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Staff Education on the Timeliness of Administration of Insulin for the Hospitalized Diabetic Patient

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Walden University

College of Nursing

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Executive Summary: Staff Education Project

Staff Education on the Timeliness of Administration of Insulin for the Hospitalized
Diabetic Patient

by

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Summary

The problem addressed in this DNP project was the necessity for a nursing staff education program (SEP) focused on the prompt administration of insulin and order management as well as the evaluation of the hospital policy regarding diabetes mellitus in nonpregnant adult patients concerning hypoglycemia/hyperglycemia. Timely administration of insulin in the hospital is essential to maintain blood glucose levels within a permissible range, which greatly reduces the chances of encountering complications related to diabetes. The project questions were: Will there be an alteration in the nursing team members' understanding of the promptness of insulin administration and the associated policy from the pretest to the posttest following the SEP? How will the participants assess the SEP in relation to the established objectives? Therefore, the project's purpose was to plan, implement, and consider a nursing SEP on timely insulin administration in the hospital setting and review the policy. Fourteen staff nurses participated in the pre-/posttest and assessed the SEP. I evaluated the collected data using descriptive statistics. Pretest scores varied from 4 to 9, with a group mean of 6.21 (62%), whereas posttest scores ranged from 9 to 12, yielding a group mean of 9.64 (96%). This resulted in a positive knowledge change of 5.4 (54%). Participants completed the evaluation of the SEP in relation to the objectives on a dichotomous scale (*yes* = 1 and *no* = 2), resulting in a mean score of 1, which indicates that the goals were successfully met. Staff education on timely insulin and medication policy administration can lead to positive social change by improving nursing practice and creating a more supportive organizational culture prioritizing diversity, equity, and inclusion for hospitalized diabetes patients.

Background

The problems in the hospital setting addressed in this project were the lack of timely insulin order acknowledgment and administration, the necessity for an educational program for the nursing staff regarding the prompt administration of insulin order management, and the examination of the hospital policy. The objective of the project was to design, execute, and assess a nursing SEP focused on the timely administration of insulin within the hospital environment and to review the hospital policy. The practice-oriented questions were: Will there be a shift in the knowledge of nursing team members concerning the timeliness of insulin administration and the hospital policy from pretest to posttest following the SEP? How will the participants assess the SEP program in relation to its objectives?

Maintaining blood glucose levels within a permissible range greatly reduces the chances of encountering complications related to diabetes (Ali et al., 2022). Timely administration of insulin is essential for effective diabetes management, and the accuracy and promptness of this management can be significantly enhanced by a reliable order acknowledgment system (Ali et al., 2022). The timely approval for insulin dispensing is a crucial consideration at the onset of treatment, and it is imperative that administration begins as swiftly as possible to facilitate prompt delivery. This procedure ensures that insulin therapy is initiated without delay, catering to the specific needs of each individual, thereby protecting patient safety and enhancing health outcomes (Alba et al., 2024).

Multiple obstacles delay the prompt acknowledgment and administration of insulin orders. The capacity of healthcare professionals to swiftly respond to and follow instructions may be compromised by the necessity for efficient communication channels

(Alba et al., 2024). Employee concerns can lead to delays in order processing as a result of a lack of available skilled labor (Sharma et al., 2020). Furthermore, technological obstacles, such as outdated systems or faulty technology, may result in delays in order confirmation (Sharma et al., 2020). Insufficient training of nursing personnel could worsen this problem (Ali et al., 2022). To ensure swift approval and delivery of insulin prescriptions, it is essential to establish effective communication channels, train and maintain a competent nursing workforce, and enhance technical systems (Ali et al., 2022).

The ramifications of lack of insulin administration for the patient include fluid and electrolyte imbalances, which can lead to excessive fluid loss through sweating, causing dehydration (Roger et al., 2024). Cognitive impairment can also occur, which can affect brain function, leading to confusion, altered mental status, and impaired decision making (Markolf et al., 2020). For the project site organization, prolonged hospital stays can cause reimbursement, regulatory body implications, and patient satisfaction (see Geerlings et al., 2020).

Staff Education Project Development

The initiative was guided by the *Johns Hopkins Nursing Evidence-Based Practice: Model and Guidelines* (Dang et al., 2022) and adhered to the Walden University *DNP Project Process Guide – Project Management Approach*. The model includes a specific plan, timeline, and organization of resources. The intended participants consisted of current RNs in the project site organization who provide care for patients with diabetes. The nurses possessed diverse levels of experience in managing patients.

The initiative took place in a specialized training room in the inpatient hospital setting, which featured a projector, seating arrangements conducive to group interaction, and whiteboards for facilitating discussions. Sessions were scheduled during peak hours to enhance participation. Attendance was not mandatory. I issued invitations to the unit leaders who promoted the program with the staff.

I presented the PowerPoint presentation, and my mentor reviewed the policy with the participants. The curriculum was framed within an analysis, design, development, implementation, and evaluation model of instructional design, along with a pre- and posttest. The PowerPoint presentation was 60 minutes long, and the pre- and posttest took 10 minutes each. All components were completed by 14 staff nurses who also evaluated the program. No participant names were provided on any tests or evaluation forms to ensure anonymity. Participants were instructed to write a number and a date on their pretest and then include the same information on their posttest. I was in attendance throughout the testing and phases, which were overseen by my mentor, who managed the distribution and collection of the anonymous tests and evaluations. The mentor delivered the sealed envelopes to me. I analyzed the participants' pretest, posttest, and evaluation of the SEP using descriptive statistics.

