1.
Types of post-stroke urinary incontinence and their causes.

gray (PAG) which is located in the midbrain and directs the urethral sphincter and bladder wall muscle activity to maintain bladder control, cause the weakening of these processes [12]. When the pontine is damaged by a stroke, hyperreflexia of the detrusor muscle can occur, causing symptoms of "frequency" and "urge" to urinate [13]. Sensation of urinary urgency is characterized by more frequent micturition throughout the day and night [14].

3.1.4 Characteristics of post-stroke urinary incontinence

Cerebellar stroke patients' urodynamically more frequently reported signs of detrusor overactivity (53–77%), external detrusor sphincter dyssinergy (40%), and inability to relax the urinary sphincter (47%) [1]. Urge incontinence is characterized by a person who has a strong urge to urinate suddenly followed by involuntary urination (wetting the bed), the frequency of urinating more than 8 times a day, including at night. Stress incontinence is characterized by urine leaking out when there is pressure on the bladder, for example when coughing, sneezing, or laughing. Stress incontinence often precedes stroke symptoms but is usually exacerbated after stroke with recurrent coughing associated with dysphagia and aspiration [15]. Functional incontinence usually occurs in patients who are aware of the need to urinate but have functional limitations to reach the toilet [1].

3.1.5 Assessment of post-stroke urinary incontinence

The assessment can be started with identifying the patient's health condition, including identifying the patient's performance status using the Karnofsky scale, and monitoring the patient's incontinence status using the Bladder diary format for three days (72 hours). Physical assessment and history-taking, including identification of urological problems before the stroke occurred such as bladder outlet obstruction or stress incontinence [16]. Physical assessment also including pain, haematuria, history of recurrent urinary tract infection (UTI), pelvic surgery, and UI associated with known abnormality of the urinary tract [17]. Careful abdominal examination should be performed, an abdominal mass can contribute to stress incontinence and occasionally can cause urinary obstruction with resultant overflow incontinence. The cough test should be performed with the full bladder comfortably in a standing position and it may reveal SUI. In neurologic patients, evaluation of lower extremity strength, reflexes and perineal sensation is necessary. Unilateral weakness or hyperreflexia of the lower extremities may identify an upper motor lesion [17].

In addition, it is also necessary to assessment onset and duration of symptoms, urgency, dribbling, symptoms related to a specific activity such as coughing, sneezing. Assessment of pre-existing incontinence, associated bowel symptoms, medication such as diuretic, anticholinergic, oestrogens, sedatives, and antidepressants. Assessment about fluid intake; medical history related to diabetes, recurrent urinary tract infections and dementia; cognitive ability; and functional capacity: dexterity, mobility, and aids [10].

3.1.6 Management of post-stroke urinary incontinence

There are several successful options for controlling UI, including: nursing interventions in the form of behavioral therapy, pharmacological agents, and surgical treatments [18]. Behavioral treatments are recommended as the first therapy for UI management [1, 19]. It is also recommended by the Intercollegiate Stroke Working Party (2012) and the National Institute for Health and Care Excellence

(2012). Based on the recommendations of the Agency for Health Policy and Research Guidelines (APCHR) and the International Consultation on Incontinence that UI intervention is at least invasive, behavioral management should be initiated early [15].

Behavioral treatment (include bladder retraining and pelvic floor muscle training) can improve bladder control by changing urinary habits experienced by UI patients and teach skills to prevent urine leakage [20]. Several studies mention that the effectiveness of bladder retraining and pelvic floor muscle training in treating UI. There are several advantages of behavioral intervention, including the absence of side effects, comfort, and patient satisfaction [20].

These behavioral interventions need to be taught by nurses to post-stroke UI patients. Families as caregivers also need to be involved in the care of post-stroke UI patients. Management of post-stroke UI needs support family and friends [21]. Families can provide support in the form of emotional and instrumental support by motivating and facilitating patients in providing the necessary equipment such as walking aids and supporting patient healing, including physical support in the form of providing time to assist patients in the management of post-stroke UI. Support from friends can help reduce feeling of isolation and fear, where support from friends who have also experienced in the same diseases can be done by sharing experiences and providing information about necessary health services [22]. Patients are also involved in daily activities so that they can improve the patient's ability and reduce anxiety, where anxiety can also affect UI. Anxiety can directly affect bladder function, this leads to changes in bladder pressure [23]. Changes in bladder pressure can be characterized by abnormal function and condition of the lower urinary tract due to over activity of the bladder wall muscles that cause a sudden urge to urinate [24].

