

## **Efficacy of Self Administration of Insulin Among Type II Diabetes Mellitus Patients At Selected Hospitals in Lucknow, Uttar Pradesh**

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### **Introduction**

Diabetes mellitus is the greatest challenge facing the modern world (DM). Diabetes mellitus is expected to affect 366 million people by the year 2030, according to the World Health Organization. By 2030, the World Health Organization expects the global prevalence of diabetes mellitus to rise from 171,000,000 in 2000 to 366,000,000. In India, where the disease's long arms have spread widely, the prevalence was 367,000 in 2000, according to a WHO statistical report, and is expected to rise to 635,000 by 2030.

Diabetes, which was previously thought to affect only the country's urban residents, has now spread to rural areas as well, affecting as much as 3 percent of the country's total population. Nearly 10 percent to 11 percent of India's 25 million diabetes patients are urban diabetics, according to estimates. About ten percent of the wealthy are currently afflicted, while roughly three-thirds of the poorest members of society are affected. Hyderabad has the highest rate of diabetes mellitus prevalence at 16.6%, followed by Chennai at 13.5%, Bangalore at 12.4%, Delhi at 11.6%, and Mumbai at 9.3%.

The current number of diabetes patients in developed countries is expected to rise by 41% to 72 million by 2025, from a current level of 51 million. The disease's prevalence would rise by 170 percent, from 84 million to 228 million people, in developing countries.

### **Methodology**

Random selection of a sample of 50 using a simple lottery method from a sample frame that meets eligibility criteria was used in this quantitative study. Observation checklist for self-administration of insulin and semi-structured interview/observation schedule were used to gather data for the demographic profile of diabetes mellitus clients, knowledge questionnaire on general diabetes mellitus information and self-administration of insulin.

The pre-test was administered using the tools that had been prepared, and the education intervention was conducted using power point slides and flip charts. The technique for administering insulin was put on display. A pamphlet detailing the proper way to administer insulin was made available. For the post-test, it took place one week later.

From November 16th to December 15th, 2018, the study was conducted in the Diabetology out-patient department of selected hospitals in Lucknow, Uttar Pradesh, with permission from the Head of the Department and the approval of the Ethical Committee. Participants gave their consent after being fully informed about the study's objectives and risks. A pilot study was conducted to determine the feasibility of the study and to improve the tools used in the study.

## **Results**

There was a lack of knowledge and practise in insulin self-administration. The results of the pretest show that the average knowledge score was insufficient in general (36.2 percent ). Knowledge of general information had a mean score of 37.4%, and self-care had a mean score of 35.8%. Seventy-eight percent of those who took part in the study had insufficient knowledge, while 22 percent had moderately adequate knowledge, and none had excellent knowledge. Self-administration of insulin practise scores were below average (12.54).

74.0 percent of participants had insufficient practise, 26.0 percent had moderately adequate practise, and none of them had good practise. The diabetes mellitus patient's knowledge and practise scores improve after an educational intervention. The average post-test score was 35.32. Self-administration of insulin receives a 27.00 and general knowledge receives an 8.32. More than two-thirds of the participants have adequate knowledge, while less than one-third have moderately adequate knowledge. There was a 26.18 standard deviation in the mean practise score across all tests after they were completed.

Eighty-one percent of participants have excellent practise, twenty-percent of participants have adequate practise, and none of the participants have insufficient practise. It is compared between the pre- and post-test knowledge scores. For the pretest, the average knowledge score is 15.92, while the post-test score is 35.22. There is a 19.40-point discrepancy. The difference ( $t=24.91$ ,  $p=0.001$ ,  $DF=98$ , significant) is enormous. There is a comparison of the knowledge score. There is statistical significance ( $X^2=77.04$ ,  $p=0.001$ ,  $DF=2$ ) in the results.

Because of this, the post-test knowledge level has been raised. Comparing the pre- and posttest scores is done. There is a 12.54 median pre-test practise score, and a 26.18 median post-test score. The discrepancy stands at 13.64. This significant difference ( $t=55.51$ ,  $p=0.001$ ,  $DF=98$ , significant) demonstrates the substantial progress made in practise. A comparison is made between the amount of practise done before and after the test. The level of post-test practise is vastly different between students. Practice makes perfect. A 44.1 percent gain in knowledge and 42.6 percent gain in practise are significant results ( $X^2 = 77.39$ ,  $p = 0.00a$ ,  $DF=2$ ) from the pre-test.

Correlation between test scores and knowledge obtained through practise.  $r=0.019$ ,  $p=0.21$ , a nonsignificant, positive, and weak correlation was found in the pre-test. As a result, when one's knowledge grows, one's ability to practise incorrectly also grows. In the posttest, there is a significant correlation ( $r=0.63$ ,  $p=0.001$ ).

A strong link exists between what one knows and what one does. This means that as our knowledge grows, so does our ability to put that knowledge into action. There is a significant correlation between post-test findings and factors such as age, education level, family history, and illness duration. Those who are older ( $>45$ ), more educated (HSC/Diploma/Degree, Pearson Chi-square test= $8.34$ ,  $p=0.02$ ,  $DF=2$ ) and have a family history of diabetes (Pearson Chi-square test= $5.25$ ,  $p=0.19$ ,  $DF=2$ ) had more knowledge in the current study. The Pearson Chi-square test showed that these groups had a higher level of knowledge. Higher levels of education (HSC/Diploma/Degree,  $p=0.03$ , significant) and age ( $>45$ , Pearson Chi-square test =  $6.93$ ,  $p=0.03$ , Patients who have been ill for longer periods of time ( $>5$  years, Pearson Chi-square test= $7.13$ ,  $p=0.03$ ,  $DF=2$ , significant) have had more practise than others (Pearson Chi-square test= $7.40$ ,  $p=0.02$ ,  $DF=2$ ).

## **Conclusion**

Diabetes Mellitus has an impact on a person's overall health. Both medical and self-care activities are necessary to control diabetes mellitus. Self-care activities are more important in controlling disease and preventing complications than medical treatment. It necessitates the participation and self-motivation of the clients. Adherence to a treatment regimen is difficult because the disease is chronic. In order to cultivate a positive self-care attitude, it is essential to have a thorough understanding of one's medical condition. To meet these needs, a tailored education programme must be developed for each individual client. Diabetes mellitus patients can benefit from education, demonstration, return demonstration, and reinforcement through a variety of media.

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