



## **Evidence based nursing care for an acute stroke: Theoretical Study**

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**Abstract**

Acute stroke need emergency care as it leads to mortality and physical disability. The aim of this study was to determine the current nursing process in delivering nursing care of acute stroke and what recent research reveals about the risk factors and nursing role for a patient suffering from an acute stroke. This study is conducted by reviewing literature to find out the recent nursing methods while caring an acute stroke.

The theoretical framework used in this study is Dorothea Orem's Self -Care Deficit Theory. Collections of data were accessed through Nelli portal database and qualitative content analysis was used to abstract findings. Eleven scientific articles were chosen using inclusion and exclusion criteria to answer the aim of this study through a qualitative approach.

The well-read articles were divided into different groups to get the main themes. Three main themes nursing assessment, promote self-care and obstacles appeared from data analysis. The result emphasized nurse role and also the challenges faced by nurses while performing nursing care. Nurses are responsible for management of care throughout the caring stages as they are the primary healthcare authorities.

Language: English      Key words: Acute stroke, evidence based nursing practice, nurse-patient relationship, evidence based healthcare, rehabilitation, nursing care, nursing management, self management, self care

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**FIGURE 1: A conceptual framework for nursing. R, relationship: deficit relationship, current or projected.** From Orem, D.E. (1995). Nursing: Concepts of practice

**FIGURE 2: Filtered Articles from Database EBSCO**

**FIGURE 3: Content Analysis using inductive approach**

## 1. INTRODUCTION

A stroke is a disease that occurs when a blood clot blocks a blood vessel or breakage of blood vessel in the brain thus, interrupting blood flow to an area of the brain. When either of these things happens, local parts of brain tissues begin to die and necrosis form, which leads to the brain damage (National Stroke Association, 2014). Ischemic stroke is the most common kind of stroke, accounting for 87 percent of all cases. A clot blocking blood flow to the brain causes it. (American Academy of Neurology, 2016)

According to World Health Organization (1970) the definition of stroke is *rapidly developing clinical signs of focal (or global) disturbance of cerebral function, lasting more than 24 hours or leading to death, with no apparent cause other than that of vascular origin*. During those years, improvements have been made in expertise about the description and nursing care of stroke with evidence based nursing practice of stroke. So, this study focuses on the evidence based nursing care for an acute stroke. Stroke is a preventable and treatable disease. Nurses attempt to increase the quality and safety of care (Kavanagh, Connolly & Cohen, 2006).

In Finland, as in many other developed countries, a stroke is third leading cause of death after coronary heart disease and cancer (Aivoliitto). Finland has a long tradition in the epidemiological research on stroke. Finnish stroke experts have contributed in many ways. *Stroke causes about 8.9% of all deaths in Finland. Finland has one of the most rapidly ageing populations in Europe, with 17.2% of the population currently aged above 65 years, and the portion increasing to 25.1% by year 2030, that is a 50% increase*. Treatment of stroke patients demands a multidisciplinary attitude and a chain of recuperation starting from acute care, through rehabilitation, up to discharge home or to long-term care. (Meretoja, et.al, 2011, 22-23)

There are approximately 10,500 incident hospital-treated stroke patients each year in Finland, and their result is getting better, both overall and after adjustment for standard relevance (Meretoja, et.al, 2011, 28). After stroke the patient's life will change drastically. Even the patient's family gets affected as well. The role of the family and rehabilitation

plays a major role to get well for patients. The total cost of treating stroke patients in Finland is about 1.6 € Billion annually, 7% of total healthcare costs, or 0.6% of the gross domestic product (*Meretoja, 2011*).

This topic is very relevant for us because both of us have been working in a rehabilitation ward and stroke patients are quite common in this department. Being a nurse, the consequences and the challenges stroke patient face was the main reason motivated us to conduct this study. A broad variety of interesting nursing theories have been developed but we chose Dorothea E. Orem theory, as it is best fitting to our study. Nurses along with patients take part in the recovering process.

This study focuses on the rehabilitation process and the nurse role in caring the patient suffering from acute stroke. The main goal of this study is to gain knowledge on how nurses play an important role in caring the patient and emote positive role in the patients and their family's life. Furthermore to investigate on the self-care and self-management performed by patients on a daily basis. Books and scientific articles are used as a source of data collection and qualitative content analysis research method was chosen to analyse the results.

## **2. AIM AND RESEARCH QUESTIONS**

The aim of this study is to gain deeper knowledge and understanding about the nursing care of a patient suffering from acute stroke. Furthermore, the aim of this study is to find the relevant studies in order to base the care on evidence.

Moreover, making the information assessable to the nursing students who are working with the patients with acute stroke so that it helps to improve patient care.

### **Problem Definition**

- 1. What is the nurse role for a patient suffering from acute stroke?**



### 3. THEORETICAL BACKGROUND

The resolution of this chapter is to provide general evidence and brief understanding about nursing care for a patient suffering from acute stroke. The emergency nurses use checklists, protocols and other implements to identify stroke patients. Nurses are responsible for management of care throughout the caring stages. (American Heart Association, 2009, 2916)

Progressing evidence over the last two decades has upturned the usual opinion that stroke is simply a results of aging which results either in death or disability. Evidence is accumulating for more effective primary and secondary prevention action. These are better acknowledgment of patients at highest risk, active intervention that are effective soon after the onset of symptoms, the process of care for the better outcome. Now there is good evidence to support interventions and care process in stroke rehabilitation. (National Collaborating Centre for Chronic Conditions, 2008)

Stroke comes very sudden and in some cases it is very traumatic which requires the continue information and guide to the patient and their family members by nurses. The professionals working with the patient with acute stroke care need to be aware of the rehabilitation process and also the caring needs of the patient through the different phases of the process. (National Collaborating Centre for Chronic Conditions, 2008)

Rehabilitation is the process of restoring or adjusting something to its previous state. In healthcare organization, rehabilitation is an act to make patients capable of doing their everyday activities on their own before they were disable by the stroke. *Rehabilitation is a client centre, active and creative process that involves adaptation to changes in life circumstances. It is a shared activity between client, career and professionals who recognize the individual contribution of all concerned. It is designed to enable the client to achieve optimum and / or acceptable level of functioning. Its aim is to minimize handicap resulting from impairment and / or disability.* (Jester, 2007, 2)

Nursing care plays a vital role in the rehabilitation of a stroke patient. Stroke rehabilitation nursing focuses on physical recovery, independence in everyday activities, lowering the risk of secondary complications and also promote to live with the stroke related disability. (Jester, 2007, 117)

### **3.1 Overview of Acute Stroke**

There are two types of stroke. Ischemic Stroke is caused by a blood clot formed in brain arteries or by an embolus that is originating elsewhere in the body's circulation. Cerebral embolic strokes are the most common subtype of ischemic stroke. Ischemic stroke develops rapidly. The patients have typical symptoms such as confusion, aphasia, headache, imbalance, and difficulty in walking, weakness and numbness of the arm, face and leg. (Suzanne, et al. 2008, 2206-2207)

Haemorrhagic stroke may be caused by intracerebral hemorrhage (diseased artery within brain ruptures) or subarachnoid hemorrhage (bleeding into the skull or cranium). A major risk factor for intracerebral hemorrhage is hypertension. (Suzanne, et al. 2008, 2223)

#### **Warning signs**

**F.A.S.T:** Face-Arm-Speech-Time is a very simple method to determine the signs of stroke. When a person can see the signs then an immediate help from emergency is needed right away.

**Face Drooping:** Ask a person to smile. The face may be dropped on one side; the person may not be able to smile.

**Arm Weakness:** Ask a person to raise his/her both arms. The person may not be able to lift one or both arm(s) due to weakness or numbness.

**Speech Difficulty:** Ask a person to repeat a very simple sentence, e.g. The Ocean is blue. Is the sentence repeated correctly or is the speech slurred?

**Time to call:** If any of the above symptoms is shown then it is time to call the emergency number immediately and get help. Notice the time when the first symptom started.

Other signs and symptoms may include paralysis on one side of the body, diplopia or loss of vision, loss of consciousness, confusion, dizziness, imbalance, dysphagia and headache and so on. (American stroke association, 2016)

### **Consequences of stroke**

Stroke can affect physical, emotional and social aspects for the patient and their family members. For the affected person, this can symbolize a major trauma (Etherington, 2002, 81). Deficits may be either temporary and resolve unexpectedly or be set fully or incompletely with the help of rehabilitation. In some patients, deficits are unfortunately permanent.

- **Physical deficits:** Hemiplegia is the paralysis of one side of the body due to damage on the opposite side of the brain. For example, left hemiplegia involves damage to the right side of the brain affecting the left side of the body. The paralysis, or weakness, may affect only one side of the face, one arm, or one leg - or may affect one entire side of the body and face.
- **Dysphagia:** Commonly stroke patients may have trouble with swallowing (dysphagia) after a stroke. Slurred speech, due to weakness of the muscles used in speaking, may also result.
- **Balance and co-ordination:** A stroke patient may have problems performing daily activities, such as walking or dressing due to difficulties with balance and coordination.
- **Cognitive deficits:** Stroke may cause problems with thoughtful, consciousness, attention, feeling, decision, and remembrance. Some patients may also be unaware of sensations on right/left side of the body.
- **Language (aphasia):** Stroke patient may find it hard to understand or form speech called aphasia, which may also be related to problems in reading or writing.
- **Psychological complications:** Stroke patients may find it difficult to control their emotions or may express inappropriate emotions in certain situations. Common emotional problems are depression and anxiety.

- **Pain:** Stroke patients may experience common problem of pain, numbness, or abnormal sensations after a stroke. These senses may be due to damage to the sensory regions of the brain and firm joints.