Previous research has shown that supportive care in cancer patients can improve their mood, reduce anxiety, and reduce depression in patients [25]. Supportive interventions also provide ongoing benefits in reducing depressive symptoms in dementia patients [26]. Supportive interventions increase patient satisfaction, significantly reduce depressive symptoms, and improve quality of life [27]. Peer support can help reduce feeling of isolation and fear, where peer support can be done by sharing experiences and providing information about necessary health services [22].

3.2 Relationship between human becoming theory and post-stroke UI

The theory of human becoming was developed by Rosemarie Parse. Parse views human, the universe, and health as inseparable, irreducible, and ever-changing [28]. Humans are an integral part of the environment, which is constantly changing and evolving with the environment. This provides a perspective that although healing is subjective, environmental factors are essentially a part of, can influence, and may facilitate the healing process. Nurses can help to create a healing environment for patients and families, by being with them and having the intention to be partners in patient care, respecting, and exploring subjective elements that can facilitate mind, body, and spirit healing [29].

Post-stroke UI patients require holistic and sustainable care in manner up to the patient's home. The holistic care model provides support to humans and focuses not only on completing the task of caring for physical aspects of the patient's chronic illness but also the human soul [30]. A holistic approach to nursing as a process strengthens every system of the human mind–body and allows natural healing potentials to develop. Many chronic health problems will respond well if handled from a holistic perspective [31].

Humans as bio-psycho-social-spiritual beings form meaning from previous experiences. The meaning associated with this experience reflects their personal values which are grown through powering and shows the individual's uniqueness in improving the quality of his/her life that needs to be maintained and improved. All aspects of human health, including quality of life, are determined by physical, chemical, biological, social, and psychological factors in the environment. Healing involves being open to one's presence as well as the environment. Emotional, physical, and spiritual closeness is needed in providing care to post-stroke UI patients.

3.3 Relationship between self-care deficit theory of nursing and post-stroke UI

Self-care deficit theory of nursing was developed by Dorothea Elizabeth Orem. In Orem's theory, humans are viewed as agents with the potential for power to satisfy their own needs for self-care. Self-care is not limited to people providing care for them, but also includes care offered by others such as nurses, and/or family members. In Orem's theory, it is explained that humans have the ability to care for themselves and if this ability is distorted by a person, then nurses help individuals to regain their self-care abilities by providing direct care and support through health education. One of the main elements of self-care is health education to patients. Health education helps patients to do self-care because self-care requires the ability to treat them. The need for care exists when the demand for self-care exceeds the capabilities of the self-care agent. Nurses act as facilitators and change agents who can teach how to solve problems and make decisions regarding self-care.

Self-care must be learned and must be done deliberately. Self-care behavior is influenced by the total skills and knowledge that a person has and uses for his/her practical efforts. Self-care is considered an important and valuable principle because it emphasizes an active role in their own health care, not a passive one [32]. Post-stroke UI patients need skills training to overcome their UI. These exercise include bladder retraining, pelvic floor muscle exercise, and ROM. Individual/patients who do pelvic floor exercise must have confidence and be motivated to do exercises regularly despite obstacles or difficulties in daily life [33]. Bladder retraining requires patients to be independent and motivated to participate actively in treatment [34].

The results of observations during previous research, respondent who actively did ROM showed their involvement in caring out daily activities such as helping with housework, fulfilling their needs related to personal hygiene such as bathing, dressing, and starting to be able to walk to urinate in the toilet so that the quality of life respondents the intervention group related to UI slowly showed improvement. These observations were in line with other studies that daily activity training could improve quality of life [35].

3.4 Overview of the results of a qualitative study of patients' experience success in dealing with post-stroke UI

The results of our qualitative study on the patient's experience of successfully dealing with post-stroke UI were also used as a basis for developing a management model post-stroke urinary incontinence in a holistic and continuous care manner up to the patient's home The resulting themes are: (1) Information and understanding about post-stroke UI, (2) Performing ways to deal with post-stroke UI, (3) Self-control and staying motivated, (4) Performing daily activities independently according to patients' ability, and (5) Family support and peer's attention. The results of this thematic analysis are integrated with the human becoming theory, self-care deficit theory of nursing, and other theories related to post-stroke UI. This qualitative study uses an applied qualitative research design

with the type of research Rapid Assessment Procedure (RAP). RAP is used as a method to interact directly to discuss or listen to what experiences the patient has had during post-stroke UI. In-depth interviews were used by researchers to obtain daily experiences of patients during post-stroke UI. The in-depth interview guide was developed based on the human becoming theory and the self-care deficit theory of nursing [36].

