

Nursing practice
requires change in
hospital
hypoglycemia
treatment nursing
essay...



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In the hospital setting, as nurses are in frequent contact with patients, family, and other health care providers, they are often the first professional to notice, be notified, or to deal with any sudden changes of their patients. Hence, taking the initiative to begin appropriate treatments in a timely manner is crucial. Yet, due to strict practice standards and regulations, nurses are restricted to initiate some treatments, especially when medication is involved, even in emergency situations. Nurses often have to await medical personnel's assessment and/or instructions prior to taking any actions even in conditions they are capable of treating, such as hypoglycemia. If hypoglycemia is not treated in a timely manner, it may result in fatal patient outcomes. Therefore, the practice of delaying patients' treatment to wait for medical personnel's response and instructions should be changed. As soon as hypoglycemia is detected, when not contraindicated, nurses should initiate treatments, including administration of dextrosol tablets, intravenous dextrose and subcutaneous glucagon. In the following paragraphs, the rationales for nurse initiated hypoglycemia treatment (NIHT), and strategic and evaluation plans to implement such practice will be discussed.

A. The rationales for NIHT

According to Anthony (2008), hypoglycemia is defined as blood glucose (BG) level less than 70mg/dL. It frequently occurs among hospitalized patients, especially for those with Diabetes Mellitus. Dinardo et al. (2002) found approximately 700 episodes of hypoglycemia per month at a university hospital; and Kresevic and Slavin (1989) found forty-six episodes of hypoglycemia among thirteen hospitalized diabetic patients. In-hospital

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hypoglycemia may be caused by decreased calorie intake, unexpected interruption of tube feeds, missed meals, medications, nil by mouth status, etc. Depending on the severity, the signs and symptoms of hypoglycemia vary. For mild to moderate hypoglycemia, a person can be asymptomatic or may present with unpleasant symptoms such as sweating, trembling, hunger, and lightheadedness (Franz, 2003). For severe hypoglycemia, confusion, convulsions and coma may occur (Boyle & Zrebiec, 2007). Egi et al. (2010) found “ the more severe the hypoglycemia, the greater the risk of death” (p. 217). If the treatment for a mildly or moderately hypoglycemic patient is delayed, severe hypoglycemia may result leading to convulsions and/or coma resulting in potential brain damage and even death. Therefore, mild or moderate hypoglycemia should not be tolerated (Egi et al., 2010). As nurses are often the first health care providers to be readily available in the hospital and are capable of treating hypoglycemia, they should initiate treatment to prevent further deterioration and/or irreversible damages to hypoglycemic patients rather than waiting for medical personnel’s instructions.

Numerous studies, done in different hospital wards, had shown hypoglycemia’s association with increased mortality and length of hospital stay (LOHS). Turchin et al. (2009) found that hypoglycemia is associated with an increased LOHS and higher mortality rate both during and after admission for patients with diabetes; and Kagansky et al. (2003) found that not only was hypoglycemia common among hospitalized elderly patients, but also predicted increased cumulative mortality for inpatients at three and six months. This further supports the importance of treating in-hospital

hypoglycemia promptly. When nurses are not restricted to initiate treatments, the risk for patients progressing to a higher degree of hypoglycemia can be reduced. Thus, decreased patient mortality and LOHS may result. Furthermore, aggressive detection and management of hypoglycemia was found to be associated with cost savings for inpatients with diabetes (Songer et al., 2007), less physician time use, decreased LOHS, and better glycemic control (Korytkowski, 2007). Therefore, NIHT is worth investing in as it leads to favorable patient outcome and, at the same time, decreases health care cost.

Additionally, Smith et al. (2005) found inadequate prescribing is linked to hyperglycemia and hypoglycemia in medical and surgical wards. Physicians who are inexperienced in treating hypoglycemia may prescribe inadequate dosing of medications and/or diet in treating hypoglycemia. As a result, a patient's hypoglycemic state may be prolonged leading to unfavorable outcomes. If all nurses, and, of course, physicians, are educated to treat hypoglycemia appropriately, the incidence of under-treatment can be minimized. In fact, once nurses' knowledge in the treatment of hypoglycemia is guaranteed, they should be allowed to initiate treatment so that hypoglycemia can be reversed efficiently and the concerns of inadequate prescribing can be minimized.