### **Pathophysiology of stroke**

Lack of oxygen of the cerebral tissue begins, when the blood flows to any part of the brain is delayed as a result of a thrombus or embolus. Lack of oxygen for one minute can lead to reversible symptoms like loss of consciousness. Oxygen shortage for longer period results microscopic necrosis of the brain. The necrotic area is then infarcted. (Deb, Sharma & Hassan, 2010, 199)

In an ischemic stroke, the blood supply to the brain is disturbed. The brain cells are lacking oxygen and glucose, which are necessary for them to function. Ischemic stroke is a complex entity with many etiologies and variable clinical manifestations. Approximately 45% of ischemic strokes are due to small or large artery thrombus, 20% are embolic in origin and others have an unknown cause. (Deb, Sharma & Hassan, 2010, 200-201)

When the intima is roughened and plaque forms along the injured vessel, then thrombosis can form in the extracranial and intracranial arteries. Blood flow through the extracranial and intracranial decline and then the collateral circulation maintains function. After the collateral circulation fails, perfusion is compromised, leading to decrease perfusion and cell death. In an embolic stroke, a clot goes through a distant source and lodges in cerebral vessels. Emboli in the form of blood, fat or air can form during surgical procedures like cardiac surgery or also after long bone surgery. If the stroke is due to hemorrhage, high blood pressure can be the underlying cause for it. (Deb, Sharma & Hassan, 2010, 202)

The most frequent neurovascular syndrome seen in thrombotic and embolic strokes is due to the involvement of the middle cerebral artery that supplies the lateral aspects of the cerebral hemisphere. When the infarction happens in this area then contralateral motor and sensory deficits occur. If the infarcted hemisphere is dominant, speech and dysphasia

problems occur. Either with thrombotic or embolic stroke, the amount of brain ischemia and infarction that might occur is difficult to anticipate. There might be a chance that the stroke can extend after the introductory insult. Massive cerebral edema and an increase in ICP can occur to the point of breach and death after a huge thrombotic stroke. (Deb, Sharma & Hassan, 2010, 201)

In a thrombotic stroke, there is risk of a future stroke because of atherosclerosis. On the other hand in embolic strokes, patient can have subsequent episodes of stroke if the underlying cause of the stroke is not diagnosed and treated. Where in haemorrhagic stroke, if the extent of brain tissue is not destroyed massively and occurred in a non-vital area then there is a chance of recovery with fewer deficits. While if the hemorrhage is largely occurred in a vital area, the recovery chance is low. About 30% of the intracerebral hemorrhage is less massive. (Deb, Sharma & Hassan, 2010, 201-203)

### **3.2 Nursing care in acute stroke**

General medical check up, nursing assessment and neurological examination include ABCs of the patient help the diagnosis of stroke and differentiation of stroke. The most common patients symptoms in emergency ward include an acute on set of weakness or other neurological problem with spinal cord, brain function or nerve.

#### **Brain Imaging**

If a stroke is suspected based on clinical evaluation, computed tomography (CT) scan of the brain is performed emergently after patient admission to a specialized stroke unit or entry into the hospital emergency room and also CT scans may have a function in stroke diagnosis. The emergency nurse arranges the patient for CT or Magnetic resonance imaging (MRI). The nurse will make a call to CT department in advance for quick work. The primary goal of CT-imaging is to exclude non-vascular (e.g. abscess or tumour) causes of stroke and find possible intracerebral hemorrhage. Sometime CT scans can give negative results with showing no clear mark. (Gillen, 2011, 10-12)

This CT-imaging determines if the patient meets criteria for Tissue plasminogen activator (t-PA) therapy. The t-PA emergency medication for ischemic stroke is available after differentiating between hemorrhagic and ischemic stroke. Differentiating between hemorrhagic and ischemic stroke is vital because the only available emergency medication for ischemic stroke is the t-PA therapy. Once the patient is an applicant for t-PA therapy, no anticoagulants are administered for the next 24 hours. CT imaging may also confirm an infarction and show the location of the lesion. Further tests may be made to determine the exact location of the clot or bleeding and to further assess the extent of brain damage. (Jester, 2007, 111)

MRI is often used for more sensitive identification of cerebral infarction. The MRI has the benefit of allowing earlier discovery of acute infarcts and can screen for acute bleeding. (Gillen, 2011, 14)

### **Administration of Thrombolytic Therapy**

In acute ischemic stroke, initial treatment focuses on restoring blood flow to the compromised area of the brain surrounding the infarct. Pharmacological therapies play a significant role in treating the acute stroke. It includes antithrombotic, thrombolytic, neuroprotective and antiedema therapies. (Gillen, 2011, 16)

Antiplatelet and anticoagulation helps preventing clot circulation. However, the risk of thrombolytic therapy includes hemorrhagic conversion, hemorrhage and increased cerebral edema that can give worse consequences. *Heparin is administered intravenously in a continuous infusion* (Gillen, 2011, 16). Nurses in the acute stroke unit administer aspirin 300 mg as soon as possible to the onset of the cerebral infarction (Jester, 2007, 113).

Thrombolytic therapy is appealing therapy for acute stroke. In principle, ischemic strokes can be treated with the thrombolytic therapy, tissue plasminogen activator (t-PA), which helps dissolve a blockage. The nurse is responsible for administration of thrombolytic therapy. The nurses should make sure that all intravenous lines are injected before administering thrombolytic therapy. This treatment must start in six hours from onset of symptoms to be therapeutic. However, the frame of opportunity to safely administer t-PA is generally considered to be just 3 hours to 4.5 following stroke to contribute excellent

outcomes. (Gillen, 2011, 16)

The limitations on use of t-PA are due to the significantly increased risk of bleeding associated with its administration. Major complications include intracranial bleeding in the t-PA administration. Few patients arrive at the hospital in time to be diagnosed within the three-hour limit; only four percent of stroke patients currently receive t-PA therapy. The placement of nasogastric tube, urinary catheters and intra-atrial pressure catheters is usually 24 hour delayed. (Suzanne, et al. 2008, 2211- 2212)

Basic nursing care performed by the nurses involve: level of consciousness, body temperature, blood pressure, pulse, respirations, heart rhythm, blood glucose, oxygen saturations and hydrations. Nurses plays vital role in planning the care of the patient. They record and check the vital signs and if found abnormal then immediately inform a doctor. (Jester, 2007, 112)

Most ICU patients are attached to a display that allows constant demonstration of all vital signs like blood pressure, heart rate and rhythm. Nurses do the documentation. Nurses insert a Foley catheter to drain urine from the urinary bladder. A spinal drain, external ventricular drain, intracranial pressure monitoring catheter is passed for different purposes. The nurses pass nasogastric tube that is inserted through the nostril down the esophagus to the stomach. In some cases a percutaneous endoscopic gastrostomy tube (PEG) is inserted surgically with an endoscopic via the mouth and into the abdomen, exit stomach wall for liquids to pass. For the smooth respiratory result, patients require a ventilator. (Gillen, 2011, 28)

### **3.3 Nursing care in Rehabilitation**

Evidence based practice has become incorporated in occupational therapy and physical therapy and other practice in recent time. Rehabilitation is important since even a slight improvement in a deficit can mean the difference between returning home and staying at rehabilitation center. People with the least injury are likely to benefit the most. Successful rehabilitation depends on how immediate rehabilitation begins, extend of the brain injury, the stroke survivor`s attitude, multidisciplinary teams skills and the co-operation of family and caregivers.

Rehabilitation may include physical therapy, speech and language therapy, and even occupational therapy.

**Rehabilitation nurses:** Nurses are specialized in nursing care for people with disabilities. Stroke rehabilitation nursing aims to: aid physical recovery from stroke, assist self-care in activities of daily living, reduce the risk of secondary complications and related conditions and finally, promote holistic adaptation to stroke related disability. (Jester, 2007, 117)

According to Jester (2007), referral to member of the stroke team is listed below:

- **Physical therapists:** Physical therapist help to restore physical functioning by evaluating and treating problems with movement, balance, and coordination.
- **Occupational therapists:** Occupational therapists provide exercises and practice to help the patient perform activities of daily living.
- **Speech-language pathologists:** Speech therapist provides speech therapy to help improving language skills.
- **Social workers:** Social workers assist with financial decisions and plan the return to the home or a new living place.
- **Therapeutic recreation specialists:** They help the patients to return back to daily activities.

Gillen (2011, p. 31) states that need for stroke rehabilitation begins immediately after the diagnosis of stroke in acute hospitalization. Depending on hospital setting, nurses are available to meet the regular assessment. In acute care, nurses along with occupational



therapy evaluate cognitive function, motor skills and activities of daily life. The nursing care in the acute phase focuses on prevention of secondary stroke, complication, monitoring for possible seizures and proper management of general health conditions, encourage of self-care activities and provide emotional support to the patient and family. Over the period of time, the nursing care of stroke setting has developed rapidly with inventions of new technology, growth of medicine and various therapies.

### **Prevention of Hemiplegic Shoulder Pain**

Due to medical complexity acute stroke survivor is confined to bed. Therefore positioning is a primary part of rehabilitation treatment plan. Nurse, physical therapist and family members help to conduct this caring plan. An upright-seated position is good for swallowing and minimizes reflux. Nurses make arrangements whenever needed to help the patient. (Gillen, 2011, 33)

There are several triggers of shoulder pain after acute stroke. Shoulder pain is common after stroke. The pain is associated with shoulder abnormal joint function, rotator cuff tear, traction or compression neuropathy, and adhesive capsulitis and shoulder tissue injury. To improve the hemiplegic shoulder against pain and subluxation, overhead lifter exercises should be avoided and use of slings during ambulation training. In this case, nurses provide support to the affected upper hand by providing cushions or suitable cloths. Nursing care to treat shoulder pain includes use of skin surface electrical stimulation, exercise, soft tissue message, ice bags or cold packs, mobilization, shoulder-positioning practices and treatment with corticosteroid injection and medication. (AHA/ASA- Endorsed Practice guidelines, 2016, 130)

### **Dysphagia Screening and Nutritional Support**

Swallowing fluids and foods difficulties is often related with stroke. There is always risk of aspiration and risk to develop pneumonia. Dysphagia can lead to pneumonia, dehydration, loss of weight and affects patient's quality of life. In the ward if needed, nurse assist with nasogastric tube that is inserted through nose down esophagus to the stomach. The related trained personnel including nurses may initiate an abnormality of swallowing screening at

the bedside. If the swallowing screening is abnormal, a broad bedside swallow check is suggested. The nurse should assess swallowing by direct observation, to check choking and coughing. (Gillen, 2011, 632-634)

If needed then percutaneous endoscopic gastrostomy tube (PEG) is inserted surgically with an endoscopic via the mouth and into the abdomen, exit stomach wall for liquids to pass. Videofluoroscopy swallowing study (VFSS) and fiberoptic endoscopic evaluations of swallowing (FEES) diagnostic imaging techniques are recommended. When oral intake is approved, nurse should follow the recommendations. Nutrition is given through early tube feeding. Nurses monitor the tube feeding by setting the correct amount of liquid nutrition to be given at different interval of time. However, nutritional supplement is administered those patient with malnourishment or at chance of malnutrition Nurses ensure that the weight of the patient is under control. (Gillen, 2011, 635-639)

### **Prevention of Skin Breakdown and Contractures**

According to AHA/ASA clinical guidelines 2005, pressure ulcers affects approximately 9% of all hospitalized patients and 23% of all nursing home patients. Skin breakdown and begin of pressure ulcers are common problems related with an acute admission. This happened due to patient confined to bed rest and lack of mobility because of paralysis. Therapist suggests the use of pads to protect the risk areas from compression and abrasion. Then, nurses follow the instruction and they also ensure the use of specialized mattresses, protective dressings and positioning devices to elevate pressure and avoid skin injury (Gillen, 2011, 37).

