

# STUDENTARBEID

## Home Assignment

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Sogn og Fjordane University College. Faculty  
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Topic: SK108 Medical and Surgical Nursing  
(Norwegian Context)

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Title: CAN NURSE CALL SYSTEMS BE USED TO IMPROVE NURSING  
CARE FOR POST STROKE PATIENTS AT LIVINGSTONE GENERAL  
HOSPITAL?

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## **INTRODUCTION**

Effective patient and staff communication is pivotal to the provision and continuity of quality patient care as well as to patient and staff satisfaction and effective use of nursing time (Miller, 1997). To achieve this, many hospitals in developed countries like Norway have adopted the use of technologies, such as nurse call systems.

During the time the author was under practical placement in the Neurology and Rehabilitation ward at Førde Central Hospital on a nurses' exchange program between Norway and Zambia, he was privileged to witness how the nurse call system helped to improve nursing care, prevention of falls and positive outcomes for stroke patients. The aim of this study is to discuss how the nurse call system may help to improve nursing care and prevention of falls for stroke patients and if it can be used at Livingstone General Hospital to help nurse post stroke patients. The author will compare the nursing care for post stroke patients between Zambia and Norway and then critically look at how the use of the nurse call systems may help to improve nursing care and prevention of falls for post stroke patients. The author will also bring relevant literature and personal experiences into this text with regard to the nurse call system and nursing stroke post patients.

## **COMPARISON**

Livingstone general hospital is a public hospital located in southern province of Zambia. It is a second level hospital that serves as a reference point for all the hospitals in the region. Conditions that are treated at the hospital include medicine, surgery, gynecology/obstetrics, pediatrics, dental and ophthalmology. The hospital also has a physiotherapy department that helps in rehabilitation of patients. A typical medical ward at the hospital is divided into two bays. Patients are grouped and nursed according to the type of condition they have, with the most critically ill being nearer to the nurses' bay. The hospital has an acute ward but once patients are stable, they are transferred to either medical or surgical ward for continued treatment and nursing care, and this applies to

stroke patients as well. Due to limited resources, the hospital is unable to keep stroke patients admitted for rehabilitation hence, the patients have to go to the physiotherapy department as outpatients. Stroke patients are nursed in the medical ward during the early recovery phase. The hospital has no system in place through which the patients can summon a nurse when they need help thus shouting for help or nurses attention is not uncommon. Sometimes a bed-sider, who is often the patient's relative mostly informs the nurse when the patient needs nursing assistance, and is responsible for basic tasks like toileting assistance and bathing of the patients. The type of nursing practiced at the hospital is called functional nursing, which is as a task-oriented system in which individual caregivers are not given patient assignments, but are expected to perform specific assigned tasks within their capability for all patients in a given area (Daditch, 2003). This nursing modality is favored at Livingstone General Hospital because of shortage of staff. However, Førde Central Hospital, which is located in the county of Sogn og Fjordane in the western part of Norway, treats pediatrics, medical, surgical, orthopedics, obstetrics, gynecology, skin, oncology, neurology and rehabilitation cases among others. Stroke patients are admitted in the Neuro-Rehabilitation ward. Those in acute condition are nursed on the Neurological wing and when they are stable, they are transferred to the Rehabilitation wing where a rehabilitation team plans the care of the patient for the entire rehabilitation period. All the wings are installed with a nurse call system and the patients use the system to call on a nurse when they need assistance. Patients are assigned with their own nurse who is responsible for caring for all their needs and responding to their call alarms during his/her shift. This type of nursing model is called primary nursing, which is defined as a system in which each patient is assigned to a nurse who has 24-hour responsibility for the nursing care delivered to the patient (Tomey, 2004). The author observed that the nursing care of stroke patients in the Neuro-Rehabilitation ward at Førde Central Hospital is more patient centered and better than the one at Livingstone General Hospital perhaps due to various factors that will be explored further later on in this study.

## NURSE CALL SYSTEM

Nurse call system also known as nurse call bell or call light is an electrically functioning system by which patients can call upon a nurse from a bedside station or from a duty station. An intermittent tone shall be heard and a corridor lamp located outside the room starts blinking with a slow or a faster rate depending on the call origination. It is essential to alert nurses on time so that they can offer care and comfort without any delay (Unluturk, 2012). In the Neuro-Rehabilitation ward all patient rooms had pull strings and buzzers available within vicinity of the patient's bed and in bathrooms plugged to a socket in the wall. This enabled patients pull a string or push a buzzer to summon a nurse whenever they need help. Most recovering stroke patients needed assistance to perform daily tasks and they called for help using a pull string or buzzer. When a call was initiated, it beeped in the nearest staff base on the call panel which was mounted on the wall, directing the nurse responsible for the patient to the room where the call was coming from. The alarm continued beeping until the nurse was in the room to reset it. Other types of nurse call systems that were available in the ward were:

*Bed alarms*-This type of nurse call had a sensor attached to the patients' bed that triggered the alarm when the patient fell from the bed or attempted to get out of bed. It was used for patients who needed to be closely monitored such as acute stroke patients or patients with seizures secondary to stroke.