4. Model schematic

The patient's independence in dealing with post-stroke UI is at the core of the problem regarding the need to provide information and understanding about post-stroke UI, perform ways to deal with post-stroke UI, perform self-control and staying motivated, perform daily activities independently according to patient's ability, and get family support and peer's attention. The schema of the post-stroke UI management model that we developed which is shown in **Figure 1**.

5. Model component

This model includes five components in managing post-stroke UI, namely 1) Improving the provision of information and understanding about post-stroke UI, 2) Improving the ability to do ways to deal with post-stroke UI, 3) Improving self-control and staying motivated, 4) Improving ability carry out activities independently according to patient's ability, and 5) Improving family support and peer's attention in managing post-stroke UI. The following described the components of this model in more detail:

5.1 Improving the provision of information and understanding of post-stroke UI

The basis for implementing this theme is the finding of our previous qualitative study which showed that informants (patients) need information to increase their knowledge in recognizing and understanding various physical and psychosocial conditions that occur to them. This information can make it easier for patients to overcome problems related to post-stroke UI that they were experiencing.

Information is provided through health education about post-stroke UI which includes an explanation of the basic concepts of post-stroke UI such as definition, causes, the process of occurrence, signs and symptoms that appear, types of post-stroke UI, and how to deal with post-stroke UI. Nurses need to build a trusting relationship and conduct an initial assessment of the patient's knowledge regarding the patient's perceived physical and psychosocial conditions.

Providing education about post-stroke UI is given to patients and their families as caregivers. Before educating patient and caregivers, nurses seek information from patients related to what patients have known about post-stroke UI. This makes it easier for nurses to provide further information. Information from patients is a central aspect of patient-centered care [37]. The information conveyed by the patient reflects the patient's knowledge about their condition [38]. Nurses have the potential to identify people with incontinence, establish appropriate interventions, and provide valuable health education to empower patients [39]. Providing information related to a through assessment in describing the type and severity of incontinence is needed to provide treatment/nursing care according to individual needs [10].