Lastly, hypoglycemia, regardless of its severity, is a rather straightforward condition to manage (Boyle & Zrebiec, 2007). Patients with diabetes or their family members often manage hypoglycemia outside the hospital setting, even in emergency situations. If a hypoglycemic person is conscious, management may only involve the administration of oral glucose. Needless
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to say, nurses or anyone without appropriate training are capable of providing such treatment. For more severe cases, the administration of intravenous dextrose or subcutaneous glucagon may be involved. When outside the hospital, diabetic patients may carry a glucagon emergency kit that can be used by anyone with minimal training to manage severe hypoglycemia. When non health care providers are permitted to initiate treatment of hypoglycemia, nurses, who have sufficient knowledge about hypoglycemia and other health related problems, should not be restricted in initiating such treatment.

B. Plan to implement NIHT

The process of implementing NIHT, including the administration of subcutaneous glucagon, intravenous dextrose and dextrosol tablets without physician's order, involves extensive planning. Before this change is proposed, one must examine the organization's readiness for change and recognize the key players involved (Dulaney & Stanley, 2005). If there are currently other changes going on for those who will be implementing NIHT, the organization and its nursing staff may be less open and more hesitant to adopt additional changes, even if it is considered to be best practice. Thus, implementing the change at the right timing and place is important. The outcome of NIHT may be less favorable when it is implemented by staff members who are already overwhelmed by other changes. According to Dulaney and Stanley (2005), an "effective change agent should research potential driving and restraining forces that will affect the proposed change" (p. 163). These forces must be well investigated before NIHT is proposed to prepare one in addressing any foreseeable issues.

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One of the major forces to investigate is the estimated cost for NIHT. Practice change within an organization can be costly. Staff members will need to spend additional hours in training and discussion regarding NIHT; new documents will need to be printed when practice standards are revised; and new materials or equipments may be purchased. Funding may not always be readily available for an organization to adopt new change so one must be prepared to seek sponsorship and support. Hence, one should seek for funding from outside the organization to cover the expenses of NIHT before its implementation.

To ensure the safety of NIHT, a hypoglycemia treatment protocol (HTP) will be developed. HTP aims to improve the quality of treatment for inpatient with hypoglycemia and to prevent deterioration from mild to severe hypoglycemia. It will clearly define nurses' role within this new practice, and direct them towards implementing the practice safely. One should seek advice from endocrinologists, diabetic nurse specialists, dieticians, and experts from another organization that had implemented NIHT when developing HTP in an attempt to increase the credibility of the protocol. HTP, for example, should clearly define the type of treatment to initiate depending on the specific BG level, patient's level of consciousness and intake status; any contraindications that nurses should look for; the approved activities for registered and enrolled nurse; the amount and route of carbohydrate or medication to administer for the specific range of BG; the frequency of monitoring after treatment, etc.

Furthermore, data collection concerning the effectiveness, problems, and cost of the current in-hospital hypoglycemia treatment will be performed.
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These data will be compared to the anticipated costs and benefits of NIHT. Previous researches on NIHT and data from other organizations that had implemented NIHT will be collected. These data, together with HTP, will then be presented to the organization as well as the nurse regulatory body and the department of health. Since NIHT involves increasing the scope of practice for nurses, the government and nurse regulatory body will need to be involved. The standards of nursing may need to be revised and strict practice guideline for NIHT will need to be developed to ensure the safety of such practice change.

Once a government act is in place, the next step will be choosing the appropriate setting to implement NIHT. NIHT will be piloted in an inpatient department, for example, general medical and vascular surgery unit which tend to have a higher number of patients with Diabetes Mellitus, and therefore, higher prevalence of hypoglycemia. Once the pilot study is completed and given that NIHT is proven to be safe and beneficial, it will be introduced to other departments of the institution gradually, with or without revision of the HTP.

