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The Efficacy of Video-Assisted Instruction in Preventing Lipohypertrophy in Patients Diagnosed with Type 2 Diabetes

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Abstract:- A thick fatty tissue called lipohypertrophy develops in the insulin site as a result of repeated injections at the same location. Patients with diabetes mellitus who use regular insulin are more likely to experience it. The absorption of insulin is impacted in these adipose-rich regions. The purpose of this study was to evaluate how well individuals with diabetes mellitus responded to video-assisted instruction on lipohypertrophy prevention. The aim of the study was to evaluate the efficacy of video-assisted instruction in preventing lipohypertrophy and investigate the relationship between lipohypertrophy preventive pretest knowledge and certain socio-demographic factors. Thirty patients with diabetes mellitus receiving insulin injections made up the total sample size. To choose the samples, a convenient sampling procedure was applied. Using a self-administered questionnaire, the investigators evaluated the participants' degree of knowledge regarding lipohypertrophy prevention during the pretest. A half-hour of video-assisted instruction on lipohypertrophy prevention was conducted on the same day. A posttest using the same instrument was carried out five days later. 10.4% of the samples had strong knowledge during the pretest, 43% had average knowledge, and 46.6% had poor knowledge. Following video-assisted instruction, 71.2% of samples possessed excellent knowledge, 25.5% had average knowledge, and 3.3% had inadequate knowledge regarding lipohypertrophy avoidance. A paired "t"test was employed, and the results indicated a statistically significant increase in knowledge ('t'=9.25, p <0.05). Pretest knowledge scores and a few chosen demographic factors do not correlate. The study came to the conclusion that patients with diabetes mellitus can effectively prevent lipohypertrophy by learning more through video assisted education.

Keywords:- *Effectiveness, Video Assisted Teaching, Knowledge, Prevention, Lipohypertrophy, Diabetes Mellitus)*

I. INTRODUCTION

The development of hard fatty tissue beneath the skin as a result of excess fat accumulating at the site of subcutaneous insulin injections is known as lipohypertrophy. It could feel thick to the touch and be slightly uncomfortable. It is a typical minor side effect of ongoing insulin infusion. Globally, 10.5 percent of adults between the ages of 20 and 79 have diabetes mellitus, affecting over 530 million adults. Currently, 8.6 lakh individuals in India have type 1 diabetes, and one in six of these individuals pass away before receiving a diagnosis. The prevalence of lipohypertrophy in insulin users over the past five years has varied from 11.1% to 73.4%. At present more than 60% of the patients developed lipohypertrophy, which is consistent with the recently reported estimate of 69.8% in Indian type 1 diabetes mellitus patients.

II. MATERIALS AND METHODS

The research utilized a quantitative evaluative approach with a pre-experimental one-group pretest-posttest design. The study was conducted at NIMS Medicity in Neyyattinkara. A sample of 30 patients diagnosed with Diabetes Mellitus and using insulin injections was selected. Written permission was obtained from the relevant authority, and informed consent was gathered from all participants. A convenience sampling technique was used to identify 30 individuals who satisfied the inclusion criteria. The investigators introduced themselves to the participants and explained the study's objectives. A self-administered questionnaire was distributed to assess the pretest knowledge regarding the prevention of lipohypertrophy. On the same day, the investigators conducted a 30-minute video-assisted teaching session on the prevention of lipohypertrophy. A post-test was carried out five days later.

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III. RESULTS

➢ *Section 1: Sample Distribution Based On Demographic Variables*

- Among the samples 66.6% were in the age group of above 60 years.
- Regarding the gender, majority (56.6%) of samples were male.
- Among the samples 66.6% were having basic education.
- About the occupation, majority (40%) of samples were coolie.
- Regarding the monthly income, 50% of samples had income less than Rs.5000.
- Majority (80%) of samples were having type2 Diabetes Mellitus.
- About duration of illness, majority (50%) of samples were having Diabetes above 10 years.
- Regarding comorbid factors, 53.3% had hypertension as comorbid factor.

➢ *Section: 2: Level of Knowledge*

Table.1: Level of Pretest and Posttest Knowledge on Prevention of Lipohypertrophy n=30

Level of Knowledge	Pretest (%)	Post Test(%)
Poor	46.6	3.3
Average	43	25.5
Good	10.4	71.2

➢ *Section :3 : Effectiveness of Video Assisted Teaching*

Table.2: Mean, SD and t Value for Difference between Pretest and Posttest Knowledge n=30

Knowledge	Mean	SD	t	df	Table value
Pre test	7.4	5.2	9.25	29	2.05
Post test	19.6	3.36			

➢ *Section: 4 :Comparison Between Pre Test And Post Test Score.*

On pre test 10.4 % samples had good knowledge. After video assisted teaching 71.2% had good knowledge. It reveals that there is an improvement of knowledge after video assisted teaching .

➢ *Section 5: Association Between Pretest Knowledge And Selected Demographic Variables*

Chi-square test was employed to find the association between pretest knowledge score on prevention of lipohypertrophy and selected demographic variables. There is no significant association exist.

IV. NURSING IMPLICATIONS

The current study has significant implications for nursing service, nursing administration, nursing education, and nursing research.

- Based on the study's findings, a training program may be established for staff nurses to enhance their skills in early detection of complications related to insulin injection.
- The research findings can serve as valuable resource materials for teaching nursing students, thereby fostering a holistic approach to nursing care.
- Nursing students can utilize the findings of this study to identify complications associated with insulin injection.
- The research findings can be stored in the nursing school or college library for future reference.
- The study is important for nurse administrators to identify the need for effective practices in minimizing further complications.
- Nurse administrators can support and encourage staff nurses to enhance their knowledge and skills in caring for patients with diabetes mellitus.
- This study will serve as motivation for novice researchers to undertake similar research initiatives.

V. DISCUSSION

The current study aimed to evaluate the effectiveness of video-assisted teaching in preventing lipohypertrophy among patients with diabetes mellitus. The results indicated that only 10.4% of participants had adequate knowledge in the pretest. Following the video-assisted teaching, there was a significant enhancement in knowledge about the prevention of lipohypertrophy. The study concluded that video-assisted teaching effectively improved awareness regarding this condition.

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