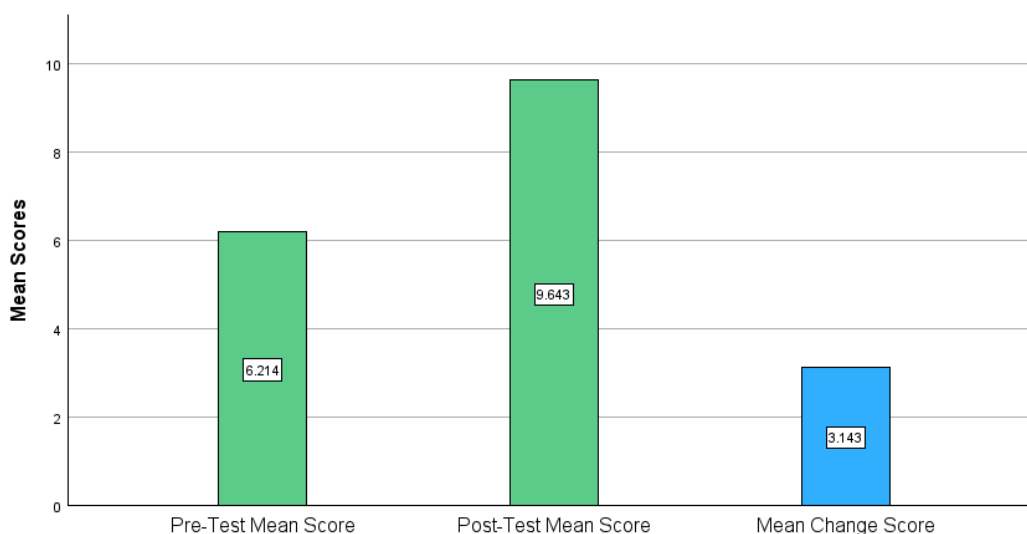
Results

I administered a test to participants to measure their knowledge of insulin policy at the project site organization before and after the intervention. There were 18 participants who took the pretest and 14 who took the posttest. Therefore, only the 14 participants who completed both the pre- and posttests were included in the descriptive analysis.

The higher the score, the more knowledge the participant had of insulin policy. The pretests had a mean score of 6.21 ($SD = 1.529$, $N = 14$) with the lowest score being 4 and the highest score being 9, for a range of 5 (Table 1). The posttest had a mean score of 9.64 ($SD = .929$, $N = 14$), with the lowest score being 9 and the highest score 12, for a range of 3. The change score is the average change from pre- to posttest. For the change score, the mean score was 3.14 ($SD = 1.994$, $N = 14$), with the lowest score being 0 and the highest score being 8 for a range of 8. The results can be seen in Figure 1.

Figure 1

Mean Change in Knowledge Results from Pretest to Posttest



The 14 participants filled out the evaluation of the staff education program objectives. Table 1 shows the six goals, and all participants answered *yes*, showing that the six objectives were met in the education program for a group mean of 1. No comments were given on the evaluation.

Table 1*Results of the Staff Education Evaluations by Participants*

Objective	N	%
At the conclusion of the staff education program, the participant will be able to:		
1. State the main goals of patients with diabetes needing hospitalization		
YES	14	100
NO	0	0
2. Discuss the importance of insulin administration in the hospitalized patient		
YES	14	100
NO	0	0
3. Identify clinician and organizational barriers to the timely administration of insulin and overcome barriers		
YES	14	100
NO	0	0
4. Review of the ramifications of the lack of timely insulin administration in the hospital setting		
YES	14	100
NO	0	0
5. Review of the policy		
YES	14	100
NO	0	0

Note. YES = 1; NO = 2.

Implementing the SEP can positively impact the project site organization relative to improved patient outcomes, patient satisfaction, and reimbursement opportunities. One of the limitations of the project included the small number of nurses served by the SEP, hindering the chance to affect wide-ranging results of outcomes, which might have been

actualized if the number of nurses was greater. Another limitation was related to the participants who attended the program because these nurses were on duty at the time of the project and needed to attend to patients concurrently. For instance, there was a code blue, and all the nurses had to leave the program. The project can be important beyond the local site because the hospital is part of a regional system that might also benefit from the information and review of the regional policy.

Conclusions

My mentor encouraged me to articulate my communication efforts with English as a second language. She expected professionalism, engagement in the process, and commitment to the organization. The SEP can result in optimal care of the diabetic patient and improvement in the human condition; therefore, I recommend that the program be implemented in other units in the hospital for nurses who can commit to the time provided, perhaps during orientation and/or annual education. The implications for nursing practice include the potential for nurses committing to the importance of timely administration of insulin and adherence to the policy, thus improving the care of the patients in the hospital. By having a more global hospital education program, improved outcomes relative to the education would be possible. Positive social change may occur within the hospital setting by empowering healthcare providers to understand the implications of timely administration of medications in providing equitable care for all diabetic patients thus improving the human condition for patients and their families.

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