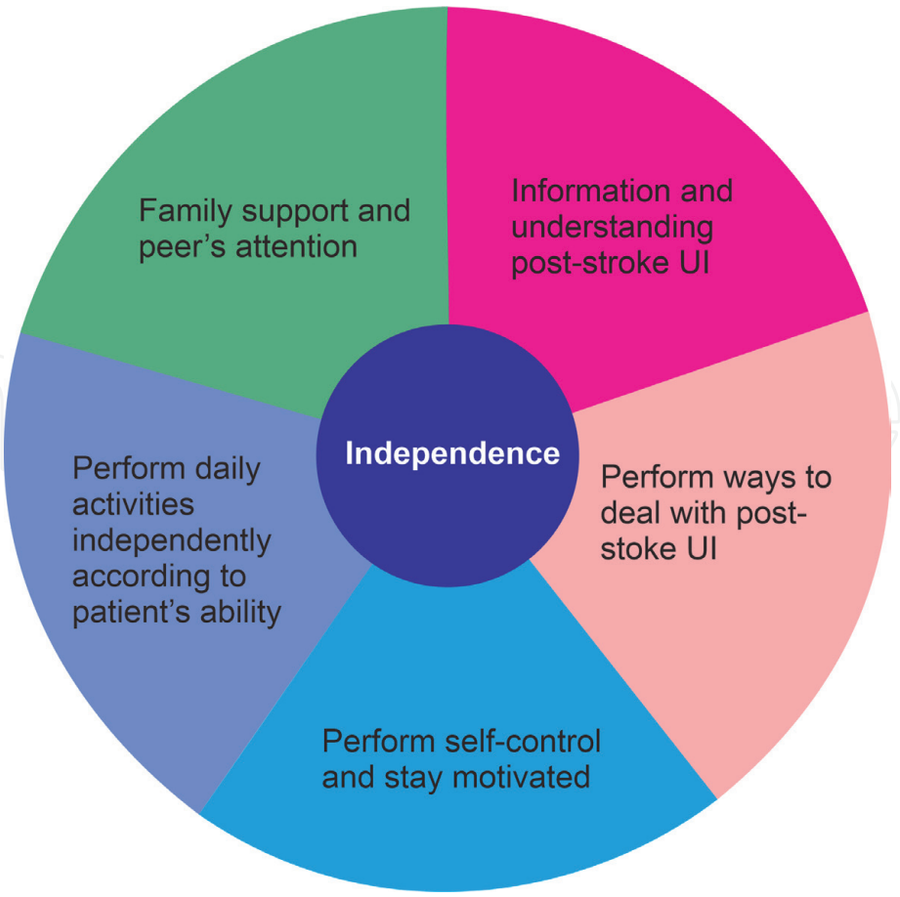


Figure 1.
Model schema of post-stroke urinary incontinence management.

Post-stroke UI is a taboo subject in society; patient openness in providing information to nurses is very much needed. In an effort to increase patient openness, there needs to be a trusting relationship between patients and nurses. In-depth interviews that researchers conducted in digging up information related to post-stroke UI were not easy to do. Some informants did not immediately open up if they had experienced UI but by starting questions to explore information related to daily activities, the obstacles found by the patient in carrying out daily activities so that the patient was open to provide information about his current condition.

5.2 Improving the ability to do ways to deal with post-stroke UI

This action needs to be done in management of post-stroke UI. The results of our qualitative study showed that the informants/patients did several ways to overcome their post-stroke UI such as bladder retraining, pelvic floor muscle exercises, distraction technique, and ROM exercises. These ways describe the knowledge, skills, and ability to decide what the patient should do in dealing with his illness. Based on these findings, it appears that the patient is not only focused on improving the functional ability to urinate but also improving the functional ability to walk. In dealing with post-stroke UI, patients need to be trained to improve the functional ability to urinate as well as the functional ability to walk [16].

Such exercises can be provided through health education and demonstrations to patients and caregivers. Skills exercises taught to patients and caregivers include bladder retraining, pelvic floor muscle exercises, and deep breathing relaxation exercises to divert the urge to urinate. In addition, ROM exercises are also done to train the patient's muscle strength so that it can help the patient walk to urinate in

the bathroom. Patients and caregivers are given the opportunity to practice and demonstrate the skills that have been taught independently, but are still given continuous supervision to achieve the goals that have been set. This education and skills training can be provided in the hospital after the patient has passed the acute phase of stroke and then continued at the patient's home.

Continental training begins as soon as the patient's condition stabilizes. It is also important to prevent incontinence which may be reversible [1]. Bladder retraining requires that patients be independent and motivated to actively participate in treatment [34]. Bladder retraining trains the patient to empty the bladder at regular intervals. Emptying the bladder at regular time intervals in post-stroke UI patients is a more effective method for treating incontinence [1].

Consider that there is strong evidence that bladder retraining with urge suppression is effective in treating urge incontinence, stress incontinence, and mixed incontinence in adult women. Bladder retraining exercise is also often combined with pelvic floor muscle training (detrusor contraction inhibition) in adults with UI without neurologic disease. This exercise has been shown to be effective in reducing incontinence episodes for three months, compared to bladder retraining with urge suppression alone [34]. Pelvic floor muscle exercises seek to reduce uncontrolled detrusor muscle contractions in patients with better cognitive abilities. Individuals/patients who perform pelvic floor muscle exercises must have confidence and be motivated to perform exercises regularly despite obstacles or difficulties in daily life [33].

Before starting pelvic floor muscle training, it is necessary to ensure that the patient can perform pelvic floor muscle contractions. More than 30% of patients are unable to contract the pelvic floor muscles at the first meeting of educational exercises [40]. So that training and education repeatedly need to be done. Patients and caregivers are also encouraged to always pay attention to environmental conditions, avoid wet floors, pay attention to room lighting during exercise, including eating nutritious foods, and avoiding drinks containing alcohol and caffeine such as tea, coffee, and cola especially before bedtime. Also avoid drinking too little because it can make the urine color dark and can irritate the bladder. Avoid drinking too much and too fast. Advise the patient to drink 500 milliliters at each meal and 200 milliliters between meals, and to drink more fluids in the morning and evening.

