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# Effectiveness of planned teaching programme (PTP) on knowledge regarding insulin therapy among IInd year GNM students in a selected college at Mangalore

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**Abstract**
**Introduction:** Diabetic mellitus is a chronic condition that requires lifelong management, which can be achieved through lifestyle modifications and insulin therapy. Insulin plays a crucial role in regulating blood sugar levels by facilitating glucose uptake in cells and inhibiting glucose production in the liver. Normally, the pancreas produces insulin in response to elevated blood glucose levels. However, in individuals with diabetes, insulin therapy is necessary to supplement or replace the body's natural insulin production, thereby controlling blood sugar levels and managing the condition. Education is a vital scale of nurse, particularly regarding insulin therapy, providing instruction on proper technique for administration as well as some important things to look for during the procedure, will help prevent complication. The adage "Prevention is better than cure" holds good if proper care is given to the patients who are at risk of developing complications directly due to lack of knowledge and proper care. Education will make the student nurses to provide best care as far as possible which will reduce the incidence of complication in the insulin therapy receiving patients.
**Objectives:** To assess the knowledge of II nd year GNM students regarding insulin therapy by using a structured knowledge questionnaire. To evaluate the effectiveness of the PTP on insulin therapy by assessing the mean post-test knowledge scores.
**Methodology:** A pre-experimental one group pre-test, post-test design was used for the study. The samples comprised of 50IInd year GNM students. Samples were selected by simple random sampling technique. Pre-test was conducted to assess the level of ix knowledge of subject regarding insulin therapy using a structured knowledge questionnaire. The PTP was administered after the pre-test. Post-test was conducted on the 7th day with the same structured knowledge questionnaire. The collected data was analyzed using descriptive and inferential statistics.
**Results:** The mean post-test knowledge score (x2= 26.66) was higher than the mean pre-test knowledge (x1= 15.3)
Paired 't' test was done to find out the difference between the mean pre-test and post-test knowledge score.
The calculated 't' value (t49=27.006) was found to be significant (t49= 2.00 at $p<0.05$).
**Conclusion:** Findings of the study showed that the knowledge of the IInd year GNM students were less before the administration of the PTP. PTP facilitated them to gain more knowledge about insulin therapy which was evident from the post-test knowledge scores.

**Keywords:** Effectiveness, knowledge level, insulin therapy, planned teaching programme

## Introduction

Diabetes mellitus often simply refers to as disease is a group of metabolic disease in which a person high blood sugar, either because the body does not produce enough insulin or because cells do not respond to the insulin that is produced. This high blood sugar produces the clinical symptoms of polyurea, polydipsia and polyphagia [1]. Diabetes was identified as a disease associated with "sweet „urine" and excessive muscle loss in the ancient world. Elevated level of blood glucose leads to spillage of glucose into the urine, hence the term sweet urine. It occurs due to absence of insufficient production of insulin. It is a chronic condition as it lasts lifetime but can be well controlled. Diabetes is known as "madhumeh" in Ayurveda. It is aloes known as "rich man's disease" because people who are over nourished usually get affected by it [2]. Insulin is produced by the pancreatic beta cells in the islets of langerhans. The normal condition, insulin is continuously related into the blood stream in small pulsatile, increments with increased when food is ingested. The average amount of insulin secreted daily by an adult is approximately 40 to 500. The active form of the hormone is composed of two poly peptide chains. All through several hormones are known to increase blood glucose level, insulin is the only hormone known to have a direct effect in lowering blood glucose level. The actions of insulin are three-fold: It promotes glucose uptakes by target cells are provide for glucose storage as glycogen, it prevents fat and glycogen breakdown, it inhibits gluconeogenesis and increases protein synthesis. Insulin act to promote fat storage by increasing the transport of glucose into fat cells. It also facilitates triglyceride synthesis from glucose in fat cells and inhibits the intercellular breakdown of stored triglycerides. In children and adolescent's insulin is needed for normal growth and development. Insulin therapy can help some people with diabetes maintain their blood sugar levels. In people with type1 diabetes the pancreas produces little to insulin in people with type2 diabetes the fat, liver, and muscle cell do not respond correctly to insulin. This is called insulin resistance [5]. Everyone with type1 diabetes and some with type2 diabetes must take insulin every day to maintain safe insulin level or replace what their pancreas in unable to produce. Insulin is usually given in 2 or 3 injections per day, generally around mealtime to control the blood glucose level. It taken by mouth insulin would be destroyed in the stomach before it could get into blood where it is needed. Because the insulin doses required by the individual patient are determined by the level of glucose in the blood accurate monitoring of

blood glucose level is essential. It is very important to eat if the patient has taken insulin, as the insulin will lower blood sugar regarding of whether they have eaten. If insulin is taken without eating the result may be hypoglycemia this is called an insulin reaction [7]. The most widely used form of insulin is synthetic human insulin which is chemically identical to human insulin but not manufactured in a laboratory. Insulin maybe grouped into several categories based on the onset peak and duration of action that are rapid acting insulin, long acting insulin, short acting insulin.

**Objectives of the Study**

1. To assess the knowledge level of IInd year GNM students regarding insulin therapy by using a structured knowledge questionnaire.
2. To evaluate the effectiveness of planned teaching programme on insulin therapy by assessing the mean post-test knowledge scores.

**Methodology**

This chapter deals with methodology that was selected by the investigator in order to assess the knowledge regarding insulin therapy among student nurses. The methodology of the study includes research approach, research design, setting of the study, population sample, sampling technique, inclusion criteria for sampling, exclusion criteria for sampling, data collection tool, development of the tool, pretesting and establishing reliability of the tool, description of the tool, data collection method, problem faced during data collection and plan for data analysis [10].