### **Communication**

Speech difficulty is common with stroke. Patients are unable to communicate orally due to aphasia, alternative methods of communication are required, that may include yes/no questions, nodding head or thumbs signal and eye blink. Speech therapist assists patients with a communication system that is used reliably by related staffs, nurses and family members. (Gillen, 2011, 37)

The patient may feel isolated and frustrated due to the lack of communication. Nurse should allow and admire the patient attempts of communication to support their emotions. The nurse should check regularly to determine what the patient has heard and understood. Nurses should encourage the alternative method of communication. (Berman & Snyder, 2014, 520)

### **Psychological Assessment**

Post stroke depression, anxiety and impairments in cognitive functioning are commonly seen post stroke due to long stay in hospitalization. The occupational therapist along with primary team helps the patient to overcome the effects of ICU psychosis that may happens due to stress, sleeping disorder, immobilization and sensory problems. Nurses promote the optimal environment and minimize the stress of the patients by involving in familiar self-oriented task. Soft music and light massage care helps to minimize anxiety and fear and even depression. Nurses try to involve them in conversations so that patient could feel good and share his/her problems. (Gillen, 2011, 36)

Use of different pharmacological agent is common during rehabilitation process for stroke to treat the complication of stroke and other unspecified medical terms. Post stroke depression is treated with anti depressant medications. ((AHA/ASA- Endorsed Practice guidelines, 2016, 15)

### **Self-Care and Patients and Family/Caregiver Training**

The term ADLs mean performance of self-care and IADL refers instrumental activities of daily life. Basic self-care activities include hygiene, showering and bathing, performing oral hygiene, caring of nails and donning dress whereas instrumental activities of daily living includes kitchen activities, home maintenance like bed making, laundry, cleaning and community based includes marketing and grocery shopping and banking. Nurses do the assessment of the patient's self-care abilities. The role of the nurse is to determine the patient's functional level and promote patient's independence as much as possible. Nurses provide a safe environment to the patient. Bedroom environment takes first priority in which many self-care activities are performed. The height of the bed should allow the patient to sit easily with both feet. Suitable mattress should also be used to improve

comfort of flexibility. Assistive devices and alternative tools are used to enhance daily care activities. Nurses give explanations about necessary adjustments to the required member. (Gillen, 2011, 716-718)

Family members and sometimes friends become an important part to provide long-term care and also take part in therapeutic activities. Nurses play a vital role in educating the patient and family members by explaining rehabilitation and recovery process, treatment options, need of therapy and estimated stay at hospital. The rehabilitation program is conducted by exact goals that are carried out by multidisciplinary teams, the patient and family members. On the basis of patient's targets and needs, nurses determine the rehabilitation plan. Family members or caregivers are instructed by nurses to follow up basic care such as normal vital signs, positioning, skin check, random movement of elbow, hand and wrist, making conversation and finally setting up favourable environment for patient during self care activities. (AHA/ASA- Endorsed Practice guidelines, 2005, 124)

Nurses ensure that not only the individual but also all the family members understand about the stroke and causes. Nurses encourage the patient in positive way to do their things on their own. Nurses give confidence to the patient to perform self-care as self-care practices build self-esteem, leading to feelings of relaxation and accomplishment. No matter how long since the stroke attack or settings, nurses play an important role in encouraging the patient to be as self-governing as possible to achieve maximum function. Nurses provide advice and do further assessment if further rehabilitation is required. (Berman & Snyder, 2014, 492)

### **Nursing discharge**

Multidisciplinary teams aid for discharge plan. Nurse carries out patient's discharge plan figuring what kind of continuity does patient needs further. Those who do not require rehabilitation services are sent home, those profoundly disabled are transferred to nursing homes and those who are long-term disabled settled to long term care setting. Nurses thoroughly check clinical observation from the beginning to till discharge. The discharge

plan focuses for the patient to be protected and function independently at home and in community. (Gillen, 2011, 42)

### **3.4 Secondary Prevention**

Suzanne, et al. (2008) explains that high blood pressure, heart disease (cardiac dysrhythmia and myocardial infarction), diabetes mellitus, smoking, high cholesterol (blood lipids), obesity and high alcohol consumptions increase the risk of having stroke. These risk factors can be affected by lifestyle changes such as eating behaviour. If blood pressure is constantly 140/90 or higher then there will be risk for stroke. Normal blood pressure is 120/80. Nurses make sure that a patient who has suffered stroke knows normal blood pressure levels. They make the patients to get their blood pressure measured on daily basis and follow up prescribed medicines.

Smoking damages the blood vessels. This can result in blockage of blood vessels, causing stroke. The nurse should counsel about stop smoking sessions as it prevents from having a further stroke. Due to high level of cholesterol in blood increases the risk of blocked arteries that can result a stroke. Lack of physical exercises increases risk of heart diseases and stroke. Advice can also be given about general healthy eating habits such as cutting down saturated fat and sugar, drink plenty of water, consume lots of fruits and vegetables. Likewise, nurses ensure that alcohol consumption is below the recommended levels and if needed refer them to local care group. The patient plays the most important role to achieve the goals. They take part in nursing care by involving themselves and focus on self-management.

## 4. THEORETICAL FRAMEWORK

### 4.1 Dorothea Orem's Self -Care Deficit Theory

Dorothea E. Orem (1914-2007) caring scholar who dedicated her life in the establishment and development of a theoretical structure to upgrade the quality of nursing practice. Her vision for nursing knowledge was theoretical with conceptual structure and elements as exemplified in her Self –Care Deficit Nursing Theory (SCDNT). (Parker & Smith, 2010, 121)

Dorothea Orem's theory is built on an idea that when a patient is capable to care for him/her, then they should. However, when a patient is not capable to care for him/her, then the nurse can provide guidance. (Coldwell Foster & Janssens, 1990)

Orem's theory is an action theory with fines conditions for nurse and patients roles. The theory is composed of three minor interrelated theories that are: the theory of self-care, theory of self-care deficit, and theory of nursing systems. The constituent of these theories is six major concepts and one peripheral concept. Four concepts are patients related which are: Self-care, Self-care agency, Therapeutic self-care demand and self-care deficit. Two concepts are related to the nurse, which are: nursing agency and nursing system. (Parker & Smith, 2010, 125)

#### **Theory of Self-Care**

The theory of self-care *focuses on the self, the I* (Orem, 1990, 49). The central idea of this theory explains self care *must be learned and it must be deliberately performed continuously in time and in conformity with the regulatory requirements of individuals associated, for example, with their stages of growth and development, states of health, specific features of health or developmental states, environmental factors, and levels of energy expenditure.* (Orem, 2001, 143)

The theory of self-care includes:

- **Self-care:** Orem (2001) defined self-care as “*the practice of activities that individuals initiate and perform on their own behalf in maintaining life, health and well-being.*” Self Care should be done in a track and with a pattern and a positive result can be assumed although some self-care done in a functional way may not improve health or well-being.
- **Self –Care Agency:** Self-Care Agency explains *complex acquired capability to meet one’s continuing requirements for care of self that regulates life processes, maintains or promotes integrity of human structure and functioning health and human development, and promotes well-being* (Orem, 2001, p. 129) Here agency can be related to capability, ability and power. To meet one’s capability to participate in self-care activities there are ten basic factors which are age, gender, developmental state, health state, socio-cultural orientation, health-care system factors, family system factors, patterns of living, environmental factors, resource availability and adequacy. (Fawcett & DeSanto-Madeya, 2013, 188)
- **Therapeutic Self-care Demand:** Therapeutic Self-Care demand is a complex action, which needs to be performed periodically for a better life, health and well-being. Therapeutic Self-care demand requires deep nursing knowledge of evidenced-based practice, a good communication and rational skills. Evidences-based nursing practice and knowledge of the person and the environment are both put together to understand what is actually needed in a specific nursing case. (Parker & Smith, 2010, 131)
- **Self-Care Requisites:** Self-care requisites are a framework for determining the therapeutic self-care demand. There are three different categories of self-care requisites in Orem’s theory, which are: universal, developmental and health deviation. (Parker & Smith, 2010, 131)
  - **Universal Self -Care Requisites:** Universal Self-Care Requisites are very necessary for all human beings of all ages, developmental stage and environment. They are associated with daily life process like breathing, food, waste elimination, rest, activity, solitude, social interaction etc.. The

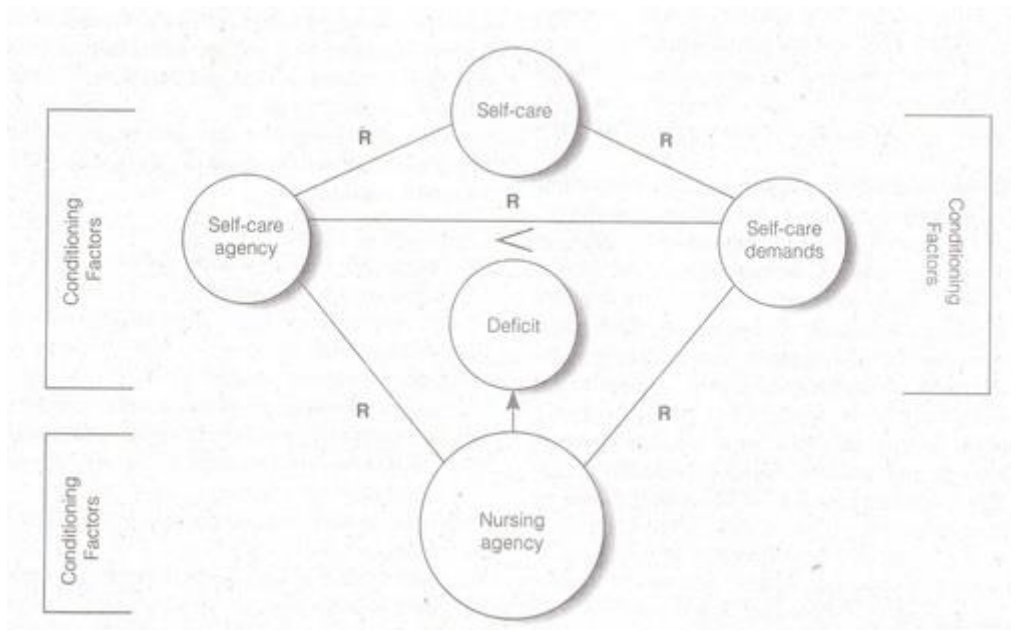
goal of these requisites is the prevention of hazards and promotion of normalcy, which can be done by promoting human function and development with his/her own potential, limitation. (Parker & Smith, 2010, 132)

