

Effectiveness of STP on Knowledge Regarding Self - Administration of Insulin among Diabetic Patients

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Abstract: *Diabetes mellitus is the metabolic disease characterized by increased the level of glucose in the blood resulting from defect in insulin secretion, insulin action or both. Diabetes mellitus is the most prevalence disease in the world now a days. Diabetes mellitus is a silent disease and is now recognized as one of the fastest growing threats to public health in almost all countries of the world. Every 5th person who suffers from diabetes mellitus in the world today is an Indian. Diabetes is an “iceberg” disease. The population in India has an increased susceptibility to diabetes mellitus. A study was conducted to evaluate the effectiveness of STP on knowledge regarding self - administration of insulin among diabetic patients in selected hospital with the objectives to assess the existing practice on self - insulin administration, effectiveness of demonstration on practice of self - insulin administration and to find out association between existing practice of self - insulin administration with selected demographic variable. One group pretest post - test research design was used. 30 subjects were selected by non - probability purposive sampling. Checklist is prepared to evaluate the practice of self - insulin administration among diabetes mellitus client. The study finding revealed that practice of self - insulin administration among subjects was effective after the demonstration. Thus, the H_1 is accepted.*

Keywords: Diabetes Mellitus, Insulin Administration, STP.

1. Introduction

Diabetes mellitus is a group of metabolic disorder arising either due to relative or absolute deficiency of a digestive hormone called insulin or inability or resistance of body cells to use the available insulin. Diabetes mellitus is a silent disease and is now recognized as one of the fastest growing threats to public health in almost all countries of the world. The population in India has an increased susceptibility to diabetes mellitus¹. Diabetes is a global public health problem, the number of people suffering from diabetes mellitus is increasing due to population growth, aging, urbanization, low physical activity and the high prevalence of obesity and quantifying the prevalence of diabetes mellitus and the number of people affected with diabetes, now and in the future, it important in permitting national planning and allocation of resources. Diabetes mellitus (DM) is recognized as one of the leading causes of death and disability worldwide, India is in leading position with largest number of Diabetics.

Taking oral medication is easy compared to insulin administration. Insulin therapy is a cornerstone of treatment in type 1 diabetes and, in many cases, also critical to the management of type 2 diabetes. “Insulin is a valuable Drug for those who are in need of it - Insulin will have tremendous impact, when it is used properly.”²

Need for the Study

According to WHO, global burden of diabetes was 347 million people worldwide have diabetes. In 2020, an estimated 3.4 million people died from consequences of high fasting blood sugar. More than 80% of diabetes deaths occur in low - and middle - income countries. WHO projects that diabetes will be the 7th leading cause of death in 2030. Healthy diet, regular physical activity, maintaining a normal body weight and avoiding tobacco use can prevent or delay the onset of type 2 diabetes.³

According to the National Patient Safety Agency (2010) Safer Administration of Insulin was issued on 16 June 2010 in response to the National Patient Safety Agency (NPSA) receiving 3, 881 wrong dose incident reports in the UK (August 2003 - August 2009) involving insulin. The NPSA identified two common preventable errors relating to dose errors: using abbreviations when prescribing insulin; and failing to use insulin syringes. Insulin has been identified as one of the top 10 high - alert medicines worldwide and a high - alert medicine is defined as a medicine that has the highest risk of causing patient injury when misused. Errors relating to insulin arise because insulin has a narrow therapeutic range and requires precise dose adjustments with careful administration and monitoring.⁴ A cross sectional study was conducted on insulin self - administration technique among patients with diabetes mellitus in Brazil. A total of 169 patients were selected by simple random sampling. The study results identified errors in all the recommended steps for the safe administration of insulin and it shows that the average percentage of samples that performed the steps correctly were 61%. Hence the investigator felt there is a need to assess the knowledge of diabetes mellitus patients regarding self - insulin administration technique.⁵

2. Material and Method

This study aims to evaluate the effectiveness of STP on knowledge regarding self - administration of insulin among diabetic patients. Quantitative evaluative research approach pre - experimental one group pre - test post - test design was used. By using non - probability purposive sampling technique 30 subjects were selected from the selected diabetes clinics in metropolitan city. the section I of tool elicited socio demographic information which include includes age, gender, religion, body built, educational status, occupation, income, suffering from any associated disease related to diabetes, type of disease, duration of insulin, types of insulin, awareness about insulin action, type of insulin action, information received, from where get information. Section II contains

observation check list - 25 items to evaluate the practice of self - insulin administration among diabetic mellitus clients. Self - administration of insulin practice was assessed with the help of observation check list before the intervention in subjects home as well as diabetes clinic. Showed the Demonstration on self - insulin administration. Post demonstration practice was assessed by using same observation check list. The collected data were coded, tabulated and analysed by using descriptive and inferential statistics.