The ways that patients do in dealing with post-stroke IU describe the patient's ability and skills to achieve healing. This is based on the knowledge and desire of the patient to recover, so that the patients carry out the process of transferring (transformation) health patterns with the choice to change attitudes in living daily life. In human becoming theory, it is stated that the transformation of health patterns can occur when individuals find insights about themselves that were previously unclear, when they find ways to change towards the hopes and dreams they cherish [28, 41]. The hope for recovery makes the patients always do ways to overcome the post-stroke UI and become the patient's strength when facing the post-stroke UI.

5.3 Improving self-control and stay motivated

Self-control is the inhibiting force that enables the person to adjust decisions and behavior towards long-term targets [42]. Self-control describes how a person chooses and finds ways to deal with the situations they experience. This relates to the values of beliefs held. In Human becoming theory, it is stated that beliefs reflect what is important in a person's life regarding his health, which is the basic for a person to make choices about how to think, act, and feel [43].

Self-control is done by thinking positively and controlling emotions [36]. Positive thinking is done by cultivating positive thoughts, eliminating the burden of thinking

about the disease, getting closer to God, and growing belief in healing, including belief related to spirituality in interpreting post-stroke UI [36]. Patients are always reminded of the goals to be achieved and focus on achieving these goals. The success of self-control can be seen in increasing physical activity, improving general health, feeling happy, increasing physical and emotional roles. Positive thinking can be used to improve the quality of live [44]. Other studies have shown that self-control training has a significant effect in improving the quality of life in patients with migraine [42] and improving the quality of life of asthma patients [45].

Positive thinking is the practice or result of a firm mind about what is constructive and about something good, so that it can eliminate negative thoughts and emotions [46]. Positive thinking helps to know and understand self-concept better, and helps to see yourself better. Positive thinking is very important in achieving goals and making a person constructive and creative. Positive thinkers face situations optimistically and if they face stressful situations, then they judge it to be controllable and use coping strategies that are functional, efficient, and problem-focused [47].

Positive thinking is supported by internal cognition, beliefs, and relationships [46]. Beliefs including religious beliefs can help a person cope with a state of uncertainty, including in dealing with stressful life events [48]. Positive thinking is also associated with optimism, perception, and self-esteem [46].

Based on this, the interventions/steps that need to be taken to increase positive thinking include:

- Education to improve patient understanding: explain to patients that inappropriate view or perceptions and attitudes can affect perceptions of urinary incontinence.

- Assist patients in determining treatment goal

- Encourage the patient to pay attention to every thought that is written. Instruct the patient to ask himself whether the thought makes sense?

- Performing distraction techniques includes: using negative thought-stopping techniques (such as focusing on yours surroundings or putting a rubber band on your wrist, scheduling time for rethinking, writing down troublesome thoughts), including diverting attention away from urinating e.g. watching television, reading newspapers, dhikr, reading scriptures, playing games, listening to music, counting backwards, and so on.

- Instruct the patient to meet with other people.

- Patient motivation in achieving their goals, thinking that there are still many other patients who have more severe problems.

- Advise patient to always be optimistic.

- Involve family or loved ones

- Involve local religious leaders to increase patient beliefs. It is intended to achieve the patient's spiritual well-being, help patients remain optimistic during treatment, and help patients accept their new situation with post-stroke UI, maintain hope, increase motivation, and encourage patients to struggle through post-stroke challenges.

Emotional factors also affect the recovery of stroke patients, even patients who are have considered functionally independent at three months after stroke still experience social isolation, difficulty social participation, and depression [35]. Early adaptation can predict depressive symptoms six months after stroke [35]. Emotional contro/emotional regulation is the process by which individuals influence the emotional that they have, when they have them, how they experience and express those emotions [49]. Emotional regulation is closely related to coping, emotional resilience, emotional intelligence, emotional expressiveness, and emotional energy.

In emotional control there are two strategies that are commonly used, namely reappraisal (reassessment) and suppression. Reappraisal occurs when the person changes the way he or she thinks about a potentially emotional situation and turn the experience into a non-emotional situation, whereas suppression is referred to as an obstacle to the way a person responds or behaves in an event that evokes emotion. In addition, social context also influences emotion regulation in various ways. Having attachment figures, friends, parents, spouse, children, and significant others are valuable interpersonal resources for dealing with emotions, expectations about their accessibility, assistance, and sensitivity can significantly increase or impair the capacity to manage emotions.