- **Developmental Self-Care Requisites:** According to Orem, there are three different kinds of development self-care requisites. The first one is the action required for general human developmental process, can be met by dependent care agents. The second one demands for the self-care agents themselves which must be carried out on their own behalf. For example through self-reflection, responsibility in one's role. The third one interference with human development such as loss of friends and family. (Parker & Smith, 2010, 132)
  
- **Health deviation Self-Care Requisites:** Health deviation self-care requisites depend on the situation. When somebody is suffering from a disease or injuries. When health deviation occurs in life process then one should seek and secure medical assistance. They should be aware of the effects and the results of pathological condition they are having and effectively carry the medical treatments. They should learn to live with the effects of the pathological condition and create a new life process. (Parker & Smith, 2010, 132)

### **Theory of Self-Care Deficit**

When the individuals self care agency is not enough or require more demands to match with all self-care requisites, then a self care deficit occurs. Self-Care deficit can be complete or partial. Complete deficit is when one is not able to meet the self-care requisites that can be with a premature infant in a neonatal intensive care unit. Partial self-care deficit is inability to meet one or more self care requisites like a patient recovering from a surgery. This patient can provide some self-care. (Parker & Smith, 2010, 132)





**Figure 1: A conceptual framework for nursing. R, relationship: deficit relationship, current or projected.** From Orem, D.E. (1995). *Nursing: Concepts of practice*

### Theory of Nursing Systems

Orem describes nursing system as *an action system or actions and sequence of actions performed for a purpose* (Parker & Smith, 2010, p. 132).

Orem identifies three different levels of the nursing system to meet the self-care requisites of a patient. These are: wholly compensatory system, partly compensatory system and supportive educative system. (Coldwell Foster & Janssens, 1990)

- **Wholly compensatory system:** Wholly compensatory system exists in a condition when a patient is disabling to participate in his/her self-care activities. The patient is dependent socially for their ongoing existence and well being. (Fawcett & DeSanto-Madeya, 2013)
- **Partly compensatory system:** Partly compensatory system exists when a patient is able to participate in some of self-care activities. In this system nurse and patient

work together according to self-care requirement and how the care can be achieved. ("Theoretical Foundations of Nursing," n.d.)

- **Supportive educative system:** In supportive education system, patients are able to perform and should learn the self-care on their own. They can learn to perform required measures of therapeutic self-care with the assistance. (Coldwell Foster & Janssens, 1990)

## **5. RESEARCH METHODOLOGY**

Research is an organized investigation, which is, proceeds in strict methods to find out the answer of a question or solve the problem. The aim of a research is to establish, upgrade or boost the knowledge in the area where the research has been conducted. (Polit & Beck, 2007,1)

Nursing research is an investigation that helps to establish an evidence or proof related to nursing practice, education, nursing profession and other areas of nursing to improve the health quality of life of patient and the nurse. To accept the change is difficult. However, due to evidence-based practice it has become easier to adopt the change in the nursing practice. (Polit & Beck, 2007, 1)

Research methodology is a procedure followed by the researcher to give a shape to the study. Researcher then collects the data and analyses it to find out the answer of the research question. There are two different kinds of research methodology used, which are qualitative research methodology and quantitative research methodology. (Polit & Beck, 2007,11)

In qualitative research methodology, a researcher within a productive pattern focuses on the human experience in their life through collecting and analysing the subject. Qualitative research is naturalistic and realistic inquiry. Qualitative method is flexible, aims to be holistic, and involves merging different data collection and researcher deep interest and involvement. (Polit & Beck, 2007, 463)

### **5.1 Data collection**

Evidenced based research is only possible to proceed if relevant data are collected to evaluate the research. According to the nature of the data required and source available, several methods are used to collect the data. There are in particular two different types of data collection based on quantitative research and qualitative research. In this thesis as we are doing a qualitative research we shall apply the method of data collection used in

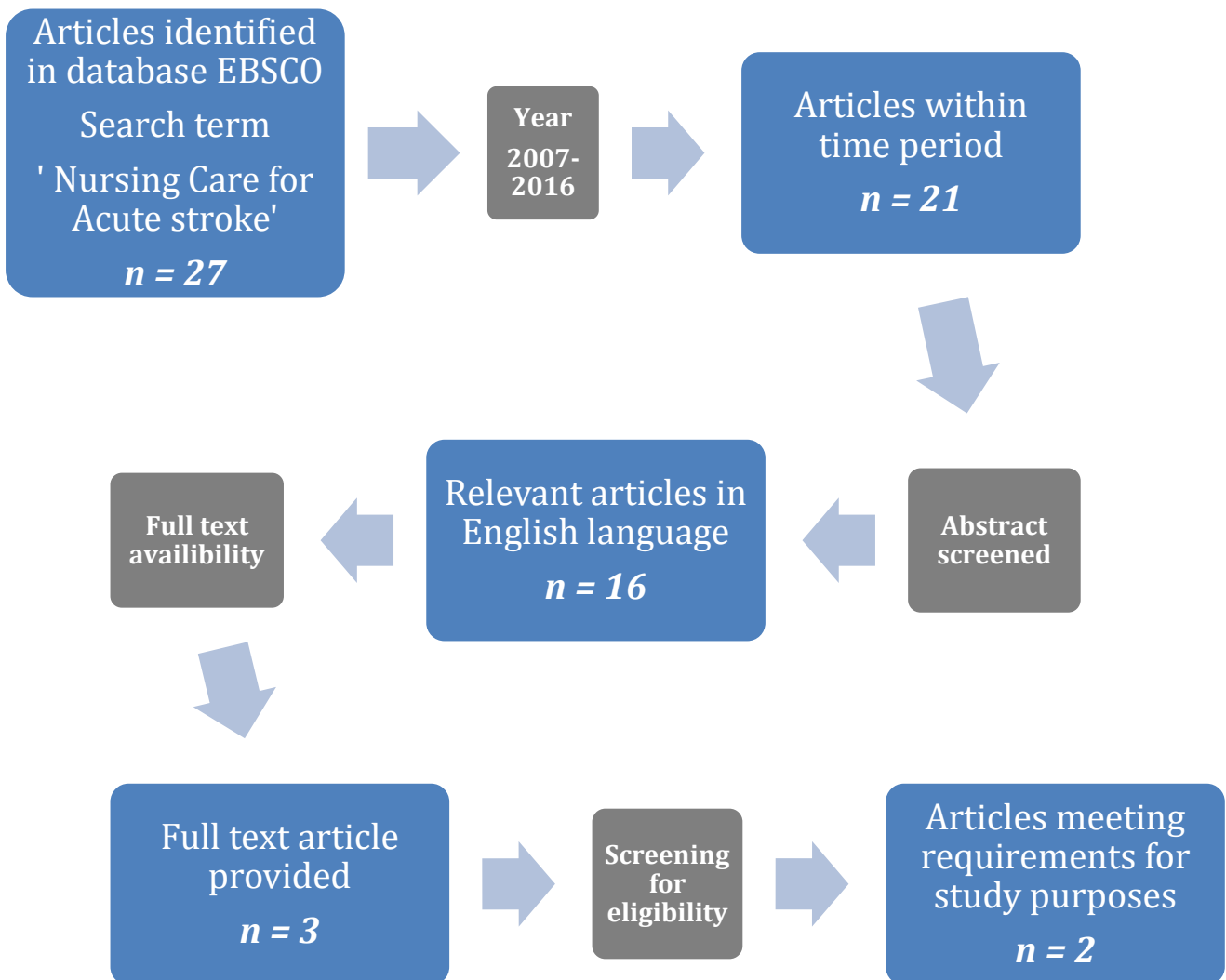
qualitative research method. There are also different sub group of data collection in qualitative research, in this study the data collection is done by literature search. (Polit & Beck, 2012, 534)

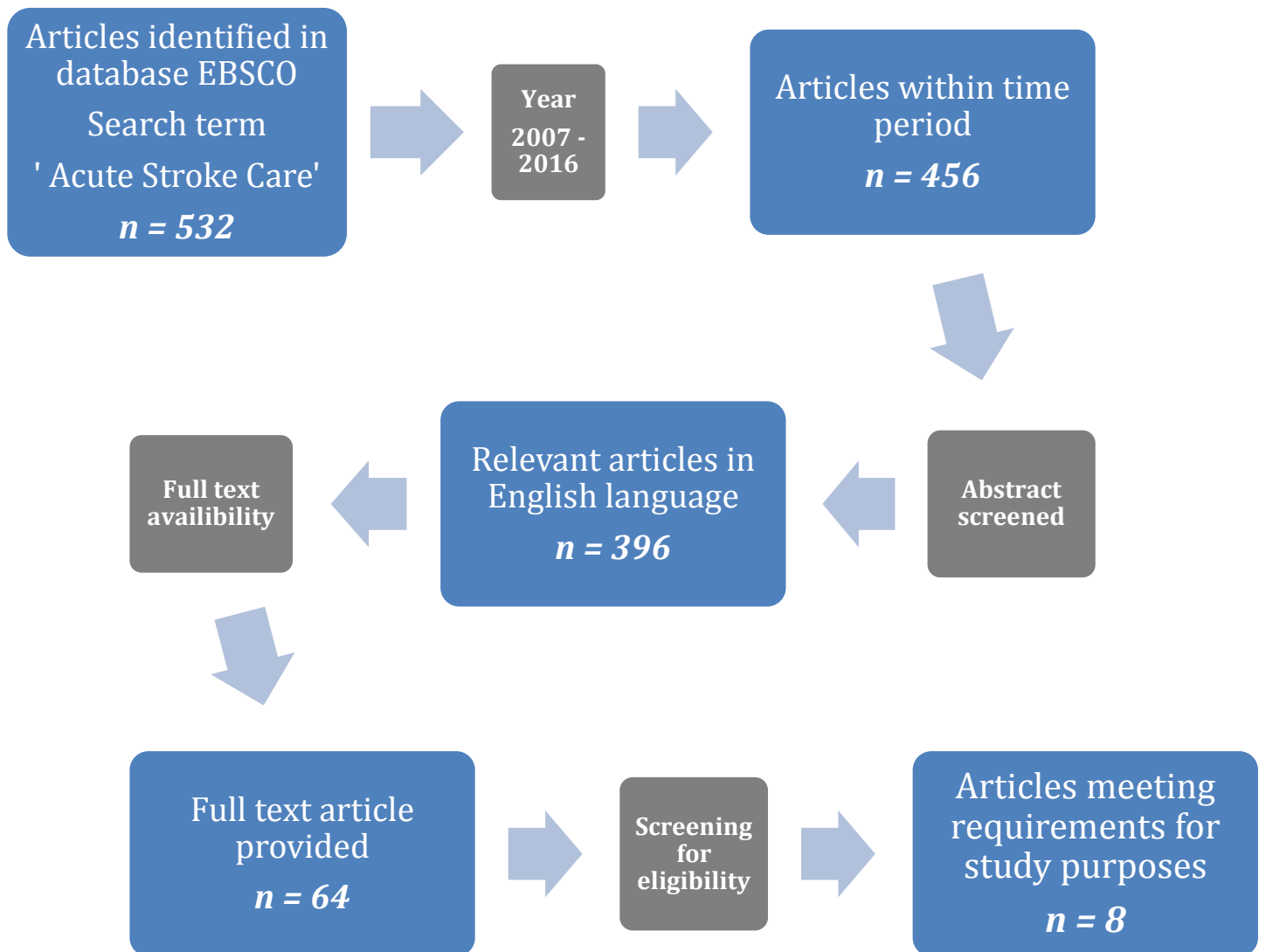
A literature search is a good way to use and give a platform for previous work related to the same field. It also gives knowledge about the experiences, outcomes and mistakes of these previous studies. (Polit & Beck, 2012, 534)