Prior to implementing NIHT, in-hospital education regarding HTP and hypoglycemia will be provided, and other health care providers will be informed about nurses' new scope of practice. As soon as all nursing staff is educated, HTP will take effect. Resources involved in NIHT will be made easily accessible in the participating ward, and the NIHT project team members will be made available around the clock to provide continuous support, encouragement and guidance.

C. Challenges to implement NIHT

The process of implementing NIHT will be very challenging as “resistance to change is often a natural reaction for all of us” (Gardner, 2009, p. 420). Staff members may be resistant as NIHT will shift them away from their usual practice or comfort zone. “When change occurs, the old way of doing things comes to an end; the sense of grief and loss that goes with this change must be recognized, and support must be offered to those who are affected” (Dulaney & Stanley, 2005, p. 164). Therefore, it is essential to provide ongoing support and guidance to assist staff in adopting the new way of treating hypoglycemia. As nurses become more familiar with NIHT and HTP, the resistance may diminish over time. Other than the staff members implementing NIHT, it is equally important to keep the members of the NIHT project team motivated and enthusiastic. Any negative attitudes may affect the change adversely leading to less favorable outcomes.

Another challenge that one may face is obtaining an approval from the nurse regulatory body and the government. As NIHT involves increasing the scope of practice for nurses, the government and nurse regulatory body need to weigh its advantages against disadvantages when implemented. Other than research evidence, supports from other health care providers, especially physicians, will be helpful. As NIHT involves nurses to prescribe, voices of physicians supporting the practice will be convincing. When physicians, who are the authorized personnel to prescribe medications, are also in support of NIHT, public concerns may be minimized. However, obtaining support from physicians alone may be an even greater challenge. Some physicians may have a lack of confidence in nurse prescribing, doubting nurses' competency, <https://assignbuster.com/nursing-practice-requires-change-in-hospital-hypoglycemia-treatment-nursing-essay/>

and some may view NIHT as an intrusion to their own practice. Hence, nurses need to demonstrate their capability and competency in their day-to-day practice to gain trust in other health care providers.

Finally, staff's lack of adherence to HTP may be another challenge. A study completed by Anthony (2007) in a hospital that had implemented a treatment protocol similar to HTP reported a low adherence to practice guideline. Staff may disregard the guideline for various reasons, for examples, lack of knowledge and familiarity with the new treatment protocol, lack of time, or misbelieve that the old ways of doing things is still acceptable. Hence, adequate education and continuous reinforcement of HTP is essential to assist staff in moving towards the new practice as well as sustaining the move.

C. Evaluating the efficacy and cost-effectiveness of NIHT

The aims of NIHT are to improve patient outcome after acute hypoglycemic episode(s) and at the same time reduce hospital cost. The evaluation of NIHT will focus on the efficacy and cost-effectiveness of such practice change. The evaluation will be based on the Cost-Effectiveness Analysis (CEA) with an objective to compare the efficacy and cost-effectiveness of NIHT versus physician initiated or instructed hypoglycemia treatment (PIHT). The sample of this study will include patients aged sixteen and above who had experienced at least one episode of hypoglycemia during their hospitalization in two hospital wards with high prevalence of hypoglycemia. NIHT will be implemented in one ward, and the other ward will continue its usual practice of PIHT, where no practice change is required. The study will

last for twelve months to allow one to capture all relevant data and the NIHT project team will monitor and evaluate the effectiveness of both interventions.

The costs related to both interventions will be measured and compared. For NIHT, it involves the use of nurses' time to receive training and to treat and monitor patients with hypoglycemia, use of educator's time for teaching, and use of NIHT project team's time while on call around the clock. On the other hand, PIHT involves the use of physicians' time for ordering and/or initiating treatment, and the use of nurses' time for contacting physicians and/or implementing physician's order. One also needs to include the physician's time used when NIHT is contraindicated or if it fails to reverse hypoglycemia after all defined interventions are implemented. The number of cases which NIHT fails or is contraindicated must be clearly recorded with reason(s) for failure or contraindication. The cost of physician after NIHT fails will also be estimated and included in calculating the cost for NIHT.