Based on this, the interventions/steps that need to be taken in controlling emotions include:

- Assess the patient's thought, feelings, and emotions.
- Show understanding, empathy, concern, and courtesy in communicating with patients.
- Help patients find and recognize the causes of emotions.
- Help patients to eliminate existing irrational thoughts through increasing knowledge about urinary incontinence.
- Assess the coping mechanisms used by the patient
- Advise and teach deep breathing relaxation techniques
- Involve the patient's family and people closest to the patient
- Instruct the family to avoid the patient from the environment or situation that can trigger the patient's emotions

5.4 Improving the ability to perform activities independently according to patient's ability

In Orem's theory (self-care deficit theory of nursing), Orem believes that human have the ability to care for themselves and if this ability is distorted, nurses help individuals to regain their abilities by providing direct care [32]. The results of our previous qualitative research showed that the informants' ability to carry out activities of daily living was in accordance with their ability to describe the conditions included in the supportive-educative system [36].

The supportive-educational system in Orem's theory states that individuals can do or can learn to take necessary actions externally or therapeutic self-care but cannot do so without help [28]. For this reason, guidance from nurses and caregivers

are needed. However, in carrying out self-care activities emphasize the active role of patients in their health care rather than a passive role. It is necessary to make efforts to increase the self-care ability of post-stroke UI patients by involving patients in daily activities, but still being given supervision and help from caregivers in stages.

5.5 Improving family support and peer's attention

Social support can act as moderator of the effect of disability on well-being [35]. Support can be defined as help that a person can use in difficult situations. Support reduces the risk of mental and somatic disorders, modulates approaches to coping with stress, and reduces the likelihood of premature death [50, 51]. Social and emotional support is important for quality of life [51]. High levels of social support are associated with better mental health [52].

Family support and peer attention are often recommended as sources of emotional, instrumental, informational, and affirmative support for people with chronic disease conditions [22]. Family and peer support programs are an effective way to meet patient needs. Orem believes that the lack of social support to reassure patients in complex care situations leads to limitations in self-care behaviors [28].

Families contribute to maintaining the patient's well-being through emotional, instrumental, and practical support. Previous research has shown the effectiveness of treatment by involving the family in patient care [53]. However, in involving families as caregivers in patient care, it is necessary to be equipped with knowledge and skills related to patient care, caregivers must also be able to take care of their own health when caring for patients. The results of our previous qualitative study found that caregivers experience fatigue when caring for patients at home [36]. Fatigue and lack of rest experienced by caregivers are caused by the increased responsibility of caregivers in maintaining patient health [54]. Caregivers recognize that it is important to take care of their personal health so they can continue to care for their sick family members [54].

In addition to caregivers, peer attention is also needed. The results of qualitative study stated that informant felt very happy with the presence of a friend who also experienced the same disease as the informant, they shared their experiences during post-stroke UI [36]. Attention from peer who also experienced the same illness can help reduce feeling of isolation and fear, where peer support can be done by sharing experiences and providing information about the health services they need [22].

6. Model implementation guide

This model is implemented in five activities. The first activity was carried out at the hospital in the form of health education to patients and caregivers about post-stroke UI. The second activity is also carried out at the hospital and continued at the patient's home, in the form of skills training that needs to be given in the management of post-stroke UI including bladder retraining, pelvic floor muscle exercises, deep breathing exercises, ROM exercises, positive thinking exercises, and exercises controlling emotions. The third activity is in the form of assistance in implementing the skills that have been taught, this can be done at the patient's home. The fourth activity is in the form of monitoring and evaluation of patient's ability (patient independence), which can be done through home visits and telephone calls. The fifth activity is a follow-up. Follow-up can be done four weeks after all activities have been carried out.

7. Conclusion

Urinary incontinence is not only a physical problem, but also psychological and social problems. Post-stroke UI patients' still carry residual symptoms even through them have been discharged from the hospital. Management post-stroke UI in a holistic and continuous care manner up to the patient's home is needed to increase the patient's independent in overcoming the disease. Thus the achievement of the quality of life of post-stroke UI patients can be better.

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