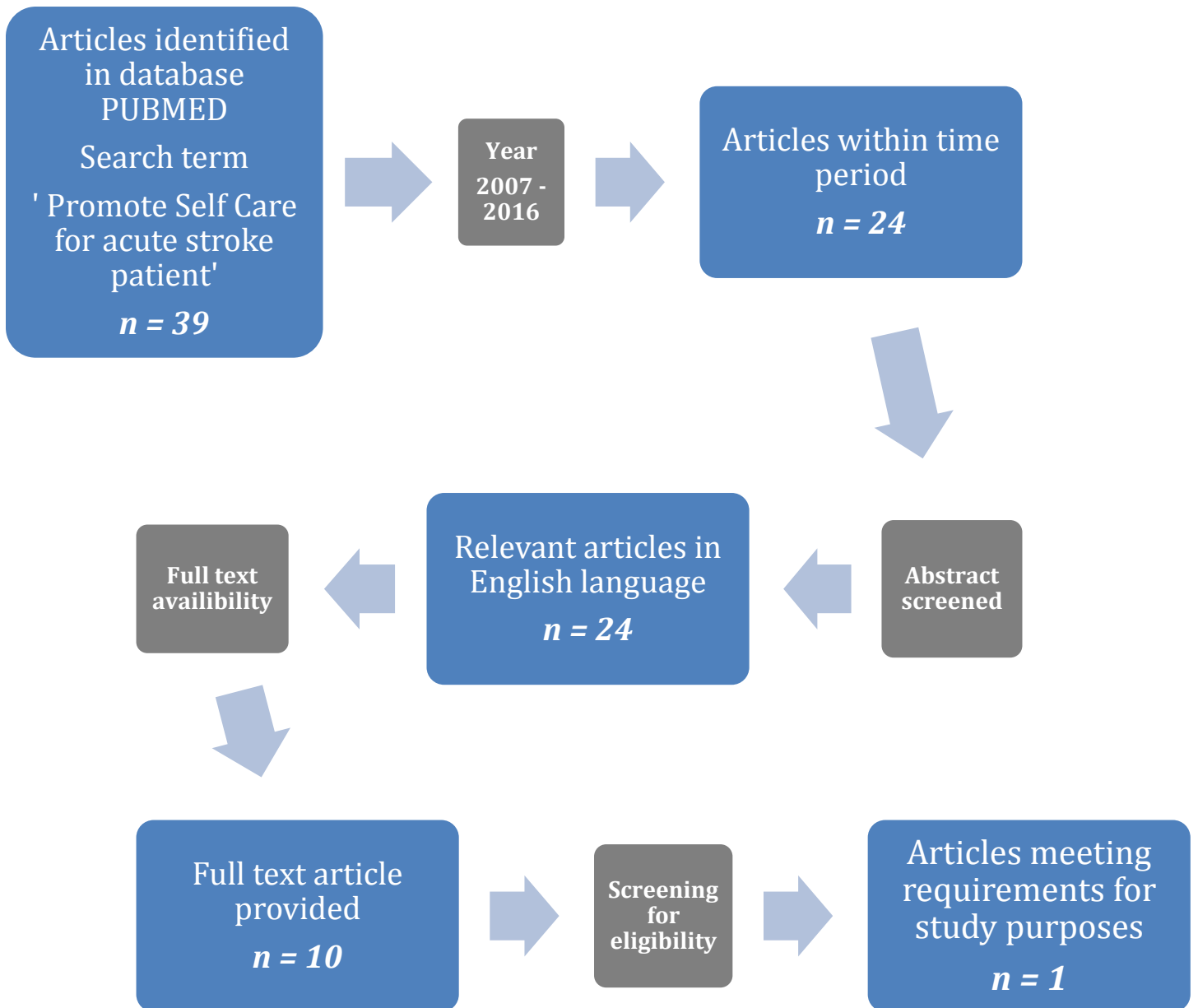
A literature search is an inexpensive and easy way of collecting relevant data. For our study, we used previous materials to identify the solution of the problem with the specified topic being studied. Articles were searched and gathered electronically through the Novia University of applied sciences Nelli-portal database as initial search and then Meta search has been conducted. Various databases were searched, EBSCO'S academic search elite and CINAHL and PUBMED were used. In the database phrases such as "Acute Stroke care", "Nursing care for acute stroke", and "Promote self care for acute stroke patients" were used. Among 598 articles, eleven articles are included in this study.

Articles were collected from various journals in Journal in Nursing care, Journals of stroke rehabilitation and Journal of Clinical nursing. After searching and going through this articles inclusion and exclusion criteria are used to eliminate articles. We used those inclusion articles because those study were scientific articles that cover our discussion and topic and were easily available whereas excluded studies are inappropriate to our study and not scientific.

<b>Keywords</b>
Acute stroke, evidence based nursing practice, nurse-patient relationship, evidence based healthcare, rehabilitation, nursing care, nursing management, self care management, self-care
<b>Inclusion and Exclusion</b>
<b>Inclusion</b> <ul style="list-style-type: none"><li>• Studies published within 9 years 2007-2016</li><li>• Nursing field</li><li>• Published in journals</li><li>• Studies that includes all ages</li><li>• Qualitative method</li><li>• Published in English language</li><li>• Relevant to the study</li><li>• Full text</li><li>• Articles related to Acute Stroke, Acute Stroke Care, Nursing Care for Acute Stroke, Nursing Role in Acute Stroke Care, Acute Stroke Rehabilitation</li></ul>
<b>Exclusion</b> <ul style="list-style-type: none"><li>• Studies more than 9 years old</li><li>• Non-English word</li><li>• Quantitative method</li><li>• Non-relevant articles</li><li>• Non-scientific articles</li></ul>

**Figure 2: Filtered Articles from Database EBSCO**







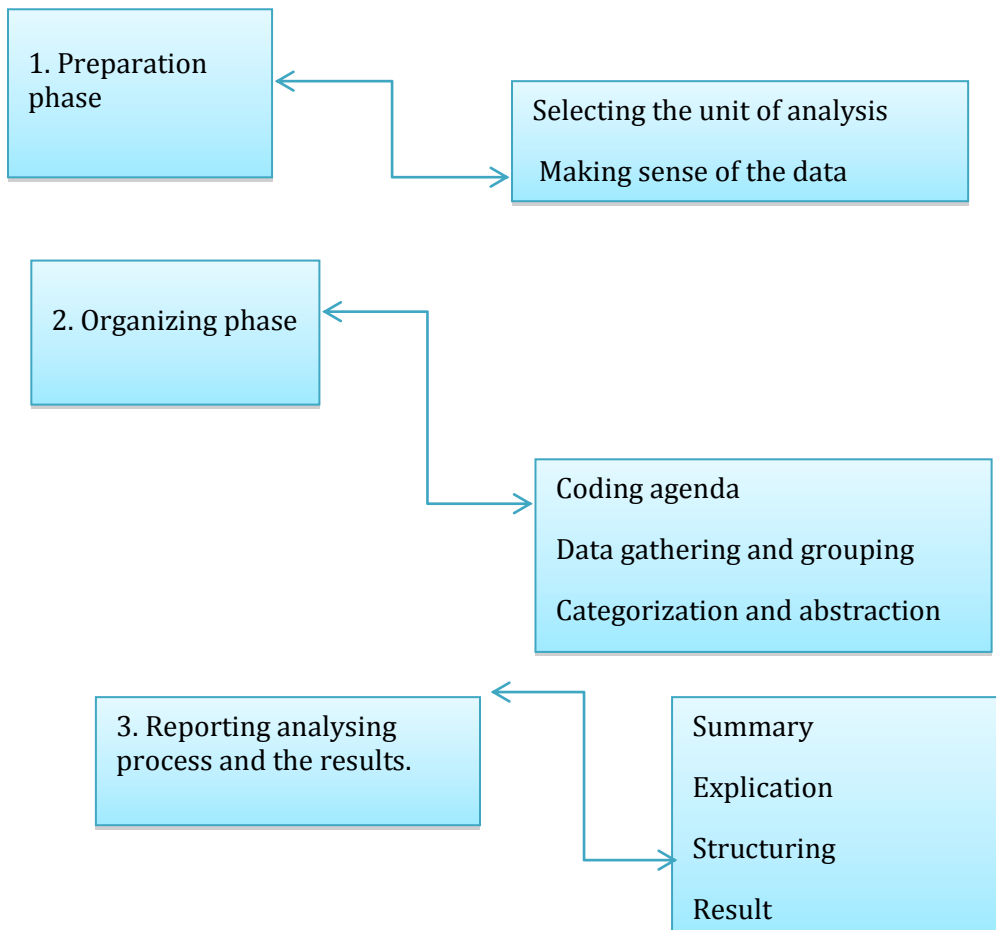
## 5.2 Qualitative Content Analysis

Polit & Beck (2012, 564) describes qualitative content analysis as a method which *involves breaking down data into smaller units, coding and naming the units according to the content they represent and grouping coded material based on shared concepts.*

Lately, the majority of nursing studies are being conducted by using content analysis research method analysing text data. Content analysis is considered as flexible method in research methodology. There are three different methods of content analysis: conventional, directed and summative. Firstly, in conventional content analysis, coding classifications are acquired directly from the text data. Secondly, the directed content analysis starts with a theory or appropriate study results as direction for initial codes. Lastly, in a summative content analysis includes counting and comparisons of keywords or content, followed by the explanation of the fundamental context. (Hsieh & Shannon, 2005, 1277)

During preparation for data analysis articles were read thoroughly many times to get an overview of the content of the articles. The well-read articles were divided into different groups to get the clear content. Then the articles were divided into different groups to get the main themes. Three main themes nursing assessment, promote self-care and obstacles emerged which were further divided into subthemes.