*Wrist band buzzers*-This was a wireless type of nurse call that had a sensor worn by the patient around the wrist of the patient. It was commonly used when the patient was in the patient lounge. A call could be initiated by pressing the buzzer and this helped the nursing staff to locate where the call was coming from.

However, it is also important to note that some nurse call systems in other health institutions are more advanced than the one at Førde Central Hospital. These enhanced nurse call systems have sought to provide more than a means for beckoning nursing personnel to the patient's room and to significantly increase their functionality. Although

these advances provide improvements for workflow and offer an opportunity to improve response times, none of these systems have been shown to improve efficiencies, patient safety or reduce costs (Tzeng, 2010). Perhaps this is something that administrators, policy makers and nurse managers should consider when selecting a type of nurse call system to use.

## **STROKE PATIENTS**

Stroke is a term used to describe neurological changes caused by an interruption in the blood supply to a part of the brain. The two major types of stroke are ischemic and hemorrhagic. Ischemic stroke is caused by a thrombotic or embolic blockage of blood flow to the brain. Bleeding into the brain tissue or subarachnoid space causes hemorrhagic stroke. Ischemic strokes account for about 83% of all strokes. The remaining 17% of strokes are hemorrhagic (Bowman, 2009). Those who survive a stroke can suffer various degrees of disability depending on which part of the brain has been damaged. Stroke represents a huge burden on the health care system, and on families coping with the aftermath (Rudnicki, 2009). Moreover, the average age of stroke patients is 75 years but the condition can affect people of all ages including children (Rudd, 2009). In line with this statement, most stroke patients are elderly and frail, which reduces their capability to perform self care and increases the risk of falls. Falling is unintentionally coming to rest on the ground, floor, or other lower level (Wolf, 1996), which may have severe consequences, both physically and psychosocially. Individuals with stroke have an increased risk for hip fractures, and after such a fracture, they less often regain independent mobility (Weerdesteyn, 2008). Furthermore, patient rooms that have clutter, poor light or have no nurse call bell are not safe (Burke, 2010), which would increase chances of falls and injury. All this concludes that due to their condition, post stroke patients need to be nursed in an environment with good nurse-patient communication systems that ensure that the nurse is always available for the patient thereby improving nursing care and reducing the risk of falls and injury.

## DESCRIPTION AND DISCUSSION

At present, the major health burdens in Sub-Saharan Africa are infectious diseases, including HIV/AIDS, and diseases related to poverty and malnutrition. However, urbanization is predicted to increase the risk factors for vascular disease and hence lead to a sharp increase in stroke, such as is found in developed countries (Connor, 2006). Therefore, one can expect that there will be an increase in stroke patients being admitted into care facilities like Livingstone General Hospital and need for more focus in managing these conditions. Having a nurse patient communication system could become an essential tool in nursing care of post stroke patients. Though there is little research done on the benefits of using the nurse call systems to nursing post stroke patients, there is literature suggesting that these patients need to be nursed in an environment with such systems in place. As earlier noted, all stroke patients are at risk falling in all post-stroke phases (Weerdesteyn, 2008). Among other factors, environments without nurse call systems also stand out as one of the major aspects that can increase the chances of falls. A stroke precipitates muscle weakness, impaired cognition and impulsivity. In addition, these patients are being physically challenged, which places them in higher-risk situations and thus at greater risk for falling (Currie, 2008). This implies that using nurse call systems is essential in caring for post stroke patients. However, there are pros and cons involved with using these systems, which affect nursing care, patient satisfaction and safety.

### *Nurses' perspective*

Using the experience gained from nursing post stroke patients in Norway and Zambia, incorporating nurse call systems into the care of post stroke patients at Livingstone General Hospital can help improve nursing care and safety. With the emphasis on patient centered nursing care, nurses will not need to depend on relatives much longer to perform basic nursing care duties like toileting assistance. However, it was quite clear to the author that use of the nurse call system favors the primary nursing care model over the functional nursing model. This is so because Livingstone General Hospital is understaffed with nurses. Increased staffing levels are imperative in prompt response to patient call lights. Similarly, a study on patient safety, satisfaction, and quality of hospital care by Aiken, H.L.