**Result**

**Section I:** Knowledge level regarding Insulin Therapy

**Table 1:** Distribution of subjects according to grading of pre-test and post-test knowledge scores, n=50

| Grading | Range of score | Pre-test | | Post-test | |
|---|---|---|---|---|---|
| | | f | % | f | % |
| Excellent | 26-30 | 0 | 0 | 41 | 82% |
| Good | 21-25 | 0 | 0 | 9 | 18% |
| Average | 16-20 | 28 | 56% | 0 | 0 |
| Below average | 11-15 | 21 | 42% | 0 | 0 |
| Poor | 6-10 | 1 | 2% | 0 | 0 |
| Very poor | 0-5 | 0 | 0 | 0 | 0 |

Maximum score=30

**Section II:** Effectiveness of PTP in Terms Gain in Knowledge Scores Regarding Insulin Therapy

**Table 2:** Mean, mean difference, SD difference and 't' value of the pre-test and post-test knowledge score of student nurses before and after the planned teaching programme. n=50

| Variable | Mean | | Mean difference | SD difference | 't' value |
|---|---|---|---|---|---|
| | Pre-test | Post-test | | | |
| Knowledge score | 15.3 | 26.66 | 11.36 | 0.777 | 27.006* |

**Significant:** $t'_{49}=2.00$, $P<0.005$.

**Discussion**

**Section 1:** Knowledge Level Regarding Insulin Therapy.

Finding of the study reveal that the post-test knowledge score(x2=26.66) was higher than the mean pre- test knowledge score(x1=15.3). Similar finding was reported when a study was conducted to assess the awareness of Diabetes Mellitus among 200 diabetic patients attending the medical outpatient department of Royal Victoria teaching Hospital, Banjul by using questionnaire on general knowledge on Diabetes mellitus, causes, complication, management and prevention. Out of the 200 patients, 47% said they knew what Diabetes Mellitus is similarly, 53% of the study participants had no knowledge of the cause of Diabetes Mellitus and about 50% were not aware of the method of prevention. 60% knew that diabetes mellitus can result to loss of sight while 46.5% knew that diabetes mellitus can cause poor wound healing. Few respondents knew that diabetes mellitus can lead to kidney failure (13.5%), skin sepsis (12.0%), Heart failure (5.5%) and stroke (4.5%). The participants with University education were more likely to be aware of diabetes mellitus than those with no formal education and this difference was statistically significant [P<0.01]19.

**Section 2:** Effectiveness of PTP Regarding Insulin Therapy.

The finding of the present study showed a significant increase in post-test knowledge scores and the computed „t" value was 27.006 ($p<0.05$).

A study was conducted to assess the effectiveness of planned teaching programme on knowledge regarding insulin therapy among diabetic patients attending OPD of selected hospital of Sri Muktsar Sahib, Punjab.Quantitative evaluative approach and pre-experimental one group pre-test, post test design was adopted. Sample included 50 diabetic patients were selected by using non-probability convenient sampling technique. The study finding revealed that pre- test mean knowledge score was 12.70 with SD 2.485 and post –test mean knowledge score was 21.86 with SD 1.927, there was statistically significant increasing post-test knowledge ($P<0.001$). These findings indicated that the planned teaching programme was effective. Hence, hypotheses H1 is accepted. There was a statistically significant association of the post-test knowledge score of subjects with using insulin therapy from except other variables.

**Conclusion**

Insulin therapy is a treatment approach for diabetes that involves administering exogenous insulin to manage the condition. This therapy is primarily used to treat specific forms of diabetes mellitus, including type 1 diabetes, where the body no longer produces insulin internally. In contrast, patients with type 2 diabetes may require insulin therapy due to insulin resistance and impaired insulin production. Over time, some patients with type 2 diabetes may also necessitate insulin therapy. Notably, insulin therapy has been shown to offer protective benefits against endothelial damage, highlighting its importance in diabetes management." The Chapter summarizes the conclusion derived from the study's finding and their nursing implications. The primary aim of the present study present study is to assess the effectiveness of planned teaching programme. The sample consisted of IInd year GNM nursing students from Athena College of Nursing, Mangalore.

**Reference**

1. Wiliam L, Hopper DP. Understanding medical surgical

nursing. 3rd edition. New Delhi. Jaypee brothers' medical publishers, 2012, 859.
2. Hawks J. Medical surgical nursing. 7th edition. New Delhi, Elsevier publishers, 2010, 1243.
3. Javed A. Textbook of medical surgical nursing. 1st edition. India: Peevee publishers, 2015, 1274–1276
4. Dr. Venkatesan B. Adult health nursing. 1st edition. Bangalore: Emesses medical publishers, 2023, 545–547
5. Lewis L. S, Bucher L. Assessment and management of clinical problems. 7th edition. New Delhi: Elsevier publishers, 2007, 1254–1255.
6. Williams L, Wilkims. Nursing research. 7th edition. New Delhi: wolters kluwer publishers, 2013, 296 – 298.
7. Lemone PT. Medical surgical nursing. 6th edition. Bangalore: pearson india education services, 2018, 510-512.
8. Camon S. Introduction to nursing research. 2nd edition. New Delhi: Jones and Barrlett publishers, 2011, 35-36
9. Basavanathappa B.T. Nursing research. 2nd edition. New Delhi: Jaypee publishers, 2007, 92, 93, 233
10. Grove K. S. Understanding nursing research. 4th edition. New Delhi: Elsevier publishers, 2010, 156, 324, 365, 331