**Figure 3: Content Analysis using inductive approach**



**Preparation, organizing and resulting phases in the content analysis process using inductive approach. (Elo & Kyngäs, 2007, 110)**

### **5.3 Ethical consideration**

Polit and Beck described ethics as *a system of moral values that is concerned with the degree to which research procedures adhere to professional, legal and social obligations to the study participants* (Polit & Beck, 2012, 727).

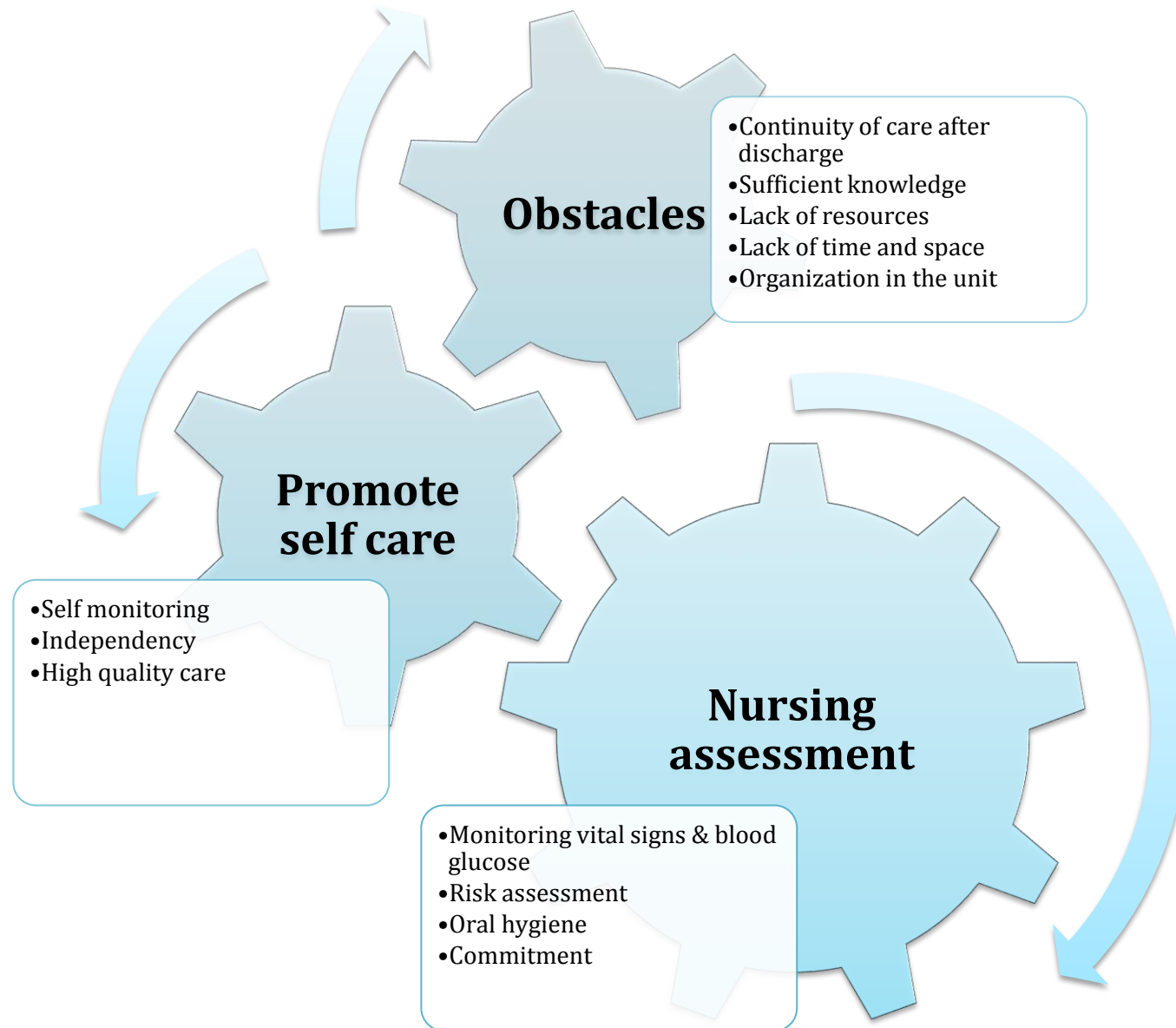
The term Ethics refers here to the way of examining the process that further helps people to know the moral value of the human behaviour. In precise, it helps people's practices or beliefs and their expected standards of moral behaviour as described in groups formal code of professional ethics. (Berman & Snyder, 2014, 74)

Ethical attitudes in nursing research include respecting independent participation in research without any negative results. The examiner safeguards the privacy of research participants as well as respects identity of the individuals including their families and significant others, valuing their variety. (Polit & Back, 2004, p. 144).

There are several recognized literatures, theories and articles provided by different scholars. Misrepresenting the results of the source used should be taken very carefully. We must protect research data and confidentiality, storing or disposing of research data in correct way and give right research publications. Plagiarism is taking the words, theories, creations or ideas of another person who wrote it originally and passing them off as your own. Plagiarism of other people's text is not permitted. We should always follow the right techniques of referencing others ideas discussed either in the books, articles or other resource on literature reviews.

## 6. RESULTS

The finalized articles were analysed with qualitative content analysis. Articles were read thoroughly many times to get the idea of the articles nature. This study describes the nursing care process during care of acute stroke patient. The result is described with three main themes: *nursing assessment, promote self-care and obstacles*.



## **6.1 Nursing Assessment**

The theme nursing assessment is described by four sub-themes: monitoring vital signs and glucose, risk assessment, oral hygiene, commitment and patient and family education which describe the nursing work in the acute care and rehabilitation.

### **6.1.1 Monitoring vital signs and glucose**

The vital signs are body temperature, blood pressure, heart rate and respiration. Nurses measure the patient's vital signs for routine check up. Regular monitoring the patient suffering from acute stroke is a good way to see any physiological changes and to prevent it immediately before it may affect the outcome of the patient. Monitoring blood glucose (BP), oxygen saturation level, blood glucose and body temperature are very important. Sudden lowering of BP may lead to worsen stroke by reducing the cerebral filling pressure. BP needs to be controlled right after the patient is haemodynamically stable. This will be secondary prevention. (Cross. S, 2007, 49-50)

Monitoring the oxygen saturation of the patient by using pulse oximeter will help to identify whether the patient is suffering from hypoxemia. Hypoxemia is considered when oxygen level is generally below 95% in the body. Giving the oxygen therapy prevents hypoxemia. Two to four litre of oxygen per minute is recommended. Caution should be taken while giving oxygen therapy to the patient with chronic obstructive pulmonary disease. Body temperature monitoring is as important as the other vital signs. Raised body temperature in the first week following stroke could dangerously affect the stroke outcome. The nurse can maintain the body temperature of the patient by using technique like tepid sponging, by providing light bed clothing, by cooling the surrounding air or also by administering anti-pyretic. Antibiotics are also considered to fight with underlying infection, which may lead to the high body temperature. (Cross. S, 2007, 50-51)

Raised blood glucose level in the acute stroke phase has a harmful effect on the neuronal function of the body. The nurse should monitor regularly blood glucose and should report when the blood glucose is outside the limit set for the patient. Hyperglycaemia and hypoglycaemia should be avoided while the patient is in acute stroke phase. When the blood glucose is above 10mmol/l then insulin should be given to the patient. Monitoring

conscious level, hydration pulse/heart rhythm is also as important as other physiological parameters when the patient is in acute stroke phase. The nurse plays a vital role in monitoring these physiological parameters and helps the patient to eliminate oncoming hazard and prevent the disease. (Cross. S, 2007, 51)

### **6.1.2 Risk assessment**

One of the important nursing roles for a patient suffering from acute stroke is risk assessment. Nurse makes sure that risk assessments are followed up as soon as the patient suffering from acute stroke is admitted. The risk assessments includes assessing the risks of moving and handling, nutrition, pressure ulcers, falls and risk of deep vein thrombosis (DVT). (Cross. S, 2007, 51)

A nurse weighs the patient who is suffering from acute stroke as soon the patient is admitted which is an important aspect of risk assessment like nutritional score. The weight of the patient gives the nutritional state over time because most of the patient suffering from acute stroke experiences dysphasia. Dysphasia may result to malnutrition. Nasogastric tubes are inserted to the patient with dysphasia to achieve the nutritional scale. (Cross. S, 2007, 51-52)

Acute stroke patients also can face weakness in either side of the body, which increases the risk of DVT. Elastic compressions stockings are recommended to wear in the weak or paralyzed legs to reduce the risk. Patient peripheral circulation sensation and the skin condition should be assessed before the stockings are on.

Early mobilization is also important to reduce the risk of hardening or shortening of muscles, aspiration, shoulder pain and respiratory complications. The nursing role here is to help the patient to encourage mobilization. It can be as simple as to sit on the bed rather than lying all the time in the bed or doing some passive limb exercise. (Cross. S, 2007, 52)

### **6.1.3 Oral hygiene**

Acute stroke patient have difficulty in maintaining good oral health due to physical weakness, lack of co-ordination and cognitive problems. Nursing role to maintain a good oral hygiene is to provide comfort to the patient as well as to prevent infection. Pneumonia, which is one of the complications of stroke can lead to death of the patient can arise from poor oral hygiene. Nurse should be aware to keep the good oral hygiene of the patient regularly and assist the patient if necessary. (Cross. S, 2007, 52)

Assessment of oral hygiene is important aspect of nursing role for a patient suffering from acute stroke. Patient with difficulty in swallowing and have feeding tube is prioritized to maintain good oral hygiene. Brushing of teeth, dentures and gums with toothpaste or special cleaning agent like chlorhexidine gluconate dental gel are very important. The nurse should assess the patient with the selection and use of suitable oral hygiene equipment and also the cleaning agents. The nurse should also pay attention on oral hygiene routine. (Kelly, T. et.al, 2010, 36-37)

### **6.1.4 Commitment**

When the nurse is committed to their patient, they feel that now the patient is their responsibility. They have a high level of responsibility towards the patient to ensure a good nursing care. The nurse sometimes can take it as a burden also.