et al., (2012) revealed that hospitals with good work environments and nurse staffing had improved outcomes for patients and nurses alike. The other important aspect in responding to nurse call lights is the issue of nurses' attitude towards call lights. Conversely, busy caregivers might find answering call bells time consuming and some might even perceive patients who ring their call bells frequently as “pests” (Deitrick, et al., 2006). However, a study done in four hospitals in the mid west region of the United States concluded that if answering calls was a high priority among nursing tasks, staff would perceive calls as being important, requiring nursing staff's attention, and being meaningful answering calls and should not be perceived as preventing staff from doing the critical aspects of their role (Tzeng, 2010). Additionally, nurses in the Neuro-Rehabilitation ward at Førde Central Hospital had two hourly nursing rounds through the ward especially during the night shift. The author observed that this system appeared to reduce call light use from the post stroke patients because most of the needs of the patients were taken care of during the nursing rounds. This is in line with a study of effects of nursing rounds by Meade CM, 2006 who concluded that a protocol that incorporates specific actions into nursing rounds conducted either hourly or once every two hours can reduce the frequency of patients' call light use, increase their satisfaction with nursing care, and reduce falls.

#### *Patients' perspective*

The nurse call system is perhaps one of the few means of control that patients have over their situation, (Deitrick et. al., 2006) allowing them to be more involved in their care by initiating a call when they need assistance or clarity on matters affecting their health. According to Tzeng, (2010), identified possible reasons why patients and families use call lights, include (but not limited to): (1) urgent calls, (2) toileting assistance, (3) intravenous problems, (4) pain medication, (5) repositioning and transfer assistance, (6) personal assistance (e.g., for food, water), (7) obtaining information, (8) getting nurses' attention, (9) asking for nursing staff's companionship, and (10) accidentally pushing the call light. However, the author observed that toileting assistance, repositioning and transfer, personal assistance, and obtaining information were the leading reasons why post stroke patients used the call light at the Neuro-Rehabilitation ward. However, no matter what the reason could be for a patient to initiate a call, if swift response is not made patients become

impatient and attempt activities that threaten their safety (Deitrick et. al., 2006). Additionally, Tzeng and Yin (2009) found that when staff call response was longer, patients were significantly less satisfied with the care they received. In summary, these findings suggest that nurse call systems are important tools in nursing care of post stroke patients. However, patients are safer and more satisfied with the care they receive if their call lights are responded to promptly.

#### *Technical issues*

Another issue of importance service and maintenance of the nurse call system. It could be quite costly to find trained personnel to fix these devices in case of faults. At Førde Hospital, maintenance personnel carried out routine checks on the nurse call system to ensure that it was functioning well. This is something that the administrative body of Livingstone General Hospital has to consider before adopting the use of this technology for nursing post stroke patients.

## **CONCLUSION**

Conclusively, because stroke patients suffer some degree of disability, having a nurse call system in place at Livingstone General Hospital can help improve nursing care, patient satisfaction and safety. This technology also gives power to patients to exercise some control over their care (Deitrick et. al., 2006). However, using the nurse call system comes with its own challenges such as need for increased staffing levels, which is vital to quick response to call lights and generally the quality of care offered. Delayed response time is associated with more patient dissatisfaction and higher risk of falling. If the use of nurse call systems was to be adopted at Livingstone General Hospital, there would be need to emphasize to staff on the importance of prompt response to call lights. In the Neuro-Rehabilitation ward at Førde Central Hospital, it was quite easy to respond to call lights and offer nursing care in good time because staffing levels were good and acceptable for the number of post stroke patients. On the other hand, due to shortage of staff at Livingstone General Hospital, answering patient call lights would be very challenging to the few nurses who are available to care for a huge number of patients. With the predicted

increase in stroke patients in developing countries (Connor, 2006) there is need to increase staffing levels to be able to address this concern and ensure patient satisfaction and safety. Furthermore, technical issues such as service and maintenance of this technology can be costly. Therefore, there is need to have an overall idea of the cost of maintenance and service before adopting this technology. Lastly, this study can help policy makers implement strategies that can help nurses deliver better nursing care with the use of nurse call systems for post stroke patients at Livingstone General Hospital.

## **RECOMMENDATIONS**

Though shortage of staff remains a major problem, author would like to make the following recommendations to the Zambian setting:

- Initiating a protocol of one or two hourly nursing rounds with the use of nurse call systems can help reduce call light use and can be effective in improving nursing care, safety and satisfaction to post stroke patients.
- Nurse Managers could initiate a protocol of encouraging patients to use the call bells and re-orienting staff to the importance of answering nurse call lights promptly.
- Policy makers and administrators at the hospital can lobby from the overseers of the Norway-Zambia nurses exchange program to increase the number of nurses from Livingstone General hospital. This can help more nurses to have hands on experience of working with the nurse call system, which can help them to easily adapt to the new technology once adopted.

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