The resources used for both interventions will also be measured. Some of these resources include medications, syringes, intravenous lines, glucometer, food and drinks, etc. The amount of use and the cost for these resources will be compared. From these data, one can identify any treatment differences between PIHT and NIHT and to estimate the total cost for each intervention. Ultimately, with other data such as the average time to reverse hypoglycemia, one can compare the cost and effectiveness of both interventions and identify any inadequate and inconsistent treatment and/or lack of adherence to HTP.

As mentioned above, the average time needed for NIHT and PIHT to assist hypoglycemic patients to regain a normal BG level will be measured. The time will be measured from the initial detection of hypoglycemia to when a normal BG level is sustained after the suggested monitoring is completed. Patients will be classified into mildly, moderately, or severely hypoglycemic according to their initially detected BG level. The number of cases which patients progress to a higher degree of hypoglycemia will be recorded. This measurement allows one to determine how effectively and efficiently NIHT and PIHT treat hypoglycemia.

Health related outcomes such as LOHS and mortality rate will be compared. Although LOHS and mortality rate may be affected by many other factors, measurement of these outcomes allows one to determine if NIHT and PIHT influence these factors independently. In fact, these factors may reflect patients' health outcome after the interventions. For LOHS, the expense of an organization will be reflected, for example, the more days a patient stays in the hospital the higher the expense will be. Hence, LOHS is measured to compare the cost-effectiveness of the two interventions. To avoid inaccurate findings, one should pay special attention to the age of the study sample and any underlying co-morbidities to rule out their influence on mortality rate and LOHS. For patients with extreme of age and/or co-morbidities, their cases should be studied carefully and, if necessary, to be excluded in the sample.

Lastly, patient and staff satisfaction will be measured. A simple questionnaire will be given to, when possible, all patients and staff who had experienced or implemented NIHT and PIHT. The questionnaire will examine patients' and

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staff's perception of and satisfaction with both interventions. When developing the questionnaire, one needs to consider that hospitalized patients are of different intellectual level, education background, and cognitive ability. One should keep the contents of the questionnaire simple and easily comprehensible otherwise these may yield inaccurate results when patients and staff misinterpret or do not understand the presented questions. The questionnaire should also not be too long as staff, who are likely to be busy at work, and patients, whose health are likely to be compromised, may be unwilling or unable to complete. This, in fact, will also lead to inaccurate findings.

When performing the evaluation for NIHT and PIHT, one needs to keep in mind the results from PIHT group do not represent the effectiveness of PIHT for all other areas. Physicians that are of different specialty and education background will have variable experiences and knowledge of hypoglycemia and therefore, may lead to variable results. Based on the evaluation results from PIHT, one can identify physicians' knowledge on the treatment for hypoglycemia only in the particular ward. In addition, one needs to consider whether twelve months is enough for collecting all essential data. If inadequate data is recognized, one may need to extend the time for the study as inadequate data may yield inaccurate results. Additionally, estimating the time for NIHT and PIHT in reversing hypoglycemia will be very challenging and is, in fact, prone to error. Such estimation will be based on nurses' and physicians' charting and/or self reporting, and therefore is prone to error if data are not recorded accurately or if staff misinterpret the defined time frame to measure.

D. Conclusion

Hypoglycemia, when not treated in a timely manner, may lead to life-threatening consequences. With adequate guidance and education, nurses are more than capable of treating such straightforward condition. However, implementing NIHT is not easy and may be very time consuming and challenging. One must be very patient as much time needs to be spent in planning and fighting for such change. Though treating hypoglycemia efficiently with appropriate treatment is important, this condition is best to be prevented. With the focus in primary health care in recent years, patient education on hypoglycemia should be promoted at the same time as NIHT being implemented.