*I think it is a really heavy responsibility we have, they (the patients) are elderly weak people, and it is basically our responsibility how the rest of their life is going to be (Struwe, Baernholdt, et al., 2013, 146).*

The commitment to the patients makes a nurse plan the best possible nursing care plan for the patient. To achieve the goal that the nurse had aimed would require knowing the patient in depth.

*It is difficult in the beginning, because you did not know the patient before (the stroke), so you have to ask the family to find out who Mr NN was before he got ill (Struwe, Baernholdt, et al., 2013, 146).*



Commitment to the patient helps nurses to find out the cognitive and physical and emotional needs of the patients. This would make a nurses' job little easier in providing a good informative, motivational and holistic care plan. Choosing to give more priority to assist a patient with their fluid intake instead of documenting while working in shortage of time was the real commitment of the nurse while providing a good care.

Commitment is not only to meet the standard quality measures but also to value the goals the patient achieved.

*It is really good, when we have set up a goal and then you see the patient struggle and achieve that goal; - it is at that moment you feel it is all worth it (Struwe, Baernholdt, et al., 2013, 146).*

### **6.1.5 Patient and family education**

Patient and family education should be started in the acute state of the stroke and should be included as a part of the entire health care experience. Patient and family education is one of the important concepts of the nursing role. When providing the education to the patient suffering from acute stroke, nurses should focus more on three areas: disease prevention, disease-specific education and self-management. Information about the risks of the disease and establishing patient-specific goals includes in disease prevention education. Common areas for prevention are blood pressure, cholesterol management, medication adherence and early identification of the Warning Signs. Pathophysiology of the disease, the treatments or rehabilitation process involving comes in disease-specific education. Only after when the patient is able to understand the disease prevention and disease-specific education, self-management education is started. Self-management education aims on solving the problem, able to make decision, utilization of the resources and creating an action plan. (Cameron, 2013, 53)

Nurse should provide the education individually for each patient to achieve the best learning effect. The nurse should use repetition and multiple styles of teaching which can help to increase the knowledge retention and improve outcome of the patient. Family education does not only include information about the disease, the risk factors or the pathology of the disease but also focus on the self-management at home for both family and the patient. Because of the disease, the role of the members of the family is altered.

Education about transportation needs, respite care, importance of follow-up care and appointments are given to the family. The family becomes the nurse when the patient is not in the health care centre. (Cameron, 2013, 53-54)

## **6.2 Promote Self-care**

Self-care is connected with self-awareness and self-esteem. The main theme promote self-care is followed by the sub themes *support in self-monitoring*, *support on high quality care*, and *promote independency*.

The sub-themes also describe the promotion for the patient with disability to act independent without having a caregiver nearby. Physical practice is focused to improve the movement of paralyzed parts. Nurses provide supportive hand to the patient and teach how to use the supportive aid.

### **6.2.1 Support in self monitoring**

The theme promote self-care management describes how nurses do as little as possible during rehabilitation time to increase the confident of the stroke patient with their own capacity. Strength and balance is practiced for further capacity. The concept promote self-care describes individual's capacity to perform day activities and manage their health. Self-care can involve help from nurses and patient feels supported.

*Self-management is encouraged to enable people to be independent and manage their own health and illness (Joice, 2012).*

### **6.2.2 Support on high quality care**

It is necessary that all the nurses provide high quality care to the patients. Nurses should be patient and listen to their patient. When the patient gets good quality care then the stroke patient can experience good results and resume their quality of life.

*When the nurses reach a high level of competency it is then, I believe, that nursing care succeeds (Struwe, Baernholdt, et al., 2013).*

### **6.2.3 Promote Independency**

Due to stroke consequences, the patient often has negative attitude to exercise and does not feel like to engage in exercises. Nurses play vital role in promoting independency by motivating them to do exercise and praising them if the patient does something on their own.

*If the patient practices his or her hand exercises intensively, then he or she will be rewarded with recovered hand movement (Joice, 2012, 41).*

## **6.3 Obstacles**

### **6.3.1 Continuity of care after discharge**

Continuity of care after discharge from hospital is very important for the acute stroke patient. For the acute stroke patient, rehabilitation is the best medicine which needs to continue to re-attain post-stroke abilities. It is very important that the nursing plan that has started in the hospital by the nurses should be followed after discharge in home care or nursing care home. But sometimes, care planning is not always followed when it comes to home care provider who may or may not follow the same care plan recommended by the nurse in the hospital.

*Sometimes it is frustrating to be the responsible nurse (PDN) because I did really do it (plan ahead), I phoned them, I wrote it down, and made all the efforts; and then the patients goes home and nothing works (Struwe, Baernholdt, et al., 2013, 147).*

### **6.3.2 Sufficient Knowledge**

Nursing staff competence is also related to good nursing care. The nurse specialized in stroke care unit would provide a better care to the stroke patient. The expertise nurse who has the competence knows to assess and intervene to avoid acute complications.

*Often we know in advance somehow. It's not always we can put it in words, but somehow we always know, which ones (patients) will get suddenly critically ill. It's an intuition you*

*acquire in the long run isn't it? You have seen it so many times before and suddenly it's right there* (Struwe, Baernholdt, et al., 2013, 145).

Special education related to stroke patient care would maintain the competencies among interdisciplinary team. High quality care is not only achieved by the competencies, knowledge about the quality standards which will boost the nurse to start the projects to improve the quality of nursing care for an acute stroke patient is also important.

### **6.3.3 Lack of resource**

A good working environment is affected by poor equipment and not enough staff. Sometimes a lack of resources can cause a serious delay in thrombolytic treatment for the patients. The life of the patients would be in the dangerous phase at this point. Due to the economy status, the nurse also can face shortage of enough staff required to provide nursing care for the patient. This may affect the quality of care provided to the stroke patient outcome. (Catangul & Roberts, 2014, 145-147)

### **6.3.4 Organization in the unit**

While providing quality care for the stroke patient, the nurse can face many problems in the way. Nurses stressed the working environment for delivering the care to the patient. Mutual understanding and acknowledgement are the key factors while working in a team to solve the problem while providing nursing care. Trust, teamwork and sufficient time are important for a clean organization.

### **6.3.5 Lack of time and space**

Errors while providing care to the patients, delay in the therapy sessions or missed treatment appointments can result due to lack of time faced by the nurse in every day basic. Lack of time not only affects the health of the patient but also the nurse working with the patient. Due to the pressure of finishing the task on time or within their shift, nurses put themselves in a machine mode, which can lead to affect their wellbeing.

*There is just not enough time for us to do things properly with our patients...so if things get missed so be it* (Seneviratne, Mather & Then, 2009, 1876).

Nurses have difficulty on working with the patient's rehabilitation because of limited time.

*It is easier to take over for patients, dressing them or brushing their teeth rather than helping them do the tasks. It is a matter of accomplishing what is required for patients in a specific window of time (Seneviratne, Mather & Then, 2009, 1876).*

Nurses also have to face a big challenge related to the space while giving care to the patient suffering from acute stroke. Units are not designed keeping in mind the status of the patient, which results in the unorganized designed unit.

*Our submarine... it's just a more condensed unit. But the thing that most bothers me is it's not centered. If you have patients in the last room... at the other end you are not in close proximity to anything or anybody – you're alone. That drives me crazy because the nursing station is so far away (Seneviratne, Mather & Then, 2009, 1875).*

While providing the quality of care in a very small space, nurses are affected emotionally. The working environment becomes frustrating and the outcome negatively affected.

*I'm too claustrophobic on this unit. It's like I am closed in... If you look down the hall from the nursing station you feel like the walls and curtains are closing in around you. It is so narrow. I feel constricted because I cannot do my work in cramped space. I bump into other people all the time (Seneviratne, Mather & Then, 2009, 1875).*

Due to limited space, the beds are set in the hallway. Nurses with their unwillingness have to provide nursing care in the hallway.

*We feel badly for the lack of privacy for that patient in the hallway. I mean even I had to perform an intimate procedure, a urinary catheter insertion in the hall, and I hated doing it (Seneviratne, Mather & Then, 2009, 1875).*

Limited space also can limit the privacy of the patient. Due to the limited space many beds are set up in one room, which makes the environment awkward while discussing with the patient about their private life.

*Sometimes it is a bit difficult, like with the four-bedded bays and when you're talking to a patient it's not very private... Sometimes, the patient can get a bit upset. You don't want to speak on sensitive issue, because that can be awkward* (Rosewilliam, Sintler, et.al., 2016, 516).

## 7. CRITICAL REVIEW

Polit and Beck (2010, 492) describes how Lincoln and Guba proposed four principles for developing trustworthiness of qualitative review. Those major four principles include credibility, dependability, confirmability and transferability.

Polit and Beck (2010, 492-493) defines all those four principles as: credibility states that the data and information collected with confidence are trustworthy. Dependability and credibility are related to each other. It refers to the consistency of inquiry used over the time. Whereas confirmability refers to the quality of the results produced by inquiry between two or more informants who are involved in the study. *The findings must reflect the participants' voice and the conditions of the inquiry, and not the biases, motivations, or perspective of the researcher.* Transferability criterion refers to the relevance of qualitative findings in one study that can be shifted to other contexts.

Data collected from scientific articles, books and journals were trustworthy and valid. The respondent chose eleven articles and used qualitative content analysis to evaluate the data collected for this study. Various criteria were used while searching scientific articles. Preferences were given only to those articles published in English language from year 2007- 2016. The respondent thinks that these articles are relevant because they were focused on nurse and patient role in care process. Most of the research has its own limitation.

This study will guide for nursing students. Offering this study would help nursing students in future to know about the care, prevention, role played by nurse, patient and family members and also some challenges that comes on the way during acute stroke care settings. The students could find further more theories and nursing care intervention so that it gets easier to help the patient.

Guideline for rehabilitation includes how to maximize the patient and family members outcome through self-care with limited resources. The International Classification of Functioning is based on a holistic efficient approach and features the effect of a health condition on quality of life (Jester, 2007, 116).

## 8. DISCUSSION

The aim of this study is to know the general role of the nurse in acute stroke care and identify the specific contribution of the nurse to acute stroke patient care as indicated by the theoretical study. In this chapter, the respondents will discuss either the focus of the study was on the aim and if the answer is found to the question. The respondent will discuss on the analysed result found and compare with the theoretical study framework selected for this study. The problem definition of the study is: **What is the nurse role for a patient suffering from acute stroke?**

In order to find the answer of the question, the respondent first needs to collect the data. The data was collected online on portal Nelly. Databases like EBSCO, CINAHL, PubMed were used. The phrase used was “nursing care for acute stroke”, “acute stroke care”, and “self-care in stroke care”. Eleven articles were selected among hundreds of articles to find out the answer we have been looking for. The articles from 2007-2016 years, available in English language, with full-text availability and relevant to the study were included.