3. Result

Maximum 76.7% of subjects practicing self - insulin administration belonged to age group of >46 years. Gender wise analysis revealed that there was Maximum 70% of subjects was male. In this study revealed that maximum 53.3% of subjects belong to Hindu religion. Maximum 76% of subjects who participated in the study had completed their secondary education. In this study majority i. e.46.7% of subjects had monthly income lies between 5001 - 10000 Rs. per month. The study concerned 46.7% of subjects suffering from associated disease related to diabetes. Majority of the

subjects 20% were suffering from the hypertension. Maximum 63.3% of subjects participated who were practicing self - insulin administration since more than one year. Most of the subjects 80% were acquired information about insulin administration out of the total subjects. Maximum 73.3% of the subject's they acquired information about insulin administration from health personnel.

Table 1: General assessment with pretest practice n=30

Level of practice score	Percentage score	Pre - Test	
		Frequency	Percentage
Poor	0 - 19%	0	0.00
Average	20 - 39%	24	80.00
Good	40 - 59%	6	20.00
Very Good	60 - 79%	0	0.00
Excellent	>79%	0	0.00
Minimum score obtained	6		
Maximum score obtained	11		
Mean score	8.23 ± 1.30		
Mean %	32.93 ± 5.21		

The above table showed that in pretest scores 80% of the subjects had average level of practice and 20% of them had good level of practice score.

Table 2: Assessment of effectiveness of STP on self - insulin administration among client with diabetic mellitus, n=30

Overall	Mean practice score	SD	Mean percentage	t - value	p - value
Pre - Test	8.23	1.30	32.93	21.62	0.000 S, p<0.05
Post Test 1 st day	19.30	2.40	77.20		
Post Test 3 rd day	22.76	1.97	91.06	30.05	0.000 S, p<0.05
Post Test 5 th day	24.53	0.77	98.13	57.34	0.000 S, p<0.05

Above table and figure shows that the tabulated t value for n=30 the tabulated value for n=30 - 1 i. e.29 degrees of freedom was 2.05. The calculated 't' value is much higher than the tabulated value at 5% level of significance at post - test 1st day, 3rd day and 5th day respectively which is level of significance Hence it is interpreted that practice of self - insulin administration among subjects was effective after the demonstration. Thus, the H₁ is accepted.

4. Discussion

Analysis of pretest interpreted as 80% had average level of practice and Remaining 20% of them had good level of self - insulin administration practice. Result also suggest that overall pretest score of self - insulin administration practice before STP was 8.23 and overall post - test of self - insulin administration practice was 1st day 19.30, 3rd day 22.76 and 5th day 24.53, there was significance increase in self - insulin administration practice score i. e. Practice of self - insulin administration was improved after the demonstration. p value =0<0.05 Hence investigator rejected H₀ and accepted H₁ Therefore investigator concluded that STP on self - insulin administration with regards to practice among diabetes mellitus clients was effective. The above findings are supported by the study by Pare catty S⁶ 'effectiveness of individual planned teaching on self - administration of insulin for patients with diabetes mellitus' (n=30). The mean post - test ability score of diabetic patients was found to be significantly higher than their pretest ability score. There was a statistically relationship between knowledge and ability level after individually planned teaching (r=0.74; p<0.05).

Learning by doing was most effective and satisfying to the patients, express by many subjects.

References

- [1] Park text book of preventive and social medicine 22 nd ed. M/s banarsidas bhanot publishers1167, prem nagar Jabalpur, 482 001 (M. P.); 2012
- [2] Gholamreza Veghari, Mehdi Sedaghat, Hamidreza Joshaghani, Sed Ahmad Hoseini, Farhad Niknezad, Abdolhamid Angizeh, Ebrahim Tazik, Pooneh Moharloeigolestan: Association between socio - demographic factors and diabetes mellitus in the north of Iran: A population - based study. International Journal of Diabetes Mellitus. Volume 2, Issue 3, December 2010, Pages 154-157
- [3] world health organization Fact sheet N 312 (cited October 2013) available from: <http://www.who.int/mediacentre/factsheets/fs312/en/>
- [4] National Patient Safety Agency (NPSA) Safer administration of insulin, 2010availablefrom: https://www.google.co.in/?gws_rd=crandei=EoHjUpvniKITrAfQoYGACw#q=npa+2010+safer+administration+of+insulin.
- [5] Stacciarini TS. pace AC. Hass VJ. Insulin self administration technique with disposable syringe among patients with diabetes mellitus followed by the family health strategy. Revista Latino - Americana de Enfermagem 2009 jul 15; 17 (4)