The result of this theoretical study emphasizes on rehabilitation, nursing care, self care and obstacles faced by nurses while giving care to the stroke patient .The result of the study is analysed into three main themes which are nursing assessments, promoting self care and the obstacles faces by the nurse while providing the care. The three themes have sub-categories, which will be discussed.

Orem’s theory is chosen for the theoretical framework of this study. After realizing the complexity of nursing knowledge, Orem’s formed three theories, which are interrelated to each other and together, comprise a Self Care Deficit Theory. Theory of self-care says patients naturally desire self-care agency and through that self-care agency is learned. The second theory, theory of self-care deficit explains about the need of nursing while the third theory, theory of nursing system explains the role of nurse to help the patient overcome the disease or help to adapt to the self-care deficit. Orem’s theory is very much connected to the topic we have chosen to investigate on.



In most cases, stroke patients are left dependent on others to perform their daily life activity. In order to regain maximum recovery, nurses play a vital role to assess the patient's needs of care. Patients should be part of the care. The nurse should encourage and motivate the patient to perform the everyday activities themselves. This would make patient involve in the recovery process. The patient should learn how to perform the task correctly because acute stroke can change the life style. If the patients are capable of taking care of themselves, then they should do it. Self-care management encourages the patient to take responsibility of his or her own health and day-to-day life activities. The nurse uses a holistic approach and encourages patients to participate during nursing intervention.

A number of various risk factors such as hypertension, smoking, hyperlipidaemia, obesity, diabetes mellitus, lack of exercise and unhealthy diet were associated to prevalence of stroke. Therefore nurses should make aware of the risk factors and prevention method as a part of assessment. Patient and family education is a key element to manage self-management at home.

Patients can be a part of care only if the patient is interested to set the goals and recover as soon as possible. Sometimes it can be quite difficult for the nurse to involve patients despite of their interest and also because of their disability due to acute stroke.

*I think it can be quite difficult with stroke with a guy who cannot communicate and has cognitive problems.... I think sometimes patients find it difficult to tell you what their goals are.... It's great if you have somebody who is very clear (Rosewilliam, Sintler, et.al., 2016, 516).*

*Because I don't know the intricacies of his job, it is difficult for me to know whether he can put strategies in place for that. So, again, because I don't know that, I cannot really say that that is a realistic goal.... But we don't know how much that is going to improve, so it is hard for us to say right now whether it (goal) is realistic or not, really (Rosewilliam, Sintler, et.al., 2016, 516).*

*We've got the best intention and we want to do the best for the patient, but how would we involve them in their actual care is probably a little bit off (Rosewilliam, Sintler, et.al., 2016, 516).*

There should be special education such as courses, which can make nurses capable to analyse and predict the capacity of the patient. The nurse can have physical and psychological tools like a stroke specific test that they can perform on the patients to

categorize them based on the results. The different categories would then identify the capabilities of the patient and the nurse would be confident to create the patient specific care plan.

There has been no major change in assessing temperature and blood glucose. Monitoring temperature in acute stroke phase is important, as hyperthermia is common due to infection preceding stroke. This can lead damage to the hypothalamus that results in thromboembolism. Hypothermia is an acute stroke phase and can increase the risk of poor outcome, mortality and the size of infarct. High blood glucose is also result of increased mortality and poor functional outcome. (Considine, & McGillivray, 2009, 142)

Catherisation is very common in acute stroke phase. Acute stroke patients are catheterised when necessary. Depending upon how the indwelling catheter is used and the changes in sphincter control, there is great risk of urinary tract infections (UTIs). UTIs are very common and 15-60% of stroke patient have UTI. Indwelling catheter should be avoided if possible. Catherisation is needed during acute stroke phase but however, it should be removed as soon as the patient is medically and neurologically stable. There should be strategies among nurses regarding the incontinence. The patient should be asked and offered a bedpan, commode or urinal in every two hours during the daytime and in the night time every four hours. In the evening less fluid intake while in the daytime more fluid intake should be encouraged by the nurse. (Catangui & Slark, 2012, 802)

Good quality care is achieved at it best only if there is an organised acute stroke unit. The patient can have their designated nurse, which can help to build a good relationship between the nurse and patients. A good relationship between patient and nurse is very important to plan the care and achieve it together. To maintain a quality care, the knowledge should be upgraded and enlarged, collaboration in the culture, commitment to the patient should be more in the focus. (Struwe, Baernholdt, et al., 2013, 144-146)

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## APPENDIX 1

### VOCABULARY AND ABBREVIATIONS

**Aneurysm** = A weakened section in the artery due to atherosclerosis or innate weakening. These sections may pouch out and rupture causing a haemorrhagic stroke.

**Aphasia** = Difficulties to speak

**ABC**= Airway, Breathing and Circulation

**CVD** = cerebrovascular disorder.

**Dysphagia** = Difficulties to swallow.

**Dysphasia** = Difficulties to understand, comprehend and form spoken and/or written language.

**Embolus** = A blood clot which has travelled from its original place in the circulation and plugged an artery or a vein.

**ICH** = Intracranial hemorrhage. Bleeding in the brain, where the bleeding has occurred to the intracranial space.

**Paralysis** = Stagnation of motor neuron function due to a stroke, causing weakening of the muscle tone.

**SAH** = Subarachnoid hemorrhage. Bleeding has occurred to the subarachnoid space.

**Thrombosis** = A blood clot has plugged an artery.

**t-PA** = tissue plasminogen activator

**VFSS/ Modified Barium Swallow** = Videofluoroscopy swallowing study

**FEES**= Fiberoptic endoscopic evaluations of swallowing

**PEG**= Percutaneous endoscopic gastrostomy tube (PEG)

## APPENDIX 2

### Conduction of Study

<b>Title</b>	<b>Author /Year</b>	<b>Aim</b>	<b>Method</b>	<b>Result</b>
<p><b>An evidence-based practice approach to improving nursing care of acute stroke in an Australian Emergency Department</b></p> <p><b>A1</b></p>	<p>Considine. J&amp; McGillivray. B 2009</p>	<p>Improving the emergency nursing care of acute stroke by enhancing the use of evidence regarding prevention of early complications.</p>	<p>Qualitative Method (Study design)</p>	<p>Highlights significant improvement in risk management, increase in triage, and increased frequency of repeated assessment of vital signs.</p>
<p><b>Triage, Treatment and Transfer Evidence-Based Clinical Practice Recommendations and Models of Nursing Care for the first 72 hours of Admission to Hospital for Acute Stroke</b></p> <p><b>A2</b></p>	<p>Middleton. S &amp; Alexandrov. W 2015</p>	<p>Pointing out nursing care for acute stroke by providing evidence based recommendation for the clinical practice process of care and models of care from arrival at the emergency department to Stroke Unit.</p>	<p>Literature review</p>	



<p><b>Is the practice of goal-setting for patients in acute stroke care patient-centered and what factors influence this? A qualitative study</b></p> <p><b>A3</b></p>	<p>Rosewilliam. S , Sintler. C , Pandyan . A , Skelton . J &amp; Roskell . C 2016</p>	<p>Determining either the goal setting for the rehabilitation with acute stroke is patient-centered and what factors influences the patient goal-setting practice.</p>	<p>Qualitative content analysis like patient's records and observation.</p>	<p>Goal-setting for the rehabilitation of stroke patient was not patient centred as evidence based by: Irrationality between the patient and professionals in setting, communicating and prioritizing of goals.</p>
<p><b>Understanding nursing on an acute stroke unit: perceptions of space, time and interprofessional practice</b></p> <p><b>A4</b></p>	<p>Seneviratne. C. C, Mather. M. C &amp; Then L. K. 2009</p>	<p>Study to uncover nurse's perceptions of the contexts of caring for acute stroke survivors.</p>	<p>Ethnographic fieldwork</p>	<p>Understanding how care providers conceive of and respond to space, time and interprofessional has the potential to improve acute stroke care.</p>

<p><b>Self-management following stroke</b></p> <p><b>A 5</b></p>	<p>Joice. S (2012)</p>			<p>This article defines the concept of self-management and describes psychological theories and emerging behaviour change techniques that nurses can use to promote positive self-care in patients who have had a stroke.</p>
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<p><b>Nurse-led ward rounds: a valuable contribution to acute stroke care</b></p> <p><b>A 6</b></p>	<p>Catangul. J. E &amp; Slark.J 2012</p>			<p>Stroke complications are common. These can be prevented, managed and treated. Monitoring, checking and evaluating patient care is one way to identify whether the patient is improving or deteriorating. The nursing team, including the input of a stroke CNS, has contributed in early detection, prevention and treatment of stroke complications.</p>
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<p><b>The lived experiences of nurses in one hyper-acute stroke unit</b></p> <p>A 7</p>	<p>Catangul. J. E &amp; Roberts J. C.</p> <p>2014</p>		<p>Qualitative review</p>	<p>Continuous support from senior nurses and doctors gives nurses reassurance and confidence in performing the role. Nurses play a vital role in facilitating the thrombolysis process, in communicating effectively with the team, in supporting the patient and doctors, in monitoring thrombolysis complications, and in improving patient care and the patient experience.</p>
<p><b>Stroke care: a nursing perspective</b></p> <p>A 8</p>	<p>Cross. S.</p> <p>2007</p>	<p>This article is aimed at nurses in training and nurses who are not stroke care specialists. It outlines some key areas of care carried</p>		<p>Nurses play a significant role in the care of patients who have had a stroke, whether in the acute stages or longer term. This article summarizes the signs and symptoms of stroke and the main risk factors. It outlines the role of the nurse in providing the best care and advice for stroke patients, their families and carers.</p>

		out by nurses.		
<b>Review of the evidence to support oral hygiene in stroke patients</b>  <b>A 9</b>	Kelly. T, et.al  2010		Literature review	This literature review shows the limited evidence on the effectiveness of interventions in oral hygiene care is focused on the use of toothbrushes and education programmes.
<b>Best Practices for stroke patient and family education in the acute care setting: A literature review</b>  <b>A 10</b>	Cameron. V  2013		Literature review	After a stroke, patients and families face many changes - physical, mental, and emotional. It is imperative that the nurse is able to appropriately educate the patient and family in preparation for discharge from the acute care center.
<b>How is nursing care for stroke patients organized? Nurses views on best practices</b>  <b>A11</b>	Struwe J.H., Baernholdt M., Noerholm V. & Lind J. (2013)	To describe staff nurses and charge nurses perceptions of how to organize stroke care.	A qualitative descriptive study	Quality of care is higher when organization of care is focused on